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ARTÍCULO/ARTICLE

Primer registro de nido y aspectos sobre la biología reproductiva del Zamarrito Pechinegro *Eriocnemis nigrivestis* (Apodiformes: Trochilidae)

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First nesting record and notes on the breeding biology of Black-breasted Puffleg *Eriocnemis nigrivestis* (Apodiformes: Trochilidae)

Resumen

El Zamarrito Pechinegro *Eriocnemis nigrivestis* es una especie endémica del Ecuador, calificada como En Peligro Crítico de extinción. Se distribuye entre 2850 y 3500 m de altitud en el bosque siempreverde montano alto de las provincias de Pichincha e Imbabura. Se han realizado varios estudios sobre la especie, en particular de su dieta, pero todavía no se conoce su biología reproductiva. El presente trabajo se realizó en la reserva Verdecocha, en las estribaciones noroccidentales del volcán Pichincha, entre 2008–2016. Encontramos que el periodo reproductivo de *E. nigrivestis* se desarrolló entre noviembre y abril, periodo en el cual los machos establecieron territorios y realizaron maniobras de cortejo, y las hembras construyeron sus nidos y cuidaron de la prole. Además, encontramos un marcado dimorfismo sexual en juveniles de una misma nidada, un patrón poco conocido para el género *Eriocnemis*. Conocer sobre la biología reproductiva de *E. nigrivestis* nos permite inferir sobre los requerimientos de hábitat de la especie e inferir los factores bióticos y abióticos que moldean su ciclo reproductivo. Esta información es útil para entender sus relaciones ecológicas y evolutivas, y para diseñar políticas de manejo eficientes que faciliten la conservación de su hábitat.

Palabras clave: dimorfismo sexual, *Eriocnemis nigrivestis*, nido, Pichincha, reproducción.

Abstract

Black-breasted Puffleg *Eriocnemis nigrivestis* is endemic to Ecuador and currently classified as Critically Endangered. It ranges between 2850–3500 m elevation, in the montane forests in the provinces of Pichincha and Imbabura. The is an important amount of research about the species feeding ecology, but its breeding biology remains unknown. This study was carried out in Verdecocha Reserve, in the northwestern slopes of Pichincha volcano, in 2008–2016. We found that the breeding season of *E. nigrivestis* was between November and April, when males established territories and performed courtship displays, and females build nest and raised offspring. We observed sexual dimorphism in juveniles of the same clutch, a pattern little known for the genus *Eriocnemis*. Information about the breeding biology of *E. nigrivestis* allows us to understand its habitat requirements and to infer biotic and abiotic factors the can shape its breeding cycle. This information is useful to understand its ecological and evolutionary relationships, as well as to design efficient management policies for the conservation of its habitat.

Keywords: breeding behavior, *Eriocnemis nigrivestis*, nest, Pichincha, sexual dimorphism.

INTRODUCCIÓN

El Zamarrito Pechinegro *Eriocnemis nigrivestis* es una especie endémica del Ecuador y críticamente amenazada a nivel mundial (Granizo *et al*., 2002; BirdLife International, 2018). Su población se estima en 140–180 individuos adultos (BirdLife International, 2018). Habita principalmente en bosques nublados y montano altos, entre 2850–3500 m de altitud (Jahn, 2008; Jahn & Santander, 2008; BirdLife International 2018). Se considera que la pérdida de hábitat por actividades antropogénicas (producción de carbón, expansión de la frontera agrícola y ganadera, y quemas temporales) es la principal causa de declinación poblacional (Jahn, 2008; Jahn & Santander, 2008). A estas amenazas se añaden otras potenciales como la reducción del área habitable como producto del cambio climático y la expansión de especies competidoras (Jahn, 2008; Guevara et al., 2015).

Se cree que *E. nigrivestis* realiza movimientos altitudinales estacionales (BirdLife International 2018). Entre abril y septiembre suele registrarse entre 2400–3050 m, y entre noviembre y febrero sobre los 3100 m (Jahn & Santander, 2008; BirdLife International, 2018). En los últimos años, la mayoría de observaciones ocurren entre 2850 y 3500 m, con registros esporádicos de individuos inmaduros a 1700 m (Santander *et al*., 2004; Jahn, 2008; Jahn & Santander, 2008). Existen algunos estudios sobre su población, distribución, requerimientos de hábitat, preferencias alimenticias y estado de conservación (Bleiweiss & Olalla, 1983; Santander *et al*., 2004; Jahn, 2008; Jahn & Santander, 2008; Guevara *et al*., 2015; ver Heynen *et al*., 2015). Sin embargo, no existen datos publicados sobre su biología reproductiva. En marzo de 2002, una hembra capturada en Cerro Pugsi presentaba fragmentos de cascaron en el parche de incubación activo (T. Santander, datos no publ.), y en abril de 2008 se observaron dos juveniles posiblemente en su primer día fuera del nido (M. Juiña & H. F. Greeney, datos no publ.). En este contexto, nuestro estudio contribuye con la primera información sobre la biología reproductiva de *E. nigrivestis* a partir de observaciones de campo de adultos, volantones y de un nido localizado en las laderas occidentales del volcán Pichincha.

MÉTODOS

Sitio de estudio

El presente estudio se desarrolló en la reserva Verdecocha (-0,0993, -78,6336), al noroccidente del volcán Pichincha, entre 2850–3500 m de altitud. El bosque en Verdecocha corresponde a las formaciones vegetales Bosque de neblina montano y Bosque siempreverde montano alto (Valencia *et al.*, 1999; Ministerio del Ambiente, 2013), y se caracteriza por árboles cargados de musgo, abundantes epifitas, orquídeas, helechos y bromelias, con una densa capa de musgo en el suelo y árboles irregulares ramificados desde la base, en sitios muy inclinados.

Trabajo de campo

Desde abril de 2008 hasta febrero de 2016, efectuamos salidas sistemáticas de observación. Nuestro esfuerzo de muestreo estandarizado fue 12 horas/mes, en un solo día cada mes. Realizamos los recorridos entre 06h00 y 18h00. En ocasiones específicas, nuestros recorridos se prolongaron entre 3 y 24 días, con el fin de realizar búsquedas más intensivas de nidos. Utilizamos senderos prestablecidos en Verdecocha como transectos de observación directa. Estos senderos conectan Verdecocha con cuatro localidades en sus inmediaciones: Cerro Pugsi (-0,1284, -78,6406), Cerro Bravo (-0,99651, -78,615310), Frutillas (-0,0803, -78,5979) y Yanacocha (-0,1667, -78,5833). Realizamos mayor esfuerzo de muestreo en el transecto que conduce de Verdecocha a Yanacocha por ser la zona donde observamos la mayor cantidad de actividades comportamentales reproductivas de *E. nigrivestis*.

Nuestras observaciones se concentraron en el reconocimiento de territorio de machos y seguimiento de hembras para aumentar la probabilidad de obtener información reproductiva relevante en un área de muestreo extensa. Definimos como comportamiento de establecimiento de territorio, cuando los machos adultos permanecieron en un área determinada por 3–4 días, defendiendo el área de otros individuos de su misma especie y otras especies de aves, alimentándose todo el día en el sitio y utilizando generalmente la misma percha.

En 2016, nuestro enfoque de estudio fue ubicar un nido activo de *E. nigrivestis*. Una vez ubicado el nido, tomamos sus medidas utilizando un calibrador manual (precisión 0,1 mm) y cinta métrica. El seguimiento de los volantones y cuidado parental fuera del nido se dio a través de observaciones directas y filmaciones cortas durante las siguientes fechas: 20–22 y 28–30 de enero 2016, 4–5 de febrero 2016 y 13 de febrero 2016. Las observaciones se realizaron entre 6h00–18h00, exceptuando el último día que solo se observó entre 6h30–9h30.

RESULTADOS

El 20 de enero de 2016, BRH observó un macho volantón aproximadamente a las 7h00. Este era inexperto en vuelo, fácil de capturar directamente con la mano. A 3 m de distancia observó a la hembra volantona posada en el borde de un nido intentando también volar. Durante 5 min hizo tres intentos fallidos de vuelo hacia la percha donde estaba el otro volantón. Al llegar la madre a alimentar al volantón macho, la hembra volantona voló hacia la percha y también fue alimentada por la hembra adulta. El dimorfismo sexual entre volantones fue evidente (ver más adelante).

Nido

El nido estaba localizado cerca del borde de bosque y vegetación chaparra del transepto de Verdecocha a Yanacocha (-0,114722, -78,595972, 3405 m s.n.m.). Estaba construido a 1,30 m del suelo, en un área de pendiente muy pronunciada, sujeto a una raicilla colgante de 2,5 cm de diámetro que parecía desprenderse de un árbol de aproximadamente 15 m de estatura, cargado con abundantes epifitas y bromelias. Una estructura del tronco del árbol en forma de cornisa protegía al nido desde arriba. El nido tenía forma de taza irregular; midió 5,64 cm de alto en la parte posterior y 4,94 cm en la parte anterior; 4,29 x 5,20 cm de diámetro externo; 2,84 x 3,89 cm de diámetro interno, tomadas en cruz, y 3,44 cm de profundidad (Fig. 1). La estructura externa presentaba musgos y telas de araña, e internamente presentaba raicillas finas y fibras blanquecinas de semillas de bromelias, posiblemente de *Guzmania bakeri* y *Tilliandsia* sp.

Figura 1: Nido de Zamarrito Pechinegro *Eriocnemis nigrivestis* en la reserva Verdecocha, Pichincha, Ecuador (foto: Mery Juiña).

Descripción de volantones

Los datos corresponden a los tres primeros días de observación. Los volantones presentaron un dimorfismo sexual evidente al momento de abandonar el nido, pero se diferenciaron de los adultos por el plumaje más opaco, con plumones adheridos a sus puntas, y por el color rojo-anaranjado en la parte basal del pico (Fig. 2).

La hembra juvenil fue levemente más pequeña que la hembra adulta, con el pico en apariencia más corto, recto, con la porción basal rojo-anaranjado. Mostró un evidente punto postocular blanquecino, corta estría malar pardo-anteado, zamarros blancos y coberteras caudales inferiores azul-violeta. El resto del plumaje corporal

mostró destellos azul-celeste muy tenues, similar a la hembra adulta, aunque menos brillante, con pocas plumas azul iridiscentes en la garganta. Además, el color dorado cobrizo fue apenas contrastante en el cuello y lados del pecho.

El macho juvenil también fue levemente más pequeño que el adulto, con pico algo más corto, recto, con la porción basal rojo-anaranjado. No mostró punto postocular, pero tuvo zamarros blancos, coberteras caudales inferiores azul-violeta y destellos azul-violeta en la gorguera, aunque menos evidente que en el adulto. El plumaje corporal fue oscuro, con negro acentuado en el pecho y abdomen, similar al macho adulto.

Figura 2: Dimorfismo sexual en volantones de *Eriocnemis nigrivestis* en la reserva Verdecocha, Pichincha, Ecuador (foto: Mery Juiña).

Comportamiento de juveniles

Durante los tres primeros días de observación, los volantones permanecieron la mayor parte del tiempo en una percha fija, donde eran alimentados por la hembra adulta (Fig. 3); se acicalaban constantemente y realizaban vuelos cortos de exploración entre 1–3 m de distancia. A los 9 días de observación, los juveniles permanecieron en el área de anidación, usando en ocasiones la misma percha de alimentación inicial; realizaron vuelos de exploración más rápidos y distantes (3–5 m). Se los observó alimentarse esporádicamente por sus propios medios, disminuyó su actividad de acicalamiento y aumentó el tiempo de forrajeo y descanso. A los 16 días todavía permanecían en el área de anidación alimentándose de néctar y ocasionalmente de insectos junto a la hembra adulta; los vuelos de exploración fueron más distantes (5–10 m).

Al ser alimentados, los juveniles permanecían juntos en la misma percha emitiendo llamadas y abriendo el pico. Por lo general, la hembra juvenil fue alimentada primero. En las primeras horas del día (06h00–06h30) los volantones disputaron el alimento proporcionado por la hembra adulta, emitiendo llamados fuertes y con enfrentamientos agresivos entre ellos. En ocasiones, cuando el macho juvenil no era alimentado, este perseguía a la hembra adulta hasta unos 10 m de distancia. Cuando los juveniles se alimentaron por su cuenta, utilizaron las flores de *Disterigma noyesiae* y *Macleania rupestris* (familia Ericaceae las dos) que eran abundantes en la zona de anidación; también se los observó capturando dípteros en vuelo.

El acicalamiento de los juveniles fue en su mayoría individual, aunque permanecían perchados juntos la mayor parte de su tiempo. En una ocasión, el macho joven se limpió el pico y plumaje en el musgo por c. 5 min. Fotografías, vídeos y notas de campo del comportamiento de esta pareja de juveniles están disponibles en www.blackbreastedpuffleg.com

Figura 3: Diferenciación entre juveniles y adultos de *Eriocnemis nigrivesti*s en la reserva Verdecocha, Pichincha, Ecuador: a) macho adulto, b) hembra adulta, c) hembra y macho juvenil (Fotos: Mery Juiña y Bertram Hickman).

Cuidado parental

Durante los tres primeros días de observación, la hembra adulta alimentó a los volantones cada 4 o 5 min, sin alejarse demasiado del área. Entre los días 9 y 11, la frecuencia de alimentación se extendió a 5–7 min (Fig. 4), mientras que a partir del día 16 permaneció cerca de los juveniles, pero sin alimentarlos, y al día 24 abandonaron el área de anidación.

El tiempo que empleó la hembra adulta para alimentar a los juveniles en cada visita fue de 5–7 s; ocasionalmente se perchó junto a ellos durante unos 3–4 s. En una sola ocasión observamos el ataque de otra especie de ave que no pudimos identificar, mientras la hembra adulta alimentaba a los juveniles. La reacción de los colibríes fue refugiarse rápidamente al fondo de una 'caverna' cerca del nido; la hembra adulta salió a explorar después de aproximadamente 3 min del ataque, mientras que los juveniles permanecieron ocultos por más de 10 min.

Figura 4: Hembra de *Eriocnemis nigrivestis* alimentando a los pichones en la reserva Verdecocha, Pichincha, Ecuador (Foto: Mery Juiña).

Comportamiento de cortejo

Entre 2008–2016 registramos nueve juveniles (siete hembras y dos machos) y varios comportamientos que indican la temporada reproductiva de *E. nigrivestis* (Tabla 1). El cortejo consistió en vuelos verticales de macho y hembra. Al alcanzar unos 25–30 m de altura, juntaron sus cuerpos, quedaron suspendidos en el aire por unos 30 s, se separaron y retornaron a sus perchas. Durante este cortejo no emitieron sonido alguno (perceptible a nuestros oídos).

Tabla 1: Número de observaciones de comportamiento de biología reproductiva de *Eriocnemis nigrivestis* en la reserva Verdecocha, Pichincha, Ecuador (2008-2016).

Actividad	**E**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**# total eventos**
Acarreo de material	1		1										2
Alimentación de juveniles	2	1		2									5
Cópula			2										2
Cortejo			1									1	2
Defensa de territorio	1	2	5	3	1							1	13
Establecimiento de territorio	2	5	9									2	18
Percha fija	2	5	9	3	2	1					1	2	25

DISCUSIÓN

El nido de *Eriocnemis nigrivestis* estaba bajo una cornisa bien protegida de lluvia, viento y sol. Según Ortiz-Crespo (2011), la construcción de nidos protegidos se relaciona con el mantenimiento de la temperatura corporal de los colibríes en climas fríos. Por ejemplo, la Estrella Ecuatoriana *Oreotrochilus chimborazo*, una especie de climas muy fríos, construye sus nidos en cavernas o bajo cornisas bien protegidas de la lluvia y viento, para evitar la pérdida de calor corporal durante la noche (Ortiz-Crespo, 2011). Debido a que la elección de sitios de anidación en el género *Eriocnemis* es variable (M. Juiña & H. F. Greeney, datos no publ.), es importante identificar los posibles nichos de anidación de *E. nigrivestis* considerando dos parámetros: el nido como aislamiento térmico y la selección de microhábitats para nidificación (Woods, 1936; Calder, 1973, 1981). Por otra parte, el musgo es un material predominante en los nidos de colibríes encontrados en la zona de Verdecocha, incluyendo el nido de *E. nigrivestis*, debido posiblemente a la abundancia de este recurso en la zona (Ortiz-Crespo, 2011). Es necesario describir nuevos nidos con el fin de entender si el predominio de este material de construcción es significativo.

El dimorfismo sexual desde el nido se presenta en otros colibríes como *O. chimborazo*, Estrella Andina *O. estella* y Corona de Fuego Isleño *Sephanoides fernandensis* (Colwell, 1989; Williamson, 2001). Es posible que *E. nigrivestis* también muestren dimorfismo desde el nido, debido a que observamos volantones con dimorfismo marcado en sus primeros días fuera del nido. Por ello, es importante registrar un nido desde la eclosión. Los juveniles de *E. nigrivestis* se ven semejantes a los adultos después de al menos dos semanas fuera del nido, como se ha documentado también en *O. estella* (Ortiz-Crespo, 2011). Es posible que esta semejanza haya evitado que detectemos otros juveniles durante el tiempo de estudio, en particular machos juveniles que se asemejan a los machos adultos tanto en plumaje como en comportamiento. Las hembras jóvenes, por su parte, tienen un comportamiento más discreto y menos agresivo que las hembras adultas; además, su coloración es menos iridiscente y su marca facial es más pronunciada.

La competencia intra e interespecífica de *E. nigrivestis* no está bien estudiada. Según Jahn (2008), la especie que puede ocupar el mismo nicho ecológico es el Solángel de Gorguera *Heliangelus strophianus*, por lo menos en julio y agosto que es el periodo del año en que ambas especies se encuentran en simpatría. Sin embargo, Guevara et al. (2015) no encontraron evidencias concluyentes de esta supuesta competencia. Durante nuestro estudio solo se observaron interacciones intraespecíficas de defensa de territorio en *E. nigrivestis*, así como interacciones antagónicas con Metalura Tiria *Metallura tyrianthina*, Zamarrito Colilargo *Eriocnemis luciani* y Pinchaflor Satinado *Diglossa lafresnayii*.

Nuestras observaciones de campo y datos previos no publicados sugieren que la temporada reproductiva de *E. nigrivestis* en Verdecocha y alrededores ocurrió durante la época lluviosa (noviembre–abril), lo que coincide también con el registro en Cerro Pugsi de una hembra con cascarones pegados al parche de incubación en marzo (T. Santander, datos no publ.). Ruschi (1964) y Ortiz-Crespo (2011) mencionan que el periodo reproductivo de los colibríes andinos coincide con la estación de lluvias. Sin embargo, se desconoce el periodo reproductivo de

E. nigrivestis en otras localidades en su pequeña área de distribución. Es posible que existan diferencias en la época reproductiva entre distintas poblaciones de *E. nigrivestis* acorde a su disponibilidad alimenticia (Harrison, 1975).

Los hábitats óptimos para la reproducción de *E. nigrivestis* en Verdecocha podrían ser las cuchillas de las partes más altas del bosque siempreverde montano alto, que se caracteriza por presentar micro-hábitats con abundante vegetación achaparrada, con predominio de las familias Ericaceae, Rubiaceae, Bromeliaceae y Melastomataceae, que ofrecen abundante alimento para colibríes (Guevara *et al*., 2015), esta área también es considerada como hábitat prístino donde predomina *Paulicourea fuchsioides* y *Macleania rupestris*, especies de alto uso alimenticio para el *E. nigrivestis* (Guevara *et al*., 2017); sin embargo, es importante encontrar nuevos nidos que corroboraren esta hipótesis.

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NOTA/NOTE

Nuevo registro de anidación y descripción del nido del Mosquero Real del Pacífico *Onychorhynchus occidentalis* (Passeriformes: Tyrannidae) en El Oro, Ecuador

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New record of nesting and nest description of Pacific Royal Flycatcher *Onychorhynchus occidentalis* (Passeriformes: Tyrannidae) in El Oro, Ecuador

Abstract

The Pacific Royal Flycatcher *Onychorhynchus occidentalis* is distributed in Ecuador in the humid and semi-deciduous forests of the southwestern Andes. These forests are currently under pressure from anthropic activities, mainly the expansion of the agricultural frontier, making it vulnerable to extinction in global and national scales. There is limited information about its behavior, ecology and especially about its breeding biology. In this note I provide information on its breeding behavior, describing parenteral care and describing its nest for the first time in the province of El Oro, southwest Ecuador. This note contributes to knowledge about the species and might be useful for future conservation plans.

Keywords: Behavior, nest, breeding biology, *Onychorynchus occidentalis*, dry forest.

Resumen

El Mosquero Real del Pacífico *Onychorynchus occidentalis* se distribuye en Ecuador en los bosques húmedos y semi-deciduos del suroccidente de los Andes. Estos bosques actualmente se encuentran bajo presión por actividades antrópicas, principalmente debido a la ampliación de la frontera agrícola, lo cual hace que esta especie se considere vulnerable de extinción en escala global y nacional. Existe limitada información sobre su comportamiento, ecología y especialmente sobre su biología reproductiva, por lo que en esta nota se detalla información sobre su comportamiento reproductivo, se describe el cuidado parental y se da una descripción de su nido por primera vez en la provincia de El Oro. Esta nueva información contribuye al conocimiento sobre la especie y puede ser incorporada en futuros planes de conservación.

Palabras clave: Biología reproductiva, comportamiento, nido, *Onychorynchus occidentalis*, bosque seco.

El género *Onychorhynchus* (Tyrannidae) agrupa cuatro especies distribuidas en el Neotrópico, desde el sur de México hasta el sureste de Brasil (Sample *et al*., 2016). *Onychorhynchus occidentalis* tiene distribución restringida a bosques húmedos y deciduos de tierras bajas en la región Tumbesina de Ecuador y del norte de Perú (Sample *et al*., 2016). Esta región es importante para la conservación debido a su alto grado de endemismo (Best *et al*., 1996). En Ecuador, *O. occidentalis* ha sido registrada desde el norte en la provincia de Esmeraldas hasta el sur en la provincia de El Oro, con un rango de elevación desde el nivel del mar hasta 600 m (Ridgely & Greenfield, 2001; McMullan & Navarrete, 2017); aunque, existen reportes hasta 900 m en la provincia de Azuay (Whittingham, 1994).

Esta especie prefiere espacios donde la vegetación es densa a orillas de arroyos, en parches de bosques tanto maduros como secundarios (Pople *et al*., 1997). Está categorizada como Vulnerable de extinción a nivel global y en Ecuador (Granizo *et al*., 2002; BirdLife International, 2016). Las poblaciones de *O. occidentalis* se encuentran en bajas densidades y muy fragmentadas, debido a presiones antropogénicas como la acelerada deforestación (Ridgely & Greenfield, 2001; Granizo *et al*., 2002; Baquero *et al*., 2004; Flanagan *et al*., 2005). Solo se conoce aspectos generales de la biología reproductiva de la especie (e.g., cría y actividades de cotejo; Sample *et al*., 2016; del Hoyo *et al*., 2018).

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Es necesaria más información detallada y a escala local para mejorar el conocimiento sobre su historia natural. En este sentido, nuevos datos sobre la biología reproductiva, tiempos de nidificación y comportamiento reproductivo pueden ser relevantes para comprender sus requerimientos reproductivos. Aquí se presenta la primera nota de comportamiento reproductivo y descripción de nido de *O. occidentalis* al sur del Ecuador, en la provincia de El Oro.

El 7 de mayo de 2017 se observó el comportamiento de anidación de *O. occidentalis* en un bosquete rodeado de pastizales a ~100 m de un riachuelo, durante un recorrido hacia la finca Tres Marías (-3,687416, -79,909861; 236 m s.n.m.; Fig. 1) en un bosque húmedo piemontano y semi-deciduo montano bajo (MAE, 2012). La hembra emitióvocalizaciones fuertes acompañadas de vuelos cortos, y a 2 m de distancia de ella se localizó un nido activo con un pichón. El nido estaba colgado de una fina rama de un árbol del género *Erythrina* a 4,1 m sobre el suelo. El área se caracterizaba por la presencia de árboles y arbustos densos de los géneros *Phyllostylon*, *Triplaris*, *Guazuma*, *Leucaena*, *Inga* y *Trichanthera*. El sotobosque estaba dominado por hierbas perennes y algunos helechos. El nido consistía de una estructura caediza–colgante, provista de una entrada en ovalo hacia el centro. Las dimensiones del nido fueron: i) diámetro interno = 7 cm; ii) diámetro externo = 16 cm; iii) alto = 8 cm; iv) profundidad = 6 cm; v) diámetro de la entrada = 5 cm. El peso seco del nido fue de 26,62 g.

Externamente el nido presentaba un tejido semi-abierto hecho básicamente de raíces secas de bromelias, hierbas entrelazadas, fibras de musgo seco y hojas secas en los extremos, con una cubierta donde destacaban ramas pequeñas (Fig. 2). En la parte interna, la estructura se mostraba mucho más compacta y con tejidos de material más fino. El piso del nido estaba cubierto con pedazos muy pequeños de hojas secas y algunas plumas pequeñas provenientes del pichón. Nidos con características similares fueron reportados por Whittingham (1994) en las estribaciones occidentales de la provincia del Azuay y por Berg (1994) en la provincia del Guayas. Del Hoyo *et al*., (2018) describen un nido incompleto, pero no mencionan la localidad del origen.

Al llegar la hembra adulta al nido con el alimento, tardó ~5 min en ingresar al nido. La aproximación al nido fue mediante vuelos cortos a manera de zigzag. Una vez en el nido, permaneció dentro por ~5 s, tiempo en el cual alimentó al pichón. Esta actividad de alimentación duró en total ~40 min por día, con lapsos de ~20 min entre salida y llegada al nido. La hembra se movió en un radio no mayor a 8 m del nido durante la vigilia. En la dieta del pichón se pudo diferenciar que la hembra llevó en su pico insectos de los órdenes Odonata (libélulas), Hemiptera (larvas de cigarra) y otros pequeños insectos no identificados, los cuales debían ser traídos de un radio no mayor a ~1 km del nido. Esta distancia fue estimada debido a que la hembra fue vista en dos ocasiones durante recorridos hacia el sitio de nidificación. Este comportamiento se repitió durante los siguientes 5 días. A pesar de que el 10 de mayo apareció otro individuo, aparentemente la pareja reproductora, no se logró identificar el sexo ya que en ninguno de sus movimientos se pudo visualizar la coloración de la cresta. Durante el evento de alimentación se observó que mientras un individuo iba por alimento, el otro permanecía en vigilia. Para ello, ambos hacían vuelos cortos y vocalizaciones al momento de aproximarse al nido (i.e., *kiiyu kiiyu*), mientras el polluelo resonaba suavemente (i.e., *ptrrr ptrrr*). Desde el 12 de mayo, a las 16h15, el nido se encontró vacío y en los posteriores 10 días no tuvo actividad alguna.

Este reporte es el primero para la provincia de El Oro y demuestra que *O. occidentalis* anida también en bosque secundario en primeros estados de sucesión. Esta observación lleva a considerar aquellas zonas en recuperación en estribaciones de la cordillera de los Andes como sitios convenientes para la reproducción de especies amenazadas. Sin embargo, estas zonas son susceptibles al cambio de uso de suelo debido a degradación y pérdida de la cobertura vegetal (Sierra, 2013), por lo que el monitoreo de nidos de especies amenazadas puede ser importante para mejorar el manejo y conservación de hábitat secundarios.

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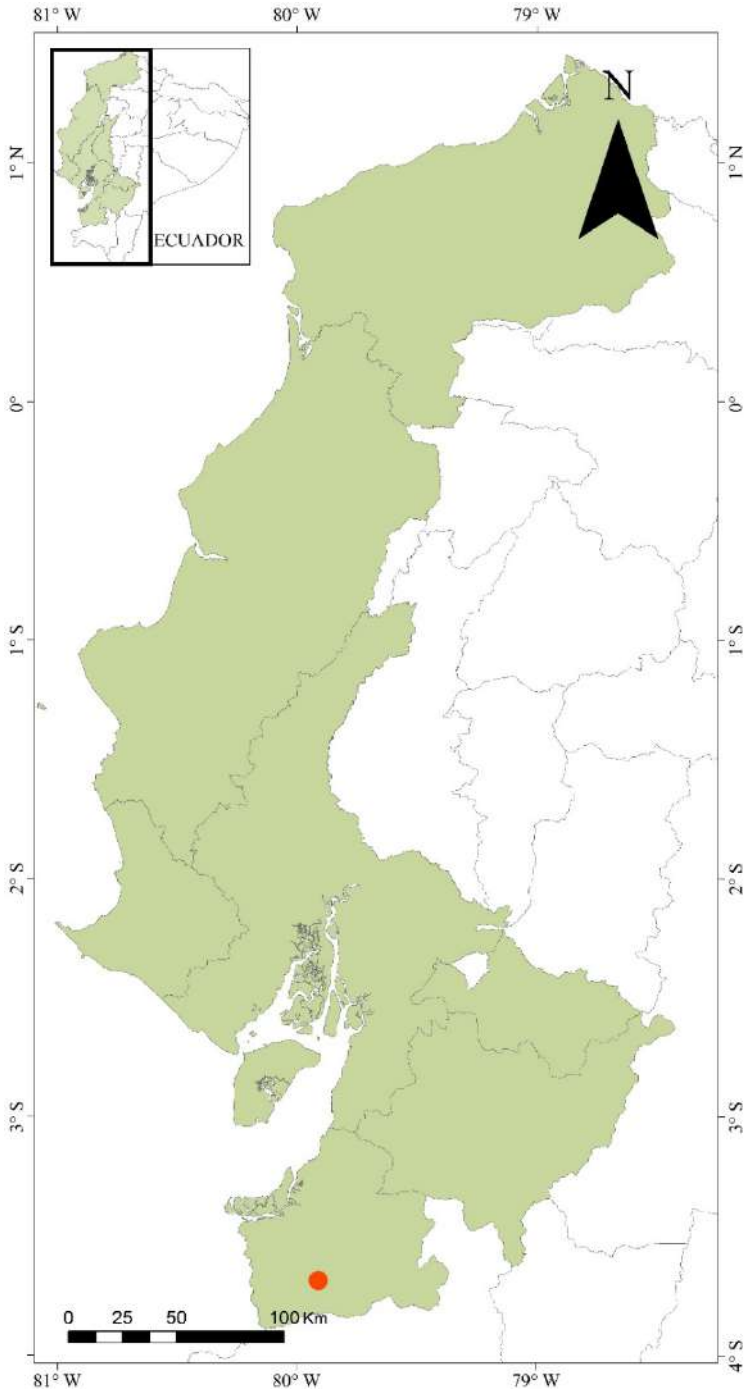

Figura 1. Distribución de *Onychorhynchus occidentalis* en el Ecuador. Área de color verde muestra la distribución aproximada en el país; el punto naranja corresponde al registro del evento reproductivo al sureste de El Oro.

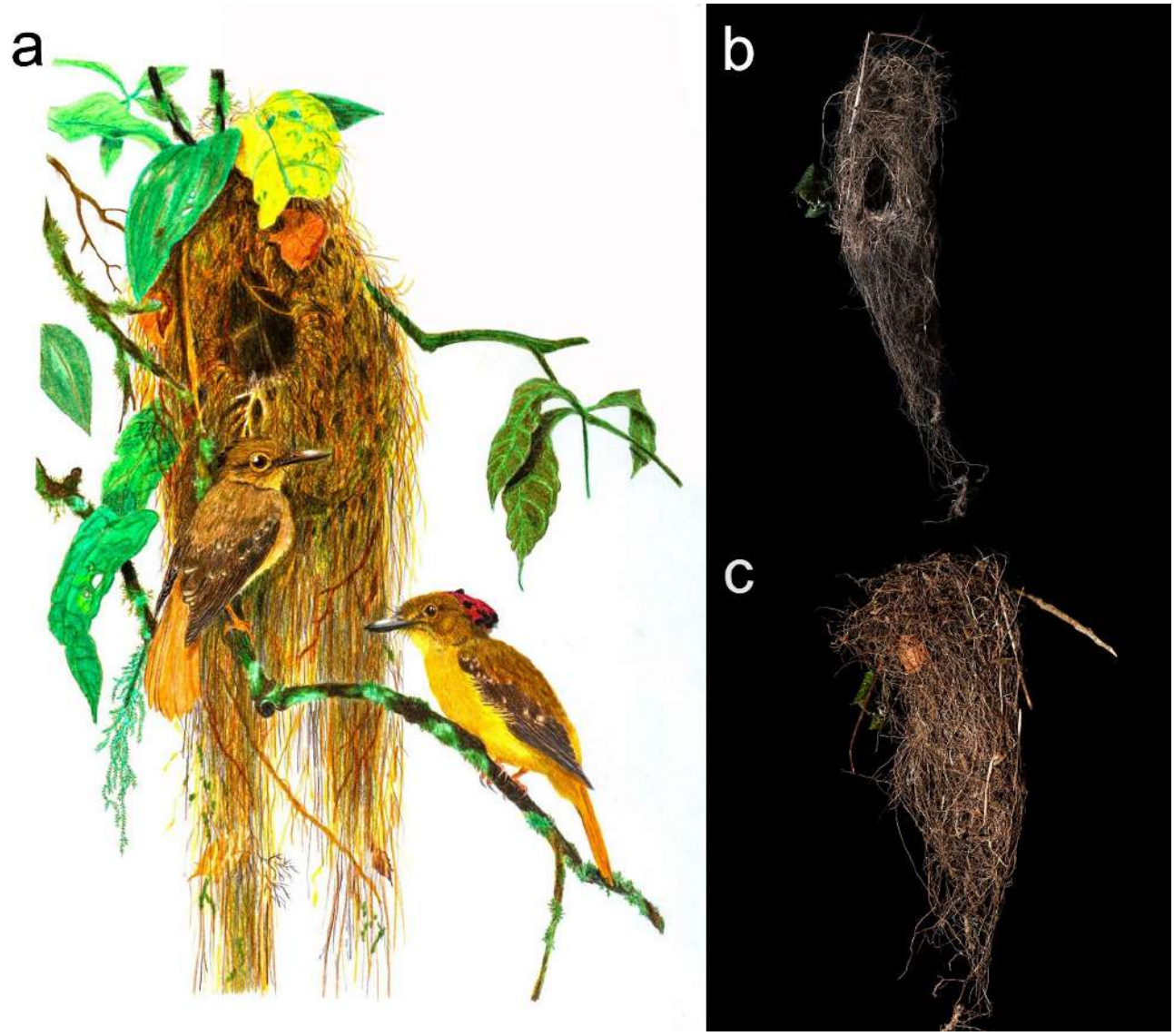

Figura 2. (a) Pareja de *Onychorhynchus occidentalis* en un nido activo en la provincia de El Oro, suroeste de Ecuador (José Falcón); (b-c) Vista frontal y lateral del nido encontrado.

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REVISTA ECUATORIANA DE ORNITOLOGÍA

NOTA/NOTE

Nuevo registro de la Garza Cucharón *Cochlearius cochlearius* (Pelecaniformes: Ardeidae) en el occidente de Ecuador

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New record of Boat-billed Heron *Cochlearius cochlearius* (Pelecaniformes: Ardeidae) in western Ecuador

Resumen

La Garza Cucharón *Cochlearius cochlearius* es una ave rara que habita en riberas de cuerpos de agua desde México hasta Argentina. En Ecuador es un ave rara y localista que se distribuye principalmente en la región amazónica. Al occidente existen registros históricos documentados en las provincias de Esmeraldas (1901) y Los Ríos (1931). Aquí se presenta una nueva observación, con evidencia fotográfica, de una pareja y un juvenil en el sector de la bananera Elba, provincia de Los Ríos, el 19 de septiembre de 2015. La presencia de un juvenil sugiere que la especie se está reproduciendo localmente y que podría ser residente en el área, pero sus hábitos nocturnos la hacen difícil de localizar. Este reporte constituye el redescubrimiento de la especie después de 84 años del último registro evidenciado de la especie en el occidente del Ecuador.

Palabras clave: *Cochlearius cochlearius*, Los Ríos, distribución.

Abstract

The Boat-billed Heron *Cochlearius cochlearius* is a rare bird that inhabits wetlands from Mexico to Argentina. In Ecuador, it is a rare and local species distributed primarily in the Amazonian lowlands. In the Pacific region of Ecuador, there are historical records from the provinces of Esmeraldas (1901) and Los Ríos (1931). Here, I report a new observation, with photographic evidence, of one pair and one juvenile from Bananera Elba, province of Los Ríos, on 19 September 2015. The presence of a juvenile suggests that the species is breeding locally and is resident in the area. The species might have remained overlooked due to its nocturnal habits. This report constitutes a rediscovery of the species 84 years after the last documented record in western Ecuador.

Keywords: Los Ríos, distribution, *Cochlearius cochlearius*.

La Garza Cucharón *Cochlearius cochlearius* tiene una amplia distribución en riberas de cuerpos de agua desde México hasta Argentina (Erize *et al*., 2006; Restall *et al*., 2006). En Ecuador, su rango de distribución incluye las tres regiones continentales (Occidente, Andes y Amazonía). La mayoría de registros proviene de la Amazonía, bajo los 400 m s.n.m. (Ridgely & Greenfield, 2001; Ridgely & Greenfield, 2006; Freile & Restall, 2018). En los Andes existen solo dos registros de individuos errantes (Bahamonde-Vinueza *et al*., 2014), mientras que en el Occidente se conocen solamente tres especímenes con localidad cierta, dos especímenes con localidad imprecisa y un registro sin documentación (Fig. 1). El primer espécimen proviene de Salidero, provincia de Esmeraldas, colectado en 1901 y depositado en el Museo Americano de Historia Natural (AMNH 469471). Los otros dos fueron colectados en 1931 en Isla Silva, río Babahoyo, provincia de Los Ríos, y están depositados en el Museo Field de Chicago (FMNH 77354, 77355) (Ridgely & Greenfield, 2001). Hay un registro no documentado de la provincia de Guayas, en 1982 (Man-Ging, 1982). Además, existe un espécimen en el Museo de Historia Natural Gustavo Orcés V. de la Escuela Politécnica Nacional (MEPN 894) cuyo único dato es "Occidente". Por último, hay dos registros históricos de juveniles colectados en las estribaciones occidentales, en la zona de Mindo, Río Blanco, en 1908 y 1909, pero no se tiene certeza de la validez de la localidad de colecta (Lönnberg & Rendahl, 1922; Ridgely & Greenfield, 2001; Bahamonde-Vinueza *et al*., 2014).

Obtuve un nuevo registro de esta especie en la provincia de Los Ríos, cantón Pueblo Viejo, sector de la bananera Elba (-1,692123, -79,587075, 10 m s.n.m., Fig. 1). En el lugar se realizó un inventario rápido de aves para conocer el aporte de los remanentes de vegetación para la conservación de aves en una matriz agrícola. Se implementaron ocho puntos de conteo, cuatro en vegetación boscosa intervenida y cuatro en vegetación a orillas de canales de agua. El muestreo efectivo se realizó en una visita de un día (19 de septiembre de 2015), y cada punto de conteo se recorrió a pie, por 20 min, para obtener registros visuales y auditivos (Bibby *et al*., 1998; Ralph *et al*., 2006). Según el mapa de ecosistemas del Ecuador (MAE, 2013), el lugar originalmente pertenecía al ecosistema Bosque semideciduo de tierras bajas de Jama-Zapotillo. Actualmente, existe un remanente de bosque degradado, con dominancia de árboles de samán (*Samanea saman*), rodeado de plantaciones extensas de banano.

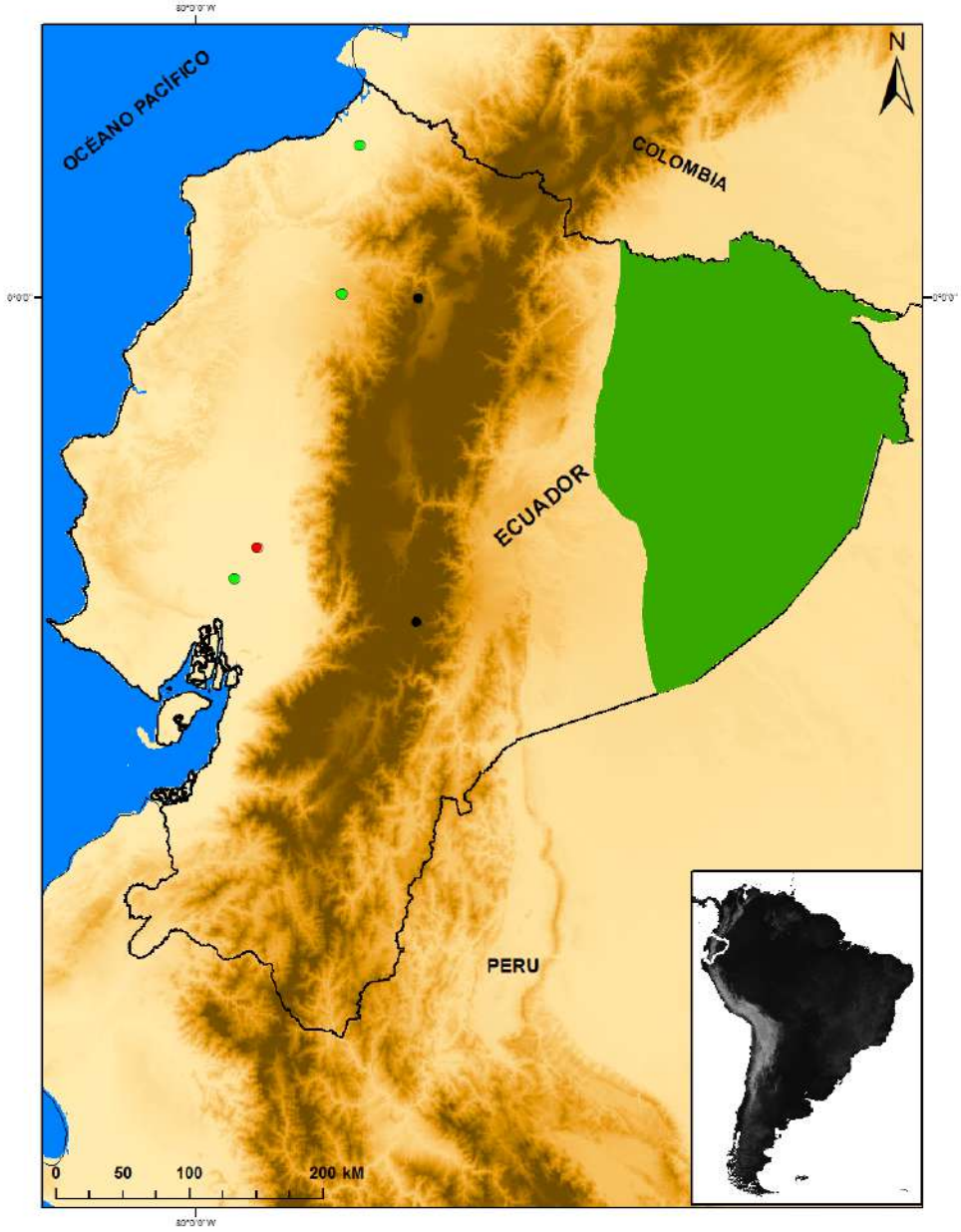

Figura 1: Distribución de *Cochlearius cochlearius* en Ecuador. En el occidente se presentan los registros históricos en verde: desde el norte, Salidero, Esmeraldas (1901); Río Blanco, Pichincha (1908, 1909); Isla Silva, Los Ríos (1931); en rojo el registro nuevo en Pueblo Viejo, Los Ríos (2015). En negro se presentan los registros en los Andes: desde el norte, Quito, Pichincha (2014); Isla Colay, Laguna de Atillo, Chimborazo (2004). En verde se muestra su distribución aproximada en la Amazonía ecuatoriana, adaptado de Ridgely & Greenfield (2006).

Observé y fotografié tres individuos, dos adultos y un juvenil, de *C. cochlearius* en uno de los cuatro puntos de conteo ubicados en la vegetación a orillas de canales de agua (Fig. 2). Los adultos fueron identificados por su pico grande y ancho, ojos de gran tamaño y cabeza con frente blanca y penacho negro, mientras que el juvenil

presentaba coloración mayormente marrón (Ridgely & Greenfield, 2006; McMullan & Navarrete, 2017; Freile & Restall, 2018). Los individuos perchaban a una altura de 5 m en ramas de sotacaballo (*Zygia longifolia*). Estos árboles se encontraban en forma de hilera en la orilla del canal de agua, alcanzaban una estatura de 6 m y presentaban un follaje denso y numerosos frutos en forma de vainas alargadas que dificultaban la visualización hacia su interior.

Figura 2: Dos individuos adultos y un juvenil de Garza Cucharón *Cochlearius cochlearius* perchados en árbol de sotacaballo (*Zygia longifolia*), en la bananera Elba, provincia de Los Ríos, 19 de septiembre de 2015.

El registro de una pareja con un juvenil sugiere reproducción local, que no se había reportado previamente en el occidente de Ecuador (Ridgely & Greenfield, 2001), aunque los especímenes juveniles de "Río Blanco" sugerirían que existió actividad reproductiva. El registro reciente más cercano a esta nueva localidad proviene del embalse Tinajones, cerca de Chongoyape, departamento de Lambayeque, noroccidente de Perú (en 2005), donde se observó un individuo juvenil solitario que murió en poco tiempo, presumiblemente un vagabundo de las poblaciones amazónicas (Salazar *et al*., 2006). En el Pacífico colombiano, Ayerbe-Quiñones *et al*. (2008) reportaron un individuo colectado en el departamento de Cauca, en la zona costera e insular del Pacífico, aunque sin detalle de los datos de colección. Estos registros aislados sugieren que no existen poblaciones establecidas en el occidente de América del sur, por lo que sería poco probable que exista un flujo de individuos en la región. Por ello, se ha sugerido que los registros al occidente de los Andes comprenden individuos solitarios y vagabundos desde la Amazonía (Salazar *et al*., 2006; Bahamonde-Vinueza *et al*., 2014).

En México, en los meses inmediatos al anidamiento, generalmente en los manglares, los volantones se adentran hacia la vegetación cercana con follaje denso, haciéndose difícil su observación (Juárez & Dickerman, 1972; Hernández & Fernández, 1999). Consecuentemente, podemos inferir que la percha de los tres individuos aquí reportados en los árboles de follaje denso es parte de su estrategia de camuflaje para evitar a posibles depredadores. La percha diurna de *C. cochlearius* en árboles con follaje denso, ubicados en lugares alejados, y su hábito nocturno, podrían explicar que la especie haya pasado desapercibida en la región occidental del Ecuador. Este registro muestra la necesidad de mayor investigación ornitológica en la provincia de Los Ríos, incluso en zonas bajo fuerte influencia antrópica.

A pesar de ser una especie rara, aunque fácil de identificar (Freile & Restall, 2018), el último registro documentado en el occidente del Ecuador data de 1931. Por ello, se la ha reportado como posiblemente extirpada en esta región (Athanas & Greenfield, 2016). El reporte de tres individuos que se presenta en esta nota constituye el primer registro documentado de la especie 84 años después de las últimas colectas. Esto pone en evidencia la importancia para la conservación de los escasos remanentes de vegetación natural en la provincia de Los Ríos. Es probable que el poco interés de investigación en Los Ríos se deba a la tala masiva de los bosques nativos, pues hasta el año 2016 solo quedaba el 1,3% de bosque nativo original en esta provincia (MAE, 2017).

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ARTÍCULO/ARTICLE

Dieta del Caracara Crestado Norteño *Caracara cheriway* (Falconiformes: Falconidae) en el archipiélago de Jambelí, suroeste de Ecuador

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Diet of Northern Crested Caracara *Caracara cheriway* (Falconiformes: Falconidae) in the Jambelí Archipelago, southwestern Ecuador

Resumen

Presentamos el primer reporte sobre la ecología trófica del Caracara Crestado Norteño *Caracara cheriway* en Ecuador, por medio del análisis de egagrópilas colectadas en el archipiélago de Jambelí, provincia de El Oro. Las presas más representativas fueron los mamíferos (39,4%), seguidos de insectos (29%), reptiles (13,2%) y aves (10,5%). Los mamíferos aportaron el mayor porcentaje de biomasa (83,3%), seguidos por reptiles (8,5%) y aves (7,3%). Si bien *C. cheriway* es un consumidor generalista altamente oportunista, su dieta se constituyó principalmente de presas vivas en nuestra área de estudio, quedando en segundo plano el consumo de carroña.

Palabras clave: *Caracara cheriway*, ecología trófica, Ecuador, egagrópilas, Falconidae, Jambelí.

Abstract

We present the first report of the trophic ecology of Northern Crested Caracara *Caracara cheriway* in Ecuador, from the analysis of pellets collected at Jambelí archipelago, province of El Oro. The most representative prey were mammals (39.4%), followed by insects (29%), reptiles (13.2%) and birds (10.5%). Mammals contributed the highest percentage of biomass (83.3%), followed by reptiles (8.5%) and birds (7.3%). Although *C. cheriway* is a highly opportunistic generalist consumer, its diet was mainly constituted by living prey in our study area, leaving carrion consumption as a complementary feeding strategy.

Keywords: *Caracara cheriway*, Ecuador, Falconidae, Jambelí, pellets, trophic ecology.

INTRODUCCIÓN

Los estudios de ecología trófica son fundamentales para dilucidar patrones en el funcionamiento de un ecosistema. Estas investigaciones permiten, por ejemplo, establecer cómo se regulan las poblaciones animales en una localidad, reconocer las estrategias de comportamiento alimenticio y, en el caso de depredadores, determinar su influencia en la estructura de la cadena alimenticia (Bó *et al*., 2007).

Los caracaras (Falconidae) son especies omnívoras con un amplio espectro de elementos de los cuales se alimentan (White *et al*., 2017). Dentro de este grupo, el Caracara Crestado Norteño *Caracara cheriway* no es la excepción. Se considera un ave de alimentación generalista, altamente oportunista, que consume una gran variedad de vertebrados vivos, invertebrados y carroña (del Hoyo *et al*., 2017). *Caracara cheriway* tiene amplia distribución geográfica, desde Florida y el suroeste de Estados Unidos hasta el noroeste de Perú y la parte media y baja del río Amazonas, en el norte de Brasil (BirdLife International, 2016). En Ecuador, es una especie poco

común a común en el suroeste; hacia el norte alcanza el sur de la provincia de Los Ríos, y existen unos pocos registros en el valle central de los Andes a 2000 y hasta 3000 m (Ridgely & Greenfield, 2001).

La dieta de *C. cheriway* ha sido estudiada principalmente en Norteamérica (Rodríguez-Estrella & Rivera-Rodríguez, 1997; Morrison *et al*., 2008; Skoruppa & Lee, 2008; Morrison & Dwyer, 2012), y existen también algunas observaciones puntuales en México (Partida & Rodríguez-Estrella, 2015; Pérez-Estrada & Rodríguez-Estrella, 2016; García-Mata *et al*., 2017). A pesar de ser una especie común en Ecuador, su ecología trófica en el país es desconocida y, hasta donde conocemos, también en el resto de Sudamérica. El presente trabajo se fundamenta en el análisis de egagrópilas colectadas en el archipiélago de Jambelí, provincia de El Oro, suroeste de Ecuador, y se orienta a incrementar el conocimiento sobre el uso de recursos por parte de *C. cheriway* en esta zona insular, tema fundamental para comprender las estrategias de alimentación y dinámica de diferentes especies en los ecosistemas (Pozo-Zamora *et al*., 2017).

MÉTODOS

Recolectamos egagrópilas de *Caracara cheriway* en septiembre de 2016, fuera de la época de reproducción, bajo un nido (Fig. 1a) localizado en el archipiélago de Jambelí, provincia de El Oro, suroeste de Ecuador (-3,378480, -80,130430; 5 m s.n.m.). El nido estaba en la intersección de las ramas de un cactus *Armatocereus cartwrightianus*, a 5,5 m sobre el suelo (Fig. 1b). Estaba construido exclusivamente con ramas secas de 1–2 cm de diámetro, con una forma no muy definida, como es típico de esta especie (Ferguson-Lees & Christie, 2001). A pesar de que el nido no estaba activo, se podía ver a la pareja de adultos en los alrededores o incluso posados en el cactus, y es posible que lo estuvieran preparando para la próxima época de reproducción (Fig. 1b). El hábitat donde se encontraba el nido corresponde a un arbustal deciduo en zonas adyacentes a playas de arena o playas rocosas (Cerón, 2013). La vegetación era achaparrada, de 2–4 m de altura, y estaba compuesta por plantas herbáceas, rastreras o trepadoras como *Cryptocarpus pyriformis*, *Hippomane mancinella*, *Scutia spicata*, *Vallesia glabra*, *Batis maritima*, *Canavalia maritima*, *Ipomoea pescaprae* y *Sesuvium portulacastrum* (Cerón, 2013).

El análisis de las egagrópilas se realizó en el laboratorio, donde medimos la longitud y ancho de cada egagrópila utilizando un calibrador digital (precisión 0,01 mm). El peso en seco se midió con una balanza de precisión (Sartorius LA-230P). Disgregamos las egagrópilas según la propuesta de Marti *et al*. (2007), y colocamos los contenidos en placas Petri para su identificación y cuantificación. El Número Mínimo de Individuos (NMI) fue determinado por el conteo de mandíbulas homólogas o restos de cráneos para los vertebrados; mientras que para artrópodos se usó élitros, cabezas y mandíbulas (no otras partes para evitar reconteo; Manning & Jones, 1990). La composición de dieta se expresó como frecuencia relativa (NMI de cada tipo de presa dividido por el número total de presas y multiplicado por 100; Grayson 1984, Formoso *et al*., 2012). La masa promedio (en gramos) de las presas se obtuvo de fuentes secundarias: Brito *et al*. (2018) para los mamíferos y R. Vargas *et al*. (datos no publ.) para los reptiles, insectos y arácnidos. Para el cálculo de la biomasa se multiplicó la masa promedio (en gramos) de las especies consumidas por el Número Mínimo de Individuos (NMI) de la especie (Herrera & Jaksic, 1980). Los componentes alimenticios fueron identificados mediante el uso de guías disponibles y aplicables para la zona de estudio (Brito *et al*., 2018; Torres-Carvajal *et al*., 2018) y por comparaciones con material de referencia depositado en el Museo de la Escuela Politécnica Nacional (MEPN) y en el museo del Instituto Nacional de Biodiversidad (MECN).

RESULTADOS

Colectamos y analizamos un total de 17 egagrópilas con las siguientes dimensiones: largo 3,96 ± 0,59 cm (3,34–5,05 cm), ancho 2,42 ± 0,23 cm (2,06–2,7 cm), peso 4,02 ± 1,34 g (2–5,57 g). Contabilizamos 38 presas de al menos 10 especies diferentes, pertenecientes a cinco clases taxonómicas: mamíferos, aves, reptiles, insectos y arácnidos. El tamaño de las presas varió desde *Rattus rattus* (160 g) hasta pequeños grillos y escorpiones de menos de un gramo.

Los mamíferos fueron las presas más abundantes en la dieta de *C. cheriway* en nuestro estudio (39,4% NMI; 83,3% biomasa). El resto de la dieta la complementan reptiles y aves, con 8,5% y 7,3% en aporte de biomasa, respectivamente (Tabla 1). La presa de mamífero más consumida fue *Mus musculus*. Las especies de roedores *Rattus rattus* y *Aegialomys xanthaeolus* fueron menos consumidas, pero aportaron mayor biomasa debido a su mayor tamaño (Tabla 1). Otra especie importante en la dieta fue el lagarto *Dicrodon guttulatum*, que aportó

6,1% de la biomasa total. Aunque los invertebrados (insectos y arácnidos) aportaron un porcentaje significativo en número de individuos (36,9%), tan solo representaron 1% de la biomasa.

Figura 1: (a) Nido del Caracara Crestado Norteño *Caracara cheriway* sobre un cactus *Armatocereus cartwrightianus* en el archipiélago de Jambelí, suroeste de Ecuador (b) Individuos adultos posados sobre el nido (A. Orihuela-Torres).

DISCUSIÓN

Caracara cheriway es un ave carroñera y oportunista, capaz de variar su dieta de manera significativa dependiendo del lugar donde se encuentre y de adaptarse a la disponibilidad de recursos (Morrison & Pias, 2008). Además de alimentarse de gran variedad de presas vivas, emplea métodos bastante sofisticados para encontrar comida. Se ha reportado que puede cleptoparasitar a rapaces y pelícanos (Rodríguez-Estrella & Rivera-Rodríguez, 1992; Ferguson-Lees & Christie, 2001), alimentarse de frutos (Skoruppa & Lee, 2008) o seguir a automóviles y trenes para alimentarse de las presas que estos atropellan (Ferguson-Lees & Christie, 2001).

En nuestro estudio, los vertebrados fueron las presas más importantes para *C. cheriway* en un ambiente insular. Estos resultados son similares a otros estudios en los cuales los vertebrados, en especial mamíferos, fueron la parte más importante de su dieta (Rodríguez-Estrella & Rodríguez, 1997; Morrison & Pias, 2006; del Hoyo *et al*., 2017). Los resultados de este estudio corroboran la predilección de *C. cheriway* por presas vivas (Morrison & Dwyer, 2012), pese a que puede consumir carroña cuando tiene la oportunidad. Los artrópodos no fueron un componente importante de la dieta de esta especie en nuestra zona de estudio.

Un dato interesante fue el registro de roedores autóctonos en la dieta de *C. cheriway*. Si bien las especies introducidas *Mus musculus* y *Rattus rattus* fueron más abundantes, registramos dos especies nativas: *Aegialomys xanthaeolus* y *Phyllotis* sp. Esto es relevante ya que no se habían detectado roedores nativos en otros estudios de dietas de rapaces en la misma zona (Orihuela-Torres *et al*., 2018) y en otras observaciones de campo no publicadas. Recomendamos que se priorice el levantamiento de información sobre la riqueza y diversidad de los mamíferos en la isla para clarificar estrategias adecuadas de conservación en esta zona, que enfrenta una compleja problemática ambiental y socioeconómica, principalmente por la agresiva actividad camaronera.

Tabla 1. Composición de la dieta del Caracara Crestado Norteño *Caracara cheriway* en el archipiélago de Jambelí, provincia de El Oro, Ecuador. NMI = Número mínimo de individuos consumidos.

Orden/Familia/Especie	Peso/individuo (en g)	NMI (%)	Biomasa en g (%)
Rodentia			
Cricetidae			
Aegialomys xanthaeolus	70	2 (5,3)	140 (12,8)
Phyllotis sp.	15	3 (7,9)	45 (4,1)
Muridae			
Mus musculus	14	6 (15,8)	84 (7,7)
Rattus rattus	160	4 (10,5)	640 (58,7)
MAMMALIA		**15 (39,4)**	**909 (83,3)**
Passeriformes			
no identificados	20	4 (10,5)	80 (7,3)
AVES		**4 (10,5)**	**80 (7,3)**
Squamata			
Tropiduridae			
Microlophus occipitalis	13	2 (5,3)	26 (2,4)
Teiidae			
Dicrodon guttulatum	22	3 (7,9)	66 (6,1)
REPTILIA		**5 (13,2)**	**92 (8,5)**
Coleoptera			
Carabidae	1	5 (13,2)	5 (0,5)
Orthoptera			
Gryllidae	0,5	6 (15,8)	3 (0,3)
INSECTA		**11 (29)**	**8 (0,8)**
Scorpionida			
no identificado	0,5	3 (7,9)	1,7 (0,2)
ARACHNIDA		**3 (7,9)**	**1,7 (0,2)**
Total		**38 (100)**	**1090,7 (100)**

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NOTA / NOTE

First records of Koepcke's Screech-Owl *Megascops koepckeae* (Aves: Strigidae) in Ecuador

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Primeros registros del Autillo de Koepcke *Megascops koepckeae* (Aves: Strigidae) en Ecuador

Resumen

El recientemente descrito Autillo de Koepcke *Megascops koepckeae* se había registrado, hasta hace poco, únicamente en el norte y centro de los Andes de Perú. Presentamos los primeros registros de *M. koepckeae* en Ecuador, provenientes de la ciudad de Loja. Estos registros amplían su área de distribución conocida en al menos 90 km al norte del registro más septentrional de Perú, y proporcionan nuevos elementos sobre la elección de hábitat de la especie y su distribución espacial en relación con el Autillo Peruano *M. roboratus*.

Palabras clave: Andes, Autillo de Koepcke, distribución, Loja, registros, Strigidae.

Abstract

The recently described Koepcke's Screech-Owl *Megascops koepckeae* was only known, until recently, from the northern and central Andes of Peru. We present the first records of *M. koepckeae* in Ecuador, from the city of Loja. Our records extend its known range by at least 90 km northwards from the northernmost record in Peru, and provide new insights into the species' habitat selection and spatial distribution in relation to the Peruvian Screech-Owl *M. roboratus*.

Keywords: Andes, distribution record, Koepcke's Screech-Owl, Loja, Strigidae

Koepcke's Screech-Owl *Megascops koepckeae* is an uncommon, mid-sized owl (König *et al.*, 2010), initially described as a subspecies of Tropical Screech-Owl *M. choliba* (Hekstra, 1982). To date, it is considered endemic to Peru, distributed on the western Andean slopes and in some intermontane Andean valleys between 6°–14° latitude, mostly above 2200 m (Schulenberg *et al.*, 2010; Fjeldså *et al.*, 2012), with a few extralimital records from the Pacific lowlands down to 200 m (Ugarte-Lewis, 2013). It occupies montane forests, *Polylepis* woodland, *Eucalyptus* spp. woodlots, and dry intermontane valleys dominated by scrubby patches of *Eriotheca vargasii*, *Ficus cuatrecasasiana*, and *Schinus molle* (Holt *et al.*, 2018a). Information on its natural history is very scarce (König *et al.*, 2010). In this paper, we present the first records of *M. koepckeae* in Ecuador (Freile & Restall, 2018) and briefly discuss its geographic and spatial distribution (Fig. 1).

FIELD OBSERVATIONS

On 8 February 2018, P. Székely audio-recorded an unknown screech-owl in a small woodlot of *Eucalyptus globulus* near the campus of Universidad Técnica Particular de Loja (UTPL) (-3.985666, -79.200005; 2092 m a.s.l.), using an Olympus LS-11 Linear PCM Recorder and a RODE NTG2 condenser shotgun microphone. His audio-recordings were later identified as *M. koepckeae* by Juan Freile (hereafter JF), and were uploaded to Xeno-Canto (XC415274, XC415275; Székely, 2018).

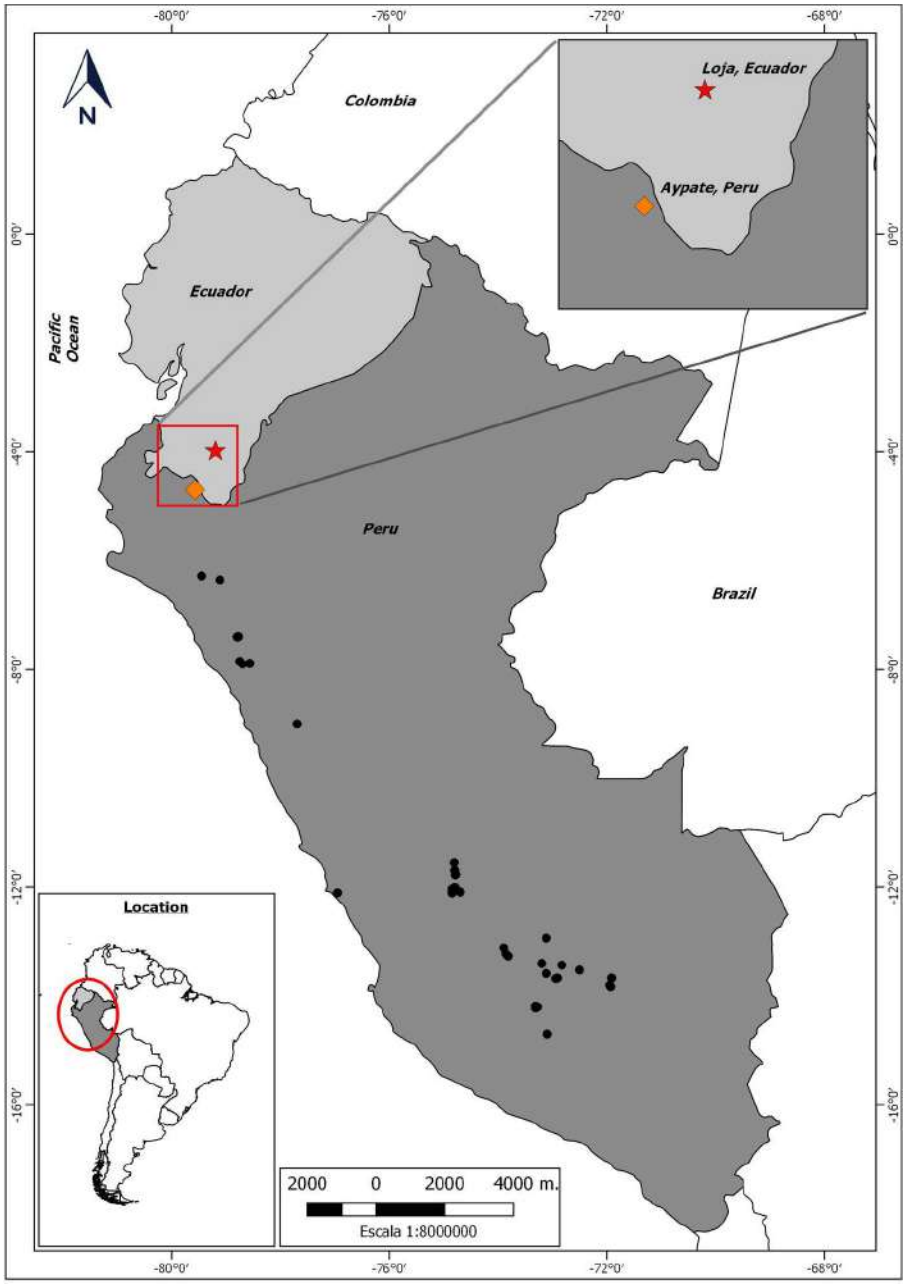

Figure 1: Distribution of Koepcke's Screech-Owl *Megascops koepckeae*. Black circles: localities with documented records in Xeno-Canto (www.xeno-canto.org), GBIF (www.gbif.org) and Fjeldså *et al.* (2012); Orange diamond: Aypate, Ayabaca province, Peru (Saldaña *et al.*, 2016); Red star: first record in Ecuador.

On 02 May 2018, Leonardo Ordóñez-Delgado (herafter, LOD) and JF used sample XC67492 (Lane, 2004) to search for the screech-owls recorded by P. Székely. Playback trials lasted *c.* 10 min, in four spots throughout UTPL campus, including the same woodlot where first found in February 2018. Two individuals of *M. koepckeae* were heard and seen at the UTPL campus (-3.987000, -79.199615), *c.* 200 m south of the site were originally found, confirming that a resident pair lives in the area. This locality corresponds to a small woodlot of *Eucalyptus globulus*, *Tecoma stans*, *Cupressus* sp., *Nerium oleander*, *Inga* sp., *Hibiscus rosa-sinensis* and other tree and shrub species. After 10 min of playback, a single individual responded loudly and aggressively (XC417124; Ordóñez-Delgado, 2018), approaching the sound source and perching on a nearly bare *Eucalyptus* branch, *c.* 4 m from the ground and 5 m from the observers. It remained perched and vocalizing for at least 15 min. A second individual, presumably a female, since *Megascops* species tend to move in pairs (Marshal *et al.*, 1991, Krabbe, 2018), vocalized from *c.* 10 m away, but remained out of sight. Audio-recordings of this pair were deposited at Xeno-Canto (XC413423, XC413424, XC413425; Ordóñez-Delgado, 2018).

On 18 May 2018, M. Castel used sample XC4113424 (Ordóñez-Delgado, 2018) to search for *M. koepckeae* in El Madrigal Reserve (-4.040830, -79.175940; 2285 m a.s.l.), 6.5 linear km SSE of the UTPL campus. El Madrigal harbors a 306-ha remnant of native bushland and montane forest dominated by *Alnus acuminata*, *Oreocallis grandiflora*, *Clusia alata*, *Roupala loxensis*, *Oreopanax rosei*, *Cedrela montana,* and *Schefflera acuminata*, amongst other plant species. One individual was located after a single playback trial; it swiftly approached the observers and remained around, restlessly switching perches and constantly vocalizing, for c. 15 min (Fig. 2).

Figure 2: Koepcke's Screech-Owl *Megascops koepckeae* in El Madrigal Reserve, southeast Loja, Ecuador (Veronica Nelson).

On 13 June 2018, R. Cisneros mist-netted one individual while monitoring bats in Quebrada Minas, east of Loja city (-4.003996, -79.187551, 2108 m a.s.l.), a site also dominated by *Eucalyptus* trees. A photograph of this individual was deposited at the audiovisual archive of Museo de Vertebrados UTPL (M-UTPL).

A few additional photographic records, first assigned to Peruvian Screech-Owl *M. roboratus,* were obtained between 2014–2017 at the UTPL campus and surroundings. One nestling was found next to a *Phoenix canariensis* palm, raised in captivity and released by LOD between February and October 2014. Another individual was photographed and released in December 2015, after crashing against a house window. Photos of these individuals are archived at M-UTPL.

IDENTIFICATION

Species identification was based on vocalizations (Fjeldså *et al.*, 2012; Holt *et al.*, 2018a). Vocalizations audio-recorded lasted 2–2.6 s, with 8–10 s pauses, and were repeated for *c.* 10 min. Each bout was composed of 9– 16 ascending notes, with emphasis on the two next-to-last notes, and a longer last note. After playback, the species uttered a different song, with higher-frequency initial notes followed by 5–6 double notes (XC417124; Ordóñez-Delgado, 2018).

Visual identification, using morphology and plumage, is difficult in the genus *Megascops* (Fjeldså *et al*., 2012; Camacho-Varela, 2014; Krabbe, 2018), more so in closely related species (Camacho-Varela, 2014). Differences in size and plumage can be subtle, even across *Megascops* species in different clades, such as *M. koepckeae* and *M. roboratus* (Dantas *et al*., 2015). These species are very similar in plumage, but *M. koepckeae* is larger (24 *vs*. 19–22 cm; Holt *et al*., 2018b), lacks a white nuchal collar, and has its ventral herringbone pattern more pronounced, contrasting against a paler buffy-white background (Schulenberg *et al*., 2010, Holt *et al*., 2018a; Fig. 2). *Megascops roboratus* has been recorded in the Vilcabamba valley, 25 km south of Loja (-3.251833, -79.230, 1516 m a.s.l.; Garrigues, 2007), making it interesting to understand the spatial distribution and ecological segregation of these two species in the Loja valley.

DISCUSSION

As reported for Peru, we initially found *M. koepckeae* in *Eucalyptus*-dominated woodland with an open understory and low tree density, within the altitudinal range known for the species (Holt *et al*., 2018a). Our second locality, however, was a humid montane forest dominated by alder *Alnus acuminata* and other Andean trees. Habitat selection and other aspects of the species' natural history will be published elsewhere. Our records in Ecuador extend the known distribution of *M. koepckeae* to the north, 90 km from the northernmost record in Peru (Complejo Arqueológico Aypate, Ayabaca province; -4.699674, -79.573050; 2691 m a.s.l.; Saldaña *et al.*, 2016). It is noteworthy that this species has remained undetected in an urban area and its immediate surroundings. A dearth of nocturnal ornithological work might be the simplest explanation, but we cannot rule out a potential spread from its regular range in Peru, considering that the species seemingly occupies a broad range of habitats, including being fairly tolerant of anthropogenic habitats. Furthermore, it seems likely that the species might occur in other localities in the area between Aypate and Loja. Additional searches may reveal that the species is more widespread and common in the southern Andes of Ecuador, at least within the Loja Province.

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REVISTA ECUATORIANA DE ORNITOLOGÍA

NOTA/NOTE

First record of Moustached Puffbird *Malacoptila mystacalis* (Bucconidae) in Ecuador

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Primer registro del Buco Bigotudo *Malacoptila mystacalis* (Bucconidae) en Ecuador

Resumen

Presentamos el primer reporte de Buco Bigotudo *Malacoptila mystacalis* en Ecuador a partir del registro de cuatro individuos en El Chical, noroccidente de la provincia de Carchi y la obtención de evidencia fotográfica, vídeo y grabación de vocalizaciones. Este registro representa una ampliación hacia el sur de su rango de distribución en el norte de Sudamérica. Describimos los hábitats donde encontramos dos parejas en la reserva Drácula, señalamos las marcas distintivas de campo y analizamos sus vocalizaciones, características que la diferencian del Buco Bigotiblanco *M. panamensis*, con la cual puede traslaparse en las tierras bajas y estribaciones. Este registro no es del todo inesperado dada la colección de especímenes en Ricaurte y Guayacana, departamento de Nariño, Colombia, apenas 39,5 km al norte de El Chical.

Palabras clave: Distribución, Ecuador, *Malacoptila mystacalis*, hábitat, vocalización.

Abstract

We present the first Ecuadorian record of Moustached Puffbird *Malacoptila mystacalis* based on observations, supported by photographs, videos and audio recordings, of four individuals at El Chical, northwest Carchi province. This record represents a southwards range extension in northern South America. We describe the habitats where two pairs where found in the Dracula Reserve, discuss distinctive field marks and analyze vocalizations, characteristics to separate from White-whiskered Puffbird *M. panamensis*, with which it might overlap in the lowlands and foothills. This record is not entirely unexpected given the collection of specimens in Ricaurte and Guayacana, Nariño Department, Colombia, only 39.5 km north of El Chical.

Keywords: Distribution, Ecuador, *Malacoptila mystacalis*, habitat, vocalization.

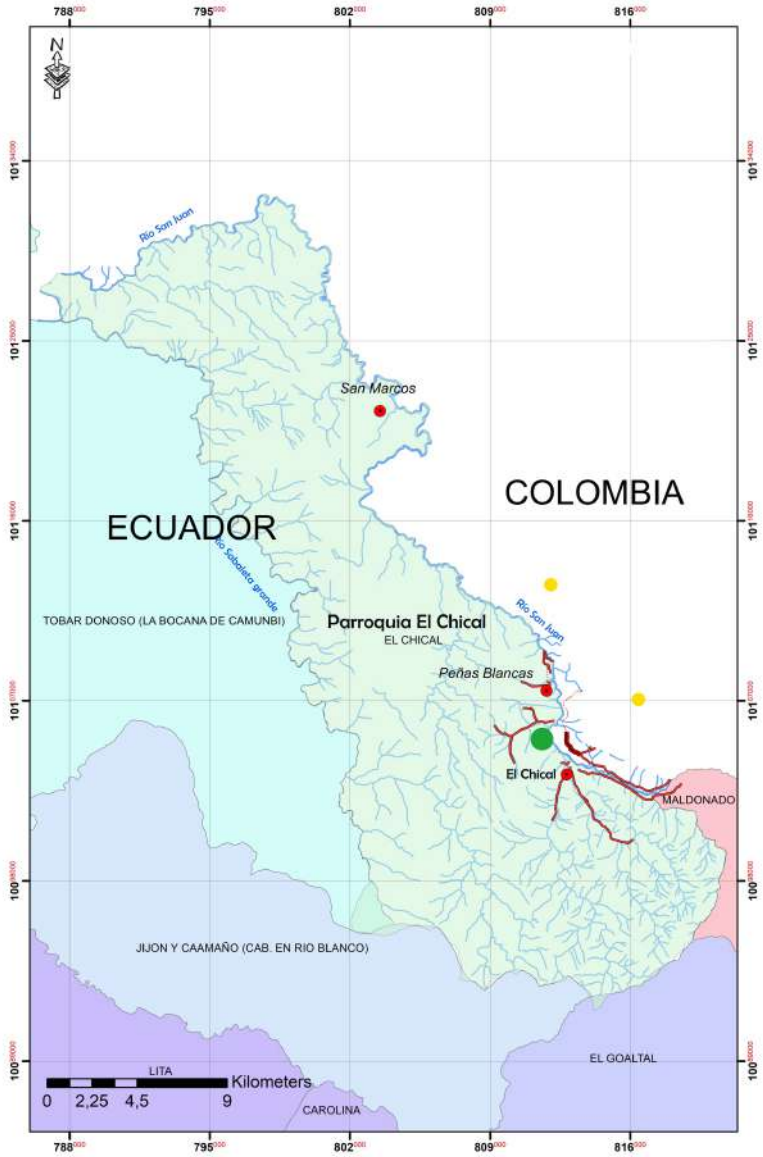
Puffbirds are medium sized, large-head forest birds with strong bills hooked at tip and puffy appearance of their feathers. They have mostly cryptic plumages in brown, black and grey shades (Ridgely & Greenfield, 2001). Most species are not sexually dimorphic, but in some species minor color differences between male and female are perceptible, meanly in the genus *Malacoptila* (Athanas & Greenfield, 2016). Puffbirds are solitary, quiet and lethargic, normally seen in small and low exposed perches in under to mid-storey. Their diets comprise insects and other arthropods, and often eat fruit (Robinson, 2003). Puffbirds nest in galleries or burrows dug by themselves in banks, while some species nest inside termite mounds. The family is endemic to the Neotropics, and has a primarily tropical distribution, although there are exceptions like the montane White-faced Nunbird *Hapaloptila castanea* (Fjeldså & Krabbe, 1990), and Moustached Puffbird *M. mystacalis*, which ranges up to 2200 m a.s.l. in Colombia (McMullan *et al.*, 2010).

Malacoptila mystacalis is uncommon in Colombia and fairly common in Venezuela, ranging from the Pacific Andean foothills of Colombia north and east to northern Colombia and coastal Venezuela, between 350–2200 m a.s.l. (McMullan *et al.*, 2010; Rasmussen & Collar, 2017). In the western Andes of Colombia, the species

ranges from the headwaters of the San Juan River south to Nariño Department, close to the Ecuadorian boundary (Hilty & Brown, 2001). *Malacoptila mystacalis* is monotypic (Clements *et al*., 2016), but Rasmussen & Collar (2017) suggest that the populations of southwest Colombia might merit subspecific status (*M. m. pacifica*); whether it is a valid subspecies needs further study.

We found the first Ecuadorian record of *M. mystacalis* during a fieldtrip to Drácula Reserve, in Cerro Oscuro, at the Río Blanco drainage, northwest province of Carchi (0.92329; -78.20375; 1200 m a.s.l.), on 11 August 2017. The reserve is owned by Ecominga Foundation, and is settled 3.5 km south of El Chical (Fig. 1). We walked upstream 4.5 km following the Rio Blanco course and surveyed montane forest along its slopes, where we found potential suitable habitat for the species. We performed 60-s playback trials to elicit responses, and made visual inspections with binoculars. The first observation was made at 7h49, when one individual flew around the observers and perched in an exposed branch in mid-storey. Another individual was heard calling from a stationary perch for a few seconds but was not seen. This observation was in a secondary, riparian montane forest with sparse undergrowth, about 4 m from the Rio Blanco. The bird perched motionless for 1.5 h, allowing us to obtain detailed observations of plumage characters, and to secure photographs and video footage (Fig. 2). During this time, it did not interact with its presumed pair or with any other species, and only uttered a high-pitch vocalization that was difficult to record. Finally, it moved around making short flights upslope to steep montane forest. Careful use of playback proved reliable for detecting *M. mystacalis*.

Figure 1: First record of Moustached Puffbird *Malacoptila mystacalis* in northwest Carchi province (green dot); yellow dots indicate the nearest localities in Colombia: Ricaurte (right), Guayacana (left).



A second record of the species was obtained in the same reserve at 12h35 in a trail along an upper montane forest remnant, where an individual was seen flying and apparently following a Squirrel Cuckoo *Piaya cayana*. Forest was mature and distant from the river, at 1400 m a.s.l., with minimal evidence of human impact and dense vegetation. We recorded its vocalization as well. This individual was performing short aerial sallies after insects from a single perch. A second individual was heard in the vicinity but was not seen. Our two records accounts for a total of two pairs that were separated by 250 m in straight line.

Our observations and photographic evidence prove that the individuals observed were two adult males (Restall *et al*., 2006; Rasmussen & Collar, 2017), because they showed light buff spots on the scapulars, mantle, lesser, median and greater coverts, and their breasts were rich rufous-chestnut. There is some resemblance to the nearly sympatric *M. panamensis* that occurs at lower elevations in lowlands to foothills (Hilty & Brown, 2001), up to 900 m a.s.l. in Ecuador (Freile & Restall, 2018), but also reported up to 1300 m a.s.l. by McMullan & Navarrete (2017). However, color of lower mandible is gray in *M. mystacalis*, not yellowish as in *M. panamensis* (Ridgely & Greenfield, 2001). Our photos show drabber brown upperparts and the rufous-chestnut on the breast of *M. mystacalis* extending from the throat almost to the belly (Fig. 2), in comparison with *M. panamensis*, which has much less rufous on the underparts. Audio recordings are available online (Loaiza, 2017). Our audio recordings were compared with other audio recordings of *M. mystacalis* (Athanas, 2005), and with audio recordings of the songs of *M. panamensis* (Athanas, 2002) (Fig. 3). Sonograms and oscillograms showing these differences are depicted in Fig. 4.

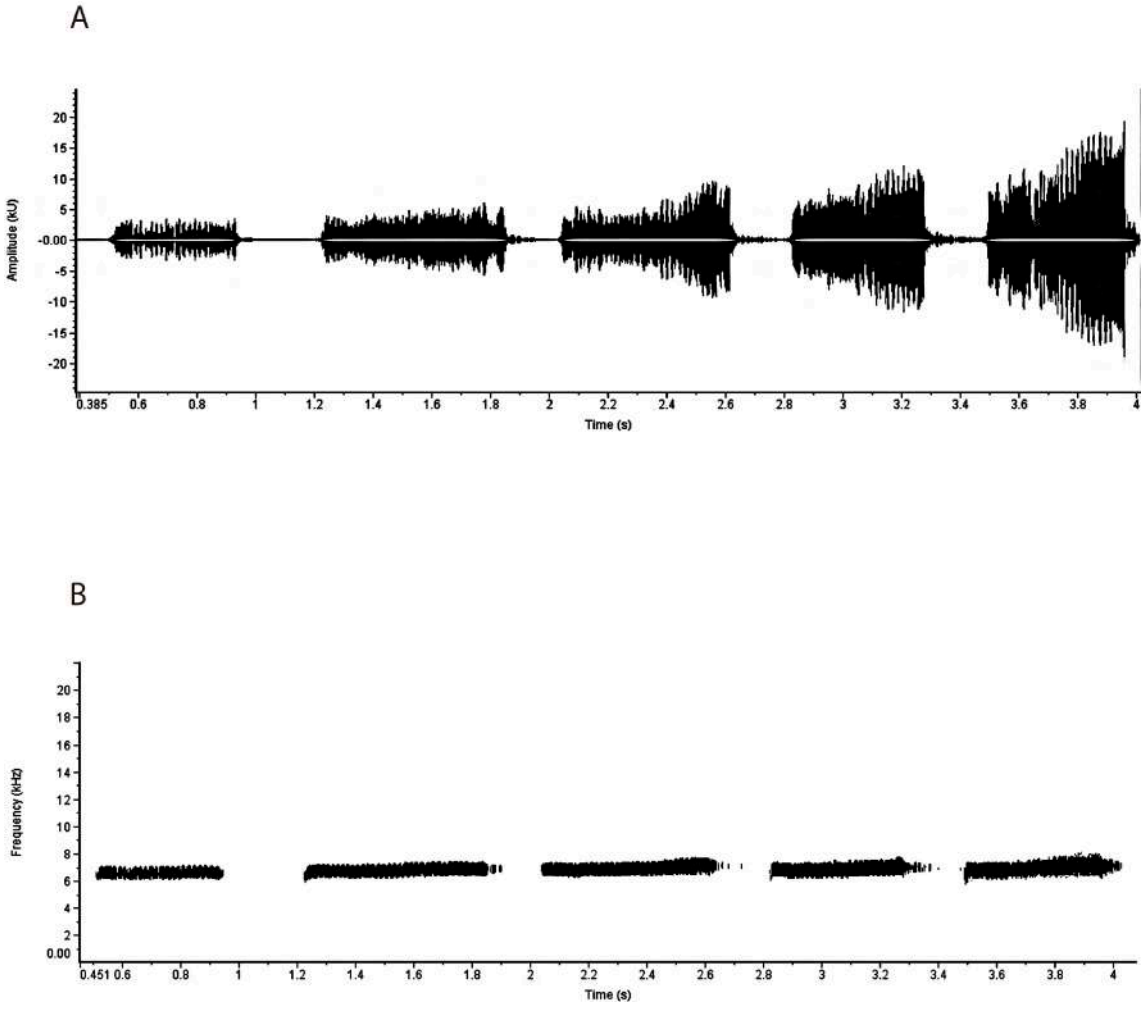
Figure 2: Adult male Moustached Puffbird *Malacoptila mystacalis* photographed on 11 August 2017 at Drácula Reserve, northwest Carchi province (Alex Boas).

Our records represent the southernmost localities for *M. mystacalis*, 39.5 km south of the nearest locality, La Planada Reserve, Nariño Department, Colombia (Fig. 1). Meyer de Schauensee & Phelps (1978) pointed out that the distribution includes eastern Peru and western Brazil, but this statement is likely mistaken since no other authors mention the presence of this species in Peru and Brazil.

Observations were made in two different habitats: a secondary forest with moderate human disturbance and mature, well-conserved forest. Parker *et al*. (1996) consider this species as having medium sensitivity to habitat disturbance, because it occurs in different ecosystems and habitat types throughout its range (Restall *et al*., 2006; Rasmussen & Collar, 2017). We suspect that the species is locally fairly common in appropriate habitats given the presence of two pairs within a linear distance of 250 m.

Our record reveals that the border area between northwestern Ecuador and southwestern Colombia has favorable conditions for this and possibly for other species. Further observations of the avifauna in the border of Ecuador and Colombia might help to clarify the status of several species listed as possibly occurring in Ecuador (Freile & Restall, 2018). Additional records of *M. mystacalis* were reported a few days later in the town of Quinshul (0.9365, -78,1862), close to El Chical (Ahlman, 2017), suggesting that there is a resident, albeit marginal, population in Ecuador. The inclusion of this species in the Ecuador bird list contributes to our knowledge about the ornithological diversity of Ecuador (Freile *et al*., 2017), and highlights the importance to pursue more detailed observations in our study area, which is currently under threat by mining concessions and future exploitation.

Figure 3: Oscillogram (A) and sonogram (B) of five syllables of the song of Moustached Puffbird *Malacoptila mystacalis* recorded by JML at Drácula Reserve, northwest Carchi, Ecuador. Song consists of short, fast, high-pitched, ascending notes. Sonogram and oscillograms prepared by Pablo Molina using Raven Pro (Cornell Lab of Ornithology, Ithaca, NY).



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We thank the staff of Ecominga Foundation for allowing us access to the Drácula Reserve in Cerro Oscuro. We really appreciate the generosity of some fellow photographers for sharing pictures of *M. panamensis* for comparative purposes. Special thanks to Cristian Martínez for providing cartographic information and René Rivas for preparing the map. Finally, we express our gratitude to two anonymous referees for their valuable feedback.

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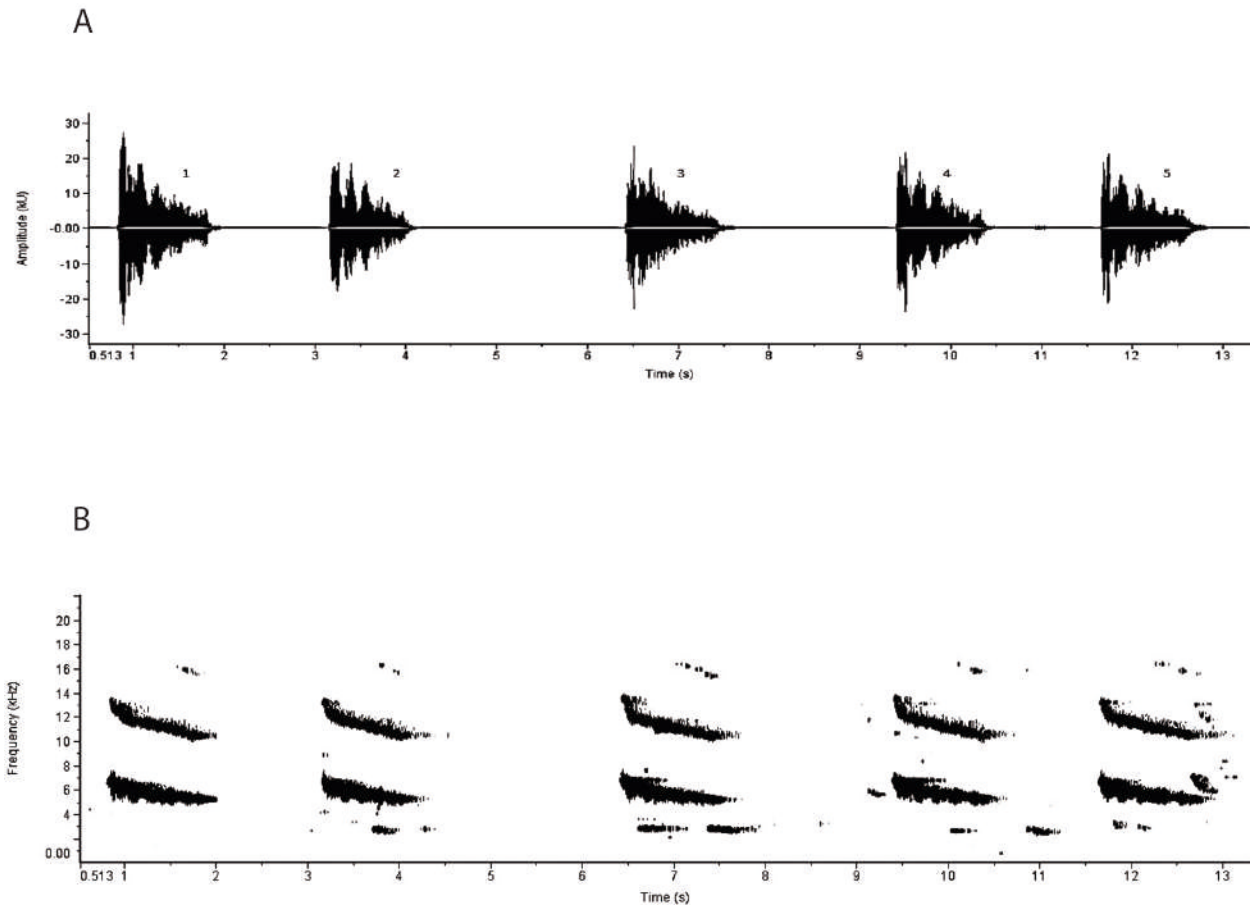
Figure 4: Sonogram (A) and oscillogram (B) of five syllables of the song of White-whiskedred Puffbird *Malacoptila panamensis* (Athanas, 2002), recorded in San Miguel de Los Bancos, Pichincha Province, northwest Ecuador. The song consists of longer, steady and lower pitched notes. Sonogram and oscillograms prepared by Pablo Molina using Raven Pro (Cornell Lab of Ornithology, Ithaca, NY).



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REVISTA ECUATORIANA DE ORNITOLOGÍA

NOTA / NOTE

First description of the nest and nestling of White-banded Tyrannulet *Mecocerculus stictopterus* (Tyrannidae)

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Resumen

Proporcionamos las primeras descripciones del nido y pichones del Tiranillo Alibandeado *Mecocerculus stictopterus*, apenas la segunda descripción de un nido de este género de pequeños atrapamoscas andinos (Tyrannidae). A principios de noviembre, cerca de Papallacta, noreste de Ecuador, encontramos un nido con pichones recién eclosionados. El nido era una copa abierta compuesta de líquenes y musgos, unida con telarañas y ensillada sobre una pequeña rama. El plumón natal de los pichones era bicolor, moteado, con un efecto camuflado de manchas de luz y sombra.

Palabras clave: Andes, biología reproductiva, historia natural, nido, pichón, Tiranillo Alibandeado.

Abstract

We provide the first descriptions of the nest and nestlings of White-banded Tyrannulet *Mecocerculus stictopterus*, only the second nest description for this genus of small Andean flycatchers (Tyrannidae). We found a single nest with newly hatched nestlings in early November, near Papallacta, northeastern Ecuador. The nest was an open cup composed of lichens and mosses, bound together with spider webs and saddled over a small branch. The natal down of the nestlings was bicolored, creating a camouflaging, sun-dappled effect.

Keywords: Andes, breeding biology, natural history.

The genus *Mecocerculus* includes six species of small, agile, flycatchers (Tyrannidae), five of which are found in Ecuador (del Hoyo *et al.*, 2016). The genus is generally Andean in distribution, from Venezuela to northern Argentina, and the nest of only a single species, White-throated Tyrannulet *M. leucophrys*, has been described (Narosky & Salvador, 1998).

White-banded Tyrannulet *M. stictopterus* is a typical member of the genus, found from western Venezuela to central Bolivia. It inhabits humid montane forests and temperate scrub near tree-line, mainly at elevations of 2300–3500 m (Ridgely & Greenfield, 2001; del Hoyo *et al.*, 2016). Apart from birds in breeding condition in January and August and a fledgling in December in Colombia (Hilty & Brown, 1986), nothing has been published regarding the reproduction of *M. stictopterus*.

On the evening of 5 November 2012, RAG observed two adult *M. stictopterus* carrying insects in their bills, and discovered a nest at the Termas Papallacta hotel (-0.3618861, -78.1501001, 3315 m a.s.l.), *c.* 2 km north of Papallacta, Napo Province. The adults were separated from similar congeners (White-tailed Tyrannulet *M. poecilocercus* and Rufous-winged Tyrannulet *M. calopterus*) by the lack of white in their tails and the lack of rufous in their wings (Freile & Restall, 2018). RAG did not examine the nest closely at that time, but noted that it contained two very small nestlings. The open cup nest was 2.4 m above the ground, built into an area of dense foliage in a 4.5 m tall tree that was growing in an isolated patch of vegetation surrounded by buildings and heavily trafficked walkways. It was supported mostly by a 1.5 cm-diameter branch, and partially by several

small side branches, bound to the substrate with spider webs. The nest itself was a fairly loose accumulation of lichens, mosses, liverworts, small sticks, and dark fibers, bound together with small amounts of spider webs. The external materials are a close approximation, in type and relative abundance, to naturally occurring epiphytes, making the nest extremely well camouflaged. The inner cup is composed predominantly of soft, spongey, light green *Usnea* sp. lichens, with a few soft, pale, flexible fibers scattered amongst the lichens. Nest measurements were: outer diameter 10.5 cm; outer height 6.5 cm; inner diameter 4.5 cm; inner depth 3.5 cm.

Figure 1: A nest, with two young nestlings, of White-banded Tyrannulet *Mecocerculus stictopterus*, 7 November 2012, Papallacta, Napo, Ecuador (H. F. Greeney).

At 9h45 on 7 November 2012, HFG flushed an adult that was brooding the nestlings in the same nest (Fig. 2). At this time, they weighed 1.6 g (Fig. 3) and 2.7 g. The nestlings had dusky orange skin, their eyes were still closed, and they were sparsely covered with natal down. The down plumes were dark grey on most of the dorsum, somewhat paler on the alar and humeral tracts. The plumes of the spinal tract were bright white at their bases, and the ventral abdominal tracts bore only short white plumes. Their feet and bills were deep orange-yellow, and the bills still bore a small white egg tooth. Their rictal flanges were slightly brighter yellow and their mouth linings were dark orange-red (Fig. 1). We again visited the nest on 16 November, at which time it still contained two nestlings (Fig. 4). The nestlings now had fairly well-developed contour feathers, and still bore most of their natal down. The bicolored down of the spinal tract created the appearance of sun-dappled shadows, presumably helping to camouflage the nestlings. At 13h30 the nestlings weighed 9.8 g and 10.0 g.

During our visits to the nest, adults were fairly bold, approaching the nest to feed or brood the nestlings while observers were less than 2 m away, in plain view. Both adults arrived at the nest carrying multiple small arthropods that included a high number of small lepidopteran larvae (especially Geometridae). Other items identified included adult crane flies (Tipulidae), spiders, and adult Lepidoptera.

The nest of *M. stictopterus* described here closely matches the limited information available for the only congener with a described nest, *M. leucophrys*, including nest placement atop a horizontal branch and the use of spider webs to bind nesting material (Narosky & Salvador, 1998). As currently defined, *Mecocerculus* is likely polyphyletic (Lanyon, 1988), and the relationships of its current members to other genera are uncertain (Remsen *et al.*, 2018). As such, detailed comparisons with the nests of other genera are somewhat premature. The eggs of *M. stictopterus* await discovery and description.

Figure 2: Adult White-banded Tyrannulet *Mecocerculus stictopterus* brooding two young nestlings, 7 November 2012, Papallacta, Napo, Ecuador (H. F. Greeney).

Figure 3: Young nestling (*c.*2 days old) of White-banded Tyrannulet *Mecocerculus stictopterus*, 7 November 2012, Papallacta, Napo, Ecuador (H. F. Greeney).

Figure 4: Mid-aged nestlings (*c.*11 days old) of White-banded Tyrannulet *Mecocerculus stictopterus*, 16 November 2012, Papallacta, Napo, Ecuador (H. F. Greeney).

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REVISTA ECUATORIANA DE ORNITOLOGÍA

ARTÍCULO/ARTICLE

The nest, eggs, and nestling of Coopmans's Elaenia *Elaenia brachyptera* (Tyrannidae)

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Resumen

Proporcionamos las primeras descripciones del nido, huevos y pichón de la Elenia de Coopmans *Elaenia brachyptera* provenientes de las estribaciones del noreste de Ecuador. Describimos 7 nidos activos, 10 huevos y un polluelo de mediana edad. Los nidos son tazas abiertas, tejidas de fibras y raicillas pálidas y flexibles, decoradas externamente con varios materiales, organizados flojamente. Los nidos se ubicaron en pequeños retoños dentro de llanuras aluviales planas y rocosas. La colocación y la arquitectura del nido hacen que sea difícil diferenciarlos de materiales acumulados de forma natural por las inundaciones periódicas. El tamaño de puesta varió de 1–2 huevos y estimamos que el periodo de incubación duró 15–16 días. Los huevos son típicos del género, blanco-cremosos con pequeñas manchas canela y púrpura pálido (lavanda) concentradas en el extremo más grande. Proporcionamos también una revisión exhaustiva de la literatura publicada sobre los nidos, huevos o ecología reproductiva del género *Elaenia*, lo cual incluye estudios sobre 30 de los 46 taxones actualmente reconocidos.

Palabras clave: Biología reproductiva, estribaciones andinas, historia natural, Passeriformes.

Abstract

We provide the first descriptions of the nest, eggs, and nestling of Coopmans's Elaenia *Elaenia brachyptera* from the foothills of northeastern Ecuador. We describe 7 active nests, 10 eggs, and 1 mid-aged nestling. Nests are open cups, woven of flexible, pale fibers and rootlets, externally decorated with various loosely-arranged materials. They are placed in small saplings within flat, rocky, river floodplains. Nest placement and architecture make nests difficult to distinguish from naturally accumulated materials left behind by periodic flooding. Clutch size ranged from 1–2 eggs and we estimate incubation to last 15–16 days. Eggs are typical of the genus, buffy to creamy white with small cinnamon and lavender spots and blotches concentrated at the larger end. We also provide a comprehensive review of published literature on the nests, eggs, and breeding ecology for the genus *Elaenia*, including studies on 30 of the 46 currently recognized taxa.

Keywords: Andean foothills, breeding biology, natural history, Passeriformes.

INTRODUCTION

The genus *Elaenia* contains between 19 and 22 species (Lanyon, 1988; del Hoyo & Collar, 2016; Remsen *et al*., 2018), encompassing up to 46 subspecies, that are distributed from Mexico and the Caribbean to the southern tip of South America (del Hoyo *et al*., 2018b). Compared to many groups of Neotropical flycatchers (Heming *et al*., 2013), the breeding biology of *Elaenia* is fairly well known, with descriptions of the nests and eggs available for 16 of the 19 species recognized by Banks *et al*. (1998) and Remsen *et al*. (2018). Coopmans's Elaenia *Elaenia brachyptera*, although described more than 100 years ago, has long been considered a subspecies of Lesser Elaenia *E. chiriquensis* (Cory & Hellmayr, 1927; Hilty & Brown, 1986; Ridgely & Tudor, 2009). Previously known as Short-winged Elaenia (Cory & Hellmayr, 1927), its new English name honors the late Paul Coopmans (Kirwan & Freile, 2008; Krabbe, 2008). Differences in vocal (Ridgely & Greenfield, 2001; Boesman, 2016), genetic (Rheindt *et al*., 2008, 2015), and plumage characters (Dickinson & Christidis, 2014; del Hoyo & Collar, 2016) support its elevation to species status. Coopmans's Elaenia occurs in the Andean

foothills (700–2800 m elevation), favoring semi-open woodland, river edges, and clearings (del Hoyo *et al*., 2018a). Its known distribution range includes southwest Colombia to northwest Ecuador and, separately, the foothills and adjacent lowlands of eastern Ecuador (Rheindt *et al*., 2015). Along with Brownish Elaenia *E. pelzelni* and Great Elaenia *E. dayi*, Coopmans's Elaenia has no published breeding information (del Hoyo *et al*., 2018b). Here, we provide the first description of the nest, eggs, and nestling of this poorly studied species.

METHODS

From August 2006 to May 2007, during four visits made every 2–3 months, we encountered nests at two localities along the Baeza-Lago Agrio road in the province of Napo, northeastern Ecuador: Río Salado bridge (-0.20555, -77.69055; 1290 m) and Río Malo bridge (-0.15388, -77.6425; 1270 m). We measured nest dimensions to the nearest 0.1 cm, supporting stem diameter to the nearest 0.1 mm, and nest and substrate height to the nearest 0.1 m. All means are given with ±SD.

RESULTS

Nests

We found seven active nests (Table 1) and an additional seven inactive nests that we suspect belonged to this species, based on their similarity in placement, form, and composition, and through elimination of other potential species building open cup nests in our study region, relying on the first author's experience with the nesting avifauna of this area. The nests (Figs. 1-2) were loosely woven open cups, composed predominantly of long, flexible pale fibers and rootlets. Although the nests lacked a well-differentiated internal lining, the fibers used for the interior of the cup tended to be slightly thinner and more tightly woven than material used for the exterior. Externally, the nests were lightly and loosely decorated with a wide variety of materials, including dead grasses, grass inflorescences, dead dicot leaves, small pieces of green moss, plastic string, spider egg sacs, and lepidopteran cocoons. Silk from these latter two items appeared to be used to help attach external decorations as well as to bind the nest together, especially along the rim and at points of attachment to the substrate. All nests were built in young saplings growing on flat, rocky, river islands or on similar floodplains adjacent to the river. The saplings used as substrates belonged to one of three genera: *Tessaria* (n = 5, Asteraceae), *Baccharis* (n = 5, Asteraceae), *Myrica* (n = 4, Myricaceae). Along with *Piper* (Piperaceae), these were the most common saplings growing in the frequently-flooded areas where we encountered nests. Nests were built into upright forks of 2–6 thin branches (n = 14 nests; mean = 3.7 ± 1.1 supports/nest), with branches measuring 0.5–17.1 mm in diameter (n = 51 supporting branches; mean diameter = 3.6 ± 2.6 mm). The nests were tightly attached to their substrate saplings by flexible fibers woven around the supporting stems as well as with small amounts of spider and lepidopteran silk. Nest height ranged from 0.5 m–1.7 m (n = 14; mean = 1.1 ± 0.4 m), and substrate saplings were 0.7–2.5 m tall (n = 14; mean = 1.5 ± 0.5 m). Mean dimensions of the seven active nests were: 7.9 ± 0.4 cm outer diameter; 6.2 ± 0.4 cm outer height; 5.3 ± 0.1 cm inner diameter; 4.1 ± 0.4 cm inner depth. Because of the composition, loose external attachment of material, and placement in riverside saplings, the nests of *E. brachyptera* had an overall appearance that was very similar to the many naturally-accumulated clumps of detritus left behind after flooding (Fig. 2).

Table 1. Nests of Coopmans's Elaenia *Elaenia brachyptera* found in the province of Napo, northeastern Ecuador, August 2006 through May 2007.

Date	Location	Contents	Comments
22 Oct	Río Salado	1 developing egg	8 Nov, 1 nestling, 12.6 g, primary pin feathers ruptured 0.5–2.5 mm
22 Oct	Río Salado	1 developing egg	
22 Oct	Río Salado	2 developing eggs	8 Nov, empty, cup slightly disturbed
8 Nov	Río Salado	2 developing eggs	
8 Nov	Río Salado	2 developing eggs	
9 Nov	Río Malo	1 undeveloped egg	23 Nov, 2 developed eggs, 1 pipped
20 Feb	Río Salado	empty but complete, adult adding moss	

Figure 1: Nests of Coopmans's Elaenia *Elaenia brachyptera*, province of Napo, Ecuador (H. F. Greeney).

Eggs

Of the six nests we observed during incubation, two contained one egg and four contained two eggs. Eggs were pale buff to off-white with cinnamon and lavender spotting and blotching, usually concentrated into an indistinct ring or cap at the larger end (Fig. 3). Ten eggs varied in length from 19.9–20.5 mm and in width from 14.6–15.1 mm (mean: 20.1±0.2 × 14.9±0.2 mm). One fresh egg weighed 2.29 g (20.0 × 14.6 mm), and one well-developed egg weighed 2.08 g (20.5 × 14.9 mm). One nest contained a single, undeveloped egg on 9 November (Table 1), that we marked with a permanent marker. Upon our return on 23 November, this egg was pipped, and would likely have hatched the following day. From this we estimate an incubation period of 15–16 days.

Figure 2: Nests of Coopmans's Elaenia *Elaenia brachyptera*, province of Napo, Ecuador (above). Naturally accumulated clumps of detritus that are scattered throughout the nesting habitat of Coopmans's Elaenia (below) (H. F. Greeney).

Nestling

We examined only a single, approximately half-grown nestling (Table 1, Fig. 4). Its eyes were fully opened, its primary feathers had emerged 0.5–2 mm from their sheaths, and contour feathers had ruptured their sheaths on all feather tracts. Feathers on the capital tract were the least developed, those on the crown and nape were just beginning to rupture from their sheaths, while those on the forecrown were unbroken. The tail feathers had emerged 1–3 mm from their sheaths. The emerging feathers of the greater and lesser wing coverts were whitish, but distinctly tinged with yellow. This suggests that immature birds can likely be distinguished from adults by their yellowish (rather than clean white) wing bars. The feathers of the upperparts were dull olive, becoming slightly warmer and browner towards the rump. The lower throat and upper breast feathers were dull olive, fading to yellow on the breast and then to white on the flanks and belly. Although difficult to tell at this age, we

suggest that immature birds will differ from adults in having a darker and more extensive olivaceous wash to the upper breast. The maxilla was dull brownish, dull yellow along the tomia and at the base of the culmen, and still bore a small white egg tooth. The mandible was similar, but overall paler, washed with yellow. The rictal flanges were inflated and bright yellow, while the mouth lining was dull yellow, slightly tinged with orange.

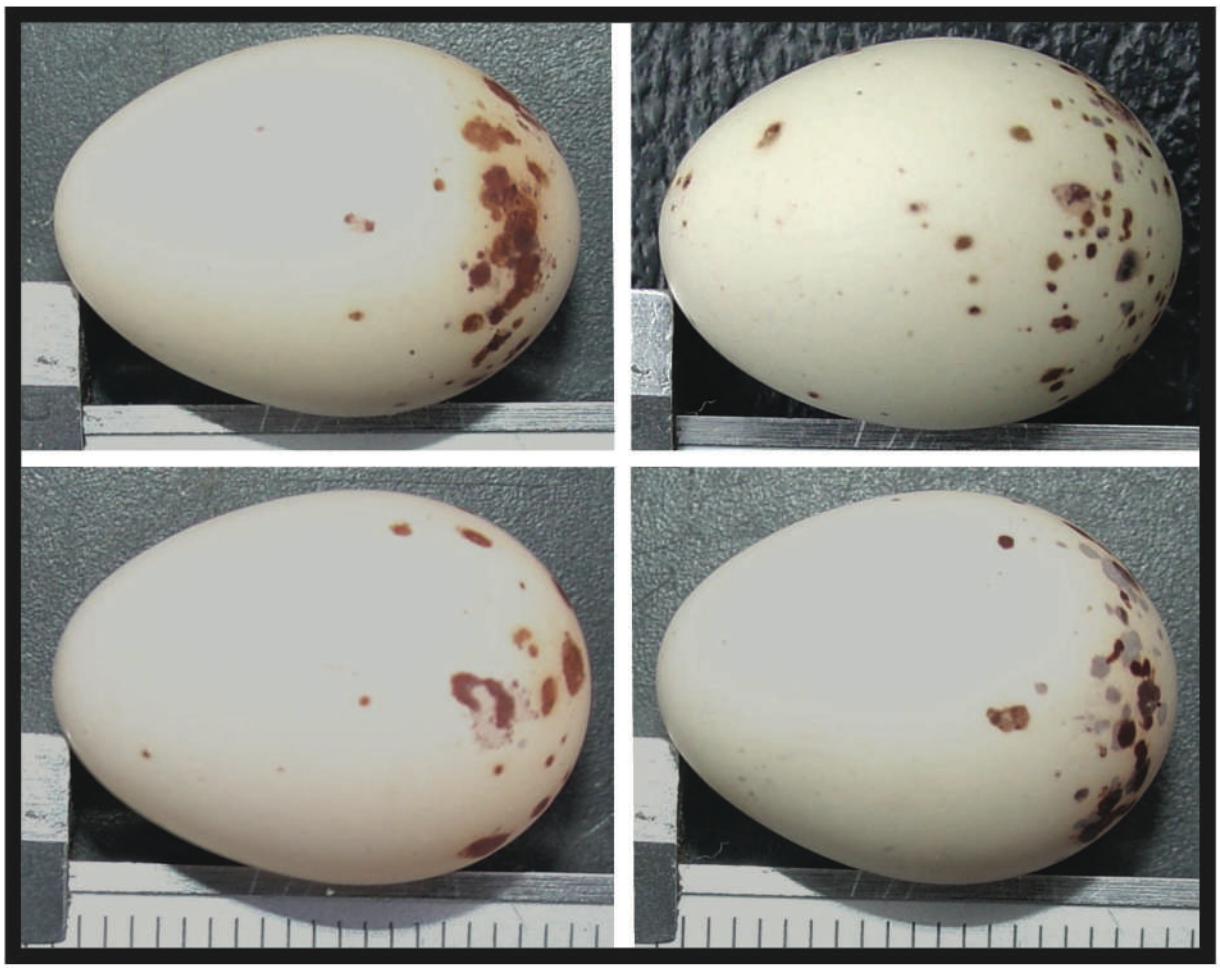

Figure 3: Eggs of Coopmans's Elaenia *Elaenia brachyptera*, province of Napo, Ecuador (H. F. Greeney).

DISCUSSION

Descriptions are now available for the nests, eggs, or breeding ecology of 17 of the 19 species, and 31 of the 46 currently recognized taxa of *Elaenia* (Banks *et al*., 1998; del Hoyo & Collar, 2016; Remsen *et al*., 2018). The published literature includes data for the following taxa: Rufous-crowned Elaenia *E. ruficeps* (Tostain, 1988; Tostain *et al*., 1992); Plain-crested Elaenia *E. cristata cristata* (von Berlepsch & Hartert, 1902; Cherrie, 1916; Haverschmidt, 1950; Hoffmann *et al*., 2009; Marini *et al*., 2009; Borges & Marini, 2010; Lopes *et al*., 2013); Mottle-backed Elaenia *E. gigas* (Stawarczyk *et al*., 2009; Greeney *et al*., 2010); two subspecies of Highland Elaenia: *E. obscura obscura* (Hartert & Venturi, 1909; Smyth, 1928; Narosky & Salvador, 1998; de la Peña, 2001) and *E. o. sordida* (Nehrkorn, 1899; von Ihering, 1900; Lopes *et al*., 2013); Slaty Elaenia *E. strepera* (Hartert & Venturi, 1909; Narosky & Salvador, 1998; de la Peña, 1999; Auer *et al*., 2007); four subspecies of Yellow-bellied Elaenia: *E. flavogaster flavogaster* (Euler, 1867, 1900; Sclater & Salvin, 1879; Wells, 1886; Nehrkorn, 1899; von Ihering, 1900; von Berlepsch & Hartert, 1902; Hartert & Venturi, 1909; Chubb, 1910; Cherrie, 1916; Bond, 1928; Smyth, 1928; Snethlage, 1935; Belcher & Smooker, 1937; Hellebrekers, 1942; Miller, 1963; Snow & Snow, 1964; Haverschmidt, 1968; Oniki, 1986; ffrench, 1991; Davis, 1993; de Andrade, 1996; Narosky & Salvador, 1998; Chatellenaz & Ferraro, 2000; Buzzetti & Silva, 2008; Pereira & Melo, 2009; Lopes *et al*., 2013; Hayes, 2014); *E. f. subpagana* (Cherrie, 1890; Carriker, 1910; Peck, 1910; Stone, 1918; Hallinan, 1924; Skutch, 1950, 1951, 1953; Amadon & Eckleberry, 1955; Skutch, 1960, 1985; Howell & Webb,

1995; de Andrade, 1996); *E. f. pallididorsalis* (Stone, 1918; Wetmore, 1972; Ricklefs, 1976) and *E. f. semipagana* (Taczanowski, 1884); *E. parvirostris* (Barrows, 1883; von Berlepsch & Hartert, 1902; Hartert & Venturi, 1909; Cherrie, 1916; Serié & Smyth, 1923; Smyth, 1928; de la Peña, 1987, 1999; Darrieu *et al*., 1988; Narosky & Salvador, 1998; Buzzetti & Silva, 2008; Hayes, 2014); Large Elaenia *E. spectabilis* (Schönwetter, 1967; de la Peña, 1987, 1995; Narosky & Salvador, 1998; Chatellenaz & Ferraro, 2000; di Giacomo, 2005; Hoffmann & Krügel, 2007); Noronha Elaenia *E. ridleyana* (Oren, 1982); two subspecies of Lesser Elaenia: *E. chiriquensis chiriquensis* (Skutch, 1945, 1951; Blake, 1956; Skutch, 1960; Dickerman, 1971; Ricklefs, 1976, 1977) and *E. c. albivertex* (von Berlepsch & Hartert, 1902; Belcher & Smooker, 1937; Munves, 1975; ffrench, 1991; Narosky & Salvador, 1998; Medeiros & Marini, 2007; de Paiva, 2008; Pereira & Melo, 2009; Borges & Marini, 2010; Lopes *et al*., 2013); Coopmans's Elaenia *E. brachyptera* (this study); Olivaceous Elaenia *E. mesoleuca* (Nehrkorn, 1899; von Ihering, 1900; Hartert & Venturi, 1909; Narosky & Salvador, 1998; Hayes, 2014); Sierran Elaenia *E. pallatangae intensa* (Taczanowski, 1884; Londoño, 2014); three subspecies of White-crested Elaenia: *E. albiceps albiceps* (Allen, 1893; Schönwetter, 1979); *E. a. chilensis* (Oustalet, 1891; von Ihering, 1900; Oates & Reid, 1903; Gibson, 1918; Smyth, 1928; Hellmayr, 1932; Reynolds, 1934; Johnson, 1965; Johnson & Goodall, 1967; Schönwetter, 1979; de la Peña, 1987; Narosky & Salvador, 1998; Ojeda & Trejo, 2002; Willson *et al*., 2005; Mella & Loutit, 2007); and *E. a. modesta* (Taczanowski, 1884; Nehrkorn, 1899); three subspecies of Mountain Elaenia: *E. frantzii frantzii* (Skutch, 1951; Blake, 1956; Skutch, 1967); *E. f. pudica* (Sclater & Salvin, 1879; Oates & Reid, 1903; Miller, 1963; Calderón-Leytón, 2002) and *E. f. ultima* (Howell & Webb, 1995); five subspecies of Caribbean Elaenia: *E. martinica martinica* (Verrill, 1892; Oates & Reid, 1903; Bond, 1941); *E. m. caymanensis* (Diamond, 1980); *E. m. riisii* (Schönwetter, 1979); *E. m. barbadensis* (Schönwetter, 1979) and *E. m. remota* (Howell & Webb, 1995); and two subspecies of Greater Antillean Elaenia *E. fallax fallax* (Bond, 1943; Schönwetter, 1979) and *E. f. cherriei* (Bond, 1943).

With respect to basic nest form (open-cup), as well as egg form and coloration, information provided herein for *E. brachyptera* is clearly well-aligned with previous descriptions for the genus (see above). Similarly, a mean clutch size of 1.7 (n = 6 clutches; Table 1) follows general latitudinal trends towards reduced clutch size nearer the equator both within the genus *Elaenia* and for birds in general (Patten, 2007; Jetz *et al*., 2008). The resemblance of nests to flood-accumulated detritus has not been remarked upon for other species of *Elaenia*, and it is not known if the nesting of *E. brachyptera* is restricted to river floodplains. We encourage additional nest descriptions for this species, whose breeding remains unknown from other portions of its range (del Hoyo *et al*., 2018a). Testing the validity and effectiveness of this interesting form of mimetic nest crypsis will no doubt provide interesting insights into the species' natural history.

Figure 4: Mid-aged nestling of Coopmans's Elaenia *Elaenia brachyptera*, 8 November 2006, province of Napo, Ecuador (H. F. Greeney).

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REVISTA ECUATORIANA DE ORNITOLOGÍA

ARTÍCULO/ARTICLE

Fourth report of the Committee for Ecuadorian Records in Ornithology (CERO) and a revision of undocumented and erroneous records in the literature

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Cuarto reporte del Comité Ecuatoriano de Registros Ornitológicos (CERO) y una revisión de registros indocumentados o erróneos en la literatura

Resumen

Presentamos nuevos registros de distribución de aves del Ecuador que han sido enviados al Comité Ecuatoriano de Registros Ornitológicos (CERO) entre septiembre 2015 y julio 2017. Incluimos reportes de cuatro especies nuevas para Ecuador (*Plegadis ridgwayi, Cathartes burrovianus, Malacoptila mystacalis, Vireo gilvus*), dos especies nuevas para Galápagos (*Calidris pugnax, Larosterna inca*), cinco especies con primera documentación en Ecuador (*Fregata minor, Syrigma sibilatrix, Calidris pugnax, Larus belcheri, Sternula antillarum*), extensiones considerables de distribución de ocho especies (*Anas bahamensis, Fregata* sp., *Jabiru mycteria, Phimosus infuscatus, Caracara cheriway, Larus dominicanus, Chloroceryle aenea, Sturnella militaris*), nuevos reportes de ocho especies raras (*Anhima cornuta, Mustelirallus albicollis, Larus argentatus, Larosterna inca, Myrmoborus lugubris, Machetornis rixosa, Progne elegans, Conirostrum bicolor*) y registros adicionales de *Nothoprocta curvirostris* y *Tyrannus tyrannus*. Presentamos el primer registro en Ecuador de tres subespecies (*Tolmomyias sulphurescens insignis, Myiarchus swainsoni phaenotus* y *Oxyura jamaicensis andina*, aunque la validez taxonómica de esta última sea debatida). Además, discutimos la identidad subespecífica de *Petrochelidon pyrrhonota* en el país. Finalmente, invalidamos registros previos de 43 especies del Ecuador continental y 6 especies de Galápagos que aparecen en distintas publicaciones, y rechazamos un registro mediante sensores remotos de *Cypseloides niger*. CERO revisa y actualiza el listado nacional de aves, que en la actualidad alcanza las 1690 especies (1632 confirmadas y documentadas, 58 no documentadas).

Palabras clave: nuevos registros, extensiones de distribución.

Abstract

We present new distributional records of birds in Ecuador submitted to the Committee for Ecuadorian Records in Ornithology (CERO) from September 2015 through July 2017. This report includes four species new to Ecuador (*Plegadis ridgwayi, Cathartes burrovianus, Malacoptila mystacalis, Vireo gilvus*), two species new to Galapagos (*Calidris pugnax, Larosterna inca*), five species with first documented country records (*Fregata minor, Syrigma sibilatrix, Calidris pugnax, Larus belcheri, Sternula antillarum*), remarkable range extensions for eight species (*Anas bahamensis, Fregata* sp., *Jabiru mycteria, Phimosus infuscatus, Caracara cheriway, Larus dominicanus, Chloroceryle aenea, Sturnella militaris*), new records of eight rare species (*Anhima cornuta, Mustelirallus albicollis, Larus argentatus, Larosterna inca, Myrmoborus lugubris, Machetornis rixosa, Progne elegans, Conirostrum bicolor*) and new records of *Nothoprocta curvirostris* and *Tyrannus tyrannus*. We present the first Ecuadorian records of three subspecies (*Tolmomyias sulphurescens insignis, Myiarchus swainsoni phaenotus, Oxyura jamaicensis andina*, although the taxonomic validity of the latter is debated). Further we discuss the subspecific identity of *Petrochelidon pyrrhonota* in Ecuador. Finally, we invalidate previous records

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of 43 species for mainland Ecuador and 6 species for Galapagos, as published in different sources, and reject a remote-sensing record of *Cypseloides niger*. CERO revises and updates the country bird list, which currently stands at 1690 species (1632 confirmed and documented; 58 undocumented).

Keywords: new country records, range extensions.

INTRODUCTION

The growing number of observers publishing field data on the birds of Ecuador and the tremendous amount of information permanently uploaded to online archives (www.macaulay.org, www.xeno-canto.org, www.ebird.org, www.hbw.com) and social media (Davies *et al.,* 2016) are generating an ever-increasing vortex of knowledge about the taxonomy, distribution, ecology, and status of Ecuadorian birds. The Committee for Ecuadorian Records in Ornithology (CERO) was created with the purpose of revising and updating the country's bird list, and to revise novel records. CERO aims to keep the pace with the unending accumulation of field data by revising relevant records uploaded in the aforementioned websites and some social media, or records submitted directly by contributing observers. Furthermore, CERO seeks to contribute to this growing body of information by periodically updating, revising and publishing the 'official checklist of birds of Ecuador' on its webpage: www.ceroecuador.wordpress.com.

Published bird lists for Ecuador and the Galapagos Islands, including the first ever published (Ridgway, 1896; Chapman, 1926), have included species with unconfirmed records in the country. Subsequent monographs, field guides, and checklists (Swarth, 1931; Harris, 1973; Ortiz-Crespo & Valarezo-Delgado, 1975; Butler, 1979; Ortiz- Crespo et al., 1990; Castro & Phillips, 1996; Ridgely *et al*., 1998; Swash & Still, 2000; Ridgely & Greenfield, 2001; Wiedenfeld, 2006; McMullan & Navarrete, 2013; Freile & Restall, 2018) have incorporated new records, including unproven ones, and have also maintained earlier uncertain records without debate. Recently, Ridgely & Greenfield (2001) and Wiedenfeld (2006) made a thorough revision of dubious records, providing insightful discussions on the validity of many of them.

With three reports published to date, CERO has updated and revised the national checklist of birds with data reported by several observers from February 1997 through March 2014 (Freile *et al.,* 2013; Nilsson *et al.,* 2014; Freile *et al*., 2017). To date, CERO has reported 22 new country records (19 species and 3 subspecies), first documented records for 22 species, and significant range extensions for 90 species. Likewise, CERO has removed seven species from the country's bird list due to previous identification or labeling errors (Nilsson et al., 2014; Freile *et al.,* 2017).

This report presents new records received by CERO since its third report, and makes a thorough revision of all checklists published to date, in order to depurate the country list. We also review recent records of species reported for the first time in Ecuador or species with first vouchers. This revision allows us to obtain a validated, official checklist, which currently stands at 1690 species (58 undocumented) (Freile *et al.,* 2018), including the results presented in this fourth report.

METHODS

CERO receives and reviews records of rare species, new country records, and/or significant range extensions, voluntarily submitted by their authors through CERO's webpage and e-mail address (cero.ecuador@gmail.com). Further, CERO regularly navigates through websites and social media to search for 'rarities,' and requests observers to submit their records or to authorize CERO to evaluate them.

The national country checklist and a list of 'most-wanted' species are published in CERO webpage, allowing observers to consult the status of the birds of Ecuador (https://ceroecuador.wordpress.com). New country records are evaluated and accepted by unanimous vote, while first documentation, undocumented records of previous hypothetical species, and major range extensions are accepted by majority vote.

Most sound-recordings were deposited by observers at xeno-canto online archive (www.xeno-canto.org), for which a XC code and appropriate citation are provided in the species accounts. Photographs are deposited at

CERO archives, some published online, and the most relevant are published in this report. Locality coordinates and elevation are provided in Table 1. New country records are marked with an asterisk in the species accounts. Taxonomy and species sequence follow February 2018 version of the South American Classification Committee, SACC (Remsen *et al.,* 2018).

CERO reviewed 36 reports submitted from September 2015 through November 2017, of records obtained by several observers between January 2004 and November 2017, using different survey protocols and documentation techniques. We also made a thorough bibliographic revision of undocumented or likely erroneous records (Tables 2-5).

RESULTS AND DISCUSSION

Horned Screamer *Anhima cornuta*
Los Ríos Province, Puebloviejo, San Juan, ruta San Juan-Vinces, 17 December 2011–12 January 2015, D. Martínez and P. Gastezzi.

Cotopaxi Province, La Libertad near La Maná, October 2014, Xavier Zurita Freire (photo).

Singles, pairs, and small groups were observed at five different sites around Puebloviejo and San Juan towns, and along the road from San Juan to Vinces (Martínez & Gastezzi, 2014). These authors further observed total of 52–57 individuals at two additional sites near Puebloviejo. The second record, at La Libertad, involves a single bird, recently injured by a shotgun, taken to a local veterinary clinic (Fig. 4a).

These records are the first for the province of Los Ríos (Martínez & Gastezzi, 2014) and for the lowlands of Cotopaxi (Freile & Restall, 2018). This recent expansion of the known range of *A. cornuta* is most likely a reflection of incomplete sampling of the avifauna of these little explored regions, not a result of recent range expansion.

White-cheeked Pintail *Anas bahamensis*
Carchi Province, laguna El Salado, near San Gabriel, 9 July 2017, W. Arteaga-Chávez and D. Togán (photo).

Three adult birds were observed swimming in open water with a flock of Blue-winged Teal *Anas discors* (Fig. 3a). Additionally, a solitary individual was recently observed at Yaguarcocha, Imbabura Province, on 22 February 2018 (K. Terán & P. Imbaquingo, unpubl.). The number of records of this species from the Andes has steadily increased in recent years (Freile *et al*., 2013; see several recent sightings in https://ebird.org).

Ruddy Duck *Oxyura jamaicensis andina*
Imbabura Province, laguna de Yaguarcocha, 4-6 September 2016, W. Arteaga-Chávez, D. Chulde, A. Andi, P. Molina, F. Cifuentes, E. Obando, S. Guerra and L. Calapi (photo).

Three males with white cheeks were observed swimming, resting, and preening in open water (Fig. 5a), not joining groups of the locally common subspecies *O. jamaicensis ferruginea*. Other records include one individual seen by W. Arteaga-Chávez at Lago San Pablo and two at Yaguarcocha, Imbabura Province, on 7 April 2018. Previous records were obtained by J. Nilsson and R. Ahlman at San Pablo in 2016 (Ahlman, 2016b) and further south, at Laguna Micacocha by R. Ahlman in April 2017 (Ahlman, 2017b).

White cheeks, variable individually, make these individuals assignable to the subspecies *O. j. andina*, not previously recorded in Ecuador (Ridgely & Greenfield, 2001; McMullan & Navarrete, 2017, Arteaga-Chávez, in press.; but see below). It seems likely that this form is spreading south from central Colombia, but it remains to be determined if a local population is established (or establishing) in northern Ecuador, or if these individuals were only vagrants. The distribution of *O. jamaicensis andina* in Ecuador is currently under revision by W. Arteaga-Chávez (in press.). Co-occurrence of black-headed individuals assignable to *O. j. ferruginea* and white-cheeked ones assignable to *O. j. andina* in two localities in northern Ecuador is not novel because similar patterns are regular in the Central and Eastern Andes of Colombia (Fjeldså, 1986; Donegan *et al*., 2015), but still remarkable given the controversial taxonomic status of both forms (Madge & Burn, 1988; Livezey, 1995).

Table 1: Localities of records submitted to the Committee for Ecuadorian Records in Ornithology (CERO) between September 2015 and November 2017. Asterisk indicates additional localities mentioned in the text accounts and tables.

Locality, province	Coordinates	Elevation (m)
Ballesteros, Orellana	-0.9644/ -75.208	190
Bellavista Reserve, Pichincha	-0.01518/ -78.6889	2250
Borja bypass, Napo*	0.416/ -77.833	c. 1600
Cerro Brujo, Galápagos	-0.7641/ -89.45841	0
Cerro Oscuro, near Chical, Carchi	0.94442/ -78.19845	1200–1400
Charco Vicente, Esmeraldas*	0.691/ -78.916	150
Chilmá Bajo, Carchi	0.86667/ -78.075	2070
Daphne Major, Galápagos	-0.4248/ -90.3671	0
Ecuasal Mar Bravo, Santa Elena	-2.2167/ -80.967	0
El Carmen de Putumayo, Sucumbíos	0.118/ -75.856	220
Derna, Orellana*	-0.4432/ -76.6713	230
Gardner Bay, Galápagos	-1.34406/ -89.6494	0
Guacamayu River, Orellana*	-0.4613/ -76.8558	240
Gualaquiza, Morona Santiago*	-3.38972/ -78.5719	c. 900
Guango Lodge, Napo	-0.37097/ -78.0816	2000
Jardín Botánico de Quito, Pichincha	-0.183/ -78.483	2800
Laguna El Salado, Carchi	0.5827/ -77.7886	2780
Laguna Yaguarcocha, Imbabura	0.3666/ -78.0833	2200
La Bonita, below, Sucumbíos*	0.46102/ -77.5654	1800
La Libertad, near La Maná, Cotopaxi	-0.9408/ -79.2236	c. 220
La Selva, Sucumbíos	-0.416/ -76.133	250
Las Peñas, 10 km N, Esmeraldas	1.0996/ -79.15205	0
Limpiopungo, Pichincha	-0.6428/ -78.4848	3890
Manta, Manabí, 3–5 km W, Manabí	-1.1012/ -81.0205	0
Miazi, Zamora Chinchipe*	-4.2874/ -78.6350	900
Micacocha, Napo*	-0.5455/ -78.2118	3900
Mindo, Pichincha*	-0.054/ -78.7786	1250
Nuevo Rocafuerte (river islands), Orellana	-0.92105/ -75.3866	190
Pedernales-San Vicente road, Manabí	0.0288/ -80.0922	4
Playa de Oro, Esmeraldas*	0.84847/ -78.7822	c. 150
Puebloviejo, Los Ríos	-1.5854/ -79.5822	20
Puerto Baquerizo Moreno, Galápagos	-0.93805/ -89.6104	0
Punta Cormorant, Galápagos	-1.22744/ -90.4257	0
Punta Moreno, Galápagos	-0.6718/ -91.2191	0
Punta Pitt, Galápagos	-0.6954/ -89.26737	0
Punta Suárez, Galápagos*	-1.3699/ -89.7340	0
Río Napo, island near Añangu, Orellana	-0.51863/ -76.3785	220
Río Topo, Tungurahua*	-1.4/ -78.2	c. 1600
Roca Montañita, Santa Elena*	-1.81926/ -80.7615	0
Ruta San Juan-Vinces, Los Ríos	-1.66705/ -79.6049	20
Sacha Lodge, Sucumbíos	-0.47506/ -76.459	230
Same, Esmeraldas*	0.8491/ -79.9269	0
San Juan, Los Ríos	-1.6333/ -79.5603	10
San Lorenzo, Esmeraldas*	1.3026/ -78.8548	0
San Vicente on Río Napo, Orellana	-0.6946/ -75.587	200
Sani Isla, Orellana*	-0.47708/ -76.2943	200
Santa Rosa, Santa Elena	-2.211/ -80.948	0
Tababela Airport, Pichincha	-0.1/ -78.35	2350
Teleférico de Quito, Pichincha	-0.18661/ -78.5371	4050
Tinalandia, Santo Domingo de los Tsáchilas*	-0.2975/ -79.0517	650
Tiputini, Orellana	-0.8078/ -75.523	200
Tipischa (1.3 km N), Sucumbíos	0.283/ -76.167	230
Tufiño, Carchi	0.8003/ -77.8553	2954
Valladolid, Zamora Chinchipe*	-4.53972/ -79.1327	c. 1600
Vinillos, Napo	-0.605/ -77.8416	2100
Wildsumaco, Napo*	-0.676/ -77.601	1600
Zamora, Zamora Chinchipe*	-4.06208/ -78.9486	c. 900

Variation in cheek pattern is considerable throughout the range of *O. j. andina* (del Hoyo *et al*., 2018), suggesting that this region is an old, wide hybrid zone (a hybrid swarm; Fjeldså, 1986; Livezey, 1995). Consequently, the validity of subspecies *O. j. andina* has been questioned. Some authors consider it a valid subspecies of *O. jamaicensis* (Clements *et al*., 2017), while others regard it as a hybrid that justifies lumping *O. jamaicensis* and *O. ferruginea* as a single species, because *andina* acts as an intergraded form between white-cheeked *jamaicensis* and black-headed *ferruginea* (Fjeldså, 1986; McCracken & Sorenson, 2005; Muñoz-Fuentes *et al*., 2013; Donegan *et al*., 2015). Conversely, other authors suggest separating *O. jamaicensis* and *O. ferruginea*, but invalidate the subspecies *andina* due to its putative hybrid origin (Livezey, 1995; del Hoyo *et al*., 2018). The taxonomy of these taxa needs further clarification.

Frigatebird *Fregata* sp.
Orellana Province, close to San Vicente on Río Napo, 5 September 2016, J. Nilsson (photo).

One adult male was observed soaring 50–500 m above ground, c. 1 hour by motorized canoe west of Tiputini (Fig. 3b). Identification to species was not possible due to light conditions and distance to the bird. This represents the first documented record of a frigatebird from the Ecuadorian Amazon, but there is an additional sight record of another unidentified frigatebird from 2010 by José Illanes (pers. comm.), upriver from Sani Isla.

Great Frigatebird *Fregata minor*
Manabí Province, 3–5 km offshore Manta, 22 March 2016, S. Howell, C. Parliament, D. Parliament, J. Gaetzi, P. Vranicar, F. Schmitt (photo).

One immature (third year) bird was observed flying low overhead (Fig. 2a). One observer (S. Howell) has extensive experience with frigatebird identification, and photographs allowed a careful study of key characters (Howell, 1994).

This represents the first documented record in continental Ecuador, with a previous sighting (31 May 1987) from Roca Montañita, Santa Elena Province (Haase, 2011). It remains plausible that the species has been overlooked in continental Ecuador given the identification difficulties (Howell, 1994). Individuals with reddish legs have been observed in the mangroves of the San Lorenzo area, Esmeraldas province (J. Freile, A. Solano-Ugalde, F. Prieto & P. Moscoso, unpubl.). Leg colour has been considered a field mark (Howell, 1994), but some individuals observed at San Lorenzo were actually reddish-legged female Magnificent Frigatebirds *Fregata magnificens*. Further study of field characters in these two species is still needed.

Jabiru *Jabiru mycteria*
Esmeraldas Province, 10 km N of Las Peñas, 21 December 2016, C. Vogt (photo).

A single bird was observed in a freshwater grassy marsh with large fern clumps (Fig. 3c). It remained standing on the ground with little movement but was flushed easily, moving large distances. After first sighting, it flew off and was seen again 2.5 km south and flushed easily once again. Seen and photographed the next day by R. Ahlman. This represents the first confirmed record from western Ecuador; there is one undocumented sighting from Manglares-Churute, Guayas Province (Freile & Restall, 2018).

Whistling Heron *Syrigma sibilatrix*
Sucumbíos Province, El Carmen de Putumayo, 18 January 2017, D. Jumbo, R. Ahlman (photo).

One adult bird observed and photographed (Fig. 2b) in open habitat; record first uploaded to eBird (Ahlman, 2017a), and later submitted to CERO by J. Freile. This represents the first documented record in Ecuador, where it was previously known from one unvouchered observation from El Puma, E of Coca, Orellana Province, along the Napo River (Mena & Jahn, 2003). There are a few more recent records, to be submitted to CERO, from the Amazon lowlands and northern Andes.

Puna Ibis *Plegadis ridgwayi
Pichincha Province, laguna de Limpiopungo, 3 January 2015, Y. Potaufeu (photo).

One adult bird was seen wading in shallow water for 2 min, making its way to a small vegetation island (Fig. 1a). It was later relocated by R. Ahlman and R. Gelis on 13 January and observed by D. Brinkhuizen, C. Vogt and other observers until 15 January 2015. This represents the first record for Ecuador, 500 km north of the northernmost records in Peru (Schulenberg *et al*., 2007; Jiménez-Gonzales, 2018).

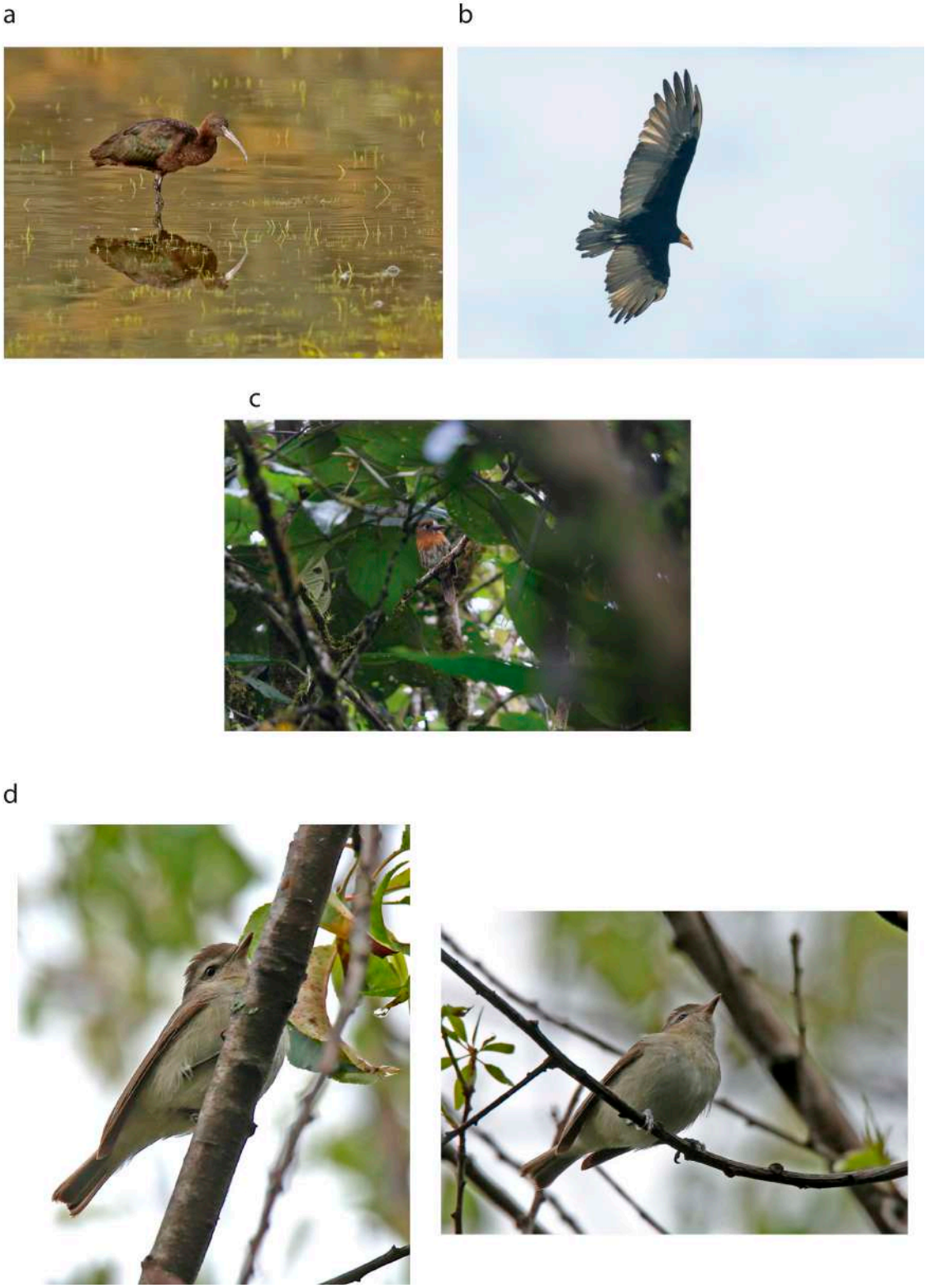

Figure 1: New country records for Ecuador. a) *Plegadis ridgwayi*, Limpiopungo, Cotopaxi Province (R. Ahlman); b) *Cathartes burrovianus*, Río Napo, Orellana Province (N. Athanas); c) *Malacoptila mystacalis*, Chical, Carchi Province (A. Boas); d) *Vireo gilvus*, Quito, Pichincha Province (R. Ahlman).

Bare-faced Ibis *Phimosus infuscatus*
Carchi Province, Chilmá Bajo, 10 March 2016, H. A. Pozo Ruano and J. M. Loaiza (photo).

A single bird was observed feeding at muddy pastureland from 10 March 2016 through 3 December 2016, often associated with Southern Lapwing *Vanellus chilensis* and Spotted Sandpiper *Actitis macularius* (Fig. 3d). This is the first record west of the Andes in Ecuador, after an increasing number of records in the northeast lowlands (Freile *et al*., 2013; Freile & Restall, 2018). The species occurs along the Cauca valley of central Colombia (McMullan & Donegan, 2014), but likely spread to northwest Carchi across the Andes in the Carchi-Nariño region. An observation of five individuals below La Bonita, Sucumbíos Province (J.M. Loaiza, J.F. Freile & P. Molina, unpubl.), on 1 February 2016, partially supports our suggestion of trans-Andean spreading.

Lesser Yellow-headed Vulture *Cathartes burrovianus
Orellana Province, Ballesteros, 30 August–4 September 2016, J. Nilsson (photo).

Orellana Province, river island near Añangu, 14 December 2016, N. Athanas (photo).

The first of these records involved at least four individuals (one adult, one juvenile, and two immatures) observed on a small river island in front of the military post at Ballesteros, in front of Nuevo Rocafuerte, and at the old airstrip east of Nuevo Rocafuerte. The second record involved one individual observed circling above a young river island near Añangu (Fig. 1b). The habitats involved in these records included the edge of mature *Cecropia* woodland, sparsely vegetated river islands, and open grassy fields bordered by secondary forest. Subsequent sightings have further documented the presence of this species in Ecuador, including two near the mouth of Guacamayu River by L. Navarrete *et al*. (Frost, 2017); and one in Derna area, 10 min down river from Coca and another individual near Añangu (Ahlman, 2017d).

Even though Tallman & Tallman (1977) reported one sighting from Limoncocha, there have been no additional observations from the Napo River area since then. Ridgely & Greenfield (2001) regarded this early observation as dubious, but habitat changes might have facilitated the species recent colonisation from neighbouring Peru along the Napo River.

Crested Caracara *Caracara cheriway*
Carchi Province, Tufiño, 16 June 2017, G. Herrera-Villareal and W. Arteaga-Chávez (photo).

Two individuals were observed for several weeks in the Ecoparque de Tufiño (Fig. 3e). The species is locally and sporadically found in the Andean valleys of northern Ecuador (Ridgely & Greenfield, 2001; Freile & Restall, 2018), but it remains to be determined if it was formerly a resident breeder that has drastically declined or if it only wanders into the northern Andean valleys (Ridgely & Greenfield, 2001). This record is also among the highest in elevation, but there are additional recent records from the northern Andes (Tellkamp, 2016, 2017; Ahlman, 2018b).

Ash-throated Crake *Mustelirallus albicollis*
Sucumbíos Province, 1.3 km N Tipishca, 10–11 December 2014, R. Ahlman and D. Brinkhuizen (audio recording).

Two birds were heard and audio-recorded in a marshy area with low grass vegetation, some open water, sparse bushes and small trees (Brinkhuizen, 2014; XC 206291). They responded to playback only at this site; trials at other sites with taller grass were unsuccessful. This is the second known locality for this species in Ecuador, where it was previously known only from Sacha Lodge, Orellana Province (Nilsson *et al*., 2014). One additional, more recent record, was obtained by R. Ahlman (*in litt*., September 2019) at El Carmen de Putumayo, province of Sucumbíos, where first recorded in May 2016. At this locality, at least two or three pairs are regularly heard within earshot.

Ruff *Calidris pugnax*
Galápagos Province, playa Cerro Brujo, San Cristóbal Island, 2 August 2016, O. Campbell (photo).

A single adult male in non-breeding plumage was observed in a saline pool with dried mud, right behind the beach, feeding alone or in loose association with Black-necked Stilt *Himantopus mexicanus* (Fig. 2c). Distance to the photographed bird was 50–75 m.

This represents the first documented record of *C. pugnax* from Galapagos and Ecuador, which was only recently published (Campbell, 2018). The only previous country record is an uncorroborated sighting in inner Guayas Province (R. Ahlman; see Freile & Restall, 2018).

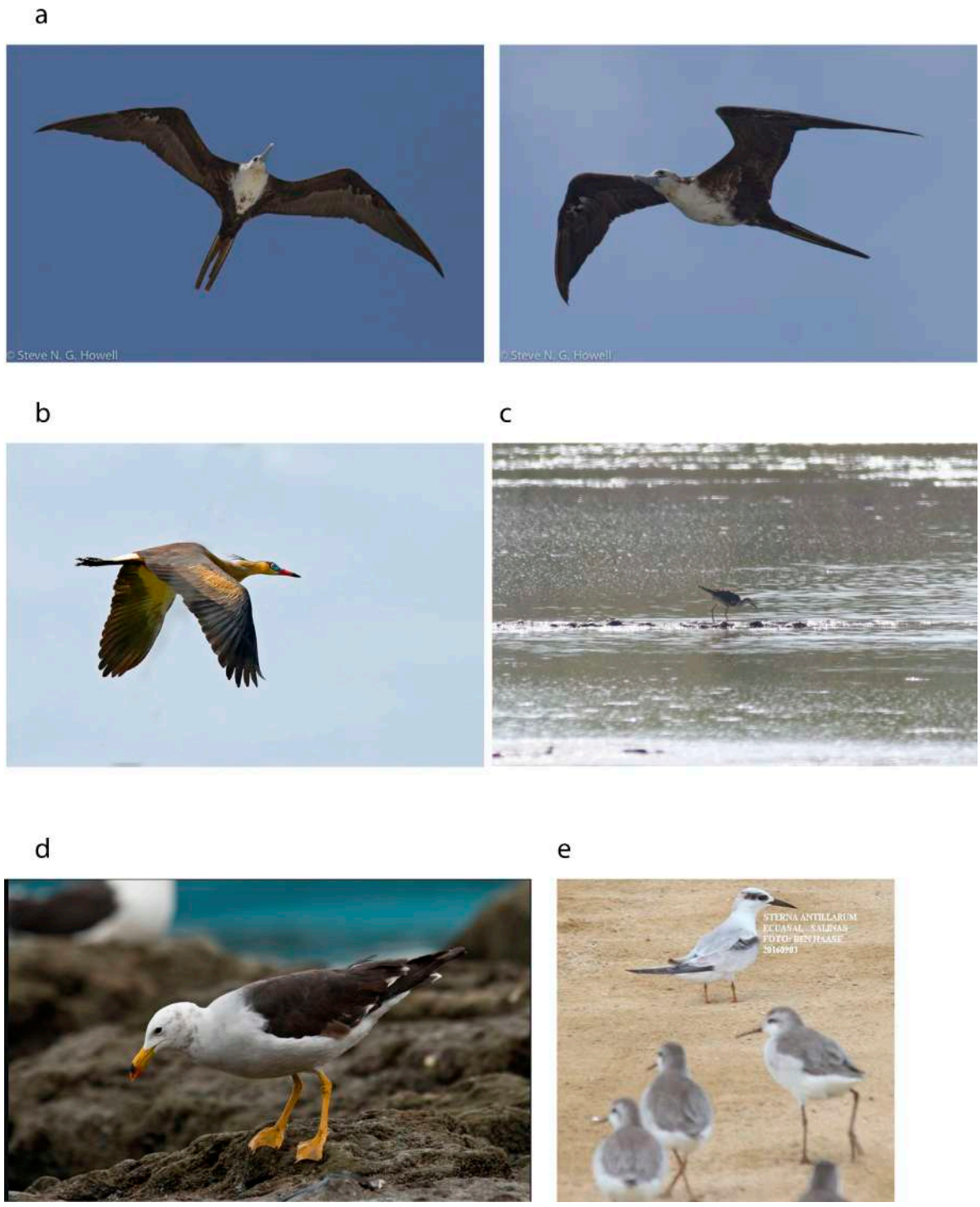

Figure 2: First documented records of species previously considered as hypothetical in Ecuador. a) *Fregata minor*, Manta, Manabí Province (S. Howell); b) *Syrigma sibilatrix*, El Carmen de Putumayo, Sucumbíos Province (R. Ahlman); c) *Calidris pugnax*, San Cristóbal, Galápagos Province (O. Campbell); d) *Larus belcheri*, Santa Rosa, Santa Elena Province (D. M. Brinkhuizen); e) *Sternula antillarum*, Mar Bravo, Santa Elena Province (B. Haase).

Belcher's Gull *Larus belcheri*
Santa Elena Province, Santa Rosa, peninsula de Santa Elena, 25 September 2015, D. M. Brinkhuizen (photo).

One bird seen foraging on a rocky shore (Fig. 2d), loosely associated with other gulls, including Kelp Gull *Larus dominicanus*. Previously published records all pertain to undocumented observations (Ridgely & Greenfield, 2001; Haase, 2011), making the Santa Rosa photographs the first vouchered record in Ecuador. There are additional, more recent, records that will be revised by CERO in due course.

Kelp Gull *Larus dominicanus*
Pichincha Province, Tababela (Quito) Airport pond, 13-22 January 2017, J. Nilsson (photo).

One adult was observed in an artificial pond (Fig. 3f), representing the first record in the Andes of Ecuador and the highest record throughout its range (Howell & Dunn, 2007).

Herring Gull *Larus argentatus*
Manabí Province, Pedernales-San Vicente road, 13 February 2017, M. Sánchez, T. Santander, E. Guevara and M. Ellis (photo).

One immature (second year) individual was observed in a shrimp pond near Pedernales (Fig. 4b). This is the third record in Ecuador and the first coastal record (Freile & Restall, 2018) of the *L. argentatus smithsonianus* subspecies, which is often regarded as a separate species (Crochet *et al*., 2002).

Inca Tern *Larosterna inca*
Galápagos Province, Daphne Major, J. C. Manosalvas and G. Jiménez-Uzcátegui; Punta Cormorant (Floreana) and Punta Moreno (Isabela), C. Carrión; Puerto Baquerizo Moreno (San Cristóbal), A. Villa; Gardner Bay (Española) and Punta Pitt (San Cristóbal), L. D. Dejean, E. Stucki, C. Larrea, D. Degel, G. Loza, C. King and S. Estupiñan (photos).

The first of these records in Galápagos involves a solitary adult seen and photographed on the rocky shores of Daphne Major in 14 August 2008, where it was seen again 3 days later (Fig. 6a). This record was published, albeit without voucher photos (Jiménez-Uzcátegui & Manosalvas, 2010). Two subsequent records were obtained by naturalist guides, first involving possibly the same bird first seen in Punta Cormorant (Floreana) and later in Punta Moreno (Isabela) on an unspecified date in 2011 by C. Carrión; and another individual seen at Puerto Baquerizo Moreno (San Cristóbal) on an unspecified date in 2015 by A. Villa (both pers. comm. to G. Jiménez-Uzcátegui).

More recently, a single bird in adult plumage was first located by L. D. Dejean when it landed on a boat's deck near Gardner Bay, Española, on 2 April 2017 (Fig. 6b). The bird remained the whole day and was later seen at other locations throughout the central and southwest islands (Punta Pitt and Puerto Baquerizo Moreno, San Cristóbal; Punta Suárez, Española; Puerto Ayora, Santa Cruz) until late April 2017. These records are the first documented for the Galápagos Archipelago, but one earlier record, supported with a photograph, is available in eBird (Megyesi, 2015). Another record, though unvouchered, is also available (Jaramillo, 2008).

Least Tern *Sternula antillarum*
Santa Elena Province, Ecuasal Mar Bravo, 3 September 2016, B. Haase (photo).

One immature was photographed (Fig. 2e) perched on a sandy ditch amongst a flock of waders. There are a few unvouchered records in coastal Ecuador between August and November (Ridgely & Greenfield, 2001; Haase, 2011). The first published photograph taken in Ecuador (B. Haase, pers. comm., 2018) appeared in Haase (2011), but it was not labeled as taken in Ecuador. The 2016 record was submitted to CERO without a supporting form, and will also be published in due course along with five additional records, three supported with photos (B. Haase, pers. comm., 2018).

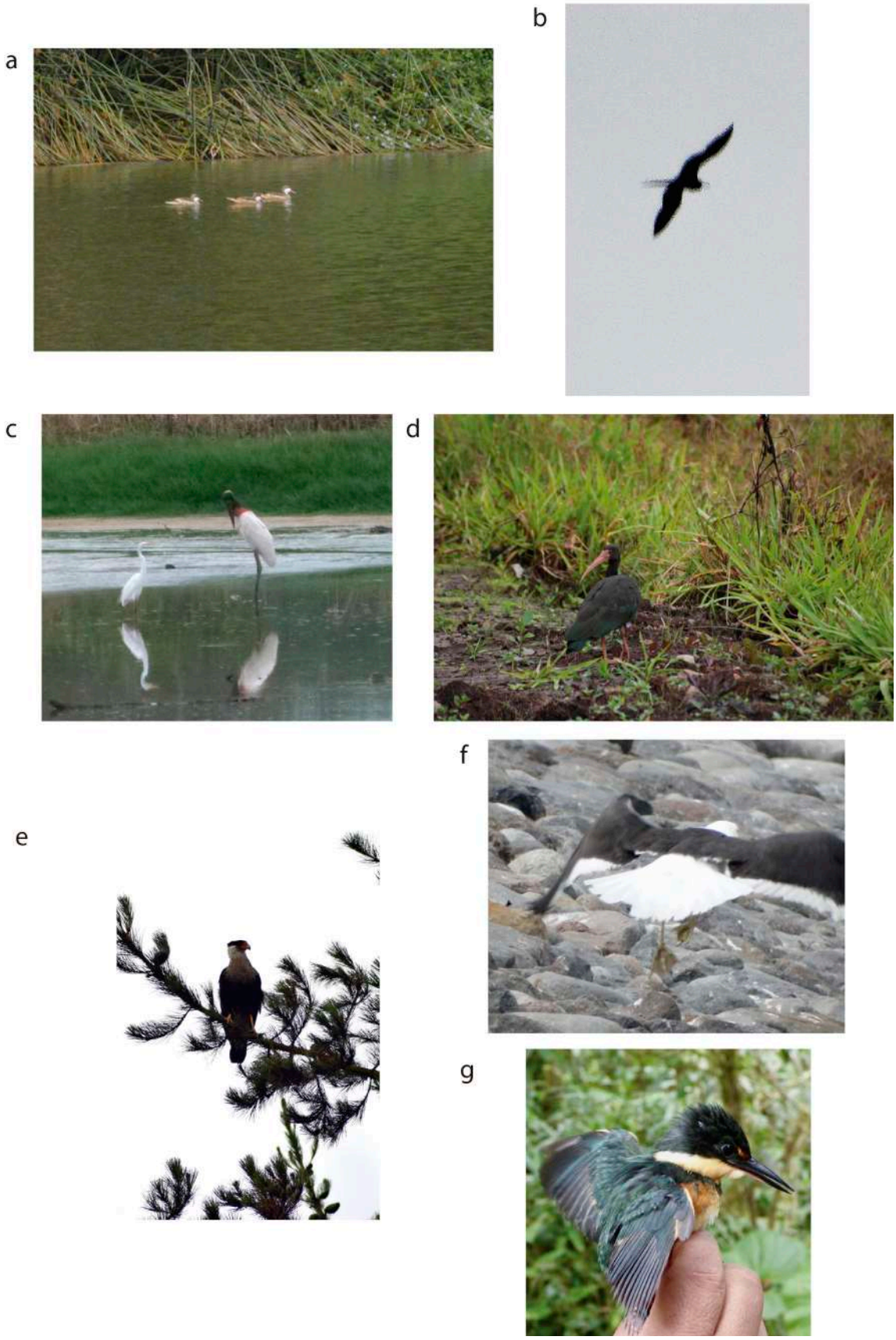

Figure 3: Major range extensions and extralimital records of birds in Ecuador. a) *Anas bahamensis*, El Salado, Carchi Province (W. Arteaga-Chávez); b) *Fregata* sp., San Vicente, Orellana Province (J. Nilsson); c) *Jabiru mycteria*, Las Peñas, Esmeraldas Province (C. Vogt); d) *Phimosus infuscatus*, Chilmá Bajo, Carchi Province (J. M. Loaiza); e) *Caracara cheriway*, Tufiño, Carchi Province (G. Herrera-Villareal); f) *Larus dominicanus*, Tababela, Pichincha Province (J. Nilsson); g) *Chloroceryle aenea*, Bellavista, Pichincha Province (C. D. Becker).

American Pygmy Kingfisher *Chloroceryle aenea*
Pichincha Province, Bellavista Reserve, 26 July 2017, D. Becker, K. Shaw (photo).

One adult female was mist-netted, measured, and photographed (Fig. 3g) inside mature forest, not in close proximity to any body of water. The species has been recorded mainly below 400 m elevation in the Pacific lowlands (Freile & Restall, 2018), with a few records from the foothills and lower slopes (i.e., Tinalandia, Mindo valley; Ridgely & Greenfield, 2001) and an exceptional record in Quito (Nilsson *et al*., 2014).

Moustached Puffbird *Malacoptila mystacalis
Carchi Province, Cerro Oscuro, Dracula Reserva near Chical, 11 August 2017, J. M. Loaiza, J. C. Crespo and A. Boas (photo, audio-recording, video).

Up to four birds (two pairs) were heard and observed at two sites, the first pair in a riparian secondary forest with fairly open understorey, at 1,200 m a.s.l., and the second in a mature forest ridge with dense understorey, at 1,400 m (Loaiza *et al*., 2019). These records are supported by photographs, audio-recordings and video (Fig. 1c), and represent the first records of the species in Ecuador, but Chical is less than 40 km south of the nearest locality in Colombia (Reserva La Planada, Nariño department; Loaiza *et al*., 2019). This discovery is not entirely unexpected (Ridgely & Greenfield, 2001).

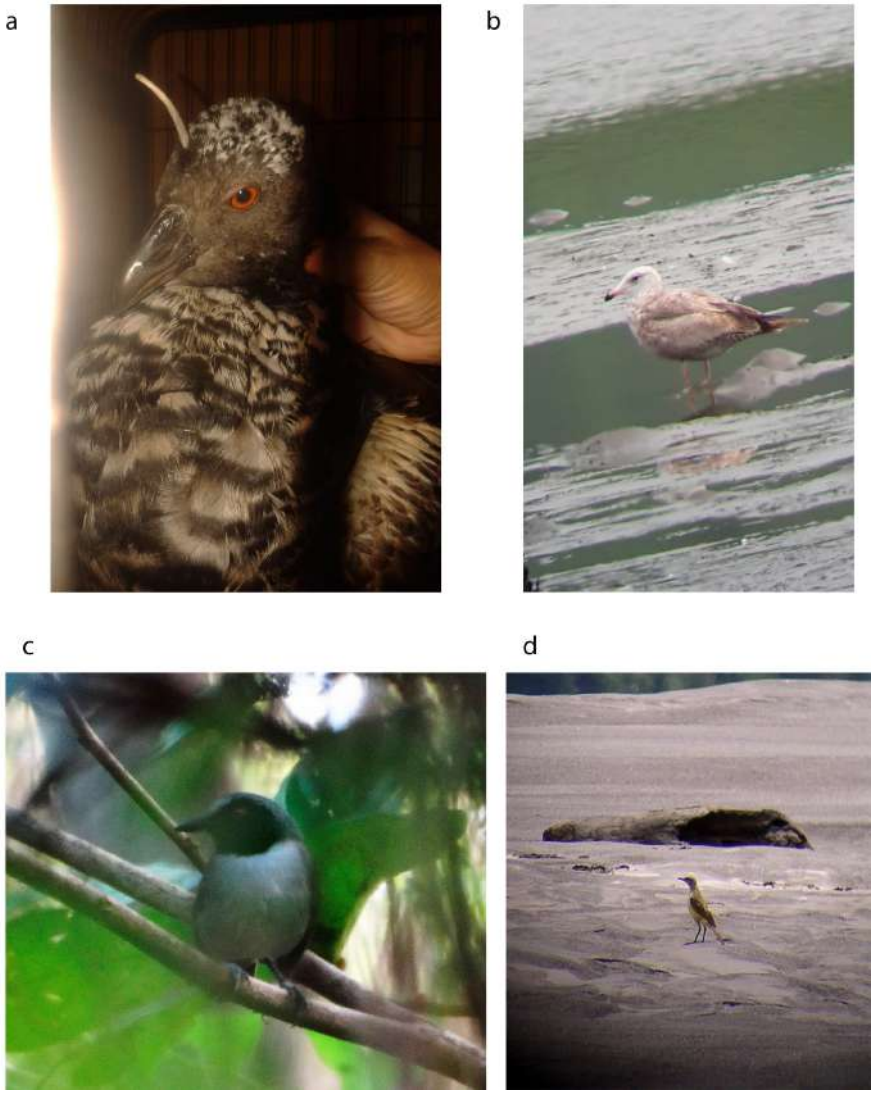

Figure 4: Rare birds recorded in Ecuador. a) *Anhima cornuta*, La Maná, Cotopaxi Province (X. Zurita); b) *Larus argentatus*, Pedernales, Manabí Province (M. Sánchez-Nivicela); c) *Myrmoborus lugubris*, Nuevo Rocafuerte, Orellana Province (J. Nilsson); d) *Machetornis rixosa*, Río Napo, Sucumbíos Province (G. Rosenberg).

Ash-breasted Antbird *Myrmoborus lugubris*
Orellana Province, river islands near Nuevo Rocafuerte, 30 August–4 September 2016, J. Nilsson (photo).

Found as a relatively common species on four different river islands with mature forest between Nuevo Rocafuerte and the border with Peru, in fairly dense to somewhat more open undergrowth (Fig. 4c). It was previously known from a single island near the mouth of the Río Aguarico on the Río Napo (Ridgely & Greenfield, 2001).

Yellow-olive Flycatcher *Tolmomyias sulphurescens*
Sucumbíos Province, Sacha Lodge, 20 February 2015, D. Lane (photo, audio-recording).

At least four individuals were heard and seen in river edge forest of medium height (Fig. 5b, Lane, 2015a; XC 214585, 214587). They generally perched at mid-levels and in understory, as well as around openings at the lodge's river-edge landing area. First noticed when four birds were interacting, either two territorial pairs or family members. They responded territorially to playback of their own vocalizations. The next day, a pair was encountered in understory, but after playback, the presumed male sang from the upper mid-story. Photos are uploaded at the observer's personal online archive https://www.flickr.com/photos/8013969@N03/16417378107/in/photostream/.

This represents the first record of *T. sulphurescens* in the Amazonian lowlands of Ecuador, since the species has previously been reported in the east Andean foothills to subtropics (subspecies *T. s. confusus* and *T. s. peruvianus*) and western lowlands to subtropics (subspecies *T. s. aequatorialis*; Freile & Restall, 2018). Plumage and vocal characters of birds in the Amazon lowlands correspond to subspecies *T. sulphurescens insignis*, previously known from riparian habitats in Loreto Department, northeast Peru, and adjacent western Brazil (Clements *et al*., 2017). Contra Schulenberg & Parker (1997), *T. sulphurescens insignis* concurs with Orange-eyed Flycatcher *T. traylori* in the Napo region, including records in Sacha Lodge and possibly other localities along the Río Napo. It seems plausible that these two taxa segregate by habitat when syntopic. A thorough assessment of geographic variation in *T. sulphurescens* might reveal that several subspecies, including *T. s. insignis*, deserve species status (Ridgely & Greenfield, 2001; Fitzpatrick *et al*., 2004).

Cattle Tyrant *Machetornis rixosa*
Sucumbíos Province, Río Napo in front of La Selva Lodge, 13 January 2004, D. Lane, G. Rosenberg (photo).

One adult was observed on a sandbar in the Río Napo (Fig. 4d). Although the species is now well-established and likely spreading following deforestation, first records date back to the early 2000s (Ridgely & Greenfield, 2006). This early record from a sandbar along the Napo might suggest that the species is expanding its range along the Napo from northern Peru. However, there are no records along this river in northern Peru, but an increasing influx of records in the southern Colombian Amazon (eBird, 2018), which suggests it as the actual immigration pathway. Furthermore, one bird was seen perching temporarily at the canopy walkway of Sacha Lodge (Lilley, 2019), suggesting that *M. rixosa* is able to disperse over vast tracts of forest.

Swainson's Flycatcher *Myiarchus swainsoni*
Sucumbíos Province, Sacha Lodge, 22 January 2010, D. Lane (photo, audio-recording).

Several birds were seen and heard along open lake edges with stands of arum and palms (Fig. 5c, Lane, 2010; XC 257112, 257113). The species is a year-round breeding resident in Sacha Lodge, as indicated by calls of recently fledged juveniles available in Moore *et al*. (2013) and regular territorial singing. However, no nests have yet been found. Additional recordings from the same locality are available in Xeno-Canto (Lysinger, 1995; XC 260956, 260957; Lane, 2015b; XC 214547), as well as from nearby Añangu (Moore, 2005; XC 258958). Photos have been uploaded at the observer's personal online archive (https://www.flickr.com/photos/8013969@N03/16598858736/in/photostream/).

The species was previously known as an austral migrant to Amazonian Ecuador, found from April through September, with two subspecies recorded (*M. s. ferocior* and *M. s. swainsoni*) (Ridgely & Greenfield, 2001; Freile & Restall, 2018). These two subspecies have largely pale mandibles, and *M. s. ferocior* has a distinctly masked appearance (Freile & Restall, 2018). Slight plumage and soft part color differences suggest that *M. s.*

phaeonotus is the subspecies breeding in Ecuador. This subspecies ranges mainly in southeast Venezuela, western Guyana, and northern Brazil (Fitzpatrick *et al*., 2004), with the closest records in Amazonas State, Brazil (B. M. Whitney, unpubl.) and Mitu Department, Colombia (Spencer, 2011). It remains to be determined if breeding birds in Amazonian Ecuador (and likely Colombia and northern Peru) are actually *M. s. phaeonotus* or an undescribed cryptic taxon. Until its status is further investigated, we accept this record as *M. s. phaeonotus*.

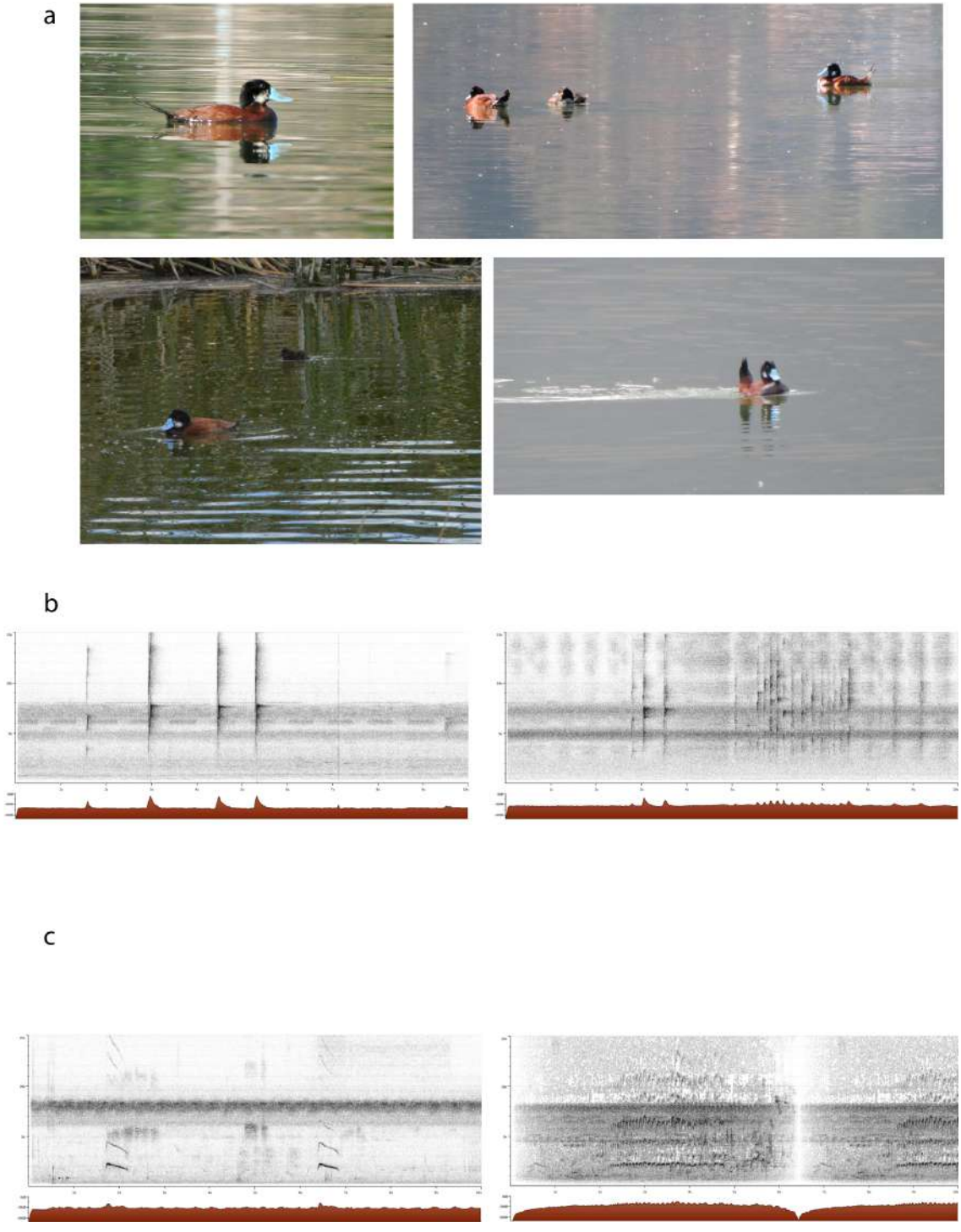

Figure 5: First records of three subspecies in Ecuador. a) *Oxyura jamaicensis andina*, Yaguarcocha and San Pablo, Imbabura Province (D. Chulde and E. Obando-Clavijo); b) *Tolmomyias sulphurescens insignis*, Sacha Lodge, Sucumbíos Province (D. Lane; XC 214585, XC 214587); *Myiarchus swainsoni phaeonotus*, Sacha Lodge, Sucumbíos Province (D. Lane; XC 257112, XC 214547).

Warbling Vireo *Vireo gilvus
Pichincha Province, Jardín Botánico de Quito, 11 April 2017, R. Ahlman (photo).

A single bird was first heard calling and latter observed and photographed (Fig. 1d). It responded to playback of its own calls, initially audio-recorded, with a soft 'tchep' call and readily approached for photographs (Ahlman, 2017c). It also responded to playback of calls of the nominate *V. g. gilvus* subspecies from eastern North America, and not to the western subspecies (R. Ahlman, *in litt*., September 2019). Observations lasted from 7h45 through 8h20, when the bird flew south and was not seen again. This unexpected record is the first for Ecuador and South America, and the southernmost record of the species in the Neotropics (Ridgely & Tudor, 2009; Brewer, 2018). Two unvouchered records from Venezuela are reported in eBird (Hernández-Vidal, 2000).

Southern Martin *Progne elegans*
Orellana Province, Tiputini, 29–31 August 2016, J. Nilsson.

Three adult males, two adult females, and one immature were observed flying and perched on a tall tower at Tiputini village, on the northern bank of the Río Napo. Although there are few records to date (Freile & Restall, 2018), the species is possibly a regular annual visitor to Amazonian Ecuador. There is also a small wintering population at El Carmen de Putumayo, province of Sucumbíos, were first found by R. Ahlman in mid-May 2016 (Ahlman, 2016a). The paucity of records, however, makes it desirable to get additional reports in order to understand the species' status and seasonality in the country.

Cliff Swallow *Petrochelidon pyrrhonota*
Pichincha Province, Tababela (Quito) Airport pond, 21 September 2015, J. Nilsson (photo).

Two adult birds with chestnut fronts were observed, photographed and carefully studied while perching on the ground together with Barn *Hirundo rustica*, Bank *Riparia riparia* and Blue-and-white *Pygochelidon cyanoleuca* swallows, as well as a few individuals of *P. pyrrhonota* with white fronts. Dark chestnut/rufous forehead, similar in tone to throat and sides of head, was noticed in both individuals, and clearly separated them from other whitish/pale fronted individuals seen at the same site (most likely nominate subspecies); these pale-fronted birds were larger than the two chestnut-fronted individuals. One additional record of a chestnut-fronted *P. pyrrhonota* was obtained by R. Ahlman at Lago San Pablo on September 2018 (Ahlman, 2018a).

These birds might represent either subspecies *P. pyrrhonota melanogaster*, which is the subspecies to which chestnut-fronted birds seen in Ecuador have previously been assigned (Freile *et al*., 2013; 2017), or *P. p. tachina* since some individuals of this subspecies might show dark foreheads, yet somewhat paler than throat and sides of head (Sibley, 2014). Until specimens of chestnut-fronted birds are collected or larger series of photographs obtained, Ecuadorian records could not be assigned with certainty to subspecies *P. p. melanogaster* or *P. p. tachina.*

Bicoloured Conebill *Conirostrum bicolor*
Orellana Province, river island close to Ballesteros, 30 August 2016, J. Nilsson.

One pair was observed in a fairly young successional *Cecropia* stand on a small river island along the Río Napo. The birds were feeding in the subcanopy, often hanging upside down on the underside of *Cecropia* leaves. This is the third locality for the species in Ecuador, all confined to river islands in the Río Napo (Nilsson *et al*., 2014; Freile & Restall, 2018).

Red-breasted Meadowlark *Sturnella militaris*
Napo Province, Vinillos, 30 April 2016, A. Solano-Ugalde.

One adult male was observed perching in low grasses and walking on the ground. Vinillos represents the highest elevation known in Ecuador, but the species is likely spreading following deforestation both in the northwest lowlands (Olmstead *et al*., 2011) and eastern Andean slopes (i.e., a small resident population exists in Borja, 18 km north of Vinillos).

Other records received

The following records, received by CERO, do not represent major range extensions but add to our knowledge of bird distribution in Ecuador. One Eastern Kingbird *Tyrannus tyrannus* observed at Guango Lodge (28 April 2016; A. Solano-Ugalde) actively feeding from the top of bushes, sallying and chasing prey in forest edge [mostly found below 800 m, fewer records in the inter-Andean valleys and scattered records along the Andean slopes; Ridgely & Greenfield, 2001; Freile & Restall, 2018]. One adult Curve-billed Tinamou *Nothoprocta curvirostris* was photographed at 4050 m a.s.l. along a trail beyond Teleférico de Quito, on mount Pichincha, 18 December 2016; X. Amigo). It was leisurely foraging among tussock grasses [mostly found below 3700 m, but records up to 3900 m; Ridgely & Greenfield, 2001; Freile & Restall, 2018].

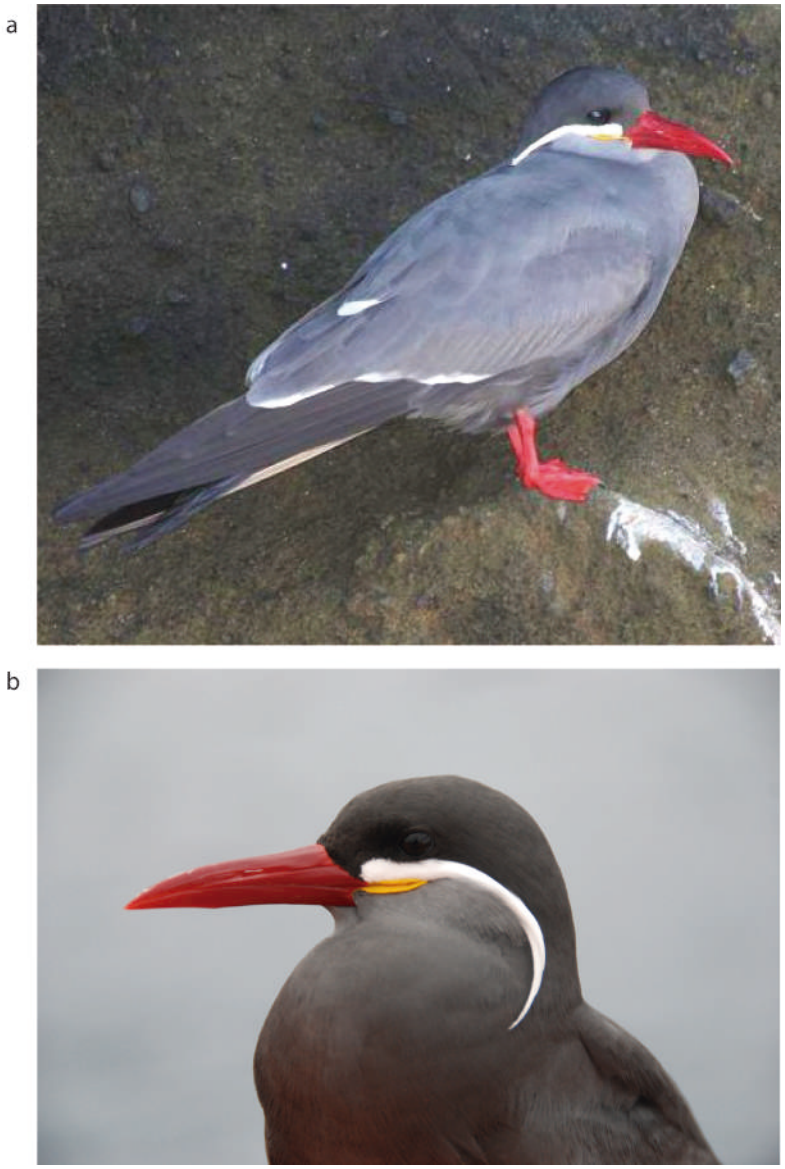

Figure 6: First records of *Larosterna inca* for the Galápagos Islands. a) Daphne Major (J. C. Manosalvas); b) Española (L. D. Dejean).

Rejected records

One record was rejected due to imprecise documentation (Black Swift *Cypseloides niger*). A tracking study of spring migration routes of three individuals of *C. niger borealis* carrying a geolocator showed that one individual passed through Amazonian Ecuador, in southeast direction to its wintering grounds in western Brazil (Beason *et al*., 2012). However, geolocators do not work with a global positioning system, but rather geolocate measuring light levels every minute. Given that the accuracy of latitude calculated by geolocators is not completely reliable near the equator, because day and night have equal duration, errors of up to 200 linear km are plausible (Beason

et al., 2012). Consequently, the actual route of the tracked individual might have been elsewhere across the western Amazon, and we therefore reject this evidence as proof of its presence in the country.

Invalidated records

We found 39 species cited in different published sources (Chapman 1926; Orcés, 1944; Meyer de Schauensee, 1966; Ortiz-Crespo & Valarezo-Delgado, 1975; Butler, 1979; Fjeldså & Krabbe, 1990; Ortiz-Crespo *et al*., 1990; Restall *et al*., 2006; Byers, 2009; McMullan & Navarrete, 2013; Moore *et al*., 2013) that do not occur within the current boundaries of mainland Ecuador and 6 additional species that do not occur within the Galápagos Archipelago (Ridgway, 1896; Harris, 1982; Vargas, 1996; Castro & Phillips, 1996; Table 4). Also, we were aware of unpublished records from mainland Ecuador of four additional species that demanded validation. Tables 2, 3 and 5 present 43 species with dubious/invalid records, including cases of taxonomic updates, misidentifications, erroneous records, locality errors, and unjustified and/or unproven records for mainland Ecuador. Erroneous records discussed by Wiedenfeld (2006) for Galápagos are presented and discussed in Table 4. Several erroneous or outdated records already debated by Ridgely & Greenfield (2001) are presented and discussed in Table 3.

Figure 7: Specimens of *Cypseloides cryptus* collected at Gualaquiza, Morona Santiago Province, by E. Festa, and first identified as *C. fumigatus* (G. Soldato).

Table 2: Erroneous citations for Ecuador in distribution texts and maps in Birds of northern South America (Restall *et al*., 2006).

Species	Common name	Ecuador map	Status in text volume	CERO comment
Mitu tomentosum	Crestless Curassow	all Amazon	–	No records; wrong citation.
Pterodroma neglecta	Kermadec Petrel	?	possible vagrant off-shore	No records; wrong citation.
Fregetta tropica	Black-bellied Storm-petrel	?	rare vagrant off Ecuador	No records; wrong citation.
Antrostomus sericocaudatus	Silky-tailed Nightjar	dot in S Andes	Subespecies *mengeli* locally common in Ecuador	No records; wrong citation.
Coeligena violifer	Violet-fronted Starfronlet	dot in S Andes	uncertain, possibly rare	Erroneously cited for S Ecuador by Züchner (1999).
Loddigesia mirabilis	Marvelous Spatuletail	no map	unconfirmed sight record in Ecuador	No records; wrong citation.
Dendroplex kienerii	Zimmer's Woodcreeper	?	uncertain, very probably	Not unlikely, but no records to date.
Formicivora rufa	Rusty-backed Antwren	dot in S Andes	–	Erroneous map.
Pithys castaneus	White-masked Antbird	dot in extreme SE	hypothetical, one sighting unconfirmed	Not unlikely, but no records to date.
Mitrephanes olivaceus	Olive Flycatcher	? and dot in S Andes	A few unconfirmed sight records	Not unlikely, but no records to date.
Tyrannus forficatus	Scissor-tailed Flycatcher	?	sight records	Not unlikely, but no records to date.
Progne sinaloae	Sinaloa Martin	?	Unrecorded but hypothetical	No records; wrong citation.

Table 3: Unvouchered, uncertain or erroneous records from continental Ecuador discussed in volume I (*Status, distribution and taxonomy*) of Ridgely & Greenfield (2001).

Species	Common name	Status vol. I	Original source	CERO comment
Phalacrocorax gaimardi	Red-legged Cormorant	no evidence	Enticott & Tipling (1997)	Unsupported record repeated in other sources (Harrison, 1985; 1987).
Buteogallus coronatus	Chaco (Crowned) Eagle	erroneous old citations	Taczanowski & Berlepsch (1885)	Misidentified specimen; locality (Río Topo, Tungurahua) is

				accurate for Solitary Eagle *B. solitarius*.
Geranoaetus albicaudatus	White-tailed Hawk	erroneous old citations	Chapman (1926)	Misidentified specimens, now known to be Variable Hawk *G. polyosoma*.
Rallus semiplumbeus	Bogota Rail	misidentified	Salvadori & Festa (1900)	A misidentified juvenile Virginia Rail *R. limicola aequatorialis*.
Forpus conspicillatus	Spectacled Parrotlet	misidentified?	Fjeldså & Krabbe (1990)	An observation by Bloch, Poulsen, Rahbek & Rasmussen [cited as 'certainly not *coelestis'*], but unlikely by distribution; locality is accurate for Pacific Parrotlet *F. coelestis*.
Pionites leucogaster	White-bellied Parrot	erroneous old citations	Meyer de Schauensee (1966)	Unsupported record repeated in other sources.
Chlorostilbon stenurus	Narrow-tailed Emerald	erroneous old citations	Oberholser (1902)	Very probably a misidentified old specimen; very unlikely by distribution.
Amazilia edward	Snowy-bellied Hummingbird	erroneous old citations	Oberholser (1902)	Very probably misidentified old specimens; very unlikely by distribution.
Oxypogon guerini	Green-bearded Helmetcrest	uncorroborated reports	Fjeldså & Krabbe (1990)	Uncorroborated sighting by J. C. Matheus; unlikely by distribution.
Pharomachrus fulgidus	White-tipped Quetzal	erroneous old citations	Meyer de Schauensee (1966)	Unfounded error.
Synallaxis albescens	Pale-breasted Spinetail	old taxonomy	Chapman (1926)	Formerly ranked as co-specific with Dark-breasted Spinetail *S. albigularis*.
Clytoctantes alixi	Recurve-billed Bushbird	erroneous old citations	Chapman (1926)	An old error already discussed by Chapman (1926).
Conopophaga ardesiaca	Slaty Gnateater	very probably misidentified	Chapman (1926)	Available description of female specimen is accurate for Ash-throated *C. peruviana* or Chestnut-crowned

				C. castaneiceps gnateaters; no further reasons. See Greeney (2018) for further details and a similar conclusion.
Iridosornis reinhardti	Yellow-scarfed Tanager	very probably misidentified	Bloch *et al.* (1991)	Very probably misidentified; observers were not 100% convinced.

Table 4: Unvouchered, uncertain or erroneous records in Galápagos Islands discussed by Wiedenfeld (2006).

Species	**Common name**	**Status in Wiedenfeld**	**Original source**	**CERO comment**
Thalassarche melanophris	Black-browed Albatross	no evidence	Castro & Phillips (1996)	Record not supported in earlier literature or sightings.
Fulmarus glacialoides	Southern Fulmar	no evidence	Castro & Phillips (1996)	Record not supported in earlier literature or sightings.
Numenius borealis	Eskimo Curlew	erroneous old citations	Ridgway (1896)	Ridgway (1896) apparently cited a record by Salvin (1876). Rothschild *et al.* (1899) re-identified the specimen as *N. phaeopus*.
Coccyzus lansbergi	Grey-capped Cuckoo	misidentified?	Ridgely & Greenfield (2001)	Ridgely & Greenfield (2001) indicate vagrant records from Galápagos with no further information; no records to date.
Crotophaga sulcirostris	Groove-billed Ani	misidentified?	Harris (1973, 1981, 1982; Swash & Still (2000)	No documentation available to date. Harris (1981) reported this species, but not Smooth-billed Ani *C. ani*; then Harris (1982) reported both species. Only *C. ani* is definitely known from Galápagos, specimens dating back to 1985. Misidentification most likely; see Wiedenfeld (2006) for further discussion.
Psittacara erythrogenys	Red-masked Parakeet	introduced?	Vargas (1996)	One seen in 1996 (San Cristóbal), but not established as feral; sighting likely was an escaped pet that perished.

Table 5: Unsupported and erroneous records cited in published literature; four unpublished records reported to CERO by authors or third parties are also discussed.

Species	Common name	Source	CERO comment
Mitu tomentosum	Crestless Curassow	Butler (1979)	This author presents a list of hypothetical and accidental species, but fails to explain his definition of hypothetical, or to provide reasoning or documentation for those putative records. There are no records of this species in Ecuador.
Penelope albipennis	White-winged Guan	Chapman (1926)	No recent or historical records, though Chapman (1926) included it in his book, with "Tumbez" as the collecting locality. In Chapman's days, "Tumbez" referred to a Peruvian locality. Curiously, Chapman's maps do not indicate country boundaries.
Penelope argyrotis	Band-tailed Guan	Ortiz-Crespo & Valarezo-Delgado (1975), Butler (1979)	Formerly, Bearded Guan *P. barbata* was ranked as a subspecies of Band-tailed Guan *P. argyrotis*. These authors cite Chapman (1926) as source of records of *P. argyrotis* and erroneously included both species in the country list. However, Chapman gives species status to *P. barbata* and does not include *P. argyrotis* in his book.
Pelecanus erythrorhynchos	American White Pelican	Unpublished, unvouchered and undocumented observation not yet reported to CERO	Single bird observed by R. Jonsson at Same, Esmeraldas (unknown date), no further details or supporting evidence.
Cypseloides fumigatus	Sooty Swift	Chapman (1926) and others	A specimen collected at Gualaquiza by E. Festa was relocated by G. Soldato at the Torino Museum (Fig. 7), and re-identified as White-chinned *C. cryptus* by CERO.
Amazilia saucerottei	Steely-vented Hummingbird	Butler (1979)	Included in a list of hypothetical and accidental species, with no reasoning or documentation. There are no records of this species in Ecuador.
Malacoptila rufa	Rufous-necked Puffbird	Butler (1979)	Included in a list of hypothetical and accidental species, with no reasoning or documentation. There are no records of this species in Ecuador.
Brotogeris jugularis	Orange-chinned Parakeet	Chapman (1926) and others	Supposedly collected at Napo and Canelos; more likely represent

			Cobalt-winged Parakeet *B. cyanoptera*. No further justification.
Pteroglossus mariae	Brown-mandibled Araçari	Orcés (1944), Ortiz-Crespo & Valarezo-Delgado (1975)	Orcés suggested that some specimens of Ivory-billed Araçari *P. azara* were possibly hybrids with 'Brown-mandibled' Araçari *P. mariae* or individual variation in *P. azara*; *P. mariae* is no longer ranked as valid species (Remsen *et al*., 2018).
Cranioleuca vulpina	Rusty-backed Spinetail	Butler (1979)	Included in a list of hypothetical and accidental species, with no reasoning or documentation. There are no records of this species in Ecuador.
Certhiaxis cinnamomeus	Yellow-chinned Spinetail	Byers (2009)	Inexplicably included in this recent publication; no documentation or reasoning support this record. Most likely a slip by the author.
Hylopezus dives	Thicket Antpitta	Moore *et al*. (2013)	A single recording reportedly obtained at Charco Vicente, on a trail to Cascada San Miguel, province of Esmeraldas. Despite intensive surveying effort for 9 years at nearby Playa de Oro, that included a few visits to Charco Vicente, the species was not located by Jahn (2011). Subsequent searches using intensive playback in appropriate habitat for the species at Playa de Oro (very dense thickets of scrubby vegetation at forest borders) by CERO members and other observers have been unsuccessful, even though this species readily responds to playback throughout its range. Habitat reported for the sound recording from Charco Vicente (inside primary forest) is unexpected for the species. Until further evidence is obtained, CERO invalidates this record, which was also dismissed by Greeney (2018).
Gymnocichla nudiceps	Bare-crowned Antbird	Butler (1979)	Included in the main checklist without explanation or documentation. No records in Ecuador.
Pygochelidon melanoleuca	Black-collared Swallow	Ortiz-Crespo & Valarezo-Delgado (1975), Butler (1979)	First authors cite a personal communication by G. T. Corley-Smith to G. Orcés, but there is no further documentation and no records known to CERO.
Turdus sanchezorum	Varzea Thrush	McMullan & Navarrete (2013)	No specimens from Ecuador mentioned in the description (O'Neill *et al*., 2011); not unlikely,

			as rectified in the second edition (McMullan & Navarrete, 2017).
Catharus fuscescens	Veery	Unpublished, unvouchered and undocumented observations not yet reported to CERO	A recent sighting by B. Herrera from Valladolid, Zamora Chinchipe (early 2011) without further details or documentation. Another unvouchered observation from Wildsumaco, Napo (September 2013; fide R. Ahlman). Until further evidence is obtained, the species could not be included in the country checklist.
Dumetella carolinensis	Grey Catbird	Unpublished, unvouchered and undocumented observations not yet reported to CERO	One observation by R. Jonsson at Mindo, Pichincha (no date). Until further evidence is obtained, the species could not be included in the country checklist.
Tangara varia	Dotted Tanager	Unpublished, unvouchered and undocumented observation not yet reported to CERO	A sighting by B. Herrera at Zamora (March 2011), without further details or documentation. Until further evidence is obtained, the species could not be included in the country checklist.

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