

Avifaunal surveys along the lower Huallaga River, Region of Loreto, Peru: New distributional records, collection of topotypes, and taxonomic implications

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ABSTRACT—The lower Huallaga River in Peru was the focal region of 2 important ornithological collections in the mid-19th century and a third in the early 20th century. Many new taxa were described from these collections, yet the lower Huallaga region has since been largely unexplored by ornithologists. There is a need for modern sampling, including collection of genetic and vocal data, near type localities in order to anchor taxonomic units and better inform conservation decisions. We undertook 2 ornithological expeditions to the lower Huallaga region (Jeberos on the left bank of the Huallaga River in 2001 and Santa Cruz on the right bank in 2016) that collected topotypes or near-topotypes for 18 taxa previously described from the area. We report large range extensions for several species and discuss notable records, taxonomic implications, and biogeographic patterns. *Received 14 May 2018. Accepted 1 December 2018.*

Key words: Amazonia, Huallaga River, range extension, river island, taxonomy, topotype

Reconocimientos de la avifauna a lo largo del bajo río Huallaga, Región de Loreto, Perú: Nuevos registros de distribución, colecta de topotipos e implicaciones taxonómicas

RESUMEN (Spanish)—El bajo río Huallaga en el Perú fue la región focal de dos importantes colecciones ornitológicas de mediados del siglo XIX y el tercio inicial del siglo XX. Muchos nuevos taxa fueron descritos de dichas colecciones, si bien la región del bajo Huallaga ha permanecido en su mayoría inexplorada por ornitólogos. Existe una necesidad de muestreos modernos, incluyendo la colecta de datos genéticos y vocalizaciones, cerca de las localidades tipo para fijar posiciones taxonómicas e informar mejor las decisiones de conservación. Llevamos a cabo dos expediciones ornitológicas en la región del bajo Huallaga (Jeberos en la ribera izquierda del río en 2001 y Santa Cruz en la ribera derecha en 2016) que colectaron topotipos o cuasi topotipos de 18 taxa previamente descritos de esta área. Reportamos grandes extensiones de rango de varias especies y discutimos registros notables, implicaciones taxonómicas y patrones biogeográficos.

Palabras clave: Amazonia, extensiones de rango, isla de río, río Huallaga, taxonomía, topotipo

The lower Huallaga River region in north-central Peru is of historical importance in ornithology because of the pioneering fieldwork of John Hauxwell, Edward Bartlett, and Malcom P. Anderson during the 19th and early 20th centuries

that led to the description of many new taxa (Sclater and Salvin 1873, Bartlett 1882, Cory 1916, 1919a, 1919b). Hauxwell, an English bird collector, lived in Pebas on the Río Amazonas with his family (Rounds 1990, Beolens et al. 2014), but he also ventured near the lower Huallaga River during his collecting efforts at Chamicuros in 1854 (Sclater and Salvin 1867a, 1867b). Another nearby town on the east bank, Santa Cruz, was the source of the “largest and most valuable portion of the specimens brought home” from Bartlett’s extensive fieldwork in the region from 1865 to 1869 (Sclater and Salvin 1873:254). In addition to surveying Santa Cruz, Bartlett dedicated substantial effort to surveying the avifauna of Chamicuros, where he spent 12 months in 1867–1868. Before leaving for Chamicuros, Bartlett also visited sites on the west bank of the lower Huallaga River, including around Jeberos (or “Xeberos”). Here Bartlett “formed a fair collection of all the small birds which are always to be found upon the open sandy campos” (Sclater and Salvin 1873:254). There were further ornithological contributions to the region in 1912 when Anderson, an American

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zoologist and collector for the Field Museum of Natural History, collected specimens around Lagunas (Cory 1916, 1919a, 1919b). The expedition descriptions and specimen collections of these ornithologists together provided the basis for knowledge of the birds along the lower Huallaga River until 2 recent collaborative expeditions by Louisiana State University Museum of Natural Science (LSUMNS; 2001 and 2016), Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos (UNMSM; 2001), and Centro de Ornitología y Biodiversidad (CORBIDI; 2016).

We present the findings of these 2 expeditions, which are the first efforts to resample areas along the lower Huallaga River since the work of Hauxwell, Bartlett, and Anderson. The first expedition was in 2001 to the remote town of Jeberos (5.313°S, 76.276°W) on the west bank of the lower Huallaga River—a site surveyed previously only by Bartlett (Sclater and Salvin 1873). The second expedition, in 2016, represents the first avifaunal survey of the eastern bank of the lower Huallaga River since Hauxwell, Bartlett, and Anderson (Sclater and Salvin 1873, Bartlett 1882, Cory 1916, 1919a, 1919b).

Methods

Study sites

We surveyed sites in the lower Huallaga River region for a total of 59 d (Table 1; Fig. 1): 23 d at Jeberos (27 May–18 June 2001) and 36 d on the east bank of the Huallaga at numerous sites (30 May–4 July 2016).

Jeberos is a town ~45 km west of the Huallaga River, and our primary camp (165 m elevation; 5.314°S, 76.276°W) was located 3 km south of town. Jeberos was founded in the mid-17th century and has remained inhabited ever since (Jara and Valenzuela 2013), despite limited access possible only by trail, canoe, or small airplane. The habitat around Jeberos is a mosaic of small and medium-sized grasslands on sandy soil (dozens to hundreds of hectares) bordered by several different types of forest, depending on the soil type present. Semi-xerophytic scrubby forest (in appearance not unlike the forest known as Amazonian *caatinga* in Brazil; hereafter *caatinga*-like forest) occurs interspersed with patches of grassland on well-draining sandy soils, stunted white-sand forest

(locally known as *varillal*) on poorly draining white sand, and taller *terra firme* forest on somewhat sandy and clay-based soils. The *varillales* around Jeberos range in structure from similar to *terra firme* forest, but with a moderately reduced canopy height (20–30 m vs. typical 30–35 m), to forest with a very low canopy height (4–10 m) and dense understory in the most poorly draining areas. These white-sand forests occur in patches of different sizes (typically dozens to hundreds of hectares). The habitats around the town are heavily influenced by anthropogenic activities such as burning, deforestation, and agriculture.

The Río Yuracyacu camp was located on land of the indigenous community of Esperanza east of the Huallaga River on the south bank of the Río Yuracyacu, 14.2 km east of Santa Cruz (165 m elevation; 5.540°S, 75.733°W). Immediately along the Río Yuracyacu there is tall *terra firme* forest, but more than ~100 m south of this river, the forest canopy is reduced in height and the undergrowth is dominated by dense *Lepidocaryum* (Arecaceae) irapay palm stands (locally known as *irapayales*). Slightly upstream of camp on the north side of the Río Yuracyacu is more rolling hilly *terra firme* forest, but the undergrowth is still dominated by *irapayales*. Some selective logging had occurred fairly recently in the area, and logging roads and trails ~1–10 yr of age allowed us easy access to the forest around camp and across the river. While based at this camp, we made several excursions 2–3 km farther east up the Río Yuracyacu to access the hilly *terra firme* forest on the north side of the river (195 m elevation; 5.540°S, 75.710°W).

Approximately 5 km southeast of our Río Yuracyacu base camp, we established the Varillal satellite camp for several days (150 m elevation; 5.551°S, 75.776°W). Forest here had relatively dense understory and a reduced canopy height, as low as ~7–12 m in some areas.

The Laguna Achnal Tipishca camp (125 m elevation; 5.440°S, 75.811°W) was on land of the indigenous community of Achnal Tipishca, east of the Huallaga River and 9 km NNE of Santa Cruz. This camp sat on the east bank of an oxbow lake in seasonally flooded forest (*várzea*) with numerous *Mauritia flexuosa* (Arecaceae) palm stands (known locally as *aguajales*). While based at this camp, we surveyed the surrounding *várzea* and *aguajales*, the canal (5.411°S, 75.807°W) between the oxbow

Table 1. Summary of avifaunal surveys along the lower Huallaga River in 2001 and 2016.

Site	Coordinates	Dates surveyed	Surveyors	Species detected	Species collected	Specimens collected
Jeberos	5.314°S, 76.276°W	27 May–18 June 2001	JAA, KB, KE, JK, DFL, TV	266	172	507
Río Yuracyacu	5.540°S, 75.733°W	30 May–23 June 2016	AEM, OJ, DFL, MGH, FHC, MSH, CM, KVG, SFR	277	148	554
Varillal	5.551°S, 75.776°W	8–11, 14–18 June 2016	AEM, OJ, DFL, MGH, CM	105	12	15
Laguna Achual Tipishca	5.440°S, 75.811°W	24 June–4 July 2016	AEM, OJ, DFL, FHC, MSH, CM	239	71	171
River islands	5.396°S, 75.799°W and 5.469°S, 75.885°W	27–28 June, 1–4 July 2016	AEM, OJ, DFL, FHC, MSH, CM	109	26	50
Huallaga River	see text	30 May, 2, 13, 24 June, 4 July 2016	AEM, OJ, DFL, MGH, FHC, MSH, CM, KVG, SFR	86	0	0
Esperanza vicinity	5.483°S, 75.830°W	30 May, 3, 12, 13, 23, 24 June 2016	AEM, OJ, DFL, MGH, FHC, MSH, CM, KVG, SFR	148	0	0
Yurimaguas vicinity	5.895°S, 76.109°W	29 May–1 June, 4 July 2016	AEM, OJ, DFL, MGH, FHC, MSH, CM, KVG, SFR	33	0	0

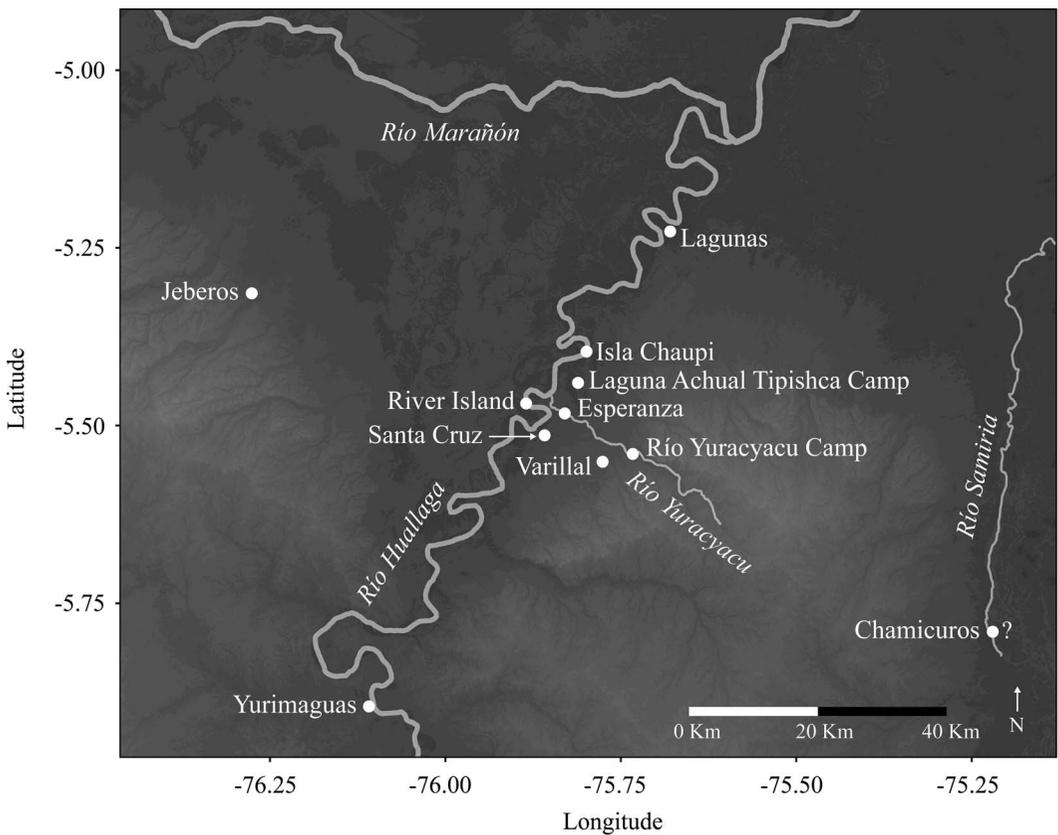


Figure 1. Map of survey localities along the lower Huallaga River. The Chamicuros locality is placed where shown in the Slater and Salvin (1873) map, but the locality is likely farther west toward the Huallaga River (see text).

lake and the Huallaga River, and a river island near the entrance to the canal, the latter of which we treat as a distinct locality below.

We surveyed 2 river islands during our 2016 expedition. Our most extensive work was on Isla Chaupi (125 m elevation; 5.396°S, 75.799°W), which we accessed on morning excursions from our base camp at Laguna Achual Tipishca. This mid-aged island, formed in 1996 (Gorelick et al. 2017), was dominated by *Cecropia* (Urticaceae) stands and a dense understory of *Heliconia* (Heliconiaceae) and vines. The margins of the island were dominated by dense stands of *Gynerium sagittatum* (Poaceae) and *Tessaria integrifolia* (Asteraceae). Our final survey of this island took place after multiple days of rain and the extensive exposed sand bars present on previous visits were fully submerged. On our return trip to Yurimaguas on 4 July, we briefly visited a young river island 5.8 km NNW of Santa Cruz (125 m elevation; 5.469°S, 75.885°W). This island, formed in 2011 (Gorelick et al. 2017), was dominated entirely by 1–2 m high *Gynerium*, *Tessaria*, and other forbs, lacking the *Cecropia* forest of Isla Chaupi.

We surveyed the Huallaga River itself along the ~130 km (by river) between Yurimaguas and Isla Chaupi, which takes ~6–7 h to travel by boat. From the boat we scanned beaches, mudflats, and forest edges.

Between different stages of the 2016 expedition we documented avifauna in the town of Esperanza and the vicinity. Within this general locality, we include the small village of Jerusalén on the Huallaga River just south of the mouth of the Río Yuracyacu and second-growth forest along the Río Yuracyacu near Esperanza.

Yurimaguas was our port of departure to and from field sites on the Huallaga River. In 2016, we opportunistically documented taxa in the urban areas, riverside vegetation near the dock, and along the highway just southwest of town.

Fieldwork

Daily fieldwork consisted of a combination of mist netting throughout the day and audiovisual surveys concentrated in the mornings and evenings. Mist netting in 2001 consisted of deploying ~10–20 nets daily. In 2016, we deployed ~20–35 nets daily at the Río Yuracyacu camp and ~10–20

while at the Laguna Achual Tipishca camp. During our audiovisual surveys, we used shotguns to collect specimens, and we obtained sound recordings and photos of as many species encountered as possible. We prepared study skins for most specimens, and the rest were preserved as skeletons. For all specimens, we obtained muscle, heart, and liver tissues and placed them in liquid nitrogen for high-quality preservation during both our 2001 and 2016 expeditions, with additional muscle and stomach content samples preserved in ethanol. In 2016, we submitted complete lists, often several per day, of species observed throughout the expedition to the Avian Knowledge Network through the eBird portal (Sullivan et al. 2009), which is accessible online to other researchers and the public. Photographs and audio recordings of bird vocalizations are archived at the Macaulay Library of Natural Sounds (<https://www.macaulaylibrary.org/>). Duplicates of many DFL recordings are also archived at xeno-canto (<https://www.xeno-canto.org/>).

Results

We detected 472 species from 60 families and obtained 1,297 specimens of 284 species (Supplemental Table S1). In addition to preserving tissue samples for all specimens, we collected 517 stomach content samples in ethanol, representing most species collected. Specimens from the 2001 expedition were divided evenly between LSUMNS and UNMSM, and tissues are deposited at LSUMNS. Specimens from the 2016 expedition were divided evenly between LSUMNS and CORBIDI, and both institutions hold tissue samples for all specimens (preserved in ethanol at CORBIDI and in liquid nitrogen at LSUMNS).

Avifauna by field site

Jeberos—Rails (Rallidae) had a notably high diversity of 6 species, including 2 that are localized or rare in Peru: Russet-crowned Crake (*Anurolimnas viridis*) and Ash-throated Crake (*Mustelirallus albicollis*)—both in grassland habitats. Also in grasslands, we found an abundance of Red-breasted Meadowlarks (*Leistes militaris*), whose generally localized distribution in Peruvian lowlands continues to expand as forested habitats are cleared (Schulenberg et al. 2010, Socolar et al.

2018). Bartlett also detected Red-breasted Meadowlarks and noted “Xeberos is the only locality in which I obtained this bird. It is found on the campos or open tracts of land covered with tall grass”—one of his clearest descriptions of the local habitat (Sclater and Salvin 1873). Other grassland species we detected included Spot-tailed Nightjar (*Hydropsalis maculicaudus*), Striped Owl (*Asio clamator*), and Green-tailed Goldenthrout (*Polytmus theresiae*), the latter a species that is very local in the lowlands of northern Peru and around the Pampas del Heath in southeast Peru (Schulenberg et al. 2010, Socolar et al. 2018). Plain-breasted Ground-Doves (*Columbina minuta*) were common in grassland and agricultural areas, and, since Bartlett first detected this species here in 1866 (Sclater and Salvin 1873), this represents the only documented population in the Amazonian lowlands of Peru. Recent records on eBird (all from 2006 or later) near the Peruvian border around Puerto Leguizamo (Janni and Viganò 2018; ML58128791) and Leticia (Cuervo 2006), Colombia, and Nueva Rocafuerte (Gilet 2014), Ecuador, suggest that other, likely recently established, populations of Plain-breasted Ground-Dove are present in lowland Peru, but have yet to be documented. In the *caatinga*-like forest we encountered taxa such as Black-faced Tanager (*Schistochlamys melanopsis*), Lesser Elaenia (*Elaenia chiriquensis*), Red-shouldered Tanager (*Tachyphonus phoenicius*), and Black Manakin (*Xenopipo atronitens*), the latter notably common. There was substantial overlap in the avifauna of the *caatinga*-like forest and *varillales*, with species such as “Campina” Fuscous Flycatcher (*Cnemotriccus fuscatus duidae*), Yellow-throated Flycatcher (*Conopias parvus*), Paradise Jacamar (*Galbula dea*), White-bellied Dacnis (*Dacnis albiventris*), and Short-billed Honeycreeper (*Cyanerpes nitidus*) occurring in both habitats. However, we detected other species only in *varillales* including Black-throated Trogon (*Trogon rufus*), Rufous-tailed Flatbill (*Ramphotrigon ruficauda*), Cinnamon Manakin-Tyrant (*Neopipo cinnamomea*), and Fiery Topaz (*Topaza pyra*).

Although several of the above species are quite poorly known in Peru, Bartlett collected a remarkably similar avifauna at Jeberos in 1866 (Sclater and Salvin 1867a, 1873). His documented records of species such as Plain-breasted Ground-Dove, Green-tailed Goldenthrout, Russet-crowned

Crake, Barn Owl (*Tyto alba*), Red-breasted Meadowlark, Red-shouldered Tanager, and Large-billed Seed-Finch (*Sporophila crassirostris*) suggest the long-term presence of a community of open country birds. Although anthropogenic activity has clearly augmented the amount of open country habitat around Jeberos, and probably altered its structure, we consider it likely that some of this habitat is a relict of more expansive savannas present in western Amazonia during the Pleistocene (Häggi et al. 2017). One line of evidence in favor of this view is the lack of records in the Peruvian lowlands between known population centers of open habitat bird species such as Black Manakin, Spot-tailed Nightjar, and Plain-breasted Ground-Dove. If a population center of these species were maintained by regular migration from other populations, we would expect more records from intermediary localities, particularly with the increased availability of open country due to anthropogenic habitat conversion. In recent years, a number of natural savanna-like habitats in the lowlands of Loreto in the form of open peatlands and large marshes of various vegetation types have come to the attention of ornithologists (Draper et al. 2014, Pitman et al. 2015, Socolar et al. 2018). It is possible that these open habitats may provide large-scale connectivity to the Jeberos avifauna, but we do not believe this diminishes the potential of Jeberos for hosting relictual populations of at least some open country species. Ultimately, population genetic studies will be necessary to further clarify the role of migration between known population centers.

Additional poor-soil forest birds of note that we did not encounter around Jeberos include species such as Purple-breasted Cotinga (*Cotinga cotinga*) and Mishana Tyrannulet (*Zimmerius villarejoi*), both known mostly from the Mayo valley and adjacent cordilleras Escalera and Azul, and several species known from sites in the north Peruvian Amazon including White-winged Potoo (*Nyctibius leucopterus*), Brown-banded Puffbird (*Notharchus ordii*), White-masked Antbird (*Pithys castaneus*), and Pompadour Cotinga (*Xipholena punicea*) (Schmitt et al. 2017, Socolar et al. 2018). It is difficult to ascertain whether our failure to detect these species indicates absence, presence in very low densities, or that we did not access appropriate habitat, the last option seeming unlikely given the extensive poor-soil habitats of various types

around Jeberos. Interestingly, since 2001, records of a number of species (e.g., Bare-faced Ibis [*Phimosus infuscatus*], Paint-billed Crake [*Mustelirallus erythropus*], Southern Lapwing [*Vanellus chilensis*], and Southern Caracara [*Caracara plancus*]) that we did not detect at Jeberos have been increasing in the Peruvian lowlands (Socolar et al. 2018), and we suspect that a resurvey at Jeberos would likely detect some of these species.

Río Yuracyacu—The *terra firme* avifauna around this camp and the hilly terrain upriver and north of the Río Yuracyacu were similar and held characteristic avifauna of the habitat. Understory flocks regularly included Rufous-backed Antwren (*Epinecophylla haematonta*), Pearly Antshrike (*Megascictus margaritatus*), Cinereous Antshrike (*Thamnomanes caesius*), Saturnine Antshrike (*Thamnomanes saturninus*), and Ocellated Woodcreeper (*Xiphorhynchus ocellatus*). We detected none of these species around the Laguna Achual Tipishca camp only 14 km to the northeast, no doubt due to the lack of *terra firme* there. Regeneration along an old logging road ~1 km south of camp resulted in a high density of fruiting *Miconia* (Melastomataceae), which attracted large numbers of frugivores such as tanagers, manakins, and occasionally cotingas and toucans. Here, we found flocks of tanagers that regularly included Short-billed (*Cyanerpes nitidus*), Purple (*C. caeruleus*), and Red-legged honeycreepers (*C. cyaneus*; in descending order of abundance), Green Honeycreeper (*Chlorophanes spiza*), White-bellied (*Dacnis albiventris*) and Black-faced (*D. lineata*) dacnis, several *Tangara* spp., and Palm (*Thraupis palmarum*), Swallow (*Tersina viridis*), and Yellow-crested (*Tachyphonus rufiventer*) tanagers. Our observations of White-bellied Dacnis, a localized and generally rare bird in Peruvian lowlands (Schulenberg et al. 2010), reinforce a pattern of occurrence in poor-soil second-growth forests with fruiting melastomes (Socolar et al. 2018). Other unusual records included a group of 7 White-chinned Swifts (*Cypseloides cryptus*) flying over a treefall gap near camp on 13 June 2016 and several observations and 2 specimens of Spot-throated Woodcreeper (*Certhiasomus stictolaemus*). Both species are poorly known in Peru and are likely overlooked (Schulenberg et al. 2010, Schmitt et al. 2017). On several nights, we did intensive nocturnal surveys in addition to our nightly casual

observations at camp. Potoos (*Nyctibius* spp.) were not uncommon, and we heard Common (*N. griseus*) and Great (*N. grandis*) potoos around camp most nights, with a Long-tailed Potoo (*N. aethereus*) on several occasions. Focused searches for Rufous (*N. bracteatus*) and White-winged potoos along the old logging road and in *varillal* habitat failed to detect these species. Nightjars were few, with only Common Pauraque (*Nyctidromus albicollis*) heard with certainty. Owls were better represented, with Spectacled Owl (*Pulsatrix perspicillata*), Crested Owl (*Lophotrix cristata*), Tawny-bellied (*Megascops watsonii*) and Tropical (*M. choliba*) screech-owls, and Amazonian Pygmy-Owl (*Glaucidium hardyi*). On several occasions, we heard a single-note call (ML97746671) that we suspected to be a species of *Ciccaba* (*C. huhula* or *C. virgata*) or possibly a begging young *Pulsatrix*. We suspect that our failure to detect species such as Razor-billed Curassow (*Mitu tuberosum*) and Blue-throated Piping-Guan (*Pipile cumanensis*) at this site is attributable to extensive and ongoing hunting pressure from nearby villages. In fact, we did not detect these 2 species in 2001 or 2016 at any of our study sites.

Laguna Achual Tipishca—We found high densities of localized species such as Orange-crowned Manakin (*Heterocercus aurantiivertex*), Point-tailed Palmcreeper (*Berlepschia rikeri*), and Pheasant Cuckoo (*Dromococcyx phasianellus*) in the mix of *várzea* and *aguajal* in the immediate vicinity of our camp. Interestingly, high densities of Orange-crowned Manakins have also been reported from both banks of the lower Tigre River in peatland pole forest, a distinctly different habitat (Díaz-Alván et al. 2017). Common members of the *várzea* understory included Dot-backed Antbird (*Hylophylax punctulatus*), Wire-tailed Manakin (*Pipra filicauda*), Varzea Schiffornis (*Schiffornis major*), and Buff-breasted Wren (*Cantorchilus leucotis*). Taxa detected while surveying the lake margins themselves included Black-collared Hawks (*Busarellus nigricollis*), the “Riverine” Yellow-olive Flycatcher (*Tolmomyias sulphureus insignis*), Band-tailed Antbird (*Hypocnemoides maculicauda*), and Amazonian Streaked-Antwren (*Myrmotherula multistriata*). The *várzea* along the canal connecting Laguna Achual Tipishca with the Huallaga River was particularly interesting, with Plain-breasted Piculet (*Picumnus castelnaui*), Zimmer’s Woodcreeper (*Dendroplex*

kienerii), Black-tailed Antbird (*Myrmoborus melanurus*), Tropical Gnatcatcher (*Polioptila plumbea*), and Three-striped Flycatcher (*Conopias trivirgatus*) the most notable species. Our observations of Three-striped Flycatchers reinforce the striking pattern of records in northern Peru clustering around the Pacaya Samiria National Reserve (Schulenberg et al. 2010, Diaz-Alván et al. 2017, Schmitt et al. 2017, Socolar et al. 2018). We regularly observed migrant Swainson's Flycatchers (*Myiarchus swainsoni ferocior*) in the area, but despite concerted effort with playback we did not detect any resident, dark-mandibled *M. s. phaeonotus* reported by others from peatland savanna in the Tapiche-Blanco interfluvium of Loreto (Pitman et al. 2015, Socolar et al. 2018) and from oxbow lake edge in eastern Ecuador (DFL, 2012, pers. observ.). The canal also held high abundances of Horned Screamers (*Anhima cornuta*), Wattled Jacanas (*Jacana jacana*), and Ringed (*Megaceryle torquata*) and Amazon (*Chloroceryle amazona*) kingfishers.

River islands—Our 2016 expedition was the first to survey whitewater river islands in the Huallaga River, and we detected many of the species typically found in this habitat elsewhere in Amazonian Peru, which resulted in numerous range extensions for these taxa. Common bird species of Isla Chaupi included river island specialists (Remsen and Parker 1983, Rosenberg 1990) such as Parker's Spinetail (*Cranioleuca vulpecula*), Castelnau's Antshrike (*Thamnophilus cryptoleucus*), and Black-and-white Antbird (*Myrmochanes hemileucus*), along with more widespread second-growth species such as Fuscous Flycatcher (*Cnemotriccus fuscatus fuscator*), Tropical Kingbird (*Tyrannus melancholicus*), Orange-headed Tanager (*Thlypopsis sordida*), and Chestnut-bellied Seedeater (*Sporophila castaneiventris*). We detected fewer individuals of other river island specialist species, including Ash-breasted Antbird (*Myrmoborus lugubris*), Leaden Antwren (*Myrmotherula assimilis*), Lesser Horned (*Furnarius minor*), White-bellied Spinetail (*Mazarina propinqua*), Streaked Flycatcher (*Myiodynastes maculatus*), Bicolored Conebill (*Conirostrum bicolor*), and Pearly-breasted Conebill (*C. margaritae*). Species such as Collared Plover (*Charadrius collaris*), Yellow-billed Tern (*Sternula superciliaris*), Large-billed Tern (*Phaetusa simplex*), and Sand-colored Nighthawk

(*Chordeiles rupestris*) were common on exposed sandbars.

The young river island visited on 4 July lacked many of the species associated with *Cecropia* woodland such as Castelnau's Antshrike, Ash-breasted Antbird, and Leaden Antwren, but did hold young river island scrub habitat specialists such as River Tyrannulet (*Serpophaga hypoleuca*), Lesser Wagtail-Tyrant (*Stigmatura napensis*), and Riverside Tyrant (*Knipolegus orenocensis*) not detected on Isla Chaupi. Although we found bird densities to be qualitatively higher on river islands than in *várzea* or *terra firme* habitats, densities did not reach the extraordinarily high levels reported by Rosenberg (1990) on river islands in northeastern Peru.

Huallaga River—During our surveys along the Huallaga River in 2016, especially during travel between Yurimaguas and our field camps, we detected a variety of waterbirds and other river-associated species typical of Amazonian rivers. We observed large numbers of Yellow-billed and Large-billed terns, Black Skimmers (*Rynchops niger*), Collared Plovers, and Sand-colored Nighthawks. We also detected other less common taxa including Comb Duck (*Sarkidiornis melanotos*), Capped Heron (*Pilherodius pileatus*), Lesser Yellow-headed Vulture (*Cathartes burrovianus*), Great Black Hawk (*Buteogallus urubitinga*), and Pied Lapwing (*Vanellus cayanus*).

Esperanza vicinity—The avifauna around Esperanza proved to be quite diverse, despite our limited sampling of the area. We detected several taxa only at this locality such as Black-banded Crake (*Anurolimnas fasciatus*), Uniform Crake (*Amaurolimnas concolor*), Chestnut-crowned Foilage-gleaner (*Automolus rufipileatus*), and Varzea Thrush (*Turdus sanchezorum*). The second-growth habitat in the area hosted such common edge species as Scarlet-crowned Barbet (*Capito aurovirens*), Social Flycatcher (*Myiozetetes similis*), Buff-breasted Wren, Silver-beaked (*Ramphocelus carbo*), Masked Crimson (*R. nigrogularis*), Blue-gray (*Thraupis episcopus*), and Palm (*T. palmarum*) tanagers, Orange-backed Troupial (*Icterus croconotus*), and Yellow-rumped Cacique (*Cacicus cela*).

Yurimaguas vicinity—In and around Yurimaguas, we observed birds typical of towns, including Black-throated Mangos (*Anthracothorax nigricollis*), Tropical Kingbirds (*Tyrannus melan-*

cholicus), and Blue-gray Tanagers, as well as less expected birds such as Olive-spotted Hummingbird (*Leucippus chlorocercus*) and Rufous-collared Sparrow (*Zonotrichia capensis*), the latter documented in Yurimaguas only beginning in 2014 as the first record in the Peruvian Amazon (Ugarte and Lavalley 2018).

Range extensions

Ash-throated Crake (*Mustelirallus albicollis*)—The Ash-throated Crakes in grassland habitats at Jeberos represent a population over 530 km from the next nearest documented population, which is in Ecuador at Sacha Lodge along the Napo River, Sucumbios Province (Nilsson et al. 2014).

Blue-headed Macaw (*Primolius couloni*)—This species is largely associated with the foothills and nearby lowlands of central and southeastern Peru (Meyer de Schauensee 1966, Schulenberg et al. 2006). We detected this species by voice on several occasions over the Río Yuracyacu camp and documented its voice with a recording (ML77651881). This is one of the northernmost documented sites for the species; the next nearest published records are from the Cordillera Azul ~180 km to the south (Alverson et al. 2001).

Ash-breasted Antbird (*Myrmoborus lugubris*)—This species is widespread on river islands in the Amazon Basin (Meyer de Schauensee 1966, Rosenberg 1990), with documentation as far west as the lower Marañón River (sight records) and the upper Río Napo in Peru near the Ecuador border (specimen record; Schulenberg et al. 2006). We found it to be fairly common on Isla Chaupi, with multiple pairs detected in the dense understory of *Cecropia* woodland, where 1 pair was audio-recorded and collected. This represents a range extension of ~100 km. Recordings made: ML77916371, ML77918241, ML77918341.

Leaden Antwren (*Myrmotherula assimilis*)—This species is uncommon in *várzea* and older river islands throughout the Amazon Basin (Meyer de Schauensee 1966, Rosenberg 1990), as far west as the lower Río Marañón near the mouth of the Río Tigre (sight records; Schulenberg et al. 2006). We audio-recorded and collected a single male on Isla Chaupi, representing a range extension of ~170 km. Recordings made: ML43537361, ML77423271.

Zimmer's Woodcreeper (*Dendroplex kienerii*)—This species is restricted to *várzea* and older river islands on the Amazon and its main tributaries (Aleixo and Whitney 2002) and is known from as far west as the lower Río Marañón near the mouth of the Río Tigre (specimen record; Schulenberg et al. 2006). We found this species to be uncommon along the canal draining Laguna Achnal Tipishca, and 4 specimens were audio-recorded and collected. This represents a range extension of ~180 km. Recordings made: ML77361421, ML77361811, ML 77362111.

"Riverine" Yellow-olive Flycatcher (*Tolmomyias sulphurescens insignis*)—We collected 2 individuals of this taxon with associated voice recordings (ML77922491, ML77923271) around the Laguna Achnal Tipishca camp. This is a range extension of ~175 km from the nearest documented locality of the taxon (Schulenberg and Parker 1997).

Black Manakin (*Xenopipo atronitens*)—This species was fairly common around Jeberos in scrubby, *caatinga*-like forest, and represents one of only a few known Peruvian localities. The nearest documented locality is in stunted forest habitat ~270 km to the east along the Río Blanco (Pitman et al. 2015). Other more distant localities for this species, such as those around the Pampas del Heath (Graham et al. 1980), upper Ucayali River (Harvey et al. 2014), and upper Juruá River (Guilherme and Borges 2011), also consist of short scrub and stunted forest.

Black-faced Tanager (*Schistochlamys melanopsis*)—These tanagers were uncommon in the *caatinga*-like forest around Jeberos, and their presence represents a ~100 km range extension from known sites in the Moyobamba area.

Pearly-breasted Conebill (*Conirostrum margaritae*)—A habitat specialist, restricted to the canopy of *Cecropia* forest on river islands of the Amazon and its main tributaries (Meyer de Schauensee 1966, Rosenberg 1990). It was previously documented as far west as the confluence of the Ucayali and Marañón Rivers (specimen record; Schulenberg et al. 2006). A previously reported specimen record of *C. margaritae* (Schulenberg et al. 2006) from the Río Marañón at the mouth of the Río Morona (LSUMZ 173191) refers to *C. bicolor*. We detected 2 pairs of *C. margaritae* on Isla Chaupi, with a single pair audio-recorded (ML77920221)

and collected. This represents a range extension of ~260 km.

Notable findings with taxonomic and biogeographic implications

Rose-fronted Parakeet (*Pyrrhura roseifrons peruviana*)—We collected 11 individuals apparently belonging to this taxon in *terra firme* forest around the Río Yuracyacu camp. Two of these individuals (LSUMZ 190793 and 190788) have a narrow band of dark red on the forecrown immediately posterior to the upper mandible, thus exhibiting plumage variation undescribed for this taxon (Joseph 2002). These individuals may represent intergrades with nearby populations that have varying amounts of bright or dark red on the forecrown (*P. r. parvifrons*, *P. r. roseifrons*, or *P. orosaensis*; Arndt 2008, Arndt and Wink 2017). Further sampling and genetic analysis of these populations is needed to sort out taxonomic relationships. Recordings made: ML77359991, ML77360331, ML77360721.

Ocellated Woodcreeper (*Xiphorhynchus ocellatus*)—A common member of mixed-species understory flocks in the *terra firme* forests around our Río Yuracyacu camp where we collected 18 individuals. We also recorded vocalizations from this population (ML77414641, ML77415131, ML77416481, ML77416491, ML77462441). By voice, this population appears to be the same as that encountered in *terra firme* and taller *varillales* near Jeberos, where we collected 5 specimens and made 2 recordings (ML228485, ML228478).

The *X. ocellatus* complex is one of the most confusing avian taxonomic quandaries in the Neotropics. The species is widespread in Amazonia, but poorly known in many sites. It is easily mistaken for Elegant Woodcreeper (*X. elegans*), both in the field and in museum collections, which has led to confusion about the status of the 2 forms. Recent publications (e.g., Aleixo 2002, Sousa-Neves et al. 2013) have also shown that the phylogenetic relationships within the *X. ocellatus* complex are not straightforward.

Although the type locality of *X. ocellatus perplexus* is reported as “Sarayuacu,” a town on the eastern side of the Huallaga-Ucayali interfluvium (Zimmer 1934), the same interfluvium as our Río Yuracyacu camp, a thorough review of the collecting itinerary of the Olallas (Wiley 2010)

indicates that the type locality was actually on the east bank of the Ucayali, slightly upstream from Sarayuacu. This finding supports the continued application of the name *perplexus* to birds between the Ucayali and Madeira rivers (Marantz et al. 2003, Sousa-Neves et al. 2013). In addition, the birds in the Ucayali-Madeira interfluvium are associated with *várzea* forest (B. Whitney, LSUMNS research associate, 2018, pers. comm.), unlike other members of the complex, which is consistent with the habitat at the *perplexus* type locality, and provides further support for the current application of the name *perplexus*. It is clear that short vocalizations from the birds around the Río Yuracyacu camp (XC327805) and Jeberos (XC330978) are similar to one another, but differ strongly from *perplexus* in Peru east of the Ucayali River and south of the Amazon (XC340329, XC367443), as well as forms such as *napensis*, found north of the Marañón River, providing strong evidence that the populations from our field sites represent a distinct taxon that appears to lack a name.

A second taxonomic issue within the *Xiphorhynchus ocellatus* complex involves the relationship of populations north of the Amazon between the Napo and Negro rivers to populations of the lower Huallaga River. Sousa-Neves et al. (2013) produced a phylogenetic hypothesis of the *X. pardalotus/ocellatus* complex, and their resulting taxonomic proposals included the recognition of populations to which they applied the name *beauperthuisii*. The type locality of this name, as clarified by Penhallurick and Aleixo (2008), is Pebas, on the north bank of the Amazon River downstream from the mouth of the Napo River. Sousa-Neves et al. (2013) applied the name *beauperthuisii* to birds from the Napo River east to the west bank of the Negro River as well as a disjunct population at Jeberos. The only genetic samples included by Sousa-Neves et al. (2013) within this proposed range of *beauperthuisii*, however, were from along the Japura and Negro rivers. It has since been clarified (A. Aleixo, Museu Paraense Emílio Goeldi, 2019, pers. comm.) that the application of the name *beauperthuisii* to birds on the east bank of the Napo River and at Jeberos was largely based on an unpublished cytochrome b phylogeny (see Aleixo et al. 2006), which did include samples from these areas (individuals from Jeberos: LSUMZ 172872,

172873, 172874, 172875, 172876; individuals from east bank of the Napo River: LSUMZ 2734, 6983, 7104, 7147). In the unpublished cytochrome b phylogeny, the Jeberos birds are sister to the clade of birds from the east bank of the Napo River to the west bank of the Negro River. Rather than consider the birds at Jeberos and Río Yuracyacu as disjunct populations of *beauperthysii* (sensu Sousa-Neves et al. 2013), we believe that the birds of the lower Huallaga River represent an unnamed taxon due to their distinctive call type compared to birds at Orán (XC263055) and other sites farther afield in the Napo-Negro interfluvium (e.g., XC287354). In summary, the phylogenetic relationships of the various populations within the large and confusing *X. ocellatus* complex still require better sampling and carefully revised taxonomy and nomenclature.

White-flanked Antwren (*Myrmotherula axillaris*)—We collected 8 specimens at Jeberos, 16 around the Río Yuracyacu camp, and 3 around the Laguna Achual Tipishca camp. Surprisingly, the form we encountered around the Río Yuracyacu and Laguna Achual Tipishca appeared to be *M. a. heterozyga*, the form known from east of the Ucayali and south of the Amazon, not the expected form known from the Cordillera Azul, west of the Huallaga River at Jeberos, and the Mayo Valley, which has been traditionally referred to as *M. a. melaena*. We note that the type locality of *M. a. melaena* is “New Grenada, Bogota” (Sclater 1857b:130) and recommend a formal comparison of western Amazonian specimens to the type specimen of *melaena* to determine if the name is appropriately applied over such a wide geographic distribution. Our finding represents an interesting biogeographical pattern given that *M. a. “melaena”* and *M. a. heterozyga* are one of the only taxon pairs to be separated by the lower Huallaga River. These 2 taxa are distinct from the undescribed taxon of the *M. axillaris* complex found in dry forest in the Huallaga River valley south of Tarapoto. Recordings made: ML77936581, ML77936641, ML77937241, ML77938411.

Fuscous Flycatcher (*Cnemotriccus fuscatus*)—We obtained specimens of 2 taxa in close geographic proximity but segregating by habitat. Our 6 specimens of *C. f. fuscator* came from river island scrub on Isla Chaupi, whereas 2 specimens of *C. f. duidae* came from the Varillal locality just 17 km to the southeast and 3 from Jeberos. A

similar scenario of habitat segregation in close geographic proximity between these 2 nonmigratory taxa has been noted elsewhere in Peru near Iquitos and in the upper Ucayali River (Álvarez et al. 2012, Harvey et al. 2014), which, when combined with the evidence of distinctive vocal and plumage characters, indicates that these certainly represent species-level taxa. We currently refrain from proposing taxonomic changes in this group due to the presence of several other distinctive populations of *Cnemotriccus* whose phylogenetic relationships to *fuscator* and *duidae* remain unclear. Recordings made: *fuscator* (ML77926471), *duidae* (ML77928451; ML228498 from Jeberos).

Epaulet Oriole (*Icterus cayanensis*)—In 2016 on the east bank of the Huallaga we detected individuals of both subspecies (*I. c. chrysocephalus* and *I. c. cayanensis*) and intergrades between the two. In 2016 we collected 2 individuals, one near the Río Yuracyacu camp and one on Isla Chaupi, the former being an *I. c. cayanensis*-like individual but with yellow thighs and the latter a typical *I. c. chrysocephalus*. *Icterus c. chrysocephalus* was uncommon at Jeberos where we collected 1 individual. Intergrades between these 2 subspecies have also been documented to the south in the Cordillera Azul (Alverson et al. 2001). Recordings made: ML77934871; ML228533 from Jeberos.

Remarks on the Chamicuros type locality

Chamicuros is the locality associated with the largest number of avian types along the lower Huallaga River, but its precise location at the time when Hauxwell and Bartlett collected there is uncertain. Chamicuros, based on the Sclater and Salvin (1873) map (where labeled as “Chamicuras”), lies roughly 60 km east through continuous forest from our Río Yuracyacu camp where we conducted most of our 2016 fieldwork (Fig. 1). Alternative coordinates for the Chamicuros locality based on gazetteers are equivocal, although they all agree in placing Chamicuros in the Huallaga-Ucayali interfluvium to the northeast of Yurimaguas. Vaurie (1972:10) noted that Chamicuros lies “between Santa Cruz and Lagunas,” but that a specific locality was “not located.” In the same entry, he provided a coordinate for “Pueblo Chamicuros” (5.50°S, 75.75°W), only 4.8 km NW

of our Río Yuracyacu camp. Lamas (1976) provided the same coordinate as that of Vaurie (1972), but under the name “Chamicuros.” Finally, Stephens and Traylor (1983) provided a new coordinate for Chamicuros (5.50°S, 75.50°W, 26.2 km ENE of the Río Yuracyacu camp) apparently based on the Sclater and Salvin (1873) map, yet they cited Lamas (1976). Based on the Sclater and Salvin (1873) map, it looks as though Chamicuros could be feasibly accessed only by traveling up the Samiria River. Interestingly, however, the type locality descriptions for both the Rufous-backed Antwren (*Epinecrophylla h. haematonota*) and Brown-winged Schiffornis (*Schiffornis turdina amazona*) specifically mention the bank of the Huallaga River: “Chamicurros in ripis fl. Huallaga in Peruv. Orient.” (Sclater 1857a:48) and “In ripis fl. Huallaga, loco Chamicurros dicto” (Sclater 1860:466), respectively. This would be quite unusual if Chamicuros had indeed been accessed from the Río Samiria and suggests that the Chamicuros collecting locality may have been much closer to our Río Yuracyacu camp than suggested by the Sclater and Salvin (1873) map. Despite the uncertainty surrounding the exact location of Chamicuros, particularly at the time when Hauxwell and Bartlett collected there, we consider our 2016 fieldwork along the lower Huallaga River as sufficiently near the original Chamicuros locality to represent a resampling effort. When we asked our local guides about Chamicuros during our 2016 fieldwork, they referred to the small village (5.418°S, 75.814°W) at the mouth of the canal to Laguna Achnal Tipishca as the modern-day locality of Chamicuros. They said that the people of Chamicuros had moved there several decades ago after an outbreak of malaria farther inland.

Topotypes

We here list 22 currently recognized taxa described from along the lower Huallaga River downstream of Yurimaguas. We collected topotypes or near-topotypes of 18 of these taxa, and detected an additional 3 (*Crypturellus bartletti*, *Anurolimnas fasciatus*, and *Pachyramphus marginatus nanus*), but were unable to locate Striated Antthrush (*Chamaeza nobilis*).

Bartlett’s Tinamou (*Crypturellus bartletti* [*Crypturus bartletti*]); type locality: “Santa Cruz” (Sclater and Salvin 1873:311)—Heard on multiple days by AEM, OJ, DFL, and MGH in *varillal* habitat southeast and south of the Río Yuracyacu camp (5.551°S, 75.776°W and 5.563°S, 75.744°W, respectively) but not observed or collected. Voice recorded by OJ (ML41723351) and MGH (ML162499781 and ML162500811) 10 km from approximate type locality. Also recorded by DFL (ML228463) at Jeberos.

Black-banded Crake (*Anurolimnas fasciatus* [*Porzana fasciata*]); type localities: “Peruvia orient. Pebas et Chamicurros (Hauxwell); fl. Ucayali (Bartlett)” (Sclater and Salvin 1867b:981)—One individual heard by OJ and DFL near town of Esperanza (5.483°S, 75.830°W), but not observed, sound recorded, or collected.

Pied Puffbird (*Notharchus tectus picatus* [*Bucco picatus*]); type locality: “In reg. fl. Amazonum superioris; Chamicurros (Hauxwell.)” (Sclater 1855a:194)—Two females collected at the Laguna Achnal Tipishca camp. We also collected 2 individuals at Jeberos, and DFL made a voice recording there (ML228459).

Spotted Puffbird (*Bucco tamatia pulmentum* [*Bucco pulmentum*]); type localities: “in Peruvia Orientali et regionibus fl. Amazonum superioris: Pebas (Cast. et Dev.): Chamicurros (Hauxwell)” (Sclater 1855a:194, pl. 106)—One male and 2 females collected at the Río Yuracyacu camp. Commonly heard at the Río Yuracyacu camp and voice recorded by OJ and DFL (ML228436, ML39282121, ML70743501, ML70744391, ML70746141).

Cream-colored Woodpecker (*Ceelus flavus peruvianus* [*Crocomorphus flavus peruvianus*]); type locality: “Lagunas, Lower Huallaga River, Peru” (Cory 1919a:457)—One male collected on 2 July in *várzea* forest near the Laguna Achnal Tipishca camp, 26 km southwest of approximate type locality. Voice recorded by DFL (ML70747171).

Pearly Antshrike (*Megascictus margaritatus* [*Myrmeciza margaritata*]); type locality: “In Peruvia, Chamicurros” (Sclater 1854:253, pl. 71)—Eighteen individuals collected in *terra firme* forest around the Río Yuracyacu camp. Voice recorded by DFL near the Río Yuracyacu camp (ML70750511, ML70750541) and Jeberos (ML228497).

Saturnine Antshrike (*Thamnomanes saturninus huallagae* [*Cercomacra huallagae*]); type locality: “Lagunas, Lower Huallaga River, Peru.” (Cory 1916:338)—Fourteen individuals collected in *terra firme* forest around the Río Yuracyacu camp, 35 km south-southwest of approximate type locality. Voice recorded by AEM and DFL (ML78451231, ML7074813).

Plain-throated Antwren (*Iseria hauxwelli hauxwelli* [*Formicivora hauxwelli*]); type locality: “In Peruv. Orientali (*Hauxwell*)” in original description (Sclater 1857b:131, pl. 126, fig. 2) and “Chamicuros, E. Peru” in the Catalogue of the Birds in the British Museum (Sclater 1890:238). AEM examined the type specimen at the Natural History Museum at Tring, and confirmed the original tag locality of “Chamicuros”—Five individuals collected in *terra firme* forest around the Río Yuracyacu camp. Voice recorded by AEM and DFL (ML33502951, ML70752541).

Rufous-backed Antwren (*Epinecrophylla haematonota haematonota* [*Formicivora haematonota*]); type locality: “Chamicuros in ripis fl. Huallaga in Peruv. Orient. (*Hauxwell*)” (Sclater 1857a:48)—Sixteen individuals collected in *terra firme* forest around the Río Yuracyacu camp. Voice recorded by AEM, OJ, and DFL in 2016 (ML33259951, ML33501901, ML61167071, ML70754261, ML70754291, ML70756861, ML70757201), with an additional recording from Jeberos by DFL (ML22508).

Plumbeous Antbird (*Myrmelastes hyperythrus* [*Thamnophilus hyperythrus*]); type locality: “Chamicuros, on the Peruvian Amazon” (Sclater 1855b:235)—One male individual collected in *várzea* at the Laguna Achual Tipishca camp. Voice recorded by OJ and DFL (ML61233861, ML70757681).

White-cheeked Antbird (*Gymnopathys leucaspis peruanus* [*Gymnopathys leucaspis peruana*]); type locality: “Chamicuros, Peru.” (Zimmer 1937:3)—Two males and one female collected in *terra firme* forest at the Río Yuracyacu camp. Voice recorded by DFL (ML70758341).

Rufous-capped Antthrush (*Formicarius colma nigrifrons* [*Formicarius nigrifrons*]); type locality: “Chamicuros, on the eastern side of Peru” (Gould 1855:344)—Two males and 1 female collected in *terra firme* forest at the Río Yuracyacu camp. Voice recorded by OJ (ML41369651).

Striated Antthrush (*Chamaeza nobilis nobilis* [*Chamaeza nobilis*]); type locality: “Chamicuros, on the eastern side of Peru.” (Gould 1855:344)—Not detected at any field sites. We consider it likely that this species is present in the area, but perhaps patchily distributed or in higher-elevation *terra firme* terraces such as those we briefly surveyed northeast of the Río Yuracyacu camp.

White-chinned Woodcreeper (*Dendrocincla merula bartletti* [*Dendrocincla bartletti*]); type locality: “Chamicuros, East Peru” (Chubb 1919:51)—Fifteen individuals collected at the Río Yuracyacu camp. Recorded by OJ and DFL in 2016 (ML31439471, ML70759031), and by DFL from Jeberos (ML228442).

Plain-crowned Spinetail (*Synallaxis gujanensis huallagae*); type locality: “Lagunas, Lower Huallaga River, Peru.” (Cory 1919b:274)—Two individuals audio-recorded by DFL (ML70759571, ML70760311, ML70760321), one of which was collected, on Isla Chaupi on 3 July, 23 km southwest of approximate type locality. The 2-parted song of these individuals confirms that the *huallagae* subspecies belongs to northern voice group (including nominate *gujanensis*). This finding means that the application of the name *huallagae* to birds south of the lower Huallaga and (presumably) lower Ucayali rivers is incorrect; this point may be rendered obsolete in light of Stopiglia et al. (2019). A revision of the taxonomy of this species will be presented elsewhere.

Brownish Twistwing (*Cnipodectes subbrunneus minor* [*Cnipodectes minor*]); type locality: “Eastern Peru, Chamicuros (*Bartlett*)” (Sclater 1883:654)—Four individuals collected in *terra firme* forest around the Río Yuracyacu camp. Commonly heard in *terra firme* forest and audio-recorded by AEM and DFL (ML33348001, ML70760811, ML70761751).

Cinnamon Manakin-Tyrant (*Neopipo cinnamomea cinnamomea* [*Pipra? cinnamomea*]); type locality: “The Upper Amazon” in original description (Lawrence 1868:429), but later restricted to Chamicuros by JT Zimmer (see Snow 1979)—One male collected in *terra firme* forest on 6 June near the Río Yuracyacu camp. Audio-recorded by DFL (ML70762651, ML70762301), with additional recordings from Jeberos (ML228473, ML228440).

White-crowned Manakin (*Dixiphia pipra pygmaea* [*Pipra pipra pygmaea*]); type locality: “Chamicuros, Perú” (Zimmer 1936:10)—Nineteen

individuals collected at the Río Yuracyacu camp, 2 individuals collected in *varillal* habitat 6 km southeast of the Río Yuracyacu camp, and 2 individuals collected at the Laguna Achual Tipishca camp. Voice recorded by OJ and DFL (ML61168061, ML60993291, ML70763141), with additional recordings from Jeberos (ML228476, ML228472, ML228471).

Brown-winged Schiffornis (*Schiffornis turdina amazona* [*Heteropelma amazonum*]); type locality: “In ripis fl. Huallaga, loco Chamicuros dicto (*Hauxwell*)” (Sclater 1860:466)—Eight individuals collected in *terra firme* forest at the Río Yuracyacu camp. Voice recorded by DFL (ML70763951, ML70764191), with additional recordings from Jeberos (ML228506, ML228470).

Black-capped Becard (*Pachyrhamphus marginatus nanus*); type locality: “East Peru: Xeberos, Peruvian Amazons” (Bangs and Penard 1921:395)—We did not collect any specimens, but encountered the species in low densities at Jeberos and the Río Yuracyacu camp.

Tropical Gnatcatcher (*Polioptila plumbea parvirostris* [*Polioptila parvirostris*]); type locality: “Chamicuros, R. Amazon (*Hauxwell*)” (Sharpe 1885:448)—One male collected in short-stature flooded forest along the canal between Laguna Achual Tipishca and the Huallaga River. Voice recorded by DFL (ML70764761).

Yellow-backed Tanager (*Hemithraupis flavicollis sororia*); type locality: “Chamicuros, Perú” (Zimmer 1947:15)—Four individuals collected around the Río Yuracyacu camp. Voice recorded by DFL (ML70764921), with an additional recording from Jeberos (ML228493).

Discussion

Our avifaunal survey of the lower Huallaga River represents the first since the early 20th century. This lack of recent ornithological work in the region is underscored by our documentation of numerous range extensions and discoveries of taxonomic significance. Future studies in systematics of lowland Amazonian birds, particularly involving taxa for which we obtained topotypes or near-topotypes, will now benefit from a large, modern collection from both banks of the lower Huallaga River.

Despite our efforts to survey the avifauna along the lower Huallaga River thoroughly, the potential is still high for discoveries in the natural history of the regional avifauna. In 2016, our time was notably limited in the hilly *terra firme* northeast and the extensive *varillal* habitats southeast of our Río Yuracyacu camp. Both these habitats were more difficult to access due to their distance from the Río Yuracyacu and the lack of direct access on trails. We suspect that highly localized birds associated with *varillal* habitats such as Gray-legged Tinamou (*Crypturellus duidae*), White-winged Potoo, and White-masked Antbird (*Pithys castaneus*), may yet be present in the region but eluded our detection. Future work in the region should thus prioritize thoroughly sampling *varillal* and the highest *terra firme* habitats. In addition, although we did not access this habitat in our study, the nearby and extensive treeless wetlands of the Pacaya-Samiria basin are very poorly known and comprise a massive priority for future exploration. We strongly recommend that future biological surveys along the lower Huallaga River be directed through the Federación Cocama-Cocamilla (FEDECOCA), a federation involving 61 native communities in the Santa Cruz and Lagunas districts (V. Yaricahua, FEDECOCA, 2016, pers. comm.).

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