Conservación Colombiana
Número 17 • octubre 2012

Birds of Colombia 2012

Aves de Colombia 2012

Conservación Colombiana
Journal for the diffusion of biodiversity conservation activities in Colombia.
Revista de difusión de acciones de conservación de la biodiversidad en Colombia.

ISSN 1900–1592. Non–profit entity no. S0022872 – Commercial Chamber of Bogotá
ISSN 1900–1592. Entidad sin ánimo de lucro S0022872 – Cámara de Comercio de Bogotá.

Edición Octubre 2012. Publicado 7 de noviembre de 2012.

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Fundación ProAves de Colombia ***www.ProAves.org***
Dirección: *Carrera 20 No. 36–61, La Soledad, Bogotá*
Teléfonos: *+57–1–2455134 / 57–1–3403239; Fax: +57–1–340 3285*

***Fotografía portada* / Cover photograph**
The first ever published photograph in life of Santa Marta Wren *Troglodytes monticola*, an Endangered and Colombian endemic species restricted to a highly degraded timberline ecotone in the Sierra Nevada de Santa Marta. By Juan Carlos Luna.

Editor General: *Alexander Monsalve Aponte.*

Conservación Colombiana *es publicada gracias al apoyo de nuestros donantes:*

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Revision of the status of bird species occurring or reported in Colombia 2012

Revisión del estatus de las especies de aves que han sido reportadas en Colombia en el 2012

Thomas Donegan, Alonso Quevedo, Paul Salaman & Miles McMullan

c/o Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: tdonegan@proaves.org

Abstract

The following species are added to Colombia's bird checklist: Crimson Fruitcrow *Haematoderus militaris* (based on observations), Varzea Thrush *Turdus sanchezorum* (newly described, sound recording), Antioquia Wren *Thryophilus sernai* (newly described, specimen, photograph and sound recordings) and Spotted Tanager *Tangara punctata* (photograph). Dull-mantled Antbird *Myrmeciza laemosticta* is removed on account of a lack of records. New subspecies for Colombia are Pale–legged Hornero *Furnarius leucopus cinnamomeus* (photographs), Immaculate Antbird *Myrmeciza immaculata concepcion* (newly dsescribed, specimen, photograph and sound recordings) and Striped Manakin *Machaeopterus regulus zulianus* (specimen) with *M. i. brunnea* regarded as a subjective synonym of the nominate. Splits of Indigo-crowned Quail-Dove *Geotrygon purpurata* from Olive-backed Quail-Dove *G. saphirina*; Western Woodhaunter *Hyloctistes virgatus* from Eastern Woodhaunter *H. subulatus*; Klages' Antbird *Drymophila klagesi*, Santa Marta Antbird *D. hellmayri* and Streak-headed Antbird *D. striaticeps* from East Andean Antbird *D. caudata*; and Coopmans' Tyrannulet *Z. minimus* from Golden-faced Tyrannulet *Z. chrysops* are recognised. Snowy Plover *Charadrius nivosus*, Marbled Godwit *Limosa fedoa* and Worm-eating Warbler *Helmitheros vermivorum* all become confirmed species, in the latter case for the mainland. Sulphur-crested Cockatoo *Cacatua galerita* is a new confirmed escapee and Budgerigar *Melopsittacus undulatus* becomes confirmed in addition to escaped. Brief notes are made on the status in Colombia of Pale-rumped Swift *Chaetura egregia*, Pale-legged Warbler *Basileuterus signatus*, Zebra Finch *Taeniopygia guttata* (all without acceptable records) and Forster's Tern *Sterna forsteri* (already confirmed), none of which change in category. Several amendments to genus and species names, English names and linear order are made, following recent publications. Various species' threat status has been updated. As a result of these changes, the Colombian checklist again increases in size, now to 1897 species (excluding escapees), of which 1825 are documented by 'confirmed' records on the mainland.

Resumen

Las siguientes especies se agregan al listado de aves de Colombia: Haematoderus militaris (basado en observaciones), Turdus sanchezorum (recientemente descrita, grabación), Thryophilus sernai (recientemente descrita, registros del espécimen, fotografía y grabaciones) y Tangara punctata (fotografía). Myrmeciza laemosticta se excluye ya que no hay registros. Las nuevas subespecies para Colombia son Furnarius leucopus cinnamomeus (fotografía), Machaeopterus regulus zulianus (espécimen) y Myrmeciza immaculata concepcion (recientemente descrita, registros de espécimen, fotografía y grabaciones) con M. i. brunnea considerado como un sinónimo subjectivo de la subespecie nominal. Se tratan como especies separadas Geotrygon purpurata de G. saphirina; Hyloctistes virgatus de H. subulatus; Drymophila klagesi, D. hellmayri y D. striaticeps de D. caudata; y Zimmerius minimus de Z. chrysops. Charadrius nivosus, Limosa fedoa y Helmitheros vermivorum se vuelven especies confirmadas, en el último caso para la región continental. Cacatua galerita es una nueva especie exótica y Melopsittacus undulatus se vuelve especie confirmada además de exótica. Se presentan notas sobre el estado en Colombia de Chaetura egregia, Basileuterus signatus (todos sin registros aceptables) y Sterna forsteri (ya confirmado), pero ninguno se cambia de categoría. Se realizaron varias modificaciones a los nombres de géneros y especies, nombres en inglés y el orden del listado. Se actualizó el estado de amenaza de varias especies. A raíz de estos cambios, el nuevo listado Colombiano aumentó a 1897 especies (excluyendo especies exóticas), de las cuales 1825 han sido confirmadas con registros en el continente.

Introduction

Over the past four years the authors and others have published records of species new for Colombia, discussions of records, splits and lumps with a view to putting the Colombian bird checklist on a stronger footing (Salaman *et al*. 2008, Donegan *et al*. 2009, 2010a, 2011). This paper sets out details of further changes since the publication of the Spanish version of the *Field Guide to the Birds of Colombia* (McMullan *et al*. 2011).

Species added

Sulphur-crested Cockatoo *Cacatua galerita*

A new confirmed escapee for Colombia, based on published sonograms in Cortés & Donegan (2012).

Crimson Fruitcrow *Haematoderus militaris*
A published sight record by Quevedo & Luna (2012) from near the Brazilian border in Guainía (Fig. 11) means that this species can be added in the "Obs" category for Colombia.

Varzea Thrush *Turdus sanchezorum*
A species recently described from *várzea* forest of the Amazonian region (O'Neill *et al*. 2011), illustrated in Figure 2. There is a single electronically-archived Colombian recording available (Fig. 1) which was referred to in the text of the description but with no sonogram produced. Part of the sound recording includes vocalizations of the "mewing call" of *sanchezorum*, of which an example is presented in Figure 6A of O'Neill *et al*. (2011). A sonogram is published below, which is clearly of *T. sanchezorum* and allows the species to be considered confirmed in Colombia.

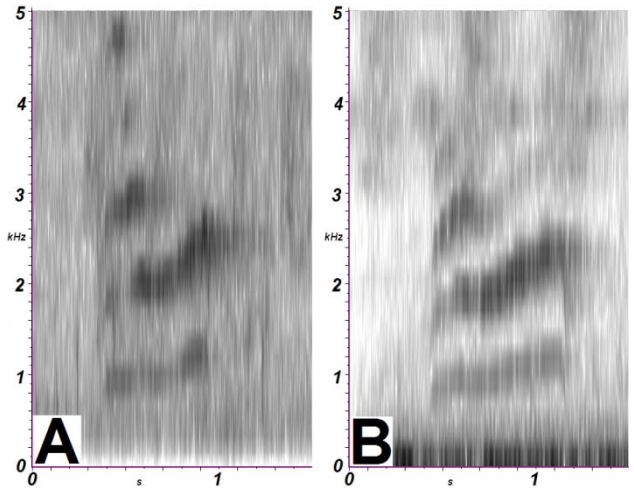


Figure 1. Sonograms of calls of *T. sanchezorum* from: A. Isla Ronda, Amazonas, Colombia (XC41114: A. Cuervo). B. near Rioja, San Martín, Peru (XC83504: D. Geale).

Figure 2. Varzea Thrush (Miles McMullan).

Antioquia Wren *Thryophilus sernai*
Recently described from the Cauca valley in Antioquia by Lara *et al*. (2012) as a species. This is clearly a new taxon, and we congratulate the discoverers. Any decision to assign it species rank (separately from allopatric Niceforo's Wren *T. nicefori* and *T. rufalbus*) at the present time is moot but we follow Lara *et al*. (2012)'s approach on account of this being a plausible long-term treatment. The new species is illustrated in Fig. 3 and its distribution is shown in Fig. 11. There are specimens (including the type specimens) and published sonograms and photographs of *T. sernai* from Colombia, so it can clearly be considered "confirmed" in the country to which it is endemic.

Recognition of this species has proved to be one of the more controversial issues considered in this series of annual papers on the Colombian checklist. In discussing species limits, Lara *et al*. (2012) considered that "*it is likely that T. sernai has differentiated from T. nicefori and T. rufalbus to the point that they would behave as reproductively isolated units should they come into contact*" citing differences in morphology, mtDNA and song. They claim in the diagnosis section that the new species is "*distinctive in nine acoustic variables*" and that it has a *"richer repertoire of syllable types, shorter trills, lower number of trill syllables, a distinctive terminal syllable with more modulations, and higher spectral frequencies*". However, there is no data available that would suggest that *sernai* is diagnosable to the usual 97.5% benchmark (Isler *et al*. 1999) used for supporting species rank determinations vocally. Their vocal "*diagnosis*" is based on the Kruskal-Wallis test (in Lara *et al*.'s table 3), which determines the likelihood that data sets come from populations with different medians, but says nothing about the extent of differences or diagnosability. No standard deviation data is presented, so there is no way of reverse engineering the data for these purposes. In studies of other taxa, pairwise mean differences have sometimes been found consistent with miniscule differentiation and low levels of diagnosability (e.g. Donegan 2012a). There is c.91% differentiation and considerable overlap based on recorded values in multivariate space (their figure 6) suggesting that voice is not diagnostic. The authors' claim of shorter trills is not borne out by the illustrations in the paper (2, 5 or 9 notes in the trills in Fig. 3 for *sernai*, versus 2-8 in other taxa). The claim of a richer repertoire of syllables is subjective. Differences in modulation of the final note and overall maximum acoustic frequency are true of some but not all examples of songs in their figure 3, so again are not diagnostic. Song can be learned in oscines such as wrens, so the possiblility that differences may be cultural and perhaps could be eliminated by learning if populations were to come into contact cannot be easily dismissed. No mention is made of whether *sernai* responds to playback of related species or how.

Lara *et al*. (2012) note that the *rufalbus* group requires revision but also consider that: "*the paraphyly of species is*

an expected outcome of speciation processes in which differentiation occurs in peripheral populations". There is at least one documented instance of this phenomenon in Troglodytidae (*Troglodytes cobbi*: Campagna *et al*. 2012). However, *T. cobbi* is strikingly different in its ecology (absence from human modified habitats) to *T. aedon*, whilst *T. sernai* is a differently marked version of *T. rufalbus / nicefori* in a different dry valley. It has a more proximate distribution to *rufalbus* and *nicefori* than *T. cobbi* does to *T. aedon*. New taxon *sernai* is less differentiated in its mtDNA than some other named populations in the *rufalbus* group are from one another (2.5-3.5% between *nicefori*, *sernai* and proximate *rufalbus*; compared to 6.8% between nominate *T. rufalbus* and subspecies *castonotus*). In conclusion, it seems implausible that a rational treatment for the *rufalbus* group involves only *T. nicefori* and *T. sernai* being afforded species rank. At least, nominate *rufalbus* and its relatives would also appear to need splitting from the southern *rufalbus* taxa.

Despite these concerns, we recognise *T. sernai* on account of its broadly similar levels of vocal differentiation from *rufalbus* to that of *nicefori*, which is historically widely recognised as a species and shows similar vocal differentiation from other taxa (Valderrama *et al*. 2007). Long-term, splitting *sernai, nicefori* and some other *rufalbus* taxa would seems a reasonable approach. In molecular phylogenies, *sernai* (like *T. nicefori*) is nestled within *T. rufalbus* and is similarly differentiated to *T. nicefori*. Moreover, it would be a questionable outcome to see a potentially threatened taxon like this, with a unique distribution go unprotected whilst an open-ended taxonomic revision takes place. A revision of species limits in the *T. rufalbus* group as a whole is urgently called for however.

Figure 3. Antioquia Wren *Thryophilus sernai*. M. McMullan, km 59 Cuidad Bolivar-Medellín, 9km from Bolombolo, río Sirifaná, June 2012.

Spotted Tanager *Tangara punctata*
A photographic record by Quevedo & Luna (2012) from near the Brazilian border in Guainía (Fig. 11) means that this species can be considered confirmed for Colombia. It is a long overdue addition, with both parts of its distribution previously considered only to exclude the country by only a few tens of kilometres (Isler & Isler 1999).

Species removed

Dull-mantled Antbird *Myrmeciza laemosticta*
Although this species must occur in the Tacarcuna and Darién region, it has come to our attention that there are no records to date, following Chaves *et al*. (2010)'s revision of species limits.

Subspecies added

Pale–legged Hornero *Furnarius leucopus cinnamomeus*
Photographic records by Luna (2012). We provisionally treat this as a subspecies, consistent with our current approach to the *leucopus* group, pending further research into species limits.

Immaculate Antbird *Myrmeciza immaculata concepcion*
A new subspecies described from the Central Andes (Donegan 2012a). There are specimens (including the type specimens) and published sonograms and photographs from Colombia.

Striped Manakin *Machaeopterus regulus zulianus*
A specimen record from the Catatumbo region of Norte de Santander by Avendaño (2012).

Subspecies removed

Immaculate Antbird *Myrmeciza immaculata brunnea*
Donegan (2012a) considered that none of the diagnosis for this subspecies, which is based on a Perijá type locality, is supported, so it is here considered a synonym of the nominate.

Splits

Indigo-crowned Quail-Dove *Geotrygon purpurata*
Olive-backed Quail-Dove *G. saphirina*
We recognize this split, following Donegan & Salaman (2012)'s separate paper in this edition.

Western Woodhaunter *Hyloctistes virgatus*
Eastern Woodhaunter *H. subulatus*
We recognise this west/east of the Andes split, following Ridgely & Greenfield (2001), Restall *et al*. (2006), Ridgely & Tudor (2009), Gills & Donsker (2012) and others. The vocal differences between these two species (in undertone presence/absence, acoustic frequency, note shape and length) are so striking that sound recordings of the two species could not be confused. No further details of the rationale for this are published here, because other authors are working on the group (*per* Remsen *et al*. 2012).

East Andean Antbird *Drymophila caudata*
Klages' Antbird *D. klagesi*
Santa Marta Antbird *D. hellmayri*
Streak-headed Antbird *D. striaticeps*

We recognize all three of the splits suggested by Isler *et al*. (2012). All four resulting species occur in Colombia (Fig. 8). *D. caudata* becomes an East Andes endemic, found from Caquetá north to Santander. *D. striateceps* (Figs. 4-5) is a widespread species occurring in the Western and Central Cordilleras southwards. *D. klagesi* (Fig. 6) occurs in the Perijá range and Norte de Santander department and the highlands of Venezuela. Finally, *D. hellmayri* (Fig. 7) is a Santa Marta endemic, which may be threatened. All four former *caudata* species recognised under this new arrangement are known in Colombia from specimen records and sound recordings. As a result, they can all be added to Colombia's checklist as confirmed species for the country.

Isler *et al*. (2012) presented a wealth of interesting new data relating to the plumage, distributions, voice and molecular biology of these birds, in support of their treatment. Two issues with the vocal data give reason to pause for consideration. First, there are no available sound recordings for the Santander population, which is several hundred kilometres more proximate to the region where *klagesi* and *caudata* separate out than the locality of available vocal samples of *caudata* from the upper Magdalena region (= southern East Andes). Given that samples from the northern and southern East Andes cluster together in mtDNA analyses, it is reasonable to assume that populations are related. However, further work would be helpful to confirm vocal affinities through sound recordings. Secondly, *hellmayri* of Santa Marta is confirmed to be diagnosably differentiated from proximate *klagesi* in two vocal characters, with additional differences in one of its calls based on a single recording. Three (rather than two) statistically diagnosable vocal differences are generally treated as a benchmark for assigning species rank in the antbirds. However, given that the single "long call" recording of *hellmayri* differs so drastically from all others, Isler *et al*. (2012)'s conclusion that calls are also distinctive is reasonable. Lumping *hellmayri* with *klagesi* would be an alternative and more conservative approach. However, we agree with Isler *et al*. (2012)'s new sequence as the best treatment based on current data.

Isler *et al*. (2012) also discussed the possible collecting locality of the "Bogotá" types of *caudata*, an issue further detailed in proposal 542 to Remsen *et al*. (2012). The authors considered that the collecting locality of the types was likely in the northern East Andes, "*probably Santander*". There are only known modern localities in the northern East Andes from this department, so this is a reasonable interpretation of available data, and the authors do not restrict the types specifically to this region. However, Cundinamarca and Boyacá departments are closer to Bogotá, were less deforested in the mid-1800s than now and may have historically supported more extensive suitable habitats for Andean forest birds. There are no modern records from these more southern departments, but *Drymophila* is a micro-habitat specialist with localised populations in bamboo thickets on cliffs or steep slopes and in the paramó/forest ecotone, treefalls and forest edge habitats. For example, studies in multiple localities in the Yariguíes mountains over several years revealed only one record by J. Avendaño at a single locality (Donegan *et al*. 2010b) despite multiple sites being studied with suitable elevation. Even if the species is genuinely absent (as opposed to overlooked) further South than Santander in this part of the East Andes, it may have occurred in this region in the 1800s when natural habitat coverage was very different. A broader interpretation of the probable collecting locality for the *caudata* types results in equal taxonomic outcomes.

The vernacular name "Long-tailed Antbird" was applied for many years to a widespread species and *D. caudata* as re-defined has a small distribution. It would be more consistent with Remsen *et al*. (2012)'s and other modern treatments of other split, range-restricted species to use "East Andean Antbird" as a new vernacular name for the species as restricted, referring to the region to which it is apparently endemic.

Figures 4 a-b. Streak-headed Antbird *D. striaticeps*, Above: RNA Loros Andinos, Roncesvalles-Tolima. A. Quevedo/ProAves. Below: RNA Mirabilis, West Andes, Cauca. Fundación ProAves.

Figure 5 a-b. Klages' Antbird *Drymophila klagesi*, Agua de la Virgen, Ocaña. T. Donegan/Proyecto EBA Colombia, January 2002.

Figure 6. Santa Marta Antbird *D. hellmayri,* RNA El Dorado, Magdalena. Trevor Ellery/ProAves.

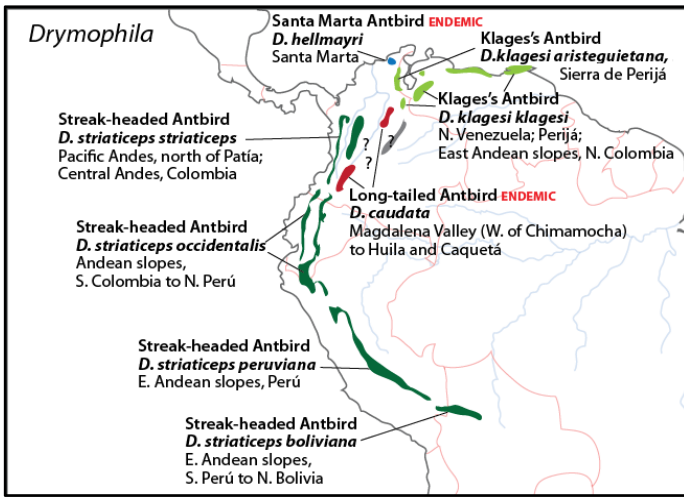


Figure 7. Map showing the distribution of *Drymophila* species, including in Colombia.

Coopmans' Tyrannulet *Zimmerius minimus*
Golden-faced Tyrannulet *Z. chrysops*

We recognise this split, following Rheindt *et al*. (2012). *Z. minimus* is restricted to the Sierra Nevada de Santa Marta in Colombia (Fig. 11), but also occurs in Eastern Venezuela. The two species differ notably in mantle coloration and the shade of yellow marks (Figs. 9-10) in addition to their molecular biology. They also seem to have different elevational ranges and habitat requirements in Colombia, with *minimus* largely below 1,000 m and as low as 300 m (M. McMullan, observations below Minca) and *Z. chrysops* generally above 1,000 and up to 2,500 m in the Andean region (although there are lower elevation records of the latter species).

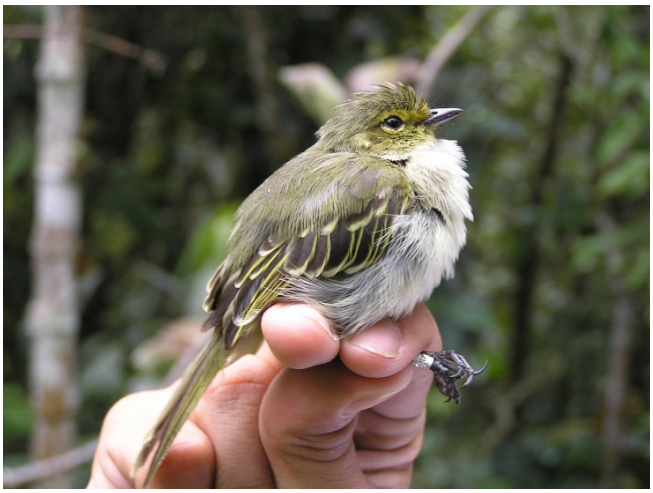


Figure 8. Golden-faced Tyrannulet *Z. chrysops*, La Luchata, Galan, Serranía de los Yariguíes, July 2005. B. Huertas / Proyecto YARE.

Figure 9. Coopmans' Tyrannulet *Zimmerius minimus*, Minca, Sierra Nevada de Santa Marta, Magdalena, 2 May 2005. T. Friedel / www.BirdPhotos.com.

Changes of Category

Snowy Plover *Charadrius nivosus*
This recently split species (Funk *et al*. 2007; Küpper *et al*. 2009; Donegan *et al*. 2011) is previously known only from sight records in Colombia (Salaman *et al*. 2010). A published photographic record (Freeman *et al*. 2012) means that it can be added to the confirmed list.

Marbled Godwit *Limosa fedoa*
Previously known only from sight records in Colombia (Salaman *et al*. 2010). A published photographic record (Freeman *et al*. 2012) means that it can be added to the confirmed list.

Budgerigar *Melopsittacus undulatus*
Changes in status from escaped and known only from sight records ("Obs" and "Esc") to escaped and confirmed ("Esc" only), based on Cortés & Donegan (2012)'s specimen and published sonogram in this edition.

Worm-eating Warbler *Helmitheros vermivorum*
Previously known from a single sight record in northern Colombia (Donegan & Huertas 2002). There are also numerous old (Russell *et al*. 1979) and recent (Pacheco Garzón 2012) records from San Andrés island. A published 'record' photograph means that this species can now finally be considered as confirmed on the mainland (Freeeman *et al*. 2012), as is already its status for Venezuela (Donegan & Huertas 2002).

Notes on status of other species

Pale-rumped Swift *Chaetura egregia*
"Quite possibly" this species was observed on 8 March 2012 near MCH hydroelectric project, Santa Cruz, Mitú, flying over tall *terra firme* forest in a group which included other *Chaetura* swifts (Grey-rumped *C. cinereiventris* & Short-tailed *C. brachyura*). No photos or sound recordings were obtained (Baruah 2012). Given the uncertainty of the observers in the trip report, it is not added to the Colombian list for the time being. However, this species surely occurs in Colombia, being mapped to the Colombian East Amazonian border near this possible sighting locality by Van Perlo (2009). Further efforts should be made to confirm whether or not it occurs in this little-studied region and to document records with sound recordings or photography.

Forster's Tern *Sterna forsteri*
Following publication of a photograph (Rowland & Master 2012), this species can formally be treated as confirmed, although we had previously done so provisionally (Donegan *et al*. 2010) following the publication of online photographs a few years ago by C. Downing and other sight records. There is no change to the status of this species.

Andean Immaculate Antbird *Myrmeciza immaculata*
Western Immaculate Antbird *M. zeledoni*
Previously treated as split for purposes of the Colombian checklist based on a pre-publication manuscript (Donegan *et al*. 2011, McMullan *et al*. 2011) but the paper supporting this has now been published (Donegan 2012a). Maps of the two split species' distributions are set out in Fig. 11.

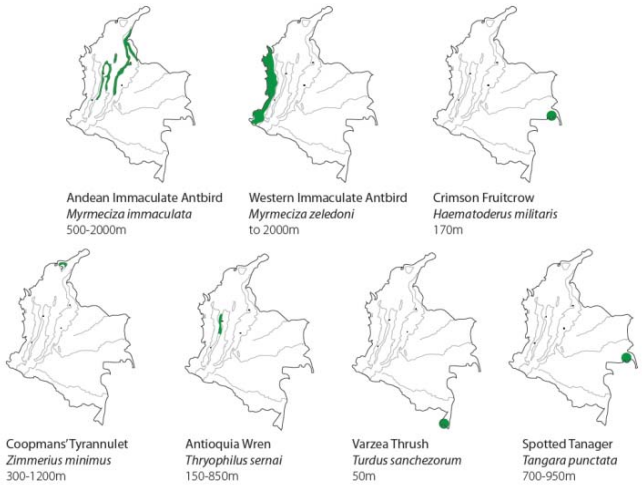


Figure 10. New distributions of various Colombian birds, following the treatments set out in this paper.

Pale-legged Warbler *Basileuterus signatus*
Stiles (2011) recently published a detailed paper concluding that the sole specimen record of this species for Colombia is a misidentified Citrine Warbler *B. luteoviridis*. Following a review of the specimens in 2005, we had previously reached the same conclusion and removed it from the Colombian list several years ago (Donegan *et al*. 2009; *cf.* Kirwan *et al*. 2012).

Zebra Finch *Taeniopygia guttata*
There are two Colombian specimens of this species at ICN (Figure 6A-B). The more recent specimen, dated 8 December 2009 from La Granja, Bogotá, is labelled as having been a captive cage bird that died ('*muerto en cautiverio*'). The other specimen is a male dated 10 February 1982 which is labelled 'Dpto. Cundinamarca, Bogotá' but has no additional information as to origins, nor is other data available (F.G. Stiles, pers. comm. 2012). Given the vague locality, this specimen cannot be said definitely to be either an escaped or captive bird. Zebra Finch is a common species in captivity in Colombia and likely prone to escaping, but there are no records to date of birds in a wild state (it not being mentioned in Baptiste *et al*. 2010). It is therefore not treated as part of the Colombian list or even escaped, at least for now. This species represents the only case of which we are aware of a species known from specimens in Colombia not (yet) being an acceptable candidate for inclusion even for the escaped list.

Figure 11 a-b. Colombian Zebra Finch specimens (both at ICN, both unnumbered) (T. Donegan, June 2012).

Genus names, linear order, spellings, English names

The following additional changes to names and orders, which are either under consideration or have been accepted by Remsen *et al*. (2012), are relevant to Colombia. Proposal numbers and, where appropriate, key references supporting these changes are cited below:

504. New linear sequence of genera in Furnariidae (J.V. Remsen & S. Claramunt) (Derryberry *et al*. 2011).
512. Transfer genera from Emberizidae and Incertae Sedis to Thraupidae (in part: partly already done: various authorities) (J.V. Remsen & K. Burns).
513. Change English name of *Scytalopus panamensis* to "Tacarcuna Tapaculo" (D. Stotz).
514. Recognize *Turdus sanchezorum* (see above).
515. Remove hyphens from certain English names that do not represent monophyletic groups: "Black-Hawk" (J. V. Remsen).
518. Recognize the genus *Isleria* for two "*Myrmotherula*" (G. Bravo & R. Brumfield) (Bravo *et al*. 2012a).
519. Correct the name *Eriocnemis alinae* to *E. aline* (M. Plenge) (David & Peterson 2010).
521. Change the scientific name of the Common Bush-Tanager from *Chlorospingus ophthalmicus* to *C. flavopectus* (R. Massmann).
523. Split Gray Hawk (*Buteo nitidus*) into two species (B. A. Millsap, S. H. Seipke & W. S. Clark) (note: also AOU-NACC-2011-A-4) (Millsap *et al*. 2011).
525. Resurrection of the genus *Uromyias* (S. DuBay and C. Witt) (Du Bay & Witt 2012).
527. Move *Philydor ruficaudatum* [and *P. lichtensteini*] to *Anabacerthia* (R. Brumfield) (Derryberry *et al*. 2011).
531. Revise linear sequence of species in *Pionus* (J. V. Remsen) (Ribas *et al*. 2007).
532. Revise linear sequence of species in *Amazona* (Remsen) (Ottens-Wainwright *et al*. 2004, Russello & Amato 2004).
534. Changes to Pipridae genera and sequence (D. Stotz) (Tello *et al*. 2009, McKay *et al*. 2010).
541. Elevate *Myrmeciza immaculata zeledoni* to species rank (see above).
542. Split *Drymophila caudata* into four species (see above).
550. Split *Zimmerius minimus* from *Z. chrysops* (see above).
551. Change linear sequence of genera in Charadriidae (J.V. Remsen) (Baker *et al*. 2012)
552. Add subfamilies to Columbidae (J.V. Remsen) (Pereira *et al*. 2007, Gibb & Penny 2010).
553. Add subfamilies to Accipitridae (J.V. Remsen) (Griffiths *et al*. 2007).
554. Change linear sequence in *Coeligena* (J.V. Remsen) (Parra *et al*. 2009).
555. Reclassification of the Scolopacidae (J.V. Remsen) (Gibson & Barker 2012).
557. Recognize the genus *Euchrepomis* for four "*Terenura*" (G. Bravo and J.V. Remsen) (Bravo *et al*. 2012b).
562. Recognize newly described *Thryophilus sernai* (C. E. Lara, A. M. Cuervo & C. D. Cadena) (see above).

Most of the implications of Proposal 549 (Split *Zimmerius vilissimus* into four species: Frank Rheindt) were already dealt with since Salaman *et al*. (2001) and remained unchanged since, for the reasons detailed in Donegan *et al*. (2010). However, the name of *Z. vilissimus* changes to Mistletoe Tyrannulet *Z. parvus* and vernacular name of *Z. improbus* may better be changed too. Proposals 492 (Revise generic boundaries in the *Buteogallus* group (2): J. V. Remsen) and 547 (Transfer Yellow-bellied Sapsucker Sphyrapicus varius from the Hypothetical List to Main List (Thomas Donegan) were adopted after publication of

Donegan *et al*. (2011) but in time for publication of McMullan *et al*. (2011). Proposal 547 (Transfer Yellow-bellied Sapsucker *Sphyrapicus varius* from the Hypothetical List to Main List) reflects a treatment previously adopted in Donegan *et al*. (2011).

The following proposal which passed SACC is not adopted: 530 (Remove hyphens from "Ground-Dove": J. V. Remsen).

We pend a decision on the following matters that are subject to ongoing AOU–SACC discussions, until next year:

522. An alternative classification of nighthawk species in the New World (M. Nores & F. G. Stiles). See Donegan *et al*. (2010) for our provisional treatment of the Colombian species.
543. English names for *Schiffornis* (genus and species) (F. G. Stiles).
546. Resurrect *Chubbia* (J. V. Remsen) (Gibson & Barker 2012).
556. Adopt a new English name for *Thamnophilus atrinucha* (M. Isler)
558. Treat *Thalurania fannyi* and *Thalurania colombica* as conspecific (Donegan 2012b).
561. Transfer *Milvago chimango* to *Phalcoboenus* (J. V. Remsen) (Fuchs *et al*. 2012).
564. Merge *Pipile* into *Aburria* (J. V. Remsen) (Grau et al. 2005).

Threat Categories

Updates to the threat status of various Colombian species follows a further review process by BirdLife International that concluded in February 2012. Most notable has been the downgrading from Endangered to Vulnerable of three Colombian endemic birds (highlighted in bold below), thanks to combined efforts of conservation and investigation by Fundación ProAves and others (Fundación ProAves de Colombia 2011, 2012). Of contrasting concern, the alarming threats to and deforestation rates of Amazonian forest have resulted in many Amazonian species or those with a significant Amazonian distribution having been upgraded in threat level (Bird *et al*. 2011, BirdLife International 2012, Bird & Lees 2012).

Grey Tinamou *Tinamus tao* LC to VU.
Great Tinamou *Tinamus major* LC to NT
White-throated Tinamou *Tinamus guttatus* LC to NT
Grey-legged Tinamou *Crypturellus duidae* LC to NT
Black-capped Tinamou *Crypturellus atrocapillus* LC to NT
Blue-throated Piping-Guan *Pipile cumanensis* LC to VU
Black Curassow *Crax alector* LC to VU
Crestless Curassow *Mitu tomentosum* LC to NT
Marbled Wood-Quail *Odontophorus gujanensis* LC to NT
Rufous-breasted Wood-Quail
Odontophorus speciosus LC to NT
Agami Heron *Agamia agami* LC to VU
Zigzag Heron *Zebrilus undulatus* LC to NT
Orange-breasted Falcon *Falco deiroleucus* LC to NT
Gray-bellied Hawk *Accipiter poliogaster* LC to NT
Ornate Hawk-Eagle *Spizaetus ornatus* LC to NT
Dark-winged Trumpeter *Psophia viridis* LC to EN
Semipalmated Sandpiper *Calidris pusilla* LC to NT
Ruddy Pigeon *Patagioenas subvinacea* LC to VU
Sapphire Quail-Dove *Geotrygon saphirina* LC to VU
Scarlet-shouldered Parrotlet *Touit huetii* LC to VU
White-bellied Parrot *Pionites leucogaster* LC to VU
Orange-cheeked Parrot *Pyrilia barrabandi* LC to NT
Festive Parrot *Amazona festiva* LC to VU
Wire-crested Thorntail *Discosura popelairii* LC to NT
Ecuadorian Piedtail *Phlogophilus hemileucurus* NT to VU
Pink-throated Brilliant *Heliodoxa gularis* NT to VU
[Black-mandibled Toucan *Ramphastos ambiguus* LC to VU–*note now NR for purposes of Colombian checklist*]
White-mantled Barbet *Capito hypoleucus* EN to VU
Blue-rumped Manakin *Lepidothrix isidorei* LC to NT
Grey-tailed Piha *Snowornis subalaris* LC to NT
Ecuadorian Tyrannulet *Phylloscartes gualaquizae* LC to NT
Lemon-browed Flycatcher *Conopias cinchoneti* LC to VU
Lined Antshrike *Thamnophilus tenuepunctatus* LC to VU
Blackish-grey Antshrike *Thamnophilus nigrocinereus* LC to NT
Castelnau's Antshrike *Thamnophilus cryptoleucus* LC to NT
White-streaked Antvireo *Dysithamnus leucostictus* LC to VU
Guianan Streaked-Antwren *Myrmotherula surinamensis* LC to VU
Yellow-breasted Antwren *Herpsilochmus axillaris* LC to VU
Ash-breasted Antbird *Myrmoborus lugubris* LC to VU
Magdalena Antbird *Myrmeciza palliata* NR to NT
Wing-banded Antbird *Myrmornis torquata* LC to NT
Brown-banded Antpitta *Grallaria milleri* EN to VU
Ochre-breasted Antpitta *Grallaricula flavirostris* LC to NT
Dusky Spinetail *Synallaxis moesta* LC to NT
Cabanis' Spinetail *Synallaxis cabanisi* LC to NT
Ash-browed Spinetail *Cranioleuca curtata* LC to VU
Grey-throated Leaftosser *Sclerurus albigularis* LC to NT
Long-tailed Woodcreeper *Deconychura longicauda* LC to NT
Zimmer's Woodcreeper *Dendroplex kienerii* LC to NT
Red-bellied Grackle *Hypopyrrhus pyrohypogaster* EN to VU
Olive Finch *Arremon castaneiceps* LC to NT
White-capped Tanager *Sericossypha albocristata* LC to VU
Bicoloured Conebill *Conirostrum bicolor* LC to NT

Acknowledgements

Thanks to Juan Carlos Luna and Oswaldo Cortés for advance sight of their co-authored papers in this issue. F. Gary Stiles allowed TD to work in the ICN collection. Trevor Ellery, Tom Friedel (and birdphotos.com), Blanca Huertas and Juan Carlos Luna kindly allowed us to use various photographs. We acknowledge the work of Remsen

Summary of changes and new species totals

Change	Species	Conf.	Bog.	Obs.	Obs.*	SA	SA (Obs)	Int	Int? / Esc	Total
2011 Check–list totals		**1,814**	**4**	**46**	**5**	**11**	**5**	**4**	**[13]**	**1,889 [1,902]**
Species added	Crimson-throated Fruitcrow *Haematoderus militaris*			+1						
	Antioquia Wren *Thryophilus sernai*	+1								
	Varzea Thrush *Turdus sanchezorum*	+1								
	Spotted Tanager *Tangara punctata*	+1								
Species removed	Dull-mantled Antbird *M. laemosticta*	-1								
Splits	Indigo-crowned Quail-Dove *Geotrygon purpurata*	+1								
	Western Woodhaunter *Hyloctistes virgatus*	+1								
	Klages' Antbird *Drymophila klagesi*	+1								
	Santa Marta Antbird *Drymophila hellmayri*	+1								
	Streak-headed Antbird *Drymophila striaticeps*	+1								
	Coopmans' Tyrannulet *Zimmerius minimus*	+1								
Lumps	None									
Changes of category	Snowy Plover *Charadrius nivosus*	+1		-1						
	Marbled Godwit *Limosa fedoa*	+1		-1						
	Worm-eating Warbler *Helmitheros vermivorum*	+1			-1					
Escaped species	Sulphur-crested Cockatoo *Cacatua galerita*								+1	
Totals per category 2012		**1,825**	**4**	**45**	**4**	**11**	**5**	**4**	**[14]**	**1,912**
Change since 2011 Checklist		+11	-	-1	-1	-	-	-	+1	
Less escaped species										**-14**
TOTAL BIRD SPECIES FOR COLOMBIA										**1,898**

et al. (2012) (American Ornithologists' Union South American Classification Committee), which annually leads to multiple helpful enhancements being made to the Colombian checklist.

References

Álvarez-León, R. Notas sobre la avifauna del humedal Santa María del Lago, Cordillera Oriental de los Andes Colombianos. *Revista Luna Azul* 28: 24-39.

Avendaño, J. E. 2012. La avifauna de las tierras bajas del Catatumbo, Colombia: inventario preliminar y ampliaciones de rango. *Boletín SAO* 21(1): evAP3_2012.

Baker, A.J., Yatsenko, Y. & Tavares, E.S. 2012. Eight independent nuclear genes support monophyly of the plovers: the role of mutational variance in gene trees. *Molecular Phylogenetics & Evolution* 65: 631-641.

Baptiste M.P., Castaño N., Cárdenas D., Gutiérrez F.P., Gil D.L. & Lasso C.A. (eds). 2010. *Análisis de riesgo y propuesta de categorización de especies introducicas para Colombia*. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Bogotá. 200 pp.

Baruah, P. 2012. Trip Report: Amazonian lowlands of Mitu, Colombia. 4th Mar to 11th Mar 2012. http://www.birdforum.net/attachment.php?attachmentid=385847&d=1337625704

Bird, J. P. & Lees, A.C. 2012. Acknowledging an Amazon avifauna in crisis. *Neotropical Birding* 11: 74-77.

Bird, J. P., Buchanan, J. M., Lees, A. C., Clay, R. P., Develey, P. F., Yépez, I. & Butchart, S. H. M. 2011. Integrating spatially explicit habitat projections into extinction risk assessments: a reassessment of Amazonian avifauna incorporating projected deforestation. *Diversity & Distributions* doi: 10.1111/j.1472-4642.2011.00843.x.

BirdLife International. 2012. Threat to the Amazon's birds greater than ever, Red List update reveals. http://www.birdlife.org/community/2012/06/threat-to-the-amazons-birds-greater-than-ever-red-list-update-reveals/

Bravo, G. A., Chesser, R. T. & R. T. Brumfield. 2012a. *Isleria*, a new genus of antwren (Aves: Passeriformes: Thamnophilidae). *Zootaxa* 3195: 61-67.

Bravo, G. A., Remsen, J. V., Whitney, B. M. & Brumfield, R. T. 2012b. DNA sequence data reveal a subfamily-level divergence within Thamnophilidae (Aves: Passeriformes). *Molecular Phylogenetics & Evolution* 65:287–293.

Campagna, L., St. Clair, J. J. H., Lougheed, S. C., Woods, R. W., Imberti, S. & Tubaro, P. L. 2012. Divergence between passerine populations from the Malvinas – Falkland Islands and their continental counterparts: a comparative phylogeographical study. *Biological Journal of the Linnean Society* (online): doi: 10.1111/j.1095-8312.2012.01898.x

Chaves, J.C., Cuervo, A.M., Miller, M.J. & Cadena, C.D. 2010. Revising species limits in a group of *Myrmeciza* antbirds reveals a cryptic species within *M. laemosticta*. *Condor* 112: 718–730.

Cortés, O. & Donegan, T. M. 2012. Records of two escaped species of parrots for Colombia. *Conservación Colombiana* 17: 35-37.

David, N. & Peterson, A. P. 2010. Resolution of priority affecting three hummingbird names established by Bourcier (Aves: Trochilidae). *Zoological Bibliography* 2010 1(1): 3-5.

Derryberry, E., Claramunt, S., Derryberry, G., Chesser, R. T., Cracraft, J., Aleixo, A., Pérez-Éman. J., Remsen, J. V. & Brumfield. R. T. 2011. Lineage diversification and morphological evolution in a large-scale continental radiation: the Neotropical ovenbirds and woodcreepers (Aves: Furnariidae). *Evolution* 65: 2973–2986.

Donegan, T.M. 2012a. Geographical variation in Immaculate Antbird *Myrmeciza immaculata*, with a new subspecies from the Central Andes of Colombia. *Bull. Brit. Orn. Cl.* 132: 3–40.

Donegan, T.M. 2012b. Range extensions and other notes on the birds and conservation of the Serranía de San Lucas, an isolated mountain range in northern Colombia. *Bull Brit. Orn. Cl.* 132: 140-161.

Donegan, T.M. & Huertas B.C. 2002. First mainland record of Worm-eating Warbler *Helmitheros vermivorus* for Colombia. *Cotinga* 17: 77–78.

Donegan, T.M. & Salaman, P.G.W. 2012. Vocal differentiation and conservation of Indigo-crowned Quail-Dove *Geotrygon purpurata*. *Conservación Colombiana* 17: 15-19.

Donegan, T.M., Salaman, P.G.W. & Caro, D. 2009. Revision of the status of various bird species occurring or reported in Colombia. *Conservación Colombiana* 8: 76–82.

Donegan, T.M, Salaman, P.G.W., Caro, D. & McMullan, M. 2010a. Revision of the status of bird species occurring in Colombia 2010. *Conservación Colombiana* 13: 25–54.

Donegan, T. M., Avendaño, J. E., Briceño-L., E. R., Luna, J. C., Roa, C., Parra, R., Turner, C., Sharp, M. & Huertas, B. 2010b. Aves de la Serranía de los Yariguíes y tierras bajas circundantes, Santander, Colombia. *Cotinga* 32: 72–89.

Donegan, T.M., Salaman, P., Quevedo, A. & McMullan, M. 2011. Revision of the status of bird species occurring or reported in Colombia 2011. *Conservación Colombiana* 15: 4-21

Du Bay, S.G., Witt, C.C., 2012. An improved phylogeny of the Andean tit-tyrants (Aves, Tyrannidae): More characters trump sophisticated analyses. *Molecular Phylogenetics and Evolution* 64: 285-296.

Freeman, B. G., Hilty, S. L., Calderón-F., D., Ellery, T. & Urueña, L. E. 2012. New and noteworthy bird records from central and northern Colombia. *Cotinga* 34: 33–42.

Fuchs, J., Johnson J. A. & Mindell, D. P. 2012. Molecular systematics of the caracaras and allies (Falconidae: Polyborinae) inferred from mitochondrial and nuclear sequence data. *Ibis* 154: 520-532.

Fundación ProAves de Colombia. 2011. Notes on the status of various threatened species occurring in Colombia. *Conservación Colombiana* 15: 22-28.

Fundación ProAves de Colombia. 2012. Conservation Success for three Endemic and Threatened Colombian Birds.www.proaves.org/proaves/index.php?option=com_content&view=article&id=1875

Funk, W.C., Mullins, T.D. & Haig, S.M. 2007. Conservation genetics of snowy plovers (*Charadrius alexandrinus*) in the Western Hemisphere: population genetic structure and delineation of subspecies. *Conservation Genetics* 8:1287–1309.

Gibb, G.C. & Penny, D. 2010. Two aspects along the continuum of pigeon evolution: A South-Pacific radiation and the relationship of pigeons within Neoaves. *Molecular Phylogenetics & Evolution* 56: 698–706.

Gibson, R. & Baker, A. 2012. Multiple gene sequences resolve phylogenetic relationships in the shorebird suborder Scolopaci (Aves: Charadriiformes). *Molecular Phylogenetics and Evolution* 64: 66–72.

Gill, F. & Donsker, D. (Eds) 2012. IOC World Bird Names (version 3.1). Available at http://www.worldbirdnames.org/ [Accessed: 10 September 2012].

Grau, E. T., Pereira, S. L., Silveira, L. F., E. Höfling, And A. Wajntal. 2005. Molecular phylogenetics and biogeography of Neotropical piping guans (Aves: Galliformes): *Pipile* Bonaparte, 1856 is synonym of *Aburria* Reichenbach, 1853. *Molecular Phylogenetics & Evolution* 35: 637-645.

Griffiths, C. S., Barrowclough, G.F., Groth, J.G. & Mertz, L. 2007. Phylogeny, diversity and classification of the Accipitridae based on DNA sequences of the RAG-1 exon. *J. Avian Biology* 38: 587-602.

Isler, M. L. & Isler, P. R. 1999. *Tanagers*. Christopher Helm, London.

Isler M. L., Isler, P. R. & Whitney, B. M. 1999. Species limits in antbirds. The Myrmotherula surinamensis complex. *Wilson Bull.* 116: 83–96.

Isler, M. L., Cuervo, A. M., Bravo, G.A. & Brumfield, R.T. 2012. An integrative approach to species-level

systematics reveals the depth of diversification in an Andean thamnophilid, the Long-tailed Antbird. *Condor* 114: 571–583.

Kirwan, G. M., Calderón, D., Minns, J. & Roesler. I. 2012. Neoitropical Notebook. *Cotinga* 34: 179-194.

Küpper, C., Augustin, J., Kosztolányi, A., Figuerola, J., Burke, T. & Székely, T. 2009. Kentish versus Snowy Plover: Phenotypic and genetic analyses of *Charadrius alexandrinus* reveal divergence of Eurasian and American subspecies. *Auk* 126: 839−852.

Lara, C.E., Cuervo, A.M., Valderrama, S.V., Calderón,-F., D. & Cadena, C.D. 2012. A new species of wren (Troglodytidae) from the dry cauca river canyon, northwestern Colombia. *Auk* 129(3): 537-550

Luna, J.C. 2012 Primer registro del Hornero del Pacífico *Furnarius (leucopus) cinnamomeus* en Colombia. *Conservación Colombiana* 17: 33-34.

McKay, B. D., Barker, F. K., Mays, H. L., Doucet, S. M. & Hill, G. E. 2010. A molecular phylogenetic hypothesis for the manakins (Aves: Pipridae). *Molecular Phylogenetics and Evolution* 55:733-737.

McMullan, M., Donegan, T.M. & Quevedo, A. 2010. *Field guide to the birds of Colombia*. Fundación ProAves, Bogotá. 225 pl.

McMullan, M., Quevedo, A. & Donegan, T.M. 2011. *Guia de Campo de las Aves de Colombia*. Fundación ProAves, Bogotá.

Millsap, B. A., Seipke, S. H. & Clark, W. S. 2011. The Gray Hawk (*Buteo nitidus*) is two species. *Condor* 113:326-339.

O'Neill, J.P., Lane, D.F. & Naka, L.N. 2011. A cryptic new species of thrush (Turdidae: Turdus) from western Amazonia. *Condor* 113: 869–880.

Ottens-Wainwright, P., Halanych, K.E., Eberhard, J.R., Burke, R.I., Wiley, J.W., Gnam, R.S. & Aquilera, X.G. 2004. Independent geographic origins of the genus *Amazona* in the West Indies. *Journal of Caribbean Ornithology* 17: 23-49.

Podos, J. 1996. Motor constraints on vocal development in a songbird. *Animal Behavior* 51: 1061-1070.

Pachecho Garzón, A. 2012. Study and conservation of the birds of San Andrés island. *Conservación Colombiana* 16: 5-54.

Parra, J.L., Remsen, J.V., Alvarez-Rebolledo, M. & McGuire, J. A. 2009. Molecular phylogenetics of the hummingbird genus *Coeligena*. *Molecular Phylogenetics & Evolution* 53: 425–434.

Pereira, S.L., Johnson, K.P,, D. H. Clayton, And A. J. Baker. 2007. Mitochondrial and nuclear DNA sequences support a Cretaceous origin of Columbiformes and a dispersal-driven radiation in the Paleogene. *Systematic Biology* 56: 656–672.

Quevedo, A. & Luna, J. C. 2012. Dos nuevas especies de aves para Colombia de Guainía. *Conservación Colombiana* 17: 26-27.

Remsen, J.V., Cadena, C.D., Jaramillo, A., Nores, M., Pacheco, J. F., Pérez–Éman, J., Robbins, M.B., Stiles F.G., Stotz, D.F. & Zimmer, K.J. 2012. A classification of the bird species of South America (version 31 October 2012). www.museum.lsu.edu/~Remsen/SACCBaseline.html.

Restall, R., Rodner, C. & Lentino, M. 2006. *Birds of northern South America*. Christopher Helm, London.

Rheindt F.E., Cuervo A.M. & Brumfield R.T. 2012. Rampant polyphyly indicates cryptic diversity in a clade of Neotropical flycatchers (Aves: Tyrannidae). *Biological Journal of the Linnean Society* in press.

Ribas, C.C., Moyle, R.G., Miyaki, C.Y. & Cracraft, J. 2007. The assembly of montane biotas: linking Andean tectonics and climate oscillations to independent regimes of diversification in Pionus parrots. *Proceedings Royal Society B* 274: 2399-2408.

Ridgley, R.S. & Greenfield, P.J. 2001. *The birds of Ecuador*. Cornell Univ. Press, Ithaca.

Ridgely, R.S. & Tudor, G. 2009. *The birds of South America, passerines*. Christopher Helm, London.

Rowland, F. & Master, B. 2012. New records of Forster's Tern *Sterna forsteri* for Colombia. *Conservación Colombiana* .

Russell, S.M., Barlow, J.C. & Lamm, D.W. 1979. Status of some birds on Isla San Andrés and Isla Providencia, Colombia. *Condor* 81(1): 98–100.

Russello, M. A. &. Amato, G. 2004. A molecular phylogeny of Amazona: implications for Neotropical parrot biogeography, taxonomy, and conservation. *Molecular Phylogenetics & Evolution* 30: 421-437.

Salaman, P.G.W., Bayly, N., Burridge, R., Grantham, M., Gurney, M., Quevedo, A., Urueña, L.E. & Donegan, T. 2008. Sixteen bird species new for Colombia. *Conservación Colombiana* 5: 80–85.

Salaman, P.G.W., Donegan, T.M. & Caro, D. 2010. *Checklist of the Birds of Colombia*. Fundación ProAves, Bogotá, Colombia.

Stiles, F. G. 2011. Ending fifty years of onfusion: the anomalous record of the Pale-legged Warbler (*Basileuterus signatus*) in Colombia. *Ornitología Colombiana* 11: 98-101.

Tello, J. G., Moyle, R. G., Marchese, D. J., & Cracraft, J. 2009. Phylogeny and phylogenetic classification of tyrant-flycatchers, cotingas, manakins and their allies (Aves: Tyrannides). *Cladistics* 25:429-465.

Valderrama, S. V., Parra, J. E. & Mennill, D. J. 2007. Species differences in the songs of the critically endangered Niceforo's Wren and the related Rufous-and-white Wren. *Condor* 109:870-877.

Van Perlo, P. 2009. *A field guide to the birds of Brazil*. Oxford University Press.

Vocal differentiation and conservation of Indigo-crowned Quail-Dove *Geotrygon purpurata*

Diferenciación en la vocalización de Geotrygon purpurata y evaluación de su estado de conservación

Thomas Donegan & Paul Salaman

c/o Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: tdonegan@proaves.org

Abstract

Geotrygon purpurata of the West Andes foothills differs from *G. saphirina* of Amazonia in its shorter main note to the song, which is less variable in acoustic frequency. Its conservation status is discussed and Endangered (EN) status is recommended.

Resumen

Geotrygon purpurata del piedemonte de la Cordillera Occidental difiere en su vocalización de G. saphirina en tener la nota principal más corta que demuestra menos variación en la frecuencia acústica. Su estado de conservación es discutido y se recomienda considerarla como En Peligro (EN).

Introduction

Indigo-crowned Quail-Dove *G. saphirina* has a west Amazonian distribution whilst *G. (s.) purpurata* is found in the Chocó of Ecuador and Colombia. Although *purpurata* Salvin, 1878 was originally described as a separate species, these allopatric taxa were lumped for many years (e.g., Hellmayr & Conover 1942, Meyer de Schauensee 1964, 1966, 1970, Goodwin 1970, Hilty & Brown 1986, Sibley & Monroe 1990, Brumfield & Capparella 1996, Baptista *et al*. 1997, Erize *et al*. 2006, Salaman *et al*. 2008, 2010, McMullan *et al*. 2010, 2011). More recently, several authors split them on account of their differing voice and morphology, e.g. Gibbs *et al* (2001), Salaman *et al*. (2001), Ridgely & Greenfield (2001), Jahn *et al*. (2002), Granizo *et al*. (2002), Restall *et al*. (2006), Gill & Donkser (2010), Solano-Ugalde (2011) and Johnson & Weckstein (2011). The Colombian checklist moved to Remsen *et al*. (2012)'s treatment in Salaman *et al*. (2008) and subsequent editions.

The morphological differences between these two groups are well-known, with *purpurata* (Fig. 1) having a dark purple crown and nape constrating with its white forehead (whilst in *saphirina* this is bluish and less contrasting), different shade of mauve coloration on the upper mantle, darker grey chest, lacking of white wing patches found in *saphirina* and different iris coloration (Hellmayr & Conover 1942, Ridgely & Greenfield 2001, Restall *et al*. 2006 and McMullan *et al*. 2010, 2011, Remsen *et al*. 2012).

Two molecular studies have addressed this group. First, Brumfield & Capparella (1996), using three samples of each group, found unusually high divergence between *purpurata* and *saphirina* for lowland conspecifics with a Chocó / Amazonian distribution. More recently, Johnson & Weckstein (2011) studied a single Ecuadorian *purpurata* and single Peruvian *saphirina*, finding strong support for a sister relationship and moderate (modelled >1.2 million years) differentiation, consistent with that observed between samples of Russet-crowned Quail-Dove *Geotrygon goldmani* & Chiriqi or Rufous-breasted Ground-Dove *G. chiriquensis* and those between nominate Grey-fronted Dove *Leptotila rufaxilla* & Yungas Dove *L. megalura*. However, observed differentiation does not attain that found within the widespread White-tipped Dove *L. vereauxii*.

We are not aware of any published paper concerning vocal variation in this species. Remsen *et al*. (2012) considered this split but decided against adopting it on account of the lack of published analysis of vocal variation. Only Ridgely & Greenfield (2001)'s transcriptions were available in addition to some published and archived recordings at that time. Given that other authorities continue to split these birds, that several sound recordings are now available of both populations and the results of recent molecular studies, a re-evaluation of the available vocal data is called for.

Figure 1. *G. purpurata* (RNA Pangan, Nariño, Colombia: J. C. Luna/ProAves).

Methods

We collated available sonograms from published and online sources. Note length, maximum acoustic frequency and subjective descriptions of note shape were studied, based on

the first three recordings of each recording. Statistical tests set out in Donegan (2012) were applied to consider vocal differentiation.

Vocal differences

Both the *saphirina* and *purpurata* groups appear to give two different vocalizations, one constituted solely by a single drawn out note and the other being similar, but preceded by a very short single note (Fig. 2). Calls of both sorts are often repeated several times for periods of several minutes. Recordist notes on xeno-canto show instances of *purpurara* songs changing from a single to double note after playback (R. Ahlman: XC 20968). Recordings of *saphirina* which include double notes both state that the bird called in response to whistled imitations. The main, longer note is essentially similar in both sorts of song and was analyzed here using Raven Lite for all recordings.

There are noteworthy differences in the sole or main note in songs. The main note of the *G. saphirina* song is longer than that of *G. purpurata* (Fig. 2). There is no recorded overlap for song length in the sample studied (Fig. 3, Appendix). The differences are statistically significant (unequal variance *t*-test, $p < 3 \times 10^{-12}$) and meet Donegan (2012)'s levels 1, 2 and 4 tests of differentiation. However, they marginally miss the test of 97.5%/97.5% statistical diagnosability using *t*-distributions (Level 5), perhaps influenced by the moderate vocal sample size for these rare species. *G. saphirina* is also more variable in maximum acoustic frequency than *G. purpurata*, although there is broad overlap in this feature of songs between the two populations (Figs. 2-3). Differences in maximum acoustic frequency are statistically significant (unequal variance *t*-test, $p < 0.0004$) but meet only the "Level 1" test of differentiation and not others, i.e. weak mean differences only for this variable. Notably though, *G. saphirina* is more variable in note shape of the main note, across the sample, with a peak or variation in frequency shown in some recordings (Fig. 2), whereas such variations in frequency are absent from all available *G. purpurata* recordings.

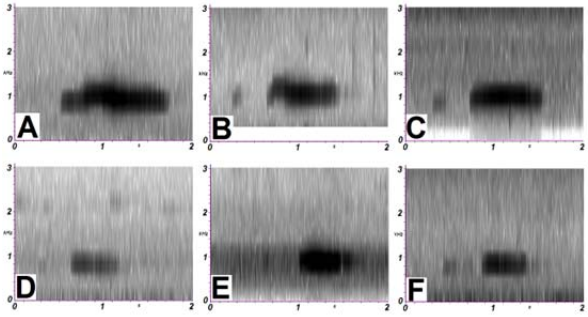


Figure 2. Sonograms of songs of (top) *G. saphirina* & (bottom) *G. purpurata*. A. XC89253; B. XC22977; C. XC94977; D. XC85492; E. Jahn *et al*. (2002); F. Krabbe & Nilsson (2003). Details of each sound recording in the appendix.

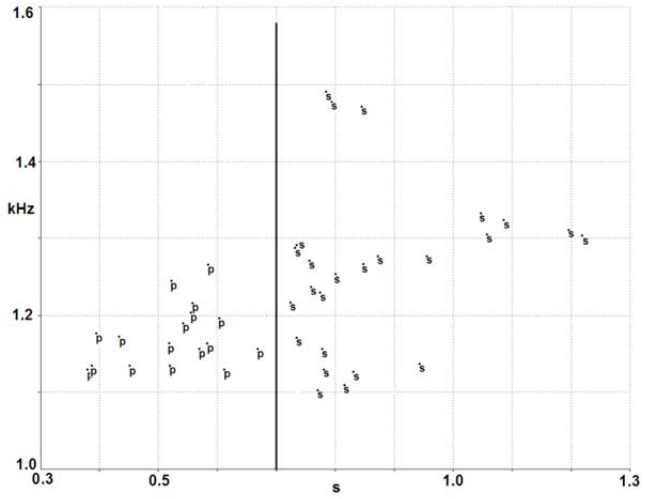


Figure 3. X-Y scatter graph generated using Past software of acoustic frequency (*y* axis) and length of the main note (*x* axis) of the principal note of *Geotrygon* songs. The vertical line shows song length = 0.7 s. All data points to the left of the line ("p") relate to *G. purpurata*. All data points to the right relate of the line ("s") relate to *G. saphirina*.

These vocal differences are likely to be significant in the context of a family in which songs generally appear to be stereotypical. A video showing an individual of Amazonian *saphirina* singing (Internet Bird Collection: see list of recordings below) shows an individual first puffing out its chest, presumably as it inhales. The song then coincides with the individual exhaling, without opening its bill, piping air through its nostrils to create sound. The ability of the Amazonian population to make longer, acoustically variable and higher pitched calls in this way is likely linked to physiological factors such as lung capacity, chest muscle strength or the shape or size of the bill, nostrils or trachea.

Distribution

G. purpurata is considered restricted to the humid Chocó. There are no records in the Magdalena valley or near low Andean passes in the elevational range of these species (McMullan *et al*. 2010). Its distribution and elevational range are similar to another terrestrial Chocó endemic, the Banded Ground-cuckoo *Neomorphus radiolosus*, restricted to extremely wet / pluvial foothill tropical forest in the Chocó in northwestern Ecuador and western Colombia. However, *G. purpurata* has a narrower elevational range of between 200 to 1100 m (Hilty & Brown 1986). Although the latter authors considered it may range lower, surveys of forested localities on the Chocó floor did not result in any records (Salaman 1994). Latitudinally, it is found across 750 km of foothills from central Chocó, Colombia to Pichincha, Ecuador with an estimated Extent of Occurrence of <15,000 km^2.

G. purpurata is considered rare to uncommon locally in humid and wet forest and advanced second growth at the following locations from Colombia (26 specimen records in Biomap Alliance Participants 2012); Chocó: Nóvita with 1 specimen in 1911 and La Vieja (most northerly record at 05°24'N) with three specimens from 1912; Valle de Cauca: río Verde / Alto Anchicaya with two specimens (1943 by F.C. Lehmann; 1972 by S.L. Hilty), and a specimen at Cajambre, Río Aguasucia in 1983 (C.J. Cabrera); Cauca: Río Huisitó / below El Tambo in Cauca Dept with 13 specimens from 1936-39, 1950 and 1958 (K. Von Sneidern) plus a specimen in 1991 (Á. Negret); and Nariño Dept: la Guayacana with 4 specimens (1958 by M.A. Carriker), Buenavista with a specimen from 1912 (W.B. Richardson).

The species is reported from just three locations in recent decades in Colombia: Alto Anchicaya in the early 1970s by S.L. Hilty (Hilty & Brown 1986), Pangan Nature Reserve (Salaman 1994, J. C. Luna *in litt*. 2012; Fig. 1) and below Tambito nature reserve (Á. Negret records). In Ecuador, Ridgely and Greenfield (2001) reported the species to be rare to uncommon inside very humid forest from various sites in Esmeraldas, Imbabura and nw. Pichincha Provinces, but reliably from only El Placer and Bilsa. Various other sound recording localities are mentioned in the Appendix.

G. saphirina in contrast is found more broadly in lowlands and in the East slope foothills where it generally occurs below 1,300 m (McMullan *et al*. 2010) with recent sound recordings at 1,450 m (XC 98120, 98253). The high Andes probably constitute a formidable barrier for a largely terrestrial to understory lowland group such as these *Geotrygon*.

Available names

The name *saphirina* (Bonaparte 1855) has its type locality in Napo, Ecuador, so refers to the Amazonian population. This name is senior to *rothschildi* Sztolcman, 1926 which has its type locality along the río Cadena, Marcapata valley, Peru (also in the Amazonian region). Hellmayr & Conover (1942) considered the taxonomic validity of *rothschildi* in need of confirmation, an issue outside the scope of this paper. The sole Peruvian recording attains the highest frequency among the sample, but falls within the range of other recordings for note length. A greater vocal sample, particularly from Peru, would be needed to assess whether any geographic variation in voice exists in Amazonia which should be recognized through the use of subspecies.

The name *purpurata* Salvin, 1878 has a vague type locality of "Ecuador", with the type in the BMNH. In the original description, the type was compared directly to various *saphirina* collected in Ecuadorian Amazonia and *purpurata* distinguished in "*having the crown of the head of a rich blackish purple, from which the white forehead is clearly defined*". The *purpurata* type should therefore be assumed to have been collected west of the Andes or on the western slope of Ecuador. The name is correctly available for the split Chocó population.

Taxonomic considerations and vernacular names

Because they are apparently sister taxa, the molecular data on a conservative view could be considered neither to support nor contradict splitting or lumping. Separation would nonetheless be consistent with the treatment of several other recognized pigeon species and Chocó versus Amazonia splits (Brumfield & Capparella 1996, Johnson & Weckstein 2011).

Considering proposed species scoring methodologies (Tobias *et al*. 2010), *purpuata* attains 2 points for song, 3 for crown and nape coloration, 1 for mantle coloration, 1 for breast coloration and 1 for iris coloration, at least 8 points (without considering biometrics) and over the 7 recommended for species rank of allopatric populations. Considering Helbig *et al*. (2002)'s guidelines, diagnosability by voice would have to be made out to a similar level to that shown between other Neotropical pigeon species in order to be indicative of species rank. Although our vocal data fall short of diagnosability, it is noteworthy that Lined Quail-Dove *G. linearis* and White-throated Quail-Dove *G. frenata* show similar vocal differences, principally in note length and in variability of note shape as those shown here. Other sympatric Neotropical pigeon species such as Plumbeous Pigeon *Patagioenas plumbea* / Ruddy Pigeon *subvinacea* and some *Leptotila* also differ primarily in the frequency and length of the notes in their songs rather than the number of notes in them, showing comparable levels of differences to those between these *Geotrygon*.

Hellmayr & Connover (1942) used the name Purple Quail-Dove, which is appropriate given that this is the most purple *Geotrygon*. However, this name seems to have been overlooked in the recent literature in favour of Indigo-crowned (e.g. Ridgely & Greenfield 2001, Restall *et al*. 2006).

Conservation of *G. purpurata*

The broader *Geotrygon saphirina* was recently upgraded to IUCN Vulnerable status following an assessment of deforestation rates in its Amazonian range (Bird *et al*. 2011, BirdLife International 2012). A split *G. purpurata* is forest-dependent (Solano-Ugalde 2011) and has a small geographical range within a narrow elevational range in the most humid part of the Chocó. It is evidently a low-density species and locally uncommon to rare in Ecuador (Ridgely & Greenfield 2001, Granizo *et al*. 2002, Solano-Ugalde 2011). Although due to its secretive nature it may be overlooked (McMullan *et al*. 2010), there are few specimens, sound recordings or modern localities. The population of *purpuata* is roughly estimated to number 1,000-2,499 individuals (600-1,700 mature individuals),

based on an assessment of known records, descriptions of abundance and estimated Extent of Occurrence.

A rapid population decline is suspected owing to accelerating rates of habitat loss and presumed hunting pressure in its range over the period of three generations. Habitat destruction is taking place due to coca production and alluvial gold prospecting, mining and related colonization of the Colombian Chocó. African oil palm cultivations, cattle grazing, infrastructural developments and advancing agricultural colonization are all accelerating at an unprecedented rate in both western Ecuador and Colombia. During the 2000s, deforestation reduced primary forest cover in Esmeraldas, Ecuador by over 38% (Cárdenas 2007) whilst illicit and licit cultivations in Colombia have reduced the cover of primary forest in Nariño, Colombia by over 30%. Alarmingly, several localities where *G. purpurata* has been confirmed in the past century have now been deforested.

In recent decades, *Geotrogon purpurata* has been confirmed in just a few protected areas: Bilsa Biological Reserve (3000 ha) in Esmeraldas (Ridgely & Greenfield 2001), Mangaloma (Athanas recordings) and Reserva Mariposas y Guañas, río Pachijal (Solano-Ulgade 2011) in Ecuador and Pangan Nature Reserve (8,361 has) in Nariño, Colombia (Salaman *et al*. 2010). Whilst it is likely to occur in the lowest elevations of Cotacachi Cayapas Ecological Reserve as well as the Awá Indigenous community lands in Ecuador and Colombia, all of these areas are being rapidly deforested and colonized, so provide no safe haven for *G. purpurata*. A population may persist at Alto Anchicaya, on the northern boundary of the Farallones de Cali National Park and below Munchique National Park, from where there are historical records (Hilty & Brown 1986).

G. purpurata has a very limited range with an Extent of Occurrence of less than 15,000 km^2 (within the threshold for Vulnerable) that is severely fragmented (B1a) combined with a continuing decline (B1b) in (i) extent of occurrence, (ii) area of occupancy, (iii) area, extent and quality of habitat, (iv) number of locations and (v) given that it is a forest-dependent species, presumably number of mature individuals (B1ab(i,ii,iii,v)). Granizo *et al*. (2002) considered it Vulnerable for Ecuador. The population size is however estimated to number fewer than 2,500 mature individuals and is continuing an inferred decline in the numbers of mature individuals. No subpopulation is estimated to comprise more than 50 mature individuals, perhaps qualifying it for Endangered status (C2a(i)).

Acknowledgements

Thanks to the recordists whose names feature in the appendix below, to J. C. Luna for providing various data and the photographs.

References

Baptista, L. F., Trail, P. W. & Horblit, H. M. 1997. Family Columbidae (pigeons and doves). Pp. 60-243 in "*Handbook of the Birds of the World, Vol. 4. Sandgrouse to cuckoos*." (J. del Hoyo *et al*., eds.). Lynx Edicions, Barcelona.

Biomap Alliance Participants (Darwin Initiative, Natural History Museum, Instituto de Ciencias Naturales de la Universidad Nacional de Colombia, Conservation International & Conservación Internacional Colombia). 2012. Base de datos Darwin: Proyecto BioMap base de datos de distribución de la avifauna Colombiana. http://www.biomap.net.

Bird, J. P., Buchanan, J. M., Lees, A. C., Clay, R. P., Develey, P. F., Yépez, I. & Butchart, S. H. M. 2011. Integrating spatially explicit habitat projections into extinction risk assessments: a reassessment of Amazonian avifauna incorporating projected deforestation. *Diversity & Distributions* doi: 10.1111/j.1472-4642.2011.00843.x.

BirdLife International. 2012. Threat to the Amazon's birds greater than ever, Red List update reveals. http://www.birdlife.org/community/2012/06/threat-to-the-amazons-birds-greater-than-ever-red-list-update-reveals/

Boesman, P. 2009. Birds of Peru MP3 sound collection. Birdsounds.nl

Brumfield, R. T. & Capparella, A. P. 1996. Historical divergence of birds in north-western South America: a molecular perspective on the role of vicariant events. *Evolution* 50(4): 1607-1624.

Cardenas, A.2007. Analisis multitemporal de cobertura vegetal y uso del suleo para la ventana binacional Ecuador, periodo 1998-2007, proyecto "Diseño de SIMSA-CCCM".

Donegan, T.M. 2012. Geographical variation in Immaculate Antbird *Myrmeciza immaculata*, with a new subspecies from the Central Andes of Colombia. *Bull. Brit. Orn. Cl*. 132: 3–40.

Erize, F., Rodriguez-Mata, J. R. & Rumboll, M. 2006. *Birds of South America: non-passerines*. Princeton Univ. Press.

Gibbs, D., Barnes, E. & Cox, J. 2001. *Pigeons and doves*. Christopher Helm, London.

Gill, F. & Donsker, D. (Eds) 2012. IOC World Bird Names (version 3.1). Available at http://www.worldbirdnames.org/ [Accessed: 10 September 2012].

Goodwin, D. 1970. *Pigeons and doves of the world*. Natural History Museum, London.

Granizo, T., Pacheco, C., Rivadeneira, M.B., Guerror, M. & Suárez, L. (eds.) 2002. *Libro rojo de las aves del Ecuador*. SIMBIOE, Conservación Internacional, EcoCiencia, Ministerio del Ambiente & IUCN, Quito.

Helbig A. J., Knox, A.G., Parkin, D.T., Sangster, G. & Collinson, M. 2002. Guidelines for assigning species rank. *Ibis* 144: 518–525.

Hilty, S.L. & Brown, W.L. 1986. *A Guide to the Birds of Colombia*. Princeton Univ. Press. Princeton, New Jersey.

Hellmayr, C. E. & Conover, B. 1942. *Catalogue of birds of the Americas and the adjacent islands*. Zoological Series, Field Museum of Natural History. Volume 13, Part 1 No. 1.

Jahn, O., Moore, J.V., Valenzuela, P.M., Krabbe, N., Coopmans, P., Lysinger, M. & Ridgely R.S. 2002. *The birds of northwest Ecuador, vol. 2*. John V. Moore Nature Recordings, San Jose, CA.

Johnson, K.P. & Weckstein, J. 2011. The Central American land bridge as an engine of diversification in new world doves. *Journal of Biogeography* 38: 1069-1076.

Krabbe, N. & Nilsson, J. 2003. *Birds of Ecuador: sounds and photographs*. DVD–ROM. Bird Songs International, Westernieland.

McMullan, M., Donegan, T.M. & Quevedo, A. 2010. *Field guide to the birds of Colombia*. Fundación ProAves, Bogotá. 225 pl.

McMullan, M., Quevedo, A. & Donegan, T.M. 2011. *Guia de Campo de las Aves de Colombia*. Fundación ProAves, Bogotá.

Meyer de Schauensee, R. 1964. The birds of Colombia and adjacent areas of South and Central America. Acad. Nat. Sci., Philadelphia.

Meyer de Schauensee, R. 1966. The species of birds of South America and their distribution. Livingston Publishing Co., Narberth, Pennsylvania.

Meyer De Schauensee, R. 1970. A guide to the birds of South America. Livingston Publishing Co., Wynnewood, Pennsylvania.

Moore, J. V. 1996. *Ecuador: more bird vocalizations from the lowland rainforest: volume II*. John V. Moore Nature Recordings, April 1996

Remsen, J.V., Cadena, C.D., Jaramillo, A., Nores, M., Pacheco, J. F., Pérez–Éman, J., Robbins, M.B., Stiles F.G., Stotz, D.F. & Zimmer, K.J. 2012. A classification of the bird species of South America (version 14 September 2012). www.museum.lsu.edu/~Remsen/SACCBaseline.html.

Restall, R., Rodner, C. & Lentino, M. 2006. *Birds of northern South America*. Christopher Helm, London.

Ridgley, R.S. & Greenfield, P.J. 2001. *The birds of Ecuador*. Cornell Univ. Press, Ithaca.

Salaman, P.G.W. (ed.) (1994) *Surveys and conservation of biodiversity in the Chocó, south-west Colombia*. Cambridge, UK: BirdLife International (Study Report 61).

Salaman, P., Cuadros, T., Jaramillo, J. G. & Weber, W. H. 2001. *Lista de chequeo de las aves de Colombia*. Sociedad Antioqueña de Ornitología, Medellín.

Salaman, P., Donegan, T. & Caro, D. 2008. Listado de Aves de Colombiana 2008. *Conservación Colombiana* 4

Salaman, P.G.W., Donegan, T.M. & Caro, D. 2010. *Checklist of the Birds of Colombia*. Fundación ProAves, Bogotá, Colombia.

Sibley, C.G. & Monroe, B.L. 1990. *Distribution and taxonomy of birds of the World*. Yale University Press, New Haven, Connecticut.

Solano-Ugalde, A. 2011. Notes on the distribution and natural history of bird species in the Chocó bioregion of Ecuador. *Bulletin of the British Ornithologists' Club* 131(4): 249-255.

Tobias, J. A., Seddon, N., Spottiswoode, C. N., Pilgrim, J. D., Fishpool, L. D. C. & Collar, N. J. 2010. Quantitative criteria for species delimitation. *Ibis* 152: 724–746.

Appendix

Vocal data:

Data are presented as follows: mean ± standard deviation (lowest value–highest recorded value) (n = no. of vocalizations; no. of recordings). *Acoustic frequency*: *purpurata* 1.173 kHz ± 0.039 (1.129-1.265) (*n*=18; 6). *saphirina* 1.263 kHz ± 0.106 (1.102-1.490) (*n*=26; 9). *Song length*: *purpurata* 0.522s ± 0.083 (0.379-0.668) (*n*=18; 6). *saphirina* 0.861 s ± 0.145 (0.724-1.219) (*n*=26; 9).

Sound recordings inspected:

Geotrygon purpurata Ecuador: XC 20968 (R. Ahlman: 23 km west of Lita, Esmeraldas). XC 76410 (R. Ahlman: Bilsa, Mache-Chindul Hills). XC 85492 (A. Spencer: trail to the río Mira, 4 km. west of Alto Tambo, Esmeraldas). XC 9172 (= IBC recording = Boesman 2009 track) (N. Athanas: Reserva Mangaloma, Pichincha). Jahn *et al*. (2002) track 1-22 (M. Lysinger: west of Pedro Vicente Maldonado, Pichincha, 400-500 m). Krabbe & Nilsson (2003) (J. Tobias: Jatun Sacha biological station, Mache-Chindu hills, Esmeraldas, 400 m).

Geotrygon saphirina Ecuador: XC 4943 (D. Jones: La Selva Lodge, Sucumbios/Napo). XC 98120, 98253 (T. Brooks: Wildsumaco, 5km NW Guagua, Sumaco, Napo). XC 94977 (D. Lane: Yasuni NP, Parakeet Lick, Napo). ML53349 (L. F. Kibler: 235 km E of Quito; La Selva lodge area on Garza Cocha). IBC video: (J. del Hoyo: Sani Lodge, Orellana Province). Moore (1996, track 15) (unspecified locality, lowland rainforest of eastern Ecuador). Peru: XC 22977 (= Boesman 2009 track) (D. Geale: Chikais, Amazonas).

An apparent hybrid *Heliodoxa* hummingbird from the West Andes of Colombia

Un aparente híbrido del género Heliodoxa en la Cordillera Occidental de Colombia

Thomas Donegan[1] & Liliana Dávalos[2]

[1] ProAves Foundation, Southmead, The Vale, London N14 6HN. Email: tdonegan@proaves.org

[2] Department of Ecology and Evolution and Consortium for Inter-Disciplinary Environmental Research, 650 Life Sciences, State University of New York at Stony Brook, Stony Brook, NY 11794, USA. Email: ldavalos@life.bio.sunysb.edu

Abstract

Details and photographs are presented of an individual mist-netted in the West Andes of Colombia in 1997, which seems possibly to represent a combination between Fawn-breasted Brilliant *Heliodoxa rubinoides* and Empress Brilliant *H. imperatrix*.

Resumen

Presentamos medidas y fotografías de un aparente híbrido capturado en la Cordillera Occidental de Colombia en 1997. Este individuo parece posiblemente representar una combinación entre Heliodoxa rubinoides y H. imperatrix.

Introduction

During August to September 1997, the authors studied birds in Tambito Nature Reserve, El Tambo municipality, dpto. Cauca in the Western Cordillera of Colombia (*c*. 02°30'N, 77°00'W), using mist-nets and observations (see Donegan & Davalos 1999 for details). In a study site located in mature, emergent secondary growth with abundant palms at 1,600 m (Site 2 in Donegan & Dávalos 1999), the most abundant genus during netting was *Heliodoxa*, with 30 Empress Brilliant *H. imperatrix* and 9 Fawn-breasted Brilliant *H. rubinoides* captured in four days. In addition, a further hummingbird was captured which could not be identified. A discussion of this individual was included in an unpublished expedition report provided to donors and presence of a hybrid *Heliodoxa* was briefly mentioned in Donegan & Dávalos (1999), but no details have been published to date.

Hybrids are more frequent among the hummingbirds than many other bird families. Many dubious taxa have been described based on apparent hybrid types for both Colombia (Hilty & Brown 1986) and South America (Remsen *et al*. 2012). The study and diagnosis of novel hummingbird hybrids continues today (e.g. Banks & Johnson 1961, Graves & Zusi 1990, Graves & Newfield 1996, Graves 1990, 1996, 1997a,b, 1998a,b, 1999a,b, 2001, 2003a,b,c, 2004, 2006, 2007a,b). Among reported study cases are both intergeneric (Graves & Zusi 1990) and intrageneric (Graves 2003b) hybrids considered to involve members of the genus *Heliodoxa*. This paper discusses a previously undescribed morphotype that apparently results from a novel intrageneric combination in this genus.

Description of individual

The bird is illustrated in Figs. 1 to 5, with a morphological description appearing in Table 2 and biometric data in the Appendix. The photographs are of low quality, taken on a late 1980s model SLR camera without flash and with print film. As a result, they are not comparable to those taken by ornithologists today, although the key features of the bird are clearly visible. The individual is identified to the genus *Heliodoxa* on account of its straight and black bill being tapered to the skull, with feathers extending forwards on the bill, unmodified remiges, unspotted rectrices, general size (see Appendix), presence of a gorget, forked tail and glittering crown. No morphological features of other hummingbird genera were noted, so species of other genera were not considered in detail here. Biometric measurements are set out in the Appendix. The bird was in primary, tail and body moult.

Discussion

The most striking morphological feature of this individual was its glittering silvery blue gorget (Fig. 1). This, combined with the absence of any rufous on the malar (Fig. 5), make it a presumed adult male and preclude the two *Heliodoxa* species confirmed at the locality. Green-crowned Brilliant *H. jacula* also occurs in the region, but at lower elevations, and has a blue gorget. However, various features are inconsistent for *H. jacula*, particularly the tail coloration (which is dusky, not navy blue), light brown tail shafts (not concolor with the tail), the shade of blue on the gorget and large gorget size (cf. Figs. 9-10), some of which are more reminiscent of *H. rubinoides* (cf. Fig. 8).

Differences from *Heliodoxa* species occurring on the Pacific slope of Colombia are detailed further in Table 1.

New hummingbird species continue to be discovered (e.g. Cortés-Diago *et al* 2007) and reported (Valdes-Velásquez & Schuchmann 2009) from the West Andes. The presence of a fourth sympatric *Heliodoxa* species at the same locality would be unprecedented for the genus and seems improbable. This individual is more likely to have had a hybrid origin based on these considerations alone, and shows various intermediate features between species present at the study locality (Table 2).

Table 1. Differences between presumed hybrid *Heliodoxa* and species occurring in the region.

Species	Differences
Empress Brilliant *Heliodoxa imperatrix*	Male Empress has a pink (not blue) gorget, a longer and green tail, no brown in the wing or tail, no white on the undertail coverts, no speckling on the breast and a more tapered head with more extensive bill feathering. The BMNH collection includes two specimens of *imperatrix* with a silver gorget, showing bluish or pinkish sheens but these do not fully match that of the presumed hybrid either.
Fawn-breasted Brilliant *H. rubinoides*	Fawn-breasted has a pink (not blue) gorget, a more extensively brown (less extensively green) breast, a light brown tail which is much shorter and lacks white undertail coverts. Its bill is more tapered, downcurved and thicker. Tail, bill and body lengths and mass of Fawn-breasted fall out of range (the latter being too short or low).
Green-crowned Brilliant *H. jacula*	Green-crowned's blue gorget is smaller and shaped as a crescent moon, rather than a larger rotated D and is of a different shade of blue. It has no brown in the wing. Mass of Green-crowned is too low and other measurements are at the extreme of variation in this species.

Other Colombian *Heliodoxa* (*aurescens, leadbetteri, schreibersi, gularis*) are not in range and most show distinctive marks not found on this individual, so are not considered plausible parental species.

Key features for purposes of hybrid diagnosis are those potentially referable only to a single species. The brownish wing covert edgings, brownish leading primary (Fig. 1), dusky tail (Fig. 4) and brown ventral tail shaft coloration (Fig. 3) are exclusively *H. rubinoides* features among the three possible parental species considered here. Brown and reddish pigments are often expressed in hybrid hummingbirds where they are available as a parental character (Banks & Johnson 1961, Graves & Newfield 1996, Graves 2004). The blue gorget is a feature solely of *jacula*. However, the shade is lighter and more silvery. Some *imperatrix* specimens at BMNH and photographs available online show silver gorgets suggesting that silver coloration may be a rare variation or polymorphy within the species. The novel "bluing" of feathers is a particular feature of hummingbird hybridisation (Graves 1998a, 1999b) and so *jacula* cannot be considered as necessarily a parent.

Most biometrics fall within the range of all species, although they are more typical of *imperatrix*, with various measures at the extreme for both *rubinoides* and *jacula* (see Appendix). No feather-by-feather measures of rectrices of the nature undertaken by Graves (op. cit.) were undertaken due to a lack of familiarity of the authors with this method for assessing hybrid hummingbirds at the time of the study. Although the central feathers were missing due to moult, the two outer tail feathers on each side demonstrate a deeply forked shape (Figs. 4-5), more like *imperatrix* (Fig. 7; males have longer tails) or *jacula* (Fig. 9) and does not at all resemble that of *rubinoides* (Fig. 6). The biometrics and particularly long body and large mass fall only within the range of *imperatrix* (Appendix).

Table 2. Morphological description of putative hybrid, with an indication of possible parental species for each character.

Feature	Possible species
Bill black and straight. Head tapered into the bill.	All.
Glittering green on upperparts	All.
White postocular	All.
Blue gorget on throat	Closest to *jacula*'s blue but lighter / more silver. Close to *imperatrix*'s silver morph gorget, but bluer.
Size of gorget on throat	*rubinoides* or *imperatrix* (cf. Figs. 9-10).
Fawn spotted breast coloration	Most like *rubinoides* but more extensively green. Male *jacula* have a fawn base to glittering green breast feathers, but fawn is almost imperceptible unless a bird is stretched or moulting.
White upper undertail coverts	Unusual in both *jacula* (e.g. Fig. 10) and *imperatrix*.
Dull shade of glittering green on lower underparts	*jacula*.
Lower undertail coverts glistening green	*jacula* or *imperatrix*.
Thin white feathering on black legs	All.
Primaries, secondaries and tertials "dusky"	*imperatrix* or *jacula*.
Brownish / dusky tinge to some wing coverts	*rubinoides*.
Brown tinge on leading primary	*rubinoides*.
Tail length	*jacula* or between *imperatrix* and *rubinoides*.
Deeply forked tail	*jacula* or *imperatrix*.
Coloration of tail feathers: dusky with brownish tinge	None; *rubinoides* has a brownish tail, others have glittering green/blue tails.
Central two tail feathers copper brown	*rubinoides*.
Copper rump	*jacula* or *rubinoides*.
Tail feather shafts on underside are brown	*rubinoides*.
Body length	*imperatrix*.
Wing length	All.
Tail length	*imperatrix* or *jacula*.
Bill length	All.
Mass	*imperatrix*.

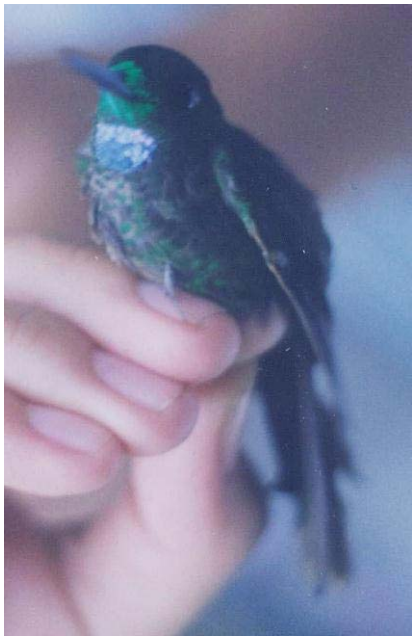


Figure 1. Putative hybrid *Heliodoxa*: frontal view. Photo: T. Donegan

Figure 2. Putative hybrid *Heliodoxa*: dorsal view. Photo: T. Donegan

Figure 3. Putative hybrid *Heliodoxa*: ventral view. Note white undertail and brown tail shafts. Photo: T. Donegan

A male *H. jacula* x *H. imperatrix* specimen is to be found at the British Natural History Museum (no. 1902.13.2211) and was inspected by TMD in September 1997. The same specimen was discussed in detail recently by Graves (2004), whose diagnosis we agree with. Graves (2004) considered the BMNH skin to represent "*the only known instance of intrageneric hybridisation in Heliodoxa*". It differs from the Tambito individual in having a green and relatively longer tail and total body length, no brown in the wing coverts and no noticeably paler base coloration or spotting of the underparts (our measures: Tail 64 mm, Wing 77; Body 154 mm, broadly close to Graves (2004)'s measures in each instance). Its blue violet gorget is noteworthy (given that *imperatrix* has a pink gorget) and an instance of predominating of blue coloration in a hybrid. Although not all hybrid combinations would necessarily look similar (as a result of meiosis in each parental species and sex-related differences) both this and the Tambito bird are putative males and specimen 1902.13.2211 is a rather different bird from that captured at Tambito.

Figure 4. Putative hybrid *Heliodoxa*: dorsal view showing tail shape. Photo: T. Donegan

Figure 5. Putative hybrid *Heliodoxa*: side view showing head shape (out of focus). Photo: T. Donegan

We have no specimens or molecular data that could provide definitive conclusions as to the hybrid or other origin of this organism. The possibility of it representing a bizarre aberration or even a new species cannot therefore be

excluded. A cross between *H. jacula* and *H. rubinoides* would produce all observed characters except the large body size and mass: a hypothesis for this combination would be supported by the blue gorget and lack of brighter glittering green plumage on the lower underparts. Given that *H. rubinoides* and *H. imperatrix* were both common at this locality and together can produce all observed features except the blue gorget, the latter feature could represent an example of 'bluing' of the silvery throat morphotype of *imperatrix* in a hybrid combination between these two species. We hope that with details included in this publication, ornithologists and birders who visit the West Andes can look out for other individuals demonstrating this plumage.

Figure 6. Tail view of male Fawn-breasted Brilliant *H. rubinoides* from same expedition. Photo: T. Donegan

Figure 7. Tail view of female Empress Brilliant *H. imperatrix* from same expedition. Photo: T. Donegan

Acknowledgements

Many thanks to Alex Cortés, the late Álvaro Negret, Luis Alfonso Ortega, Gustavo Lacera, Mark Mulligan, Quintin Lame and family, Ville Vepsäläinen and Paul Salaman for support of our fieldwork. Fundación Proselva, Universidad del Cauca and Corporación Autónoma Regional del Cauca supported the project. Grants from the J. W. Bennet Award, the G. R. N. Minchin Award and the Donald Robertson Award assisted our research in Tambito. Data from San Lucas and Yariguíes are based on research supported by persons listed in Salaman *et al*. (2002), Donegan (2012) and Donegan *et al*. (2010). Thanks to F. Gary Stiles, Á. Negret and P. Salaman for discussing this specimen with us and the latter for his comments on the MS and previous unpublished expedition report extract on which this paper was partially based.

Figure 8. Frontal view of male Fawn-breasted Brilliant *H. rubinoides* from same expedition. Photo: T. Donegan

Figures 9 a-b. Left: Moulting adult male nominate *H. jacula* from Alto Honduras, Serranía de los Yariguíes (not using flash). Note less extensive and dark blue gorget. Photo: B. Huertas / Proyecto YARE, January 2006. Right: Adult male nominate *H. jacula* from Cerro de la Paz, Santander (using flash). Note less extensive and dark blue gorget. Subspecies *jamiesoni* of the West Andes can have a larger gorget but it does not approach that of the individual illustrated in Figs. 1-6 in size. Photo: T. Donegan / Proyecto EBA, January 2003.

References

Banks, R.C. & Johnson, N.K. 1961. A review of North American hybrid hummingbirds. *Condor* 63:3-28.

Cortés-Diago, A., Ortega, L. F. Mazariegos-Hurtado, L. & Weller, A.-A. 2007. A new species of Eriocnemis (Trochilidae) from southwest Colombia. *Ornitologia Neotropical* 18:161-170.

Donegan, T.M. 2012. Range extensions and other notes on the birds and conservation of the Serranía de San Lucas, an isolated mountain range in northern Colombia. *Bull Brit. Orn. Cl.* 132: 140-161.

Donegan, T.M. & Dávalos, L.M. 1999. Ornithological observations from Reserva Natural Tambito, Cauca, south-west Colombia. *Cotinga* 12: 48 - 55

Donegan, T. M., Avendaño, J. E., Briceño-L., E. R., Luna, J. C., Roa, C., Parra, R., Turner, C., Sharp, M. & Huertas, B. 2010. Aves de la Serranía de los Yariguíes y tierras bajas circundantes, Santander, Colombia. *Cotinga* 32: 72–89.

Graves, G. R. & Newfield, N. L. 1996. Diagnoses of hybrid hummingbirds (Aves: Trochilidae) .1. Characterization of *Calypte anna x Stellula calliope* and the possible effects of egg volume on hybridization potential. *Proc. Biol. Soc. Washington* 109(4): 755-763.

Graves, G. R. & Zusi, R. L. 1990. An intergeneric hybrid hummingbird (*Heliodoxa leadbeateri x Heliangelus amethysticollis*) from northern Colombia. *Condor* 92(3): 754-760.

Graves, G.R. 1990. Systematics of the "green-thaoted sunangles (Aves: Trochilidae): valid taxa or hybrids? *Proc. Biol. Soc. Washington* 103: 6-25.

Graves, G. R. 1996. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 2. Hybrid origin of *Eriocnemis soderstromi* Butler. *Proc. Biol. Soc. Washington* 109(4): 764-769.

Graves, G. R. 1997a. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 3. Parentage of *Lesbia ortoni* Lawrence. *Proc. Biol. Soc. Washington* 110(2): 314-319.

Graves, G. R. 1997b. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 4. Hybrid origin of *Calothorax decoratus* Gould. *Proc. Biol. Soc. Washington* 110(2): 320-325.

Graves, G. R. 1998a. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 6. An intergeneric hybrid, *Aglaiocercus kingi x Metallura tyrianthina*, from Venezuela. *Proc. Biol. Soc. Washington* 111(3): 511-520.

Graves, G. R. 1998b. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 5. Probable hybrid origin of *Amazilia distans* Wetmore & Phelps. *Proc. Biol. Soc. Washington* 111(1): 28-34.

Graves, G. R. 1999a. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 7. Probable parentage of *Calliphlox iridescens* Gould, 1860. *Proc. Biol. Soc. Washington* 112(2): 443-450.

Graves, G. R. 1999b. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 8. A provisional hypothesis for the hybrid origin of *Zodalia glyceria* (Gould, 1858). *Proceedings of the Biological Society of Washington* 112(3): 491-502.

Graves, G. R. 2001. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 9. Confirmation of the hybrid origin of *Coeligena purpurea* Gould, 1854. *Proc. Biol. Soc. Washington* 114(1): 42-50.

Graves, G. R. 2003a. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 10. *Cyanomyia salvini* Brewster, 1893, is an intergeneric hybrid of *Amazilia violiceps* and *Cynanthus latirostris*. *Proc. Biol. Soc. Washington* 116(2): 293-300.

Graves, G. R. 2003b. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 11. Documentation of an intergeneric woodstar hybrid, *Calliphlox mitchellii x Chaetocercus mulsant*. *Proceedings of the Biological Society of Washington* 116(3): 820-826.

Graves, G. R. 2003c. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 12. *Amazilia bangsi* Ridgway, 1910, is an intrageneric hybrid, *Amazilia tzacatl x Amazilia rutila*. *Proc. Biol. Soc. Washington* 116(4): 847-852.

Graves, G. R. 2004. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 13. An undescribed intrageneric combination, *Heliodoxa imperatrix x Heliodoxa jacula*. *Proc. Biol. Soc. Washington* 117(1): 10-16.

Graves, G. R. 2006. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 14. New perspectives on Sefton's specimen (*Calypte costae x Selasphorus platycercus*) from the Rincon Mountains, southeastern Arizona. *Proc. Biol. Soc. Washington* 119(4): 516-521.

Graves, G. R. 2007a. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 15. A new intergeneric hybrid (*Hylocharis leucotis x Selasphorus platycercus*) from the Huachuca Mountains, southeastern Arizona. *Proc. Biol. Soc. Washington* 120(1): 99-105.

Graves, G. R. 2007b. Diagnoses of hybrid hummingbirds (Aves: Trochilidae). 16. Characterization of a striking intergeneric hybrid (*Lampornis clemencide X Calypte anna*) from Ramsey Canyon, Huachuca Mountains, southeastern Arizona. *Proc. Biol. Soc. Washington* 120(1): 106-112.

Hilty, S.L. & Brown, W.L. 1986. *A Guide to the Birds of Colombia*. Princeton Univ. Press. Princeton, New Jersey.

Salaman, P.G.W., Donegan, T.M. & Cuervo, A.M. 2002. New distributional bird records from Serranía de San Lucas and adjacent Central Cordillera of Colombia. *Bull. Brit. Orn. Club* 122(4): 285-304.

Valdes-Velásquez, A. & K.-L. Schuchmann. 2009. A new species of hummingbird (*Thalurania*, Trochilinae, Trochilidae) from the western Colombian Andes. *Ornithol. Anz*. 48:143-149.

Appendix: biometric data

For each taxon, data are as follows: mean ± standard deviation (lowest recorded value–highest recorded value) (*n* = sample size). Data are based entirely on live mist-net capture data. *H. rubinoides and H. imperatrix* data all originates from the same study at Tambito by the authors. *H. jacula* data comes from studies by TMD and others in Serranía de San Lucas (see details in Salaman *et al*. 2002, Donegan 2012) and Serranía de los Yariguíes, Colombia (see details in Donegan *et al*. 2010). Live data and photographs in this paper of *H. jacula* involve the nominate subspecies rather than *H. j. jamiesoni* of the West Andes, but inspection of specimens shows them to be only mildly differentiated in biometrics.

Species / Individual	**Body (mm)**	**Wing (mm)**	**Tail (mm)**	**Bill to cranium (mm)**	**Mass (g)**
Presumed hybrid	138	78	55	26	9.2
H. imperatrix All	144.6 ± 11.2 (125-170) (n=27)	71.5 ± 3.7 (63-79) (n=29)	59.6 ± 11.3 (48-84) (n=9)	25.3 ± 1.4 (23-28) (n=14)	9.3 ± 0.7 (8.5-10.6) (n=7)
H. imperatrix Males	154.5 ± 10.1 (140-170) (n=8)	74.6 ± 2.1 (72-78) (n=8)	63.8 ± 13.8 (50-84) (n=5)	24.3 ± 1.1 (23-25.5) (n=6)	9.9 ± 1.1 (9.1-10.6) (n=2)
H. rubinoides All	121.8 ± 7.2 (113-135) (n=9)	69.5 ± 3.7 (63-79) (n=11)	42 (n=1)	23.4 ± 1.4 (21-25) (n=7)	7.9 ± 0.6 (7.5-8.3) (n=2)
H. rubinoides Males	122.0 ± 6.3 (113-130) (n=5)	68.8 ± 4.1 (64-73) (n=5)	42 (n=1)	24.3 ± 1.2 (23-25) (n=3)	8.3 (n=1)
H. jacula All	118.3 ± 7.5 (105-135) (n=32)	67.6 ± 4.9 (57-78) (n=34)	43.8 ± 4.9 (37-55) (n=34)	26.4 ± 1.6 (23-29) (n=33)	7.0 ± 0.6 (5.9-8.4) (n=34)
H. jacula Males	126.7 ± 5.5 (117-135) (n=9)	72.3 ± 5.4 (62-78) (n=10)	49.8 ± 4.1 (44-55) (n=10)	25.9 ± 1.5 (24-28) (n=9)	7.2 ± 0.7 (5.9-8.0) (n=10)

Dos nuevas especies de aves para Colombia en el departamento del Guainía

Two new bird species for Colombia from the department of Guainía

Alonso Quevedo & Juan Carlos Luna
Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: aquevedo@proaves.org

Abstract
During an expedition in October - November 2011 in Serranía del Naquén, depto. Guainía, near the border between Colombia and Brazil, two species were recorded for the first time in Colombia: Crismon Fruitcrow *Haematoderus militaris* (based on observations) and Spotted Tanager *Tangara punctata* (photographic records).

Resumen
Durante una expedición que se desarrolló entre los meses de octubre y noviembre de 2011 en la Serranía del Naquén, departamento del Guainía, zona limitrofe entre Colombia y Brasil, se registraron por primera vez para Colombia dos especies de aves, Haematoderus militaris (basado en registros de observaciones) y Tangara punctata (registros fotográficos).

Introducción
Enmarcado dentro del proyecto de expediciones de la Fundación ProAves, se desarrolló una exploración en la Serranía de Naquén (Cerro Caparro) perteneciente al corregimiento de Puerto Colombia, departamento del Guainía cerca de la frontera con Brasil. El territorio departamental se compone de grandes extensiones planas y onduladas pertenecientes al llamado Macizo Guyanés, en medio de las cuales se encuentran algunas lomas y cerros, entre ellos, Cerro Caparro, Rana y la Serranía de Naquén, con alturas ligeramente superiores a los 950 m.s.n.m.,numerosos ríos y caños que bañan el territorio; entre los primeros, se destacan el Guainía, Aque, Inírida, Atabapo, Isana, Cuyarí, Tomo y Guasacaví; entre los segundos, están el Cunubén, Jota, Bocón, Piapoco, Colorado, Naquén, Mane y Perro de Agua. En esta región se realizaron en años anteriores algunas observaciones que permitieron el registro de varias especies nuevas para Colombia (Kingston *et al*. 1992, Newman 2008).

La expedición se desarrolló del 19 de octubre hasta el 12 de noviembre de 2011, aplicándose el método de "perfil altitudinal" se realizaron varias estaciones en las siguientes localidades limitrofes: 1. Cerro Caparro, 2. Caño Profesor y 3. Caño Muerto. En cada estación se realizaron muestreos durante dos periodos por día, con observaciones y el uso de redes de niebla, el primero de 5:00 – 12:00 am, el segundo de las 14:00 –18:30 pm

Método de determinación taxonómica
Para la determinación taxonómica de las especies observadas se emplearon varias guías ilustradas de campo (McMullan *et al*. 2010, Restall *et al* 2006, Van Perlo 2009). Para la identificación de aves migratorias se utilizó Sibley (2000).

Método de observación
Se exploró el área de estudio haciendo búsquedas exhaustivas a lo largo de trochas y senderos donde posteriormente se establecieron las estaciones de muestreo y así se dio inicio a la aplicación de la metodología de conteos por puntos y observaciones sistemáticas. El muestreo se realizó por el método de conteo extensivo, en donde para cada zona de muestreo se trazó una ruta con una longitud de 1 km, con puntos de muestreo cada 200 metros y con una duración de 10 minutos por punto utilizando binoculares de 10x42 mm.

Método de captura con redes de niebla
La captura de individuos se llevó a cabo con la instalación de redes de niebla de acuerdo a la metodología establecida por la Fundación ProAves, para su ubicación se tuvo en cuenta la alta presencia de vegetación; dichas redes fueron revisadas cada 20 minutos para evitar que las aves capturadas fueran atacadas por predadores o muriesen por enfriamiento o recalentamiento.

En el presente artículo, se presentan detalles de observaciones sobre dos especies nuevas para Colombia. Se presentarán otras notas y extensiones en rango en una futura publicación.

Haematoderus militaris
Esta especie de ave es perteneciente a la familia *Cotingidae*, que se encuentra distribuida en Brasil, Guayana Francesa, Guyana, Surinam y Venezuela. En el lugar denominado Cerro Caparro y durante el recorrido de uno de los senderos usados en el estudio (01º56'03.89"N; 68º06'05.02"O) a 170 m de altura. Un individuo de esta especie fue observado perchado en el dosel del bosque sobre la rama de un árbol seco a una altura vertical de 25 m aproximadamente. El reporte geográfico más cercano al punto de este hallazgo es en un lugar denominado Cerro Neblina, en la frontera entre Venezuela y Brasil, 260 kms al occidente del hallazgo hecho por los autores en Colombia. La especie presenta una

distribución continua hacía el nor-oriente de su distribución, pero cuenta con varios registros dispersos en la región Amazónica de Venezuela y Perú (Snow 2004, Kirwan & Green 2011) y ahora Guainía, Colombia.

Tangara punctata

Se registraron 2 capturas de esta especie en redes de niebla (Fig. 1) y un total de 8 individuos fueron observados a lo largo de los diferentes recorridos, todos por encima de la cota altitudinal entre los 700 – 950 m, en el lugar denomiado Cerro Caparro (01º57'07.37"N, 68º07'49.88"O).

Figura 1. Fotografía de *Tangara punctata*, Cerro Caparro, Guainía.

La especie presenta como su distribución historica localidades en Brasil, Ecuador, Guayana Francesa, Guyana, Perú, Surinam y Venezuela. Cuenta con dos distribuciones distintas: una en la vertiente oriental de los Andes en Perú y Ecuador y otra en el norte de la Amazonía (Isler & Isler 1999). Para Colombia se ha considerado como una especie de probable presencia (Salaman *et al*. 2001) pero no hay registros históricos (Salaman *et al*. 2010) y exploraciones realizadas al sur de la cordillera oriental, región de posible presencia de la especie, dan como resultado registros de la especie relacionada *T. guttata* (Salaman *et al*. 1999, 2002).

Agradecimiemtos

A Thomas Donegan y Paul Salaman por la revisión del documento y sugerencias en cuanto a métodos de campo, a Robert Giles y la Fundación ProAves por el apoyo y financiación de esta expedición, a Diego Riaño por el apoyo en el desarrollo de la expedición en campo.

Bibliografía

Isler, M. L. & Isler, P. R. 1999. *Tanagers*. Christopher Helm, London.

Kingston, T., Barlow, K., Newman, J., Langley, J., Kaye, P., Cortés, R., Córdoba, M. & Córdoba, G. 1992. Amazon 1992 – Final Report. A Cambridge-RHBNC expedition to Colombia. Unpubl. rep.

Kirwan. G. M. & Green, G. 2011. *Cotingas and manakins*. Princeton Univ. Press.

McMullan, M., Donegan, T.M. & Quevedo, A. 2010. *Field Guide to the Birds of Colombia*. Fundación ProAves de Colombia.

Newman, J. 2008. Sight records of five species new to Colombia from Serranía de Naquen, dpto. Guainía. *Cotinga* 29: 160-161.

Restall, R., Rodner, C. & Lentino, M. 2006. *Birds of northern South America*. Christopher Helm, London.

Salaman, P. G. W., Donegan, T. M. & Cuervo, A. M. 1999. Ornithological surveys in Serranía de los Churumbelos, southern Colombia. *Cotinga* 12: 29–39.

Salaman P., T. Cuadros, J.G. Jaramillo y W.H. Weber. 2001. *Lista de Chequeo de las Aves de Colombia*. Sociedad Antioqueña de Ornitología, Medellín, Colombia.

Salaman, P. G. W., Stiles, F. G., Bohórquez, C. I., Álvarez, M., Umaña, A. M., Donegan, T. M. & Cuervo, A. M. 2002. New and noteworthy records from the east slope of the Andes of Colombia. *Caldasia* 24: 157–189.

Salaman, P.G.W., Donegan, T.M. & Caro, D. 2010. *Checklist of the Birds of Colombia*. Fundación ProAves, Bogotá, Colombia.

Sibley. D. A. 2000. *The Sibley Guide to Birds*. National Audubon Society.

Snow, D. W. 2004. Family Cotingidae (cotingas). Pp. 110–168 in del Hoyo, J., Elliott, A. & Christie D. A. (eds.) *Handbook of the birds of the world*, vol. 9. Lynx Edicions, Barcelona.

Van Perlo, P. 2009. *A field guide to the birds of Brazil*. Oxford University Press.

New records of Forster's Tern *Sterna forsteri* for Colombia

Nuevos registros de Sterna forsteri para Colombia

Forrest Rowland & **Bernard Master**
PO Box 246, Big Timber, MT 59011 USA. Email: rowbird2005@gmail.com

Abstract
We present details of the second record of Forster's Tern *Sterna forsteri* for Colombia. Two individuals were observed, and photographed at Los Camarones on the Guajira Peninsula, 16-17 March 2011.

Resumen
Se presentan detalles del segundo registro de Sterna forsteri para Colombia. Dos individuos de esta especie fueron observados y fotografiados en la reserva Los Camarones, Guajira, 16-17 de Marzo del 2011.

Introduction
Forster's Tern *Sterna forsteri* is a migrant Tern species that breeds across the United States of America, with small populations just South of the US border with Mexico along the Colorado River Drainage in northeast Baja California, northwest Sonora, and disjunctly along the Gulf Coast in northern Veracruz. Its breeding habitat is mostly confined to freshwater marshes and ponds, with several large populations along the Mid-Atlantic Coastal, Gulf of Mexico, and Pacific Coastal tidal marshes and sheltered bays (Sibley 2003). Its active breeding range extends as far North as central Manitoba and Saskatchewan, northern Canada (McNicholl *et al.* 2001). The species' primary wintering range extends from the northern coast of California, USA, south along the Pacific coast through Honduras. Forster's Tern also winters along the Atlantic Coast of the United States from the Delaware Bay south, through coastal Florida, and along the length of the coast of the Gulf of Mexico (Sibley 2003). The wintering population's range nearly extends to Belize, though no verified records from that country exist (McNicholl *et al.* 2001). It has also been recorded outside this range as a long-distant vagrant, including on multiple occasions to the western Palearctic (Svensson *et al*. 2010).

Forster's Tern is poorly known in South America and considered a rare accidental for Colombia (McMullan, *et al.* 2010). There is an historical record from off the Atlantic coast of Brazil (Meyer de Schauensee 1966, Sick 1997, Remsen *et al*. 2012). The species was also recently recorded on the Caribbean coast of South America, at Los Camarones, in 2010 (Downing 2009, Donegan *et al*. 2010) although no photograph has yet been published.

Discussion
On March 16, 2011, the authors visited Riohacha, Guajira Peninsula, arriving at approximately 1300 hrs and at Los Camarones a little after 1600 hrs. Bernard Master noticed a small *Sterna* tern foraging some 120 meters away. The individual settled on a nearby (60m) sandbank and photographs were then obtained (Figs. 1-4). The bird was clearly a Forster's Tern *Sterna forsteri.* There were sight records of two birds of the same species seen by Samuel Hansson and Antonio Salvadori at Los Flamencos on 16 March 2011, with only one of the two birds still present the next day (Kirwan *et al*. 2012). Because there was only one individual, this may have been one of the two birds observed on the same day at Los Famencos but which was not also present on the 17th or that there had been a small influx of the species to northernmost of Colombia.

Figures 1 a-d. Forster's Tern *Sterna forsteri* on March 16, 2011, at Los Camarones, Riohacha, Guajira Peninsula.

Both observers have extensive experience with Forster's Tern in breeding, wintering, and juvenile plumages. Despite the likelihood of some slight variation in bill length and mantle color between certain populations of Forster's Tern, the individual encountered on March 16th displayed all invariable, salient features to be looked for in this species. Migratory *Sterna* species that could pose confusion or complication of identification in the region include Common Tern *Sterna hirundo,* Arctic Tern *Sterna,* and Roseate Tern *Sterna dougallii.* Of the four species in question, Forster's Tern would be the most likely to show bright orange leg coloration in non-breeding plumage (Sibley 2003). Leg length (Fig. 1, Fig. 4) rules out Arctic Tern as a possible candidate. The face pattern and lack of dark coloration on the nape, lower crown, and general nuchal area, though variable in all species, is not as pale in the other species as it is in Forster's Tern *Sterna forsteri* (Fig. 1, Fig. 4). In particular, the relatively broad eye mask is a good mark for this species. The mantle coloration (Fig. 3) is consistent with Forster's Tern and the lack of any visible carpal bar (Fig. 1-4) excludes Common Tern *Sterna hirundo* as a possibility and makes Roseate Tern *Sterna dougalli* unlikely (Kaufman 1990, Sibley 2003). To positively conclude that the individual in question was a Forster's Tern, we closely examined the length of primaries versus the length of the tail. This was consistent with Forster's Tern, but did not entirely rule out Roseate Tern *Sterna dougalli.* The bill of the bird in question did not show the slim, slightly-decurved, decidedly lengthy bill of Roseate Tern (Kaufman 1990), but rather was broad-based and straight-edged, as in Forster's Tern *Sterna forsteri.* At this point in the observers' mental inventory of field marks, primary coloration was reassessed for a firm conclusion that we had seen, and photographed, a Forster's Tern.

The following morning, March 17th, 2011, the authors returned to Los Camarones at approximately 0950 hrs to attempt to relocate the Tern, as well as other noteworthy species observed the previous day (such as Lesser Black-backed Gull *Larus fuscus* and Marbled Godwit *Limosa fedoa*). The observers found two individuals on this occasion, identical in plumage to the bird photographed the previous day, foraging together with other Tern *Sterna* species. These two individuals were more distant (70-250 m distance) and photographs were not obtained. Definitive views were had of both individuals in flight, and perched, which allowed us to conclude that two individual Forster's Terns *Sterna forsteri* were present at the site. Total lapsed observation time of these individuals during March 16th - 17th approached, but did not exceed, 60 minutes.

Acknowledgements

Thanks to Paul Salaman, Thomas Donegan and two other persons for revising this paper. We send a great many thanks to the various birders submitting their fantastic observations, and findings, as well.

References

Donegan, T.M, Salaman, P., Caro, D. & McMullan, M. 2010. Revision of the status of bird species occurring in Colombia 2010. *Conservación Colombiana* 13: 25–54.

Downing, C. December 8, 2009. "First Record for South America taken at Camarones, La Guajira." Referenced from flickr: http://www.flickr.com/photos/birding-colombia/4638128545/

Kaufman, K. 1990. Peterson Field Guides: Advanced Birding. Houghton Mifflin Company. Boston, Massachusetts.

Kirwan, G. M., Calderón, D., Minns, J. & Roesler. I. 2012. Neoitropical Notebook. *Cotinga* 34: 179-194.

McMullan, M., Donegan, T.M. & Quevedo, A. 2010. *Field Guide to the Birds of Colombia.* Fundación ProAves de Colombia.

Meyer de Schauensee, R. 1966. *The species of birds of South America and their distribution*. Livingston Publishing Co., Narberth, Pennsylvania.

McNicholl, M. K., Lowther, P.E. & Hall, J.A. 2001. Poole, Forster's Tern (*Sterna forsteri*), The Birds of North America Online (A. Ed.). Ithaca: Cornell Lab of Ornithology; http://www.bna.birds.cornell.edu/bna/species/595

Remsen, J.V., Cadena, C.D., Jaramillo, A., Nores, M., Pacheco, J. F., Pérez–Éman, J., Robbins, M.B., Stiles F.G., Stotz, D.F. & Zimmer, K.J. 2012. A classification of the bird species of South America (version 14 September 2012). www.museum.lsu.edu/~Remsen/SACCBaseline.html.

Sibley, D. A. 2003. *The Sibley Field Guide to Birds of Western North America.* Alfred A. Knopf Publishing. New York, New York.

Sick, H. 1997. *Ornitologia Brasileira*. Editora Nova Fronteira, Rio de Janeiro.

Svensson, L., Mullarney, K. & Zetterström, D. 2010. *Collins bird guide*. 2nd edition. HarperCollins.

Primera fotografía en su habitat y nuevo avistamiento del Cucarachero de Santa Marta *Troglodytes monticola*, especie en peligro crítico

First photograph in its habitat and new sighting of the Santa Marta Wren Troglodytes monticola, a Critically Endangered species

Juan Carlos Luna & Alonso Quevedo

Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: jluna@proaves.org; aquevedo@proaves.org

Abstract

The first live photographs of the Santa Marta Wren *Troglodytes monticola* are published, together with details of the first sighting in over a decade of this Critically Endangered species. The species is extremely local and rare in a small area of remnant páramo habitat at 3250 meters on the western flank of the Sierra Nevada de Santa Marta. A total of 17 individuals were observed.

Resumen

Se presentan fotografías inheditas del Cucarachero de Santa Marta Troglodytes monticola, las primeras de la especie en su habitat, junto con detalles del primer avistamiento en más de una década de esta especie en Peligro Crítico (CR). La especie es extremadamente rara y local y se encontró en una pequeña zona de páramo remanente a 3250 metros sobre el flanco occidental de la Sierra Nevada de Santa Marta. Se observaron un total de 17 individuos.

Introducción

El Cucarachero de Santa Marta *Troglodytes monticola* es una especie endémica de Colombia, conocida únicamente en la parte alta de la Sierra Nevada de Santa Marta. Recientemente, la especie ha sido subida en su categoría de amenaza a "Peligro Critico (CR)" (BirdLife International 2012), principalmente debido a la destrucción de su hábitat. Existe también un enorme vacío en información sobre el estado y ecología de la especie. Se sospecha que las poblaciones de esta especie han sufrido un descenso en los últimos años.

La especie fue descrita por Todd & Carriker (1922) y colecciones de la especie incluyen 7 especímenes colectados por M. A. Carriker en y W. W. Brown Jr. en 1899 en el páramo de Chirigua; 2 desde el páramo de Macotama colectados por Brown en el 1899; 18 especímenes de "Mamancanaca" (Carriker) del año 1946; y 10 de río o campo Guatapuri (Valledupar) colectados por Carriker en el año 1946 (Biomap Alliance Participants 2012). El único registro reciente fue realizado por Strewe & Navarro (2004), en Junio de 2001 en el valle de río frío. Ellos encontraron 2 individuos (una pareja) y también publicaron detalles de vocalizaciones (ahora disponibles en Krabbe 2008). Desafortunadamente, recientes búsquedas y trabajo de campo en la Serranía han sido infructuosos.

Hasta el momento, no se conocía la existencia de una población viable de *T. monticola*. No obstante, la falta de información puede evidenciar el hecho de que la especie no se encuentra en las zonas que regularmente son visitadas, es decir, la región de Minca y la reserva de ProAves El Dorado en el occidente de la Sierra Nevada y zonas de menor elevación cerca de Valledupar y la costa caribeña. Las áreas altas de la Sierra Nevada son remotas y aisladas, se presume que las poblaciones de la especie han sufrido un rápido descenso de más del 70% en los últimos diez años debido a la pérdida de hábitat y a la severidad de la deforestación, la quema excesiva y la ganadería extensiva (Fundación ProAves de Colombia 2011).

Menos del 15% de la cobertura forestal original permanece en la Sierra Nevada, y pese a la declaratoria de un área protegida (un Parque Nacional Natural que cubre parte de las elevaciones superiores de la sierra), las altas tasas de pérdida de hábitat continúan debido a la colonización humana y la expansión de los cultivos. Asimismo, la tala de árboles para leña es insostenible a largo plazo.

Con el propósito de ofrecer más información sobre la especie, se presenta a continuación detalles de nuevos avistamientos de *Troglodytes monticola*, y las primeras fotografías de la especie en su habitat. Además, son detalles del segundo reporte publicado sobre la especie en 65 años.

Métodos

Los autores realizaron exploraciones durante una expedición apoyada por las comunidades, propietarios de la zona y la Fundación ProAves en diciembre de 2011. La exploración se realizó hacía la parte alta de la Sierra Nevada de Santa Marta, teniendo como objetivo central la búsqueda del *T. monticola*. Utilizando la única vocalización publicada de la especie (Krabbe 2008), con la cual se realizó playback sobre los 3.250 metros de elevación.

Resultados

Usando el playback sobre un sendero de 3 km, apareció una familia de aproximadamente 6 individuos de *T. monticola* y casi un km después otro grupo de 5 individuos fue encontrado. Poco después, continuando el recorrido, 3 parejas más fueron confirmadas (Fig. 1). Con playback, se consiguió la primera evidencia fotográfica de la especie.

En esta salida de tres días, se confirmó la existencia de 17 individuos lo que hace presumir que la especie no es rara en este rango altitudinal con evidencia aun de algunos hábitats adecuados. Sin embargo esta es una primera aproximación hacia el estado actual de la especie y el registro de un evidente y creciente cambio del hábitat en la parte alta de la Sierra Nevada.

Figuras 1a-b. Primeras fotografías en campo de *Troglodytes monticola*

Debe destacarse también el registro de otro habitante raro de las alturas en la Sierra Nevada, el colibrí Piquicorto Dorsinegro *Ramphomicron dorsale,* del cual se obtuvieron dos registros a 3240 m. De igual manera, se confirmó en tres oportunidades la presencia del Periquito de Santa Marta *Pyrrhura viridicata,* especie que se encuentra En Peligro.
Ya que la población de *T. monticola* no ha sido formalmente estimada, se requiere con urgencia una investigación más detallada para conocer el estado real y actual de la especie.

Se publicarán detalles completos de la localidad en una futura publicación, cuando se haya trabajado más sobre las posibilidades de conservar su hábitat, debido a que el ecoturismo antes de implementar medidas de conservación puede afectar negativamente la adquisición de predios para establecer reservas naturales.

Figuras 2a-b. Hábitats del cucarachero en mal estado.

Agradecimientos

Agradecemos a los propietarios colonos en la Sierra Nevada quienes ayudaron a que esta visita fuera posible. Gracias a Thomas Donegan y Paul Salaman por sus comentarios sobre el manuscrito.

Referencias

Biomap Alliance. 2012. Base de datos Darwin: Proyecto BioMap base de datos de distribución de la avifauna Colombiana. http://www.biomap.net.

BirdLife International. 2012. Species factsheet: *Troglodytes monticola*. Downloaded from http://www.birdlife.org on 05/09/2012.

Fundación ProAves de Colombia. 2011. Notes on the status of various threatened birds species occurring in Colombia. *Conservación Colombiana* 15: 22-28.

Krabbe, N. 2008. *Birds of the Sierra Nevada de Santa Marta, Colombia*. John V. Moore Nature Recordings, CA.

Strewe, R. & Navarro, C. 2004. The threatened birds of the río Frío Valley, Sierra Nevada de Santa Marta, Colombia. *Cotinga* 22: 47-55.

Todd, W. E. & Carriker, M. A. 1922. The birds of the Santa Marta region of Colombia: a study in altitudinal distribution. *Ann. Carnegie Mus*. 14.

Primer registro del Hornero del Pacifico *Furnarius (leucopus) cinnamomeus* en Colombia

First record of Pacific Honero Furnarius (leucopus) cinnamomeus in Colombia

Juan Carlos Luna
Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: jluna@proaves.org

Abstract
The first records for Colombia are presented of Pacific Hornero *Furnarius (leucopus) cinnamomeus*, from south-westernmost Nariño department. A nest was found, suggesting that the species is breeding in Colombia.

Resumen
Se presentan detalles de los primeros registros de Furnarius (leucopus) cinnamomeus para Colombia, en una localidad del sur-oriente del departamento de Nariño. Se encontró con un nido, sugeriendo que la especie esta reproduciéndose en Colombia.

Introducción
El Hornero del Pacifico es una especie conocida anteriormente en la vertiente del pacifico en hábitats secos de Perú y Ecuador. Salaman *et al*. (2001) consideran la especie como "posible" para Colombia, pero no existían registros publicados hasta la fecha. Ridgely & Greenfield (2001) y Ridgely & Tudor (2009) tratan a *cinnamomeus* como una especie distinta a *F. leucopus* pero otros autores como Remsen *et al*. (2012) y McMullan *et al*. (2011) no lo separan y lo trata como subespecie de *F. cinnamomeus*.

Observaciones y discusión
Se encontró esta especie durante una exploración en las selvas bajas de la costa pacífica nariñense, al suroccidente de Colombia, cerca de la frontera con Ecuador, en el municipio de Tumaco (1º46'47.4"N 78º9'24.7"W).

El primer registro fue confirmado el 28 de agosto de 2011 a las 16:00 horas, cuando un grupo de 6 individuos fueron observados vocalizando y desplazándose sobre un potrero. Estas observaciones fueron realizadas simultáneamente con la confirmación de *Fluvicola nengeta* que también fue un nuevo registro para Colombia (Luna 2011).

Su característico color canela, que cubre la mayor parte del cuerpo y alas y la cabeza marrón-gris, hace esta especie inconfundible. Tiene una franja blanca que se origina desde la parte superior del ojo hacia atrás pasando por el pecho y la parte inferior de su cuerpo. Las patas son largas de color gris o rosado pálido.

Figuras 1a-c. *Furnarius cinnamomeus* en Nariño, Colombia.

Después, en los días posteriores la especie fue observada frecuentemente, especialmente en las mañanas y tardes. La especie fue observada forrajeando en parejas, y volando en grupos hasta de seis individuos. Se observó un nido construido de vara. Los números observados y este acontecimiento sugieren fuertemente que la especie ya esta reproduciéndose en Colombia. El registro fue incluido en el mapa de McMullan *et al*. (2011) de *F. leucopus*, pero las observaciones detalladas en el presente articulo constituyen los primeros registros confirmados para Colombia. La especie al parecer ha aumentado su distribución con la deforestación.

Agradecimientos

Gracias a Thomas Donegan y Paul Salaman por sus comentarios sobre el manuscrito.

Referencias

Luna, J.C. 2011. Primeros registros de la Viudita Enmascarada Fluvicola nengeta en Colombia *Conservación Colombiana* 15: 38–39.

McMullan, M., Quevedo, A. & Donegan, T.M. 2011. *Guia de Campo de las Aves de Colombia*. Fundación ProAves, Bogotá.

Ridgley, R.S. & Greenfield, P.J. 2001. *The birds of Ecuador*. Cornell Univ. Press, Ithaca.

Ridgely, R.S. & Tudor, G. 2009. *The birds of South America, passerines*. Christopher Helm, London.

Remsen, J.V., Cadena, C.D., Jaramillo, A., Nores, M., Pacheco, J. F., Pérez–Éman, J., Robbins, M.B., Stiles F.G., Stotz, D.F. & Zimmer, K.J. 2012. A classification of the bird species of South America (version 14 September 2012). www.museum.lsu.edu/~Remsen/SACCBaseline.html.

Salaman, P., Cuadros, T., Jaramillo, J. G. & Weber, W. H. 2001. *Lista de chequeo de las aves de Colombia*. Sociedad Antioqueña de Ornitología, Medellín.

Records and status of two escaped species of parrots for Colombia

Registros y estatus de dos especies de loros exóticos en Colombia

Oswaldo Cortés [1] & Thomas Donegan [2]

[1] Estudiante de Maestria en Biologia-Universidad Nacional de Colombia. Email: oswaldo.aves@gmail.com

4 Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: tdonegan@proaves.org

Abstract

We discuss records of two escaped parrot species for Colombia. Budgerigar *Melopsittacus undulatus* is previously known as an escapee but unconfirmed. Details of a specimen and sight and sound recording are presented. The first records of Sulphur-crested Cockatoo *Cacatua galerita*, based on observations and sound recordings, are also presented. The observations of these two species were made on the same locality and date (Humedal Jaboque, Bogotá).

Resumen

Se discuten registros de dos especies de loros exóticos en Colombia. Melopsittacus undulatus se conocía anteriormente como especie escapada, pero sin confirmación. Se presentan detalles de un espécimen, observaciones y grabaciones recientes. Los primeros registros para Cacatua galerita, basados en observaciones y grabaciones, también son presentados. Las observaciones de estas dos especies fueron realizadas en el mismo lugar y fecha (Humedal Jaboque, Bogotá).

Introduction

The study of introduced bird species in Colombia has only recently begun in earnest, with the national check-list recently including such species in a special category (Donegan *et al*. 2009, 2010, 2011) and the recent publication of a compendium of escaped species for the country (Baptiste *et al*. 2010). Parrots are among the most common cagebirds, so exotics of this family are prone to being recorded as escapees. To date, only two species are treated as known from escapees in Colombia, namely Budgerigar *Melopsittacus undulatus* (see Ordoñez 1992, Donegan *et al*. 2009) and Cockatiel *Nymphicus hollandicus* (Donegan *et al*. 2011) both of which are treated as "hypothetical" as well as escaped, owing to a lack of confirmed records (Salaman *et al*. 2010). A further species, Rose-ringed Parakeet *Psittacula krameri*, occurs in captivity but is not yet reported to have escaped (Baptiste *et al*. 2010).

In addition, various parrots are known to have escaped from birds captured in different parts of the country, producing records and at times establishments outside of species' known ranges (e.g. *Aratinga pertinax* in Bogotá and San Andrés island: ABO 2000, Donegan & Huertas 2011; and various *Ara* macaws in Medellín: Lara-Vásquez *et al*. 2007).

It is important to keep track of introduced and escaped species, so as to document historical information as to introductions and to monitor species which may raise conservation concerns (Lever 2005). This paper details confirmed records of two escaped parrot species not previously considered 'confirmed' for Colombia.

Budgerigar *Melopsittacus undulatus*

The natural range of this species is in Australia, with successful introductions reported in Japan (Lever 2005) and Florida, United States of America (Wenner & Hirth 1984) and escapees turning up in many parts of the world (Lever 2005). The species is previously considered to be known only from sight records in Colombia, with records in Bogotá (Ordoñez 1992, Donegan *et al*. 2009), Valle del Cauca and Medellín (Baptiste *et al*. 2010). The latter authors treat it as an introduced species for Colombia, whereas Salaman *et al*. (2010) treated it as escaped and known only from observations. The budgie is a common cagebird in Colombia, found frequently in houses and pet shops.

A recent confirmed record was made by OC at Humedal Jaboque, Bogotá (04°42'26"N, 74°07'40"W, 2,300 m) on 5 December 2011 (recording available at XC91781). A small flock was observed (~10 individuals) and sound-recorded at the humedal near to río Bogotá but birds were not seen on a subsequent visit on 6 December. No photograph was taken.

There is also a Colombian specimen (ICN unnumbered, Fig. 1) which lacks any label, so has no locality or date data. It is however apparently based on a bird captured in a free-flying state in Bogotá (F. G. Stiles pers. comm. 2012).

The Budgerigar can now be considered confirmed as an escaped species in Colombia on account of these records.

Sulphur-crested Cockatoo *Cacatua galerita*

The natural range of this species is in Papua New Guinea, Australia and nearby islands (Lever 2005). It has been recorded as an escapee in several countries, with establishments in Indonesia and New Zealand (Lever 2005, Heather & Robertson 1997). Although a known cagebird throughout the world, there are no reported Colombian records and it is not as common in captivity as the Budgerigar.

Figure 1a-c. Photographs of specimen of Budgerigar *Melopsittacus undulatus*. T. Donegan, June 2012.

Sound recordings were made at Humedal Jaboque, Bogotá (04°42'26"N, 74°07'40"W, 2,300 m) by OC on 5 December 2011 (recording available at XC91783, 91785 and in the background to XC91781 above). It was found common on this date and also on 6 December 2011, with a small flock of c.5 individuals observed, again at the side of the humedal near to the río Bogotá. No photograph was taken.

The occurrence of these two escaped species at the same time suggests that various escaped parrots had been recently liberated in the area, although the origin of the birds involved is not known. Several Mallards *Anas platyrhynchos* were also present, but this is a known introduced species in Bogotá's lakes (Salaman *et al*. 2008) and its presence probably unrelated to the parrots.

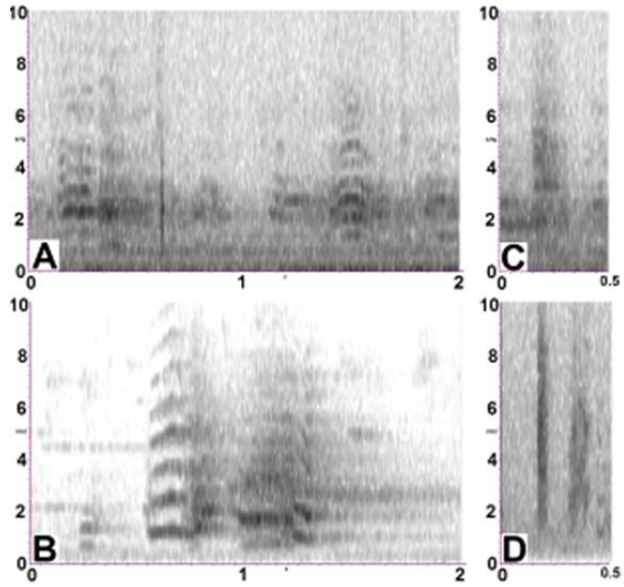


Figure 2. Sonograms of (A-B) Sulphur-crested Cockatoo *Cacatua galerita* and (C-D) Budgerigar *Melopsittacus undulatus*. A. Humedal del Jaboque, Bogotá, Colombia (XC91785: O. Cortés). B. Sherbrooke Forest, Belgrave, near Melbourne, Australia (XC98467: P. Åberg). Note the general similarity of the final call from Australia and the first from Colombia. C. Humedal del Jaboque, Bogotá, Colombia (XC91781: O. Cortés). D. Damboring Lakes, Australia (XC40579: M. Harper).

Acknowledgements

Thanks to F. Gary Stiles for allowing access to ICN and providing details of the Budgerigar specimen and to Paul Salaman for his comments.

References

Asociación Bogotana de Ornitología (ABO) 2000. *Aves de la Sabana de Bogotá, guía de campo*. ABO, Bogotá.

Baptiste M.P., Castaño N., Cárdenas D., Gutiérrez F.P., Gil D.L. & Lasso C.A. (eds). 2010. *Análisis de riesgo y propuesta de categorización de especies introducicas para Colombia. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Bogotá*. 200 pp.

Donegan, T.M. & Huertas, B. 2011. The subspecies of Brown-throated Parakeet *Aratinga pertinax* on San Andres island. *Conservación Colombiana* 15: 35-37

Donegan, T.M., Salaman, P. & Caro, D. 2009. Revision of the status of various bird species occurring or reported in Colombia. *Conservación Colombiana* 8: 80-86.

Donegan, T.M, Salaman, P.G.W., Caro, D. & McMullan, M. 2010a. Revision of the status of bird species occurring in Colombia 2010. *Conservación Colombiana* 13: 25–54.

Donegan, T.M., Salaman, P., Quevedo, A. & McMullan, M. 2011. Revision of the status of bird species occurring or reported in Colombia 2011. *Conservación Colombiana* 15: 4-21.

Heather, B. D. & Robertson, H. A. 1997. *Field guide to the birds of New Zealand*. Viking & Penguin books, Auckland.

Lara-Vásquez, C. E., Castaño-Rivas, A. M. & Jonker, R. 2007. Notas acerca de las guacamayas (Psittacidae: *Ara*) introducidas en el municipio de Medellín, Colombia. *Boletín Sociedad Antioqueña de Ornitología* 17(2): 104-110.

Lever C. 2005. *Naturalised birds of the world*. T&AD Poyser, London.

Ordoñez, E. Z. 1992. *Guia de la Aves en el Jardín Botánico "José Celestino Mutis"*. Colección Francisco José de Caldas 1. Jardín Botanico "José Celestino Mutis".

Salaman, P.G.W., Bayly, N., Burridge, R., Grantham, M., Gurney, M., Quevedo, A., Urueña, L.E. & Donegan, T. 2008. Sixteen bird species new for Colombia. *Conservación Colombiana* 5: 80–85.

Salaman, P.G.W., Donegan, T.M. & Caro, D. 2010. *Checklist of the Birds of Colombia*. Fundación ProAves, Bogotá, Colombia.

Wenner, A. S. & Hirth, D. H. 1984. Status of the feral Budgerigar in Florida. *Journal of Field Ornithology* 55: 214-219.

Corrigenda: Conservación Colombiana 15

Página(s) / Page(s)	**Corección / *Correction***
14	Uno de las grabaciones de *Schiffornis* (XC42945) citadas se considera de otra especie. *One of the Schiffornis recordings cited (XC42945) is considered to be of another species.*
5, 14, 21	Aunque el documento original no es claro, la siguiente citación fue incorrecta: *Although the original document is unclear, the following citation is incorrect*: Tamaris–Turizo *et al*. (2010). Tamaris–Turizo, D., Villa de L., C., Utría–Ortega, G. & Manjarrés–Morrón, M. 2010. O10– El Cerro Takarkuna y su importancia para la diversidad de la avifauna en la Serranía del Darién – Colombia. *Resúmenes del Congreso – III Congreso Colombiano de Zoología*. Debío haber sido: *It should have been*: Ruiz Ovalle & Hurtado (2010) Ruiz Ovalle, J. M. & Hurtado, A. 2010. O10– El Cerro Takarkuna y su importancia para la diversidad de la avifauna en la Serranía del Darién-Colombia. *Resúmenes del Congreso – III Congreso Colombiano de Zoología*. Los autores piden disculpas a Juan Miguel Ruiz Ovalle y Adriana Hurtado por no citar apropiadamente el resumen de su estudio y esperamos que los editores de resumenes de congresos, en adelante, publiquen las citas de los autores en forma menos ambigua. *The authors apologize to Juan Miguel Ruiz Ovalle and Adriana Hurtado for not duly citing the abstract of their study and call on editors of conference abstracts to be less ambiguous in their presentation of author details in future.*

Note on the identification of Lesser Nighthawk *Chordeiles acutipennis* in northern Colombia

Nota para la identificacion de Chordeiles acutipennis en el norte de Colombia

Andrew R. Collins
Southampton, England. Email: arc@soton.ac.uk

Abstract
The identification of Lesser Nighthawks in northern Colombia, is discussed. The predominantly rusty and sandy-buff plumage of these birds suggests the possibility of confusion with Antillean Nighthawk, which is so far unrecorded from the Colombian mainland. The extent of variation in the plumage of Lesser Nighthawk in Colombia is perhaps not fully appreciated.

Resumen
Se discute la identificacion de Chordeiles acutipennis *en el norte de Colombia. La predominante coloración rufa del plumaje de estas aves permite la posibilidad de confundirse con Chordeiles gundlachii, el cual no está registrado en la región continental de Colombia. La amplia variación en el plumaje del Chotacabras enano en Colombia no es completamente conocida.*

Identification of Nighthawks in Santa Marta
On 12th and 13th of October 2012 ten individuals of a Nighthawk *Chordeiles* species were found roosting in trees at the Estelar Santamar hotel, Santa Marta (Dept. of Magdalena) (Figs. 1-4). The birds were roosting on bare branches of small trees in the hotel grounds at heights of 4-6 metres, some low enough for photographs. Nine of the Nighthawks had prominent white tail bands easily seen from below (supposedly a male character) and one did not (Fig. 4). All were broadly similar in plumage with strongly buffy underparts and with variably bright rusty markings on the upperparts.

Based on the illustration in McMullan *et al*. (2010), these birds most closely resembled Antillean Nighthawk (*Chordeiles gundlachii*) and certain plumage and structural features seemed supportive of this identification. The difference between Common and Antillean Nighthawks has been extensively discussed given the status of the latter as a vagrant in the United States. Early enquiries suggested the birds in Santa Marta could indeed be Antillean Nighthawks and this was of interest because, although this Caribbean species is expected to winter in South America, there are no confirmed records from the mainland (Salaman *et al*. 2010).

Figures 1 a-b. Roosting Lesser Nighthawks.

It has been recorded on the Colombian islands of Providencia and San Andres (Salaman *et al*. 2010, McMullan *et al*. 2010). Based on published accounts and discussions on birdforum (http://www.birdforum.net/showthread.php?t=35731) some

of the features more consistent with Antillean Nighthawk than Common include:

1. Wing length not extending appreciably beyond tail (in Common Nighthawk, *Chordeiles minor,* wings usually extend beyond tail).
2. Rusty markings on head, neck, mantle and scapulars.
3. Contrastingly pale tertials.
4. Small headed appearance and "petite" body structure.
5. Broad and round-tipped primaries.
6. Bright buff colouration on vent and lower belly, paler colouration on upper breast.

A key distinction between Lesser Nighthawk and Common/Antillean Nighthawks is the position of the white patch on the primaries. Typical features for Common or Antillean Nighthawk wing patches are:

1. The patch is positioned closer to the base of the wing not extending past the tertials. In Lesser Nighthawk, the position of the patch is closer to the end of the wing, meaning that it usually extends past the end of the tertials.
2. The primary wing patch is more 'staggered', so that, for each successive feather, the white patch is further along the wing making the patch more diagonal than square.
3. Primaries lack buff spotting in front of the wing patch.

I consulted with Thomas Donegan and Nigel Cleere, who were both of the view however that these birds were Lesser Nighthawk. Lesser Nighthawk is the expected *Cordeiles* species at this elevation and locality in Colombia, being known to occur in secondary habitats west of the Andes, as well as occurring east of the Andes. Features consistent with Lesser Nighthawk include that the wing patch is relatively large and in the folded wing appears uneven (Fig. 3) and, on the primaries in front of the patch, some buff spotting is present (although it is far less extensive than shown on the illustration of Lesser Nighthawk in Sibley, 2000). Furthermore, the pattern of large and contrasting buffy or fawn spots on the wing coverts, and elsewhere, is a feature of Lesser Nighthawk. Common Nighthawk and Antillean Nighthawk both show less contrasting markings. This is shown particularly well in the illustration of a male *C. a. texensis* in Holyoak (2001, plate 7, figure 3a). This illustration shows close similarity to the bird in Figure 1 and in photographs by Cleere (2010).

Figure 2. Wings side view.

Figure 3. Female (or juvenile?).

The Lesser Nighthawk in Colombia

The seven currently recognised subspecies of Lesser Nighthawk range from a migratory form which breeds from Texas through Central America south through to Brazil. The subspecies in northern Colombia is generally considered to be *C. a. acutipennis,* which is found across much of tropical South America. Another Colombian race is *C. a. crissalis*, which is found in the tropical zone of the upper Magdalena Valley (Dept.of Huila). The movements of this species are not well understood and many populations are assumed to be residents. The subspecies *C. a. texensis,* which breeds from south western USA southwards to north and central Mexico,is known to be migratory, wintering from central and southern Mexico southwards through Central America to northern and western Colombia. In Colombia northern migrants have been reported from December to April (Hilty and Brown, 1986). Holyoak (2001) notes that winter records of the form *C. a. micromeris* (which breeds from southern Mexico to Belize) might actually refer to *C. a. littoralis* (which breeds from south central Mexico to Costa Rica). Hilty and Brown (1986) considered the five subspecies

recorded in Colombia to be inseparable in the field. However, birds with very buffy or fawn colored covert markings and sandy belly – approaching the plumage of Antillean – photographed here do appear to show differences in plumage from the less strongly-marked eastern and northern populations illustrated in Cleere (2000), McMullan *et al*. (2010) and other references.

Conclusions

The three Nighthawk species which occur in northern Colombia present identification challenges. This note illustrates that, even when armed with photographs of roosting birds, a confusing overlap of features make accurate determination difficult. Further work into subspecies limits in Lesser Nighthawk is needed, with particular reference to Colombia. Both Common and Antillean Nighthawks (males and females) are known to show plumages which range from very rusty above and buffy below to very grey above with little or no buff colour on the underparts. In contrast, for Lesser Nighthawk, Holyoak (2001) records that there are two poorly defined colour phases, one darker, and one greyer, and that "variation in colouration appears to be continuous and not especially great in this species". However, it seems likely that wide variability in colouration also applies to Lesser Nighthawk, particularly when the full range of sub-specific variation is considered.

The Antillean Nighthawk is expected to winter somewhere in South America, but has apparently never been recorded from the mainland. Many sources suggest it is not easily separable in the field from Common Nighthawk (particularly the rufous-plumaged forms). Although Antillean Nighthawk may winter on the Colombian mainland, confirmation of this will present challenges given the relatively poor understanding of the extent of variation shown by the three Nighthawk species discussed here. It is hoped this note will stimulate interest in searching for Antillean Nighthawk and in better establishing the plumage and field identification characteristics of Nighthawks in Colombia.

References

Cleere, N. 2010. *Nightjars, Potoos, Frogmouths, Oilbird, and Owlet-nightjars of the world.* Princeton University Press.

Hilty, S.L. & Brown, W.L. 1986. *A Guide to the Birds of Colombia*. Princeton University Press, Princeton New Jersey.

Holyoak, D.T. 2001. *Nightjars and their allies*. Oxford University Press, Great Clarendon Street, Oxford, UK.

McMullan, M., Donegan, T.M. & Quevedo, A.2010. *Field guide to the birds of Colombia*. Fundación ProAves, Colombia.

Salaman, P.G.W., Donegan, T.M & Caro, D. 2010. *Checklist of the birds of Colombia*. Fundación ProAves, Colombia.

Sibley D. 2000. *The North American bird guide*. Pica Press, East Sussex, United Kingdom.

A new group name for the Chachalacas (Aves: Cracidae: *Ortalis*)

Un nuevo nombre para el grupo de las chachalacas (Aves: Cracidae: Ortalis)

Thomas M. Donegan

Fundación ProAves, Cra. 20 #36–61, Bogotá, Colombia. Email: tdonegan@proaves.org

Abstract

A new group name is described for the Chachalacas *Ortalis*. Various recent studies have discussed whether the Chachalacas are more closely related to the Curassows Cracini or the Guans Penelopini (where traditionally treated) and whether it is better to "shoe-horn" the Chachalacas into one of these two groups. Levels of molecular divergence between the Penelopini, Cracini, Horned Guan *Oreophasis* (Oreophasini) and *Ortalis* are broadly equivalent; and morphological differences between the Chachalacas and Cracini/*Oreophasis* (the only relationships not strongly rejected by molecular studies) are substantial. It is proposed that the Chachalacas be assigned to a new monogeneric tribe.

Resumen

Se describe un nuevo nombre para agrupar las chachalacas Ortalis. Recientes estudios han discutido si las chachalacas están más relacionadas a los Paujiles Cracini o a las Pavas Penelopini (como tradicionalmente se conoce) y si es mejor tratarlos dentro de uno de estos dos grupos. Niveles de divergencia molecular entre los Penelopini, Cracini, la Pava cornuda Oreophasis (Oreophasini) y Ortalis son en general equivaletes; y las diferencias morfológicas entre las Chachalacas y Cracini/Oreophasis (la única relación no rechazada por estudios moleculares) es substancial. Se propone que las Chachalacas sean asignadas a una nueva tribu monogenérica.

Introduction

The Cracidae are a family of large terrestrial birds found in South and Central America and the southern United States. As discussed in Olsson (1995), the name Cracidae has been attributed in recent times either to the authors Rafinesque (e.g. Bock 1994) or Vigors (e.g. Brodkorb 1964). There are various groups within this family referred to by their vernacular names as Guans, Curassows and Chachalacas. Bonaparte (1831) made available the name Penelopidae for the Guans, which Huxley (1868) recognised as a Cracidae subfamily (with Penelopinae for the Guans and Chachalacas; Cracinae for the Curassows). Sclater & Salvin (1870) described a further sub-family name for the monospecific genus *Oreophasis* (Oreophasinae: Horned Guan), which Huxley (1868) had treated as part of the Penelopinae. The matter of higher-level relations in extant Cracidae went without much further change or comment until Verheyen (1956) reduced the previous subfamilies to tribe status and further recognised a new tribe Pipilini from within what used to be the Penelopini, whose type genus is that for the Piping-Guans *Pipile*. This latter treatment has not been widely followed. Vaurie (1968) recognised three major divisions within the family based on morphological data: the Guans and Chachalacas (Penelopini: *Chamaepetes*, *Penelopina*, *Penelope*, *Pipile*, *Aburria* and *Ortalis*), the Curassows (Cracini: *Pauxi*, *Mitu*, *Nothocrax* and *Crax*) and the Horned Guan (Oreophasini: *Oreophasis*). Delacour & Amadon (1973) re-lumped Oreophasini into Penelopini. Del Hoyo (1994) and del Hoyo & Motis (2004) ranked Delacour & Amadon (1973)'s tribes as subfamilies.

A further subfamily Gallinuloidinae Lucas was described for the fossil genera *Gallinuloides* and *Procrax* (discussed in Tordoff & MacDonald 1957) and this name has been considered applicable to some other fossil genera (Brodkorb 1964). However, some of these genera have recently been considered to be more primitive Galliformes (Dyke 2003, van Tuinen & Dyke 2004, Mayr & Weidig 2004). A further higher-level name Filholornithinae Brodkorb is also available, with an extinct type genus *Filholornis*. No higher-level name is apparently available for the Chachalacas *Ortalis* (e.g. Brodkorb 1964, Bock 1994).

Several recent molecular studies (Pereira *et al*. 2002, 2009; Pereira & Baker 2004; Crowe *et al*. 2006; Frank-Hoeflich *et al*. 2007; Eo *et al*. 2009) have proposed phylogenies for the Cracidae. Strong statistical support has been elucidated for two separate clades formed by each of the curassows and guans. However, the position of the Chachalacas *Ortalis* and Horned Guan *Oreophasis* in one or the other group remains controversial. All molecular studies and one supertree study hold these genera to be more closely related to the Curassows than the Guans (Pereira *et al*. 2002, 2009, Pereira & Baker 2004, Crowe *et al*. 2006, Frank-Hoeflich *et al*. 2007, Kimball *et al*. 2011) with strong support in some instances for rejecting a Guan-Chachalaca relationship (Pereira *et al*. 2002, 2009). However, molecular analyses have variously held *Oreophasis* and *Ortalis* to be sisters to one another or either of them to be basal to a group formed by the Curassows plus the other of these two groups. All past morphological studies (e.g. Delacour & Amadon 1973) and a recent phylogeny including molecular, morphological and behavioural data (Frank-Hoeflich *et al*. 2007) found the Chachalacas to be more closely related to the Guans than the Curassows, a conclusion which contradicts molecular studies. A more recent super-tree study by Eo *et al*. (2009) was unable to resolve the conflict although indicated that

both *Ortalis* and *Oreophasis* have closer affinities to the Cracinae. They also found a divergent *Ortalis vetula* sample, suggesting that Cracidae may not be monophyletic. This latter conclusion requires corroboration with further molecular samples, given that *vetula* is a fairly typical Chachalaca in its morphology and voice and that other studies have found *Ortalis* to constitute a cohesive monophyletic group with good statistical support.

Pereira *et al*. (2002), using 'molecular clock' techniques, hypothesised the following periods (95% confidence interval) for major divisions in the Cracidae: 'core' Guans vs. other Cracids - 26.9-40.6 million years ago (Early Oligocene); *Oreophasis* from the remainder: 26.6-36.1 mya (Early Oligocene); and *Ortalis* from Curassows: 25.8-36.5 mya (Early Oligocene). Other generic-level divergences in the Cracids are postulated to have occurred in the Miocene or later. However, despite the Cracidae having a long fossil record in North America, there are no tertiary fossils known from South America. Cracids do not easily cross large water barriers, so this could suggest instead that the South American radiation in Cracidae postdated the closure of the Panamanian land bridge, which has been postulated to have occurred at the end of the Pliocene. Although more research is required into when major divisions in the Cracidae may have occurred, it is clear from various molecular studies that Chachalacas are broadly as distantly related from other Cracid subfamilies or tribes as the other groups which have historically been recognised above generic level. Pereira *et al*. (2002) also concluded that *Ortalis* and *Oreophasis* may merit their own higher-level taxonomic rank within Cracidae.

All five recent phylogenetic studies use the names for del Hoyo (2004)'s subfamilies. Pereira *et al*. (2002, 2009), Crowe *et al*. (2006), Eo *et al*. (2009) and Kimball *et al*. (2011) each found *Ortalis* and *Oreophasis* to be more closely related to the Cracinae; whilst Frank-Hoeflich *et al*. (2007) placed *Ortalis* in the Penelopinae. However, seeking to shoe-horn *Ortalis* (and/or *Oreophasis*) into one of Delacour & Amadon's (1973) or del Hoyo´s (2004) subfamilies or tribes is rejected by molecular data in the case of a Guan-Chachalaca group; or involves creating a heterogeneous group without strong defining morphological characters in the event of a Curassow-Chachalaca group. Given morphological and molecular differences, it is here proposed that a new tribe name be made available for the Chachalacas, allowing adoption of a 'third way' of treating *Ortalis* (and *Oreophasis*) as separate tribes or subfamilies. Such a treatment which is already adopted in some online resources (although without a higher-level name for the *Ortalis*) following a proposal by the author to Remsen et al. (2012) on linear orders and higher-level taxonomy of cracids. Making a name available would allow those who wish to use higher-level divisions within Cracids to make determinations based on levels of divergence rather than historical optionality.

The names Ortalides (Fallén 1810), Ortalidae (Swainson 1840) and Ortalididae (Harris 1841) have each been used in the past as family-group names for a family of Diptera that includes *Ortalis* Fallén, 1810, with various alternatives for, or mis-spellings of, those names having also been used in the entomological literature (Sabrosky 1999). The name Ortaliinae (Mulsant 1850) is used for Coleoptera (Coccinellidae) related to the genus *Ortalia* Mulsant, 1850.

In the light of prior usage of certain more obvious *Ortalis*-derivatives for other higher-level animal taxa and usage of the word and stem *Ortalida* for *Ortalis* (discussed further below), I propose the following family-group name for the Chachalacas:

Ortalidaini n. tribe

Diagnosis

The Ortalidaini differ from the Curassows (Cracini) and Horned Guan (Oreophasini) in having extensive bare skin in the throat; no knob or other ornaments on the head; less robust and less hooked bills; lighter mass and smaller size; a lack of elaborate ground display courtships in which males feed females; and in having plumage which is generally dull brownish, reddish, dark green or grey, sometimes with light streaking on feathers, without strong black and white or rufous pigmentation; and in voice. Ortalidaini differ from the Guans (Penelopini) in showing no elaborate flight display courtship or modified primaries; in having coloured and extensive bare skin in the throat; and in voice. The Ortalidaini differ ecologically from all other Cracids (and particularly the Cracini) in being able to withstand significant human habitat modification and thriving in secondary forest and scrub. The song of the Ortalidaini is unique among Cracids, consisting of a gruff, unmusical repeated call, transcribed as "Guacharaca" or "Chachalaca" for various species, with different rhythms and frequencies of gruff notes occurring in different species' songs (Donegan *et al*. 2010). Skeletal characters are not considered here but would be expected to yield further diagnostic characters.

Type genus

Ortalis (or *Ortalida*) Merrem, 1786, by present designation.

Etymology

Ortalis in the sense of the name used for Cracids, is a Greek word, feminine gender, and means 'a young bird, fowl'. The stem for this name would ordinarily be *Ortalid*-, meaning that Ortalidinae or Ortalidini are available as tribal names (S. Gregory *in litt*. 2012). To avoid homonymy with names used in Diptera (even if perhaps incorrectly, due to the homonymy of their type genus) the Code allows 'avoidance of homonymy' in Art. 29.6 (see also Art. 29.3.3). The Example in the Code in this section would suggest that using *Ortalida*- as the stem is an available and appropriate approach, resulting in Ortalidaini being both an acceptable

tribal name and one which is not (to the knowledge of the author) preoccupied.

The correct author, date and spelling of the genus *Ortalis* are however controversial. The name *Ortalida* was used by Merrem (1786) in the original description. To explain its subsequent replacement in the ornithological literature by the name *Ortalis*, *Ortalida* has been considered the former's accusative case (e.g. AOU 1998). However, *Ortalida* could alternatively be a nominative first declension singular Latin noun (in the *puella* (f) group). As the point is not strictly relevant to the description of a new family-group taxon herein, I follow AOU (1998) and other recent authors in attributing the name *Ortalis* to Merrem (1786) rather than to any subsequent author or reverting to *Ortalida* and treat *Ortalis* as the valid generic name for these birds.

Sequence and rank

The following sequence for extant taxa is proposed:

Penelopini or Penelopinae
- *Chamaepetes*
- *Penelopina*
- *Penelope*
- *Pipile*
- *Aburria*

Oreophasini or Oreophasinae
- *Oreophasis*

Ortalidaini or Ortalidainae
- *Ortalis*

Cracini or Cracinae
- *Nothocrax*
- *Crax*
- *Mitu*
- *Pauxi*

Although most authors to have considered the issue have recognised subfamilies, Remsen et al. (2012) rejected such an approach. Given uncertainties over divergence times, recognition of tribes would be a conservative and defendable present treatment. All of the tribal groups mentioned above presumably diverged within a relatively short period and, based on molecular differentiation, appear likely to be roughly equivalent in age. The precise sequence of divergence between tribes remains a matter of controversy based on present data (and may never be exactly known). Recognition at tribal level of Oreophasini would also be consistent with these treatments, since there would no longer be any need to shoe-horn it into the Cracini in light of this description.

There is currently no consensus among ornithologists on the level of molecular divergence which should be required to recognise higher-level taxa within Aves. Under the above sequence, tribal or subfamily divisions within Cracidae approximate closely to genera, more so than before. Moreover, some Cracidae genera (e.g. *Aburria/Pipile*, *Mitu/Pauxi*) are now considered paraphyletic and some of them have been proposed as candidates for lumping in the molecular and morphological phylogenetic studies cited above. The proposition that only the family Cracidae should be recognised (without further sub-divisions above genus level) also requires re-evaluation. However, even if genera and higher-level limits seem to be coming ever closer together, Cracids are comprised of four quite distinct groups (morphologically, vocally and ecologically), reflected historically in different vernacular names for all of them except *Oreophasis*.

Two or more sub-families could alternatively be recognised, with tribes within such sub-families. No view is expressed here on whether Ortalidaini and Oreophasini should be elevated to sub-family rank or treated as tribes within Cracinae or Penelopinae. The making available of a needed tribal or subfamily level name does not necessarily constitute a recommendation of the author that it or other tribal names should be used at all within the family, given that any such determination is a matter of taste and depends on a particular author's approach to higher-level taxonomy generally.

Postscript

It has become evident from review of manuscripts which led to this paper that some ornithologists consider that descriptions of higher-level names and related studies constitute an unmeritorious and derivative checklist-housekeeping exercise. Separately, we have seen "cyber-taxonomists" describe many genera based on molecular studies, named for their employer and sometimes including erroneous treatments, a practice criticised as self-indulgent (e.g. O'Hara 2011). As molecular phylogenies constantly shed more and more light on higher-level relationships of organisms, higher-level nomenclatural studies should be considered of value (cf. Cibois *et al*. 2010). This paper is solely intended as a contribution to ornithological nomenclature and communication, to provide new perspectives on higher-level relationships in the Cracids and to assist in communication through usage of a properly described name that is not preoccupied.

Acknowledgements

F. Gary Stiles, Steven Gregory, Edward Dickinson and five other persons provided constructive comments on the manuscript.

References

American Ornithologists' Union (AOU) 1998. *Check-list of North American Birds*. 7th edition, AOU, 1998.

Bock, W. J. 1994. History and nomenclature of avian family-group names. *Bulletin of the American Museum of Natural History* 222.

Bonaparte, C. L. 1831. *Saggio di una distribuzione metodica degli animali vertebrati*. ["Prospetto del Sistema

Generale di Ornithologia"], pp. 29-62. Roma: Antonio Boulzaler, 1832.

Brodkorb, P. 1964. Catalogue of fossil birds. Part 2: Anseriformes through Galliformes *Bulletin of the Florida State Museum Biological Sciences* 8: 195-335.

Cibois, A., David, N., Gregory, S.M.S. & Pasquet, E. 2010. Bernieridae (Aves: Passeriformes): a family-group name for the Malagasy sylvioid radiation. Zootaxa 2554:65-68.

Crowe, T.M., Bowie, R.C.K., Bloomer, P., Mandiwana, T., Hedderson, T., Randi, E., Pereira, S.L. & Wakeling, J. 2006. Phylogenetics and biogeography of, and character evolution in gamebirds (Aves: Galliformes): effects of character exclusion, partitioning and missing data. *Cladistics* 22: 495-532.

Delacour, J.T., & D. Amadon 1973. Currasows and related birds. American Museum of Natural History, New York.

Donegan, T.M., Salaman, P., Caro, D. & McMullan, M. 2010. Revision of the status of bird species occurring in Colombia 2010. *Conservación Colombiana* 13: 25-54.

Dyke, G.J. 2003. The phylogenetic position of Gallinuloides Eastman (Aves: Galliformes) from the Tertiary of North America. *Zootaxa* 199:1-10.

Eo, S.H., Bininda-Emonds, O.R.P. & Carroll, J.P. 2009. A phylogenetic supertree of the fowls (Galloanserae, Aves). *Zoologica Scripta* 38: 465–481.

Fallén, C.F. 1810. *Specim. entomolog. novam Diptera disponendi methodum exhibens*. Berlingianis, Lund. 26pp.

Frank-Hoeflich, K., Silveira, L.F., Estudillo-Lopez, J., Garcia-Koch. A.M., Ongay-Larios, L. & Pinero, D. 2007. Increased taxon and character sampling reveals novel intergeneric relationships in the Cracidae (Aves: Galliformes). *Journal of Zoological Systematics & Evolutionary Research*. In press.

Harris, T.W. 1841. *A report on insects of Massachusetts, injurious to vegetation*. Folsom, Wells & Thurston, Cambridge, 459 pp.

del Hoyo, J. 2004. Family Cracidae (chachalacas, guans and curassows). Pp. 310-363 in *Handbook of the Birds of the World, Vol. 2. New World vultures to guineafowl*. (J. del Hoyo *et al*., eds.). Lynx Editions, Barcelona.

del Hoyo, J. & Motis, A. 2004. Update chapter. pp.322-476 in *Curassows and related birds*, 2nd edition. (J. Delacour & D. Amandon). Lynx Editions & National Museum of Natural History, Barcelona & New York.

Huxley, T. H. 1868. On the classification and distribution of the Alectoromophae and Heteromophae. *Proc. Zool. Soc. London* (1868): 294-319.

Kimball, R.T., St. Mary, C.M. & Braun, E.L. 2011. A Macroevolutionary Perspective on Multiple Sexual Traits in the Phasianidae (Galliformes). *Intl. J. Evol. Biol.* #423938.

Mayr, G. & Weidig, I. 2004. The Early Eocene bird *Gallinuloides wyomingensis* - a stem group representative of Galliformes. *Acta Palaeontologica Polonica* 49(2):211-217

Merrem, B. 1786. *Avium rariorum et minus cognitarum icones et descriptiones collectae e germanicus latinae factae*. Leipzig, 1786.

Mulsant, E. 1850. Species des Coléoptères trimères sécuripalpes. *Annales des Sciences Physiques et Naturelles, d'Agriculture et d'Industrie*, Lyon, 2(2):1-1104.

O'Hara, J.E. 2011. Cyber nomenclaturalists and the "CESA itch". *Zootaxa* 2933: 57–64

Olsson, S. L. 1995. Review of Bock (1994) *op. cit*. *Auk* 112(2): 539-546.

Pereira, S.L., Baker, A.J. & Wajntal, A. 2002. Combined nuclear and mitochondrial DNA sequences resolve generic relationships within the Cracidae (Galliformes, Aves). *Systematic Biology* 51(6): 946-958

Pereira, S. L., Baker, A. J. & Wajntal, A. 2009. Did increased taxon and character sampling really reveal novel intergeneric relationships in the Cracidae (Aves: Galliformes)?. *J. Zool. Systematic Evol. Res*. 47: 103-104.

Pereira, S.L. & Baker, A.J. 2004. Vicariant speciation of curassows (Aves, Cracidae): a hypothesis based on mitochondrial DNA phylogeny. *Auk* 121: 682-694.

Remsen, J.V., Cadena, C.D., Jaramillo, A., Nores, M., Pacheco, J. F., Pérez–Éman, J., Robbins, M.B., Stiles F.G., Stotz, D.F. & Zimmer, K.J. 2012. A classification of the bird species of South America (version 31 October 2012).
www.museum.lsu.edu/~Remsen/SACCBaseline.html.

Sclater, P.L. & Salvin, O. 1870. Synopsis of the Cracidae. *Proc. Zool. Soc. London* (1870): 504-544.

Swainson, W. 1840. Diptera. pp. 366-380 in Swainson, W. & Shuckard, W. E. On the history and natural arrangement of insects. Lardner's Cabinet Cyclopaedia. 406 pp.

Sabrosky, C.W. 1999. Family-group names in Diptera. pp. 1-360 in Thompson, F.C. (ed) (1999) *Family-group names in Diptera and Bibliography*. North American Dipterists' Society & Backhuys Publishers. 587 pp.

Tordoff, H.B. & MacDonald, J.R. 1957. A new bird (family Cracidae) from the early Oligocene of South Dakota. *Auk* 74: 174-183.

van Tuinen, N. & Dyke, G.J. 2004. Calibration of galliforme molecular clocks using multiple fossils and molecular partitions. *Molecular Phylogenetics and Evolution* 30: 74-86.

Vaurie, C. 1968. Taxonomy of the Cracidae (Aves). *Bulletin of the American Museum of Natural History* 138: 131-260.

Verheyen, R. 1956. Contribution à l'anatomie et à la systématique des Galliformes. *Bull. Inst. Roy. Sci. Nat. Belgique* 32(42): 1-24.

First Record for the Black-and-white Tanager *Conothraupis speculigera* in Colombia

Primer registro del Frutero Blaquinegro Conothraupis speculigera en Colombia

Yojanan Lobo–y–HenriquesJC[1, 3], John Bates[2] & David Willard[2]

1 Project BioMap, Bird Group, the Natural History Museum, Tring, HP23 6AP, UK.

2 Department of Zoology, Field Museum of Natural History, 1400 S Lake Shore Drive, Chicago, USA

3 Corresponding author; Email: lobo_y_henriques_yojanan@yahoo.co.uk

Abstract

We report the first record for Colombia of the Black-and-white Tanager *Conothraupis speculigera*, based on a Field Museum of Natural History specimen collected by Kjell Von Sneidern on 16th October 1969. We also gathered all available locality data for this poorly known species to model its potential geographical range using the program MAXENT. We conducted habitat suitability modeling using the whole dataset compiled and on subsets of the data for presumed breeding and non–breeding season records because of the poorly understood movements in this species. Our results suggest that the species might be looked for in a number of areas in Peru, Ecuador, Colombia, Brazil and Bolivia where it has not yet been recorded, but there is clearly much to learn about this enigmatic species.

Resumen

Reportamos el primer registro en Colombia del Frutero Blanquinegro Conothraupis speculigera, basados en un espécimen de museo del Field Museum of Natural History colectado por Kjell Von Sneidern el 16 de octubre de 1969. Ademas reunimos toda la información disponible de registros de localidad de esta especie poco conocida para modelar su distribución geográfica potencial usando el programa MAXENT. En una primera serie de ensayos realizamos estudios de modelamiento del hábitat usando la totalidad de los datos y en un segundo grupo de experimentos se manejaron por separado los registros de las presuntas zonas reproductivas y no reproductivas debido a lo poco que se conoce aun sobre los movimientos de la especie. Nuestros resultados sujieren la exploración de varias nuevas áreas de Perú, Ecuador, Colombia, Brasil y Bolivia donde aún no ha sido registrada la especie, Pero claramente es necesario aprender más sobre esta enigmática especie.

Introduction

The Black-and-white Tanager, *Conothraupis speculigera* Gould 1855, is an unusual thraupid first described from two males collected by Hauxwell in 1852 with type locality "Rio Ucayali, east Peru" (Carriker 1934). Carriker considered this type locality improbable, since the majority of other specimens he located at the time came from west of the Andes. Today, the species is known to exhibit a disjunct and local distribution on both slopes of the Peruvian and Ecuadorean Andes and the adjacent lowlands in Ecuador, Peru, Brazil and extreme northeastern Bolivia (Ingels 2007). In Ecuador, this species has been recorded in the south, on the western slopes of the Andes in the provinces of Azuay, Oro and Loja, and along the eastern slope in the Province of Morona–Santiago (Ridgely and Tudor 1989; Ridgely *et al*. 2005). The northernmost known record for the species until now is from Pichincha Province (InfoNatura 2009).

Conothraupis speculigera is found at elevations ranging from sea level to 1,800 m and occupies habitats such as the Gallery Forest, Riparian Thickets and the Tropical Deciduous Forest (*sensu* Stotz *et al*. 1996). It is an uncommon species with its center of abundance located in the Upper Tropical zone (900–1,600 m), although seasonal variation in site–to–site abundance is still not well understood. The species is believed to breed in the mountains during the rainy season, in the first half of the year, and later disperse to the lowlands during the dry season, in the second half of the year (Ingels 2007). Stotz *et al*. (1996) considered the Black–and–white Tanager as a species with medium conservation priority and more recently BirdLife International (2010a) has included it in the Near Threatened (NT) species list, since it is believed that the species has a relatively small population, which is being reduced due to deforestation and land degradation throughout its range.

We report here the first record for Colombia, a specimen collected by Kjell Von Sneidern from the state of Putumayo on the eastern slope of the Andes. We also review known records and create habitat suitability models predicting the potential geographical range of this species using these data.

Methodology

Compilation of Records and Georeferencing Uncertainty.

We retrieved all available records from the Global Biodiversity Information Facility (GBIF) internet portal (http://www.gbif.org). In total, we retrieved 66 records of which 15 had detailed locality data, 13 of which were georeferenced. We also gathered all records from the Ornithological Information System (ORNIS) internet portal

(http://olla.berkeley.edu/ornisnet/). These included 35 additional records of which 10 had a detailed locality and only one was georeferenced. Localities from both portals were explored to determine their general features. Using both datasets and retrieving independently the databases from specific museums or data providers a larger dataset was compiled, improving the quality of the information, especially in terms of the georeference of described localities. We also added records available from NatureServe (InfoNatura 2009) and the literature. In total, we compiled 59 records with 28 described localities and 26 different georeferenced points.

We estimated the positioning uncertainty attached to each locality using the guidelines of Wieczorek *et al*. (2004, 2006). Thus, when the locality description was simple, as for example "Samne, Libertad, Peru", the uncertainty was calculated as the error in precision in each pair of coordinates, and was calculated using the equations suggested by the mentioned authors. Otherwise, when the description included an offset distance, as for instance "10 km S Catacocha, Loja, Ecuador", the uncertainty was calculated as the maximum error, which takes into account the precision error and the specified offset distance. The maximum error was calculated using the on–line Georeferencing Calculator (Wieczorek 2001).

We also determined the slope value associated to each locality. The slope was produced from the NASA Shuttle Radar Topographic Mission (SRTM) Digital Elevation Model (DEM) data at 90 m processed by Jarvis *et al*. (2004), which was projected to Lambert Equal Area Azimuthal Equatorial in Arc View 3.3 and aggregated at 5 km. Both slope values and the estimated error were explored using simple descriptive statistics to determine the grain for habitat suitability modeling and produce consensus range maps of the species.

Niche Modeling

We used MAXENT 3.2.1 and 3.3.3e to produce potential range maps of *Conothraupis speculigera*. MAXENT uses the principle of "Maximum Entropy", estimating a unique probabilistic distribution that maximizes information available and assumes nothing from what is not known (Jaynes 2003; Phillips *et al*. 2006). The probabilistic distribution estimated is considered the least biased and most uniform distribution, given the constraint: Phillips *et al*. (2004).

A first set of habitat suitability modeling exercises was conducted in 2008 using MAXENT 3.2.1. Prior to starting, the 19 Bioclimatic variables available from WorldClim (http://www.worldclim.org) were downloaded and clipped to north South America. All layers, originally at ≈1 km grain size, were projected to Lambert Equal Area Azimuthal Equatorial in Arc View 3.3 and aggregated at 5 km. To make the modeling process more efficient, we conducted a Principal Component Analysis. The analysis was performed separately for both temperature (BIO1 to BIO11) and precipitation (BIO12 to BIO19) variables in order to select those that explained greatest variation in each group. Thus, layers for modeling were reduced to a total of 6 biovariables (BIO1, BIO2, BIO3, BIO12, BIO13 and BIO14). We used bootstrapping to produce 100 replicates and each time 30% of the data to evaluate model performance through the AUC statistic calculated by the software.

Following recommendations of Anderson *et al*. (2003), final presence/absence maps were produced based in "best model subsets". Thus, raw results of logistic probability obtained from MAXENT were given thresholds using two different approaches. First, the "equal test sensitivity and specificity threshold (ETSS) value" and, second, the "equate entropy of thresholded and non–thresholded distributions (EETNTD) threshold value". The first approach selected models that showed training omission lower than or equal to 0.278 and where the binomial test of omission was significant at the 5% level. Thirty–four models fulfilled these conditions, and we selected the 20 with the highest test AUC statistic values. For the second approach, we selected models that showed a training omission lower than or equal to 0.056 and for which the binomial test of omission proved to be statistically significant at the 5% level, which resulted in a total of 14 models. Using a simple batch file, selected models in each approach were imported into PCRaster, thresholded and added in each case. The linear addition of each subset was exported and final consensus range maps prepared in Arc View 3.3.

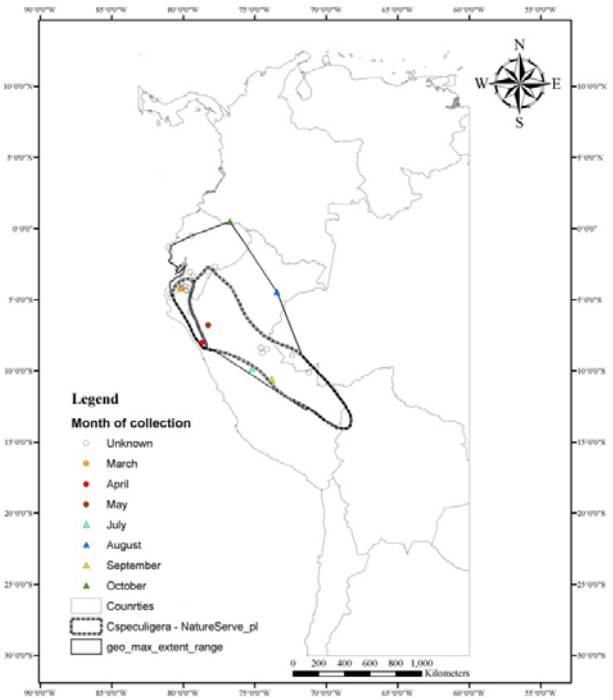
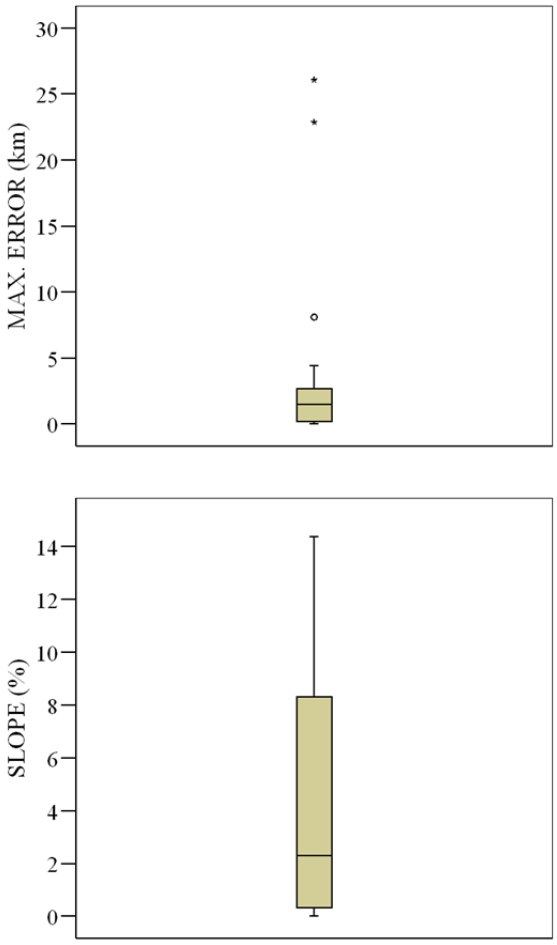


Figure 1. Map of localities of collection by month.



Figures 2a-b. Plot of georeferencing uncertainty (above, b) and average slope (below, b) values distribution for the localities where the Black-and-white Tanager (*Conothraupis speculigera*) have been recorded.

A second set of habitat suitability modeling exercises was conducted in 2011 using MAXENT 3.3.3e. This time a series of experiments were performed to test the effect of the use of the total of bioclimatic variables from WorldClim in the performance and the spatial predictions of the potential maps generated, as well as the sensitivity of models to changes in the prevalence assigned to the species. Models were produced using the 19 BioClim variables (unprojected) at ≈1 km grain size in the following manner: (1) 25 replicas evaluated with 30% of the data, using simple sub–sampling and with prevalence = 0.5 (ep05); (2) 25 replicas evaluated with 30% of the data, using simple sub–sampling and with prevalence = 0.3 (ep03); (3) 25 replicas evaluated with 30% of the data, using simple sub–sampling and with prevalence = 0.1 (ep01); (4) a unique model, no evaluated and with prevalence = 0.5 (nep05); (5) data split in Andes and Lowlands records, a unique model no evaluated in each case and with prevalence = 0.5 (nepA05 and nepL05); (6) data split in Andes and Lowlands records, a unique model no evaluated in each case and with prevalence = 0.3 (nepA03 and nepL03); (7) data split in Andes and Lowlands records, a unique model no evaluated in each case and with prevalence = 0.1 (nepA01 and nepL01). Potential range maps were produced in this case using the "equate entropy of thresholded and original distributions (EETOD) threshold value". In exercises with replicas we used the averaged raw results maps to produce presence/absence maps. Otherwise, we added linearly potential range maps generated through all the experiments to evaluate which areas were more robustly predicted as presences through all the different experiments.

Results and Discussion

First record of *Conothraupis speculigera* for Colombia

This specimen (FMNH #287617) was collected by Kjell Von Sneidern on 16th October, 1969 at San Antonio de Guamuez, Putumayo, Colombia. The specimen was originally catalogued as "*Piranga sp*." It is a bird in yellowish–green "female" plumage, but it is labeled with a question mark "?" as a male. There are no gonad data and Von Sneidern left no field notes. Von Sneidern collected intensively at this site and other species collected on the same date include species typical of both Amazonian river edge and swampy forest (e.g., *Pilherodias pileatus, Xiphorynchus ocellatus, Schistocichla luecostigma and Stelgidopteryx ruficollis*). Also collected on this date were several *terra firme* forest/bamboo specialists such as *Denconychura stichtoleama* and *Drymophila devillei*, which along with *Rhegmatorhina melanosticta* and *Ramphotrigon fusciicauda* were first records for Colombia (Fitzpatrick and Willard 1982, Stotz 1990); suggesting this is still a little explored region of the country. We also note that Von Sneidern collected Black–and–white Seedeater *Sporophila luctuosa* at this site. Witt (2005) has hypothesized that adult males of *C. speculigera* mimic males of this species. The species was previously added to the Colombian checklist and field guides based on this record (Donegan *et al*. 2009, Salaman *et al*. 2010, McMullan *et al*. 2010, 2011), but full details have not previously been published.

The Von Sneidern record constitutes an extension of the known geographical range, approximately 322 km NE from an "unnamed place" west of the Andes in Pichincha Province, Ecuador – 13.3 km E from La Bramadora (Manabi), 12.4 km NW from Consumulo (Los Rios) and 14.5 km SW from Puerto Limon (Pichincha) – (InfoNatura 2009). Additionally, this record is about 371 km from Tayuntza in Morona-Santiago, Ecuador, the nearest point where the species was reported east of the Andes (Ridgely and Greenfield 2001; Ridgely *et al*. 2005), and 398 km NNE from the expert based geographical range drawn polygon (InfoNatura 2009). This record also has other implications for the natural history of the species. The 16th October date is of note because this is outside the months that the species is generally encountered in what is currently considered to be its primary non–breeding range in Amazonian Peru

(June–September) (Schulenberg *et al*. 2010). Thus, the Colombian record may represent an important extension of the non–breeding season range of the species or may represent a migrating or vagrant individual (Fig. 3a). However, we need further surveys in that region in the Colombian Amazon to confirm one or the other hypothesis. Also, if the bird is indeed a male, this suggests that young males do not achieve adult plumage until the end of their non–breeding season.

Georeferencing and slope.

The calculated error for the georeferences proved to be, in most cases, lower than 5 km (Fig. 3b). Just in four cases the positioning uncertainty attached to georeferencing was higher than this value: 1) "Macas, 54 km SE, Tayuntza, Morona–Santiago, Ecuador", 2) "Playas, 26 km SW, Loja, Ecuador", 3) "10 km N El Empalme, NE Celica, Loja, Ecuador", and 4) "10 km S Catacocha, Loja, Ecuador". The average slope across all localities was less than 15% (Fig. 1c), which corresponds to relatively flat areas where great variability in the bioclimatic variables used to conduct the niche modeling is not expected. Furthermore, when the slope map was aggregated at 25 km grain size, the mentioned localities with values of error higher than 5 km lay in areas with average slope lower than 10%.

Modeling experiments and potential distribution

During the first set of exercises, results showed that about 75% of the models had high Test AUC values, ranging those between ≈0.70–0.92, and exhibited confidence interval limits at the 95% probability for the mean between 0.731–0.763 (μ = 0.747, n = 100). Additionally, during this first phase, the two types of threshold used in our analyses to generate presence/absence maps produced differences in final results. Although in both cases selected models had high accuracy values (EETNTD ≈0.76–0.92 and ETSS ≈0.78–0.87), in general, the ETSS models showed higher values in the training omission rate than the EETNTD, while it showed lower values for the total predicted area. Thus, when used in the ETSS, training omission values exhibited confidence interval limits at the 95% probability for the mean between 0. 179–0.223 (μ = 0.201, n = 100) and predicted area values between 0. 328–0.361 (μ = 0.344, n = 100), whilst when we used the EETNTD, training omission values exhibited confidence interval limits between 0. 088–0.120 (μ = 0.104, n = 100) and predicted area values between 0. 441–0.472 (μ = 0.456, n = 100).

The presence/absence maps produced by linear addition using the ETSS threshold on the best models subset, predict as suitable the well known areas of occurrence in south Ecuador and in northwest Peru, as well as some new areas from where the species has not been recorded in northern Ecuador and in central west Peru (Fig. 3a). Thus, results predict that the Black–and–white Tanager may occur (linear addition scores ≥ 15) in Imbabura, Manabi, Guayas, El Oro and Loja provinces in Ecuador, and in Tumbes, Piura,

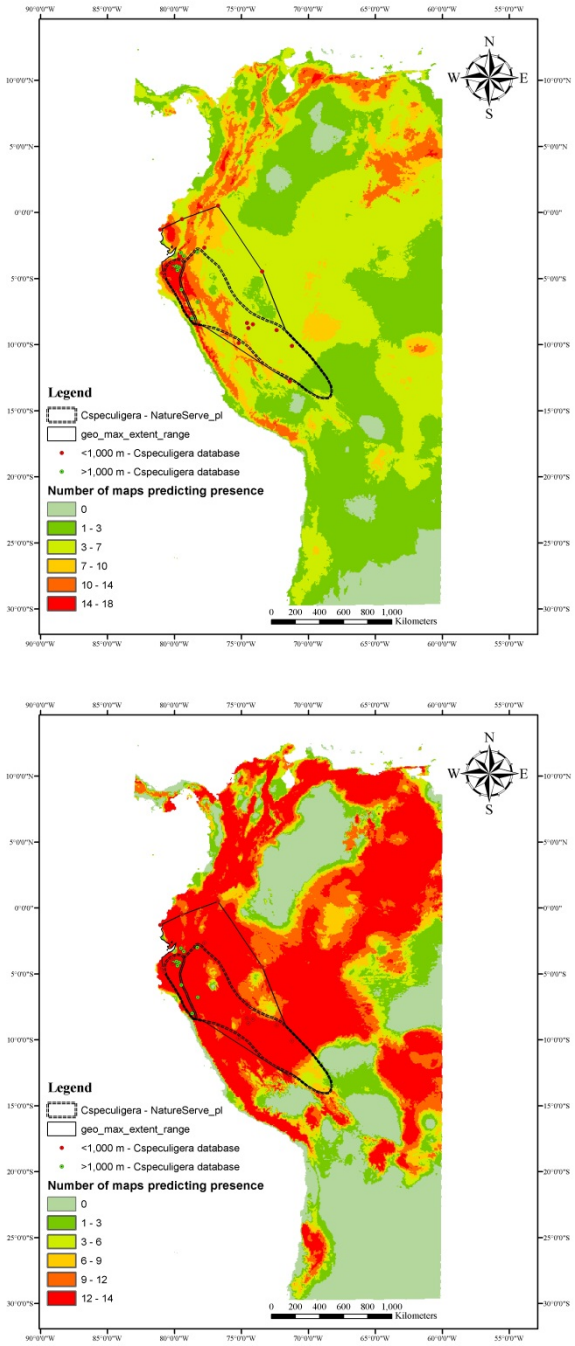


Figure 3 a-b. Potential range of *Conothraupis speculigera* modeled using MAXENT 3.2.1. Based on results from the linear addition of the best models subset, using the ETSS (a) "equal test sensitivity and specificity threshold value" and EETNTD (b) "equate entropy of thresholded and non–thresholded distributions threshold value" during the first set of MAXENT modeling experiments conducted in this study in 2008.

Lambayeque, Cajamarca, La Libertad, Ancash and Lima departments in Peru. Also, it may be present in some small and or isolated pockets in Carchi, Pichincha, Cotopaxi, Bolivar, Chimborazo, Cañar, Azuay and Zamora–Chinchipe Provinces in Ecuador and in Arequipa in southern Peru. Interestingly, Witt (2005) had documented the species in recent years in Lambayeque, and Cajamarca. Additionally, our models predict suitable habitat for the species along the Andean slopes from Colombia to Bolivia and possibly in some areas to the east of the Andes (Fig. 3a). Also the models predict the species as likely to occur (linear addition scores ≥ 8 and ≤ 14) in Nariño and Putumayo departments in Colombia; in Esmeraldas, Sucumbíos, Orellana, Tungurahua, Pastaza, Morona–Santiago and Los Rios provinces in Ecuador; in Amazonas, San Martin, Huánuco, Pasco, Junín, Huancavelica, Ica, Ayacucho, Cusco, Arequipa, Moquegua, Tacna, Puno, Ucayali and Madre de Dios departments in Peru; and in southwest Amazonas and northeast Acre states in Brazil.

Our results also identify as suitable some areas that are well outside the known range of the species. These include the Andean slopes of Colombia and Venezuela, and east of the Andes in southern Venezuela in the state of Amazonas and in Brazil in north Roraima and Amazonas states (Fig. 3a), which seem unlikely to be part of the specie's range. Additionally, suitable climatic conditions may exist in northeastern Rondonia and northwestern Mato Grosso in Brazil, and around the boundary of the departments of Cochabamba, Santa Cruz and Chuquisaca in Bolivia. Included in these areas is the only known locality for the rare, poorly known and Critically Endangered (CR) Cone–billed Tanager (*Conothraupis mesoleuca*), the only other member of the genus (BirdLife–International 2010b). Maps produced using the EETNTD predict coarsely suitable areas for the species in both the Andes and the Lowlands that are of much less specificity than the ones obtained using the ETSS threshold (Fig. 3b).

During the second set of modeling exercises, results showed that models generated had a significant better performance than those models produced above. Thus, average Test AUC values obtained for the first three experiments with evaluations and replicas (ep05, ep03 and ep01) ranged between 0.842–0.871. Those values are well above average values observed for the earlier models and were not different among them (Confidence Interval of the Mean, all $P < 0.05$), suggesting no sensitivity in model performance to changes in the prevalence of the species (Fig. 4a). Furthermore, average Training AUC showed values even higher than these, becoming particularly high in experiments conducted only using Andean records (nep05A, nep03A and nep01A) (Fig. 4b). On the other hand, using the EETOD threshold value, the average training omission showed values in the same ranges, although values of omission tended somehow to be slightly lower than those observed previously (Fig. 4c), while predicted area was significantly lower in all experiments, with exception of those conducted only using Lowland records (nep05L, nep03L and nep01L) (Fig. 4d). It is important to highlight that similarly to what was observed for the AUC, the training omission and the predicted area showed no sensitivity to changes in the prevalence of the species (Confidence Interval of the Mean, all $P < 0.05$).

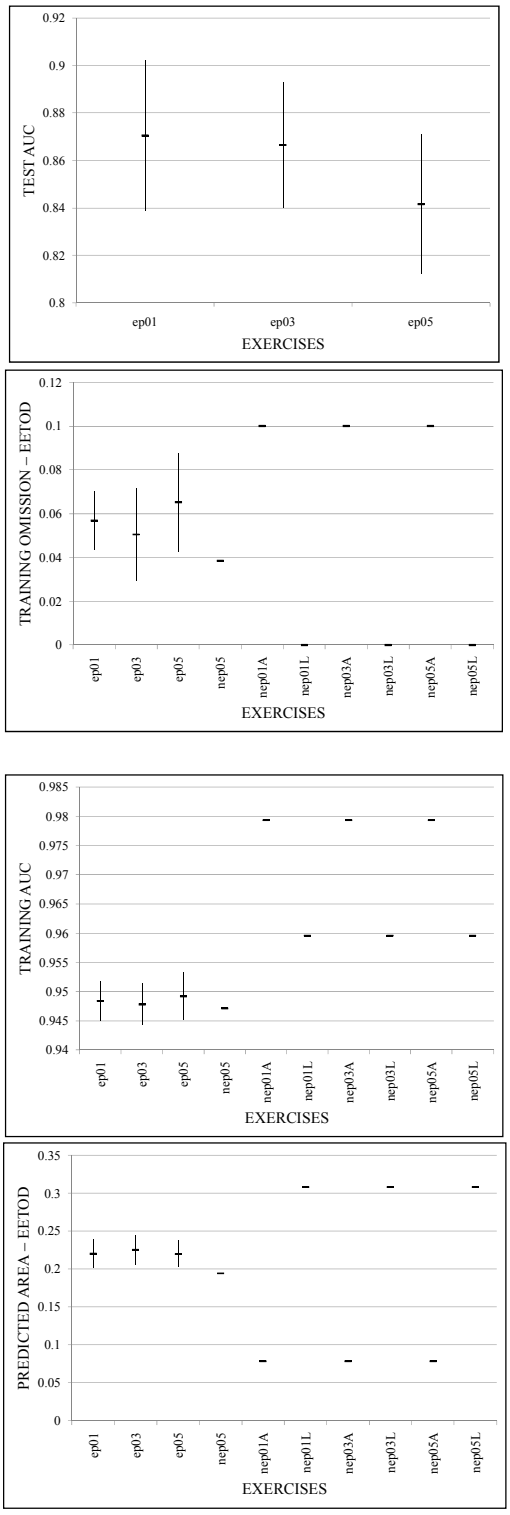
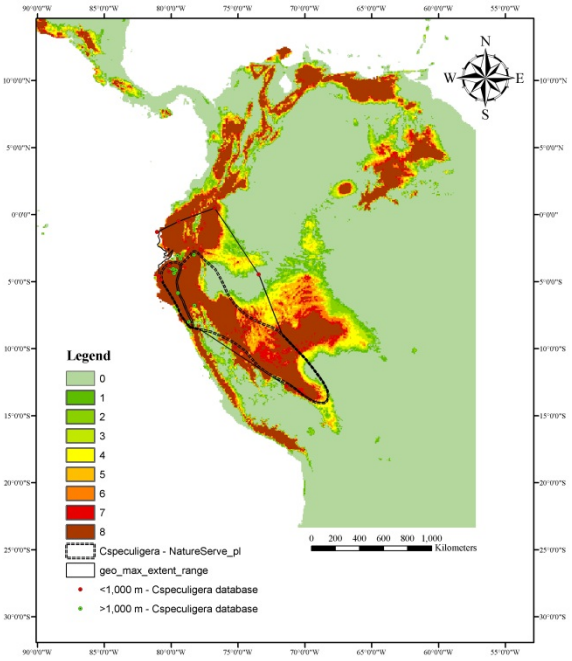


Figure 4 a-d. Performance of MAXENT 3.3.3e models during the second set of modeling experiments to model the potential range of the Black-and-white Tanager (*Conothraupis speculigera*). Test AUC (a, above), Training AUC (b, second from above), Training Omission (c, third from above), and Predicted Area (d, fourth from above). In case there were replicates in a single experiment are plotted the confidence intervals of the mean at the 95% probability. Exercises key: e= evaluated, ne = not evaluated, p01 = prevalence 0.1, p03 = prevalence 0.3, p05 = prevalence 0.5, A = Andes and L = Lowlands (for more details see text).

During this second stage, spatial predictions of suitable habitat for the Black–and–White Tanager were more robust between the different experiments and more restricted spatially, particularly in the Lowlands (Fig. 5a). Some areas became better defined as suitable in the eastern slope of the Peruvian Andes, from the department of Amazonas to the department of Madre de Dios, in the departments of Acre and Amazonas in Brazil and in some areas in southern Venezuela (Fig. 4a). Otherwise, when data was split in Andes and Lowland records, habitat suitability maps generated using only Andean data showed similar areas predicted for presence as before (Fig. 5b), while maps generated using only Lowland records resulted in more robust predictions than before; particularly in adjacent areas to the Andes in Ecuador and northern Peru, further south in Peru from the departments of San Martin and Loreto to the department Madre de Dios, and extending further in some areas of the departments of Acre and Amazonas in Brazil (Fig. 5c).



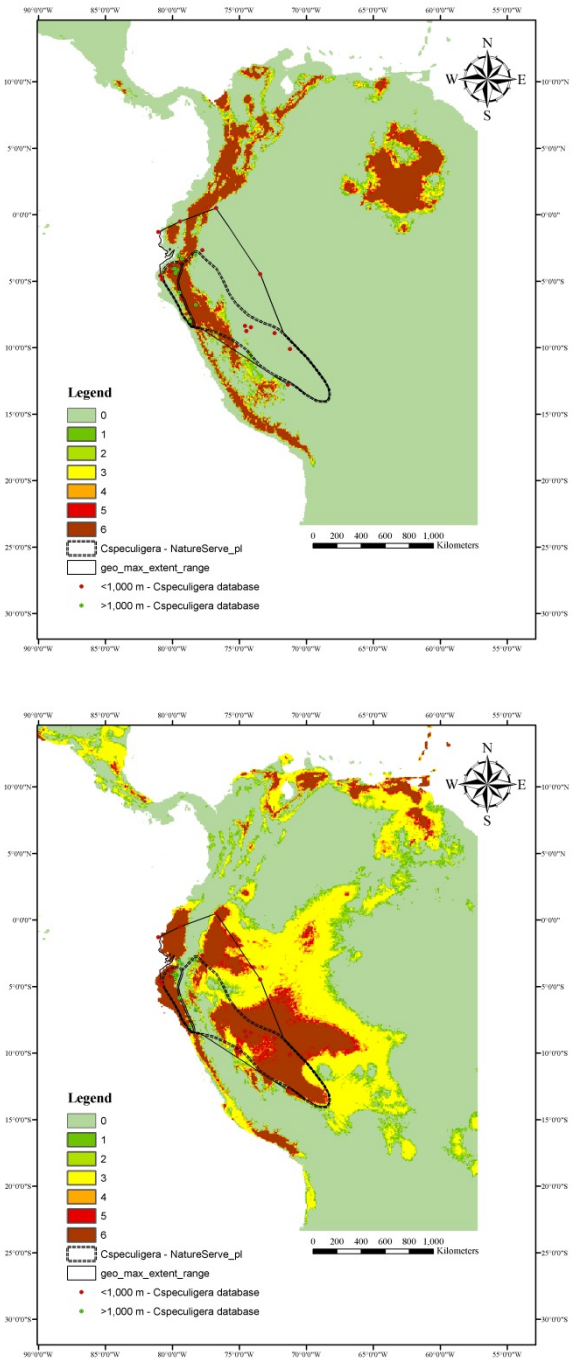


Figure 5 a-c. Potential geographical range of the Black–and–white Tanager (*Conothraupis speculigera*) modeled using MAXENT 3.3.3e. Based on results from the linear addition of presence/absence maps obtained using the EETOD "equate entropy of thresholded and original distributions" threshold value during the second set of MAXENT modeling experiments. Models were generated using the totality of data in the database (a) and splitting the data in Andes (b) and Lowlands (c) records.

There is clearly much to be learned about *C. speculigera* and its sister taxon *C. mesoleuca*. This new record for Colombia, once again, illustrates the long–term value of general collecting. The use of habitat suitability modeling provides new insights into additional areas where this species might occur seasonally based on the currently available data. However, seasonal disappearances in some areas and heavy fat loads suggest migratory movements that may still not be effectively incorporated into the current modeling.

Acknowledgments

This work was made possibly thanks to the many institutions that have granted electronic access to their datasets in the Internet through initiatives such as GBIF (http://www.gbif.org) and ORNIS (http://olla.berkeley.edu/ornisnet/). We would like to thank the referees who revised this communication for their valuable comments.

References

Anderson, R. P., Lew, D. & Peterson, A. T. 2003. Evaluating predictive models of species' distributions: criteria for selecting optimal models. *Ecological Modelling* 162:211-232.

BirdLife International. 2010a. *Species factsheet: Black–and–White Tanager Conothraupis speculigera*. <http://www.birdlife.org/datazone/index.html> (12th August 2010).

BirdLife International. 2010b. *Species factsheet: Cone–billed Tanager Conothraupis mesoleuca*. <http://www.birdlife.org/datazone/index.html> (12th August 2010)

Carriker, M. A. 1934. Rediscovery of *Conothraupis Speculigera* (Gould). *Auk* 51:497-499.

Donegan, T.M., Salaman, P.G.W. & Caro, D. 2009. Revision of the status of various bird species occurring or reported in Colombia. *Conservación Colombiana* 8: 76–82.

Fitzpatrick, J. W. & Willard, D. E. 1982. Twenty–one bird species new or little–known from the Republic of Colombia. *Bulletin of the British Ornithologists' Club* 102:153–158.

InfoNatura 2009. *Animals and Ecosystems of Latin America [web application]*. 2007. Version 5.0. <http://www.natureserve.org/infonatura/> (5th January 2009).

Ingels, J. 2007. Additional information on the breeding biology of the Black-and-white Tanager (*Conothraupis speculigera*) in Ecuador. *Boletin SAO* XVII:98-103.

Jarvis, A., H. Reuter, I., Nelson, A. & Guevara, E. 2004. *Processed void–filled seamless SRTM 90m digital elevation model data (DEM), v 3.0. Ambiotek.* International Centre for Tropical Agriculture (CIAT), London – Cali.

Jaynes, E. T. 2003. *Probability Theory: The Logic of Science*. Cambridge University Press, Cambridge.

McMullan, M., Donegan, T.M. & Quevedo, A. 2010. *Field guide to the birds of Colombia*. Fundación ProAves, Bogotá. 225 pl.

McMullan, M., Quevedo, A. & Donegan, T.M. 2011. *Guia de Campo de las Aves de Colombia*. Fundación ProAves, Bogotá.

Phillips, S. J., Dudik, M. & Schapire, R. E. 2004. A maximum entropy approach to species distribution modeling, p. 655-662. In C. E. Brodley [ed.], *Machine Learning, Proceedings of the Twenty–first International Conference* (ICML), Banff, Alberta, Canada, July 4-8, 2004. Association for Computing Machinery, Banff.

Phillips, S. J., Anderson, R. P. & Schapire, R. E. 2006. Maximum entropy modeling of species geographic distributions. *Ecological Modelling* 190:231-259.

Ridgely, R. S. & Greenfield, P. J. 2001. *The Birds of Ecuador: status, distribution and taxonomy*. Cornell University Press, Ithaca.

Ridgely, R. S. &. Tudor, G. 1989. *The Birds of South America: the Oscine Passerines*. University of Texas Press, Austin.

Ridgely, R. S., Allnutt, T. F., Brooks, T., McNicol, D. K., Mehlman, D. W., Young B. E. & Zook, J. R. 2005. *Digital Distribution Maps of the Birds of the Western Hemisphere, version 2.1*. NatureServe, Arlington, Virginia, USA.

Salaman, P.G.W., Donegan, T.M. & Caro, D. 2010. *Checklist of the Birds of Colombia*. Fundación ProAves, Bogotá, Colombia.

Schulenberg, T. S., Stotz, D. F., Lane, D. F., O'Neill, J. P. & Parker, T. A. 2010. *Birds of Peru: revised and updated edition*. Princeton University Press, Princeton.

Stotz, D. F. 1990. First specimens of *Drymophila devillei* from Colombia. *Bulletin of the British Ornithologists' Club* 110:37–38.

Stotz, D. F., J. W. Fitzpatrick, T. A. Parker III, and D. K. Moskovits. 1996. *Neotropical Birds: Ecology and Conservation*. The University of Chicago Press, Chicago.

Wieczorek, J. 2001. *Georeferencing calculator*. <http://manisnet.org/gc.html> (5th January 2009).

Wieczorek, J., Guo, Q & Hijmans, R. J. 2004. The point–radius method for georeferencing locality descriptions and calculating associated uncertainty. International Journal of Geographical Information *Science* 18:745-767.

Wieczorek, J., Guralnick, R., Chapman, A., Frazier, C., Rios, N., Beaman, R. & Guo, Q. 2006. Guide to Best Practices for Georeferencing. In A. D. Chapman and J. Wieczorek [eds.]. *Global Biodiversity Information Facility*. GBIF, Copenhagen.

Witt, C. C. 2005. Syntopic breeding suggests mimicry of the Black–and–white Seedeater (*Sporophila luctuosa*) by the Black–and–white Tanager (*Conothraupis speculigera*). *Ornitologia Neotropical* 16: 387–396.

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Conservación Colombiana es publicada dos veces al año por la Fundación ProAves, una entidad sin ánimo de lucro registrada, que tiene como misión "proteger las aves silvestres y sus hábitat en Colombia a través de la investigación, las acciones de conservación puntuales y el acercamiento con las comunidades locales. El propósito de la revista es divulgar los resultados de las investigaciones y acciones de conservación de las especies colombianas amenazadas de extinción. El formato y tipo de los artículos que se publican es variado incluyendo reportes internos de las actividades en conservación desarrolladas por la Fundación, resultados de las investigaciones y el monitoreos de especies amenazadas, proyectos de grado de estudiantes universitarios, inventarios y conteos poblacionales, planes de acción o estrategias desarrolladas para especies particulares, sitios o regiones y avances en la expansión de la red de áreas protegidas en Colombia.

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Los nombres científicos deben estar escritos en letra cursiva y deben estar mencionados después del nombre en castellano la primera vez en el titulo, resumen y texto. En adelante solo debe usarse el nombre en castellano. Abreviaturas como sp. y spp. no son nombres y no van en cursiva.

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- Titulo en castellano e inglés y autores
- Resumen en castellano e inglés
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- Métodos
- Resultados
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Contribuciones como descripciones de nuevos taxa, revisiones de literatura, discusiones de manuscritos, o artículos en forma de ediciones completas, deben usar secciones apropiadas como es su usanza en la literatura científica. No obstante, su aceptación final queda a criterio del comité editorial.

El titulo debe ser en mayúsculas (sin punto final) y negrilla, seguido en reglón aparte por el nombre de los autores en negrilla, sus afiliaciones institucionales y la dirección electrónica del primer autor. Se recomienda a los autores usar solo su primer nombre y apellido. Sin embargo, en caso que quiera usar su segundo apellido deberá ligarlo con un guión corto (–) al primer apellido.

Es recomendable que los resúmenes no excedan las 300 palabras o el 5 % de la longitud total del texto y debe incluirse una lista de palabras clave en el idioma respectivo.

Las secciones y subsecciones deben ir seguidas, separadas por un espacio intermedio, y sus títulos deben usar numeración arábiga. Las secciones principales deben ser en mayúsculas sostenidas de 14pt (encabezado tipo 1), mientras que las subsecciones y subsecciones de subsecciones en mayúsculas y minúsculas de 10 pt (encabezados tipo 3 y tipo 4 respectivamente), aunque las subsecciones de subsecciones deben ir en letra itálica. Además, el texto empieza en cada sección principal y subsección luego de un espacio intermedio, en tanto que empieza sin dejar espacio intermedio para subsecciones de subsecciones, así:

3. CONSERVACIÓN EN COLOMBIA

La conservación en Colombia ha sido históricamente…

7.1. Loros amenazados

Los loros amenazados de Colombia…

7.1.1. Loros en peligro (EN)

Los loros en peligro en Colombia se encuentran principalmente en la zona Andina…

Las tablas, figuras y anexos deben estar citados en el texto. Como figuras se entienden todo tipo de gráficos, dibujos, mapas, fotos e ilustraciones. Para las tablas, la leyenda debe ir arriba y las explicaciones de abreviaturas o simbología al pie en cursiva. Solamente se deben usar líneas horizontales en las tablas. Para las figuras, la leyenda debe ir al pie de la

misma. Se recomienda que cada leyenda incluya información suficiente para ser entendida por si misma sin necesidad de volver al texto y que incluya el nombre de la figura, un referente geográfico y temporal, y el nombre abreviado del manuscrito y el periodo del estudio.

Todas las citas en el texto deben estar en la bibliografía y viceversa. Las citas en el texto se deben ordenar cronológicamente. Cuando se cita en el texto no se debe usar coma entre el nombre del autor y la fecha, y se usan comas para separar dos referencias. En citas donde hay dos autores, estos se separan usando "&" no "y". Para citas donde hay más de dos autores se usa "*et al.*", escrito en cursiva. Se deben usar letras minúsculas seguidas al año para diferenciar varios trabajos del mismo autor y año, así: Moreno 1995b, Moreno 1995d. Se pueden citar trabajos publicados o aceptados para publicación, tesis universitarias e informes y reportes internos; que a su vez deberán ir en la Bibliografía. Artículos aceptados para publicación pero aún no publicados se citan como "*en imprenta*", ej: Salaman (*en imprenta*). Manuscritos inéditos o no aceptados y comunicaciones personales se citan únicamente en el texto, como datos no publicados y comunicación personal respectivamente, incluyendo la inicial del nombre del autor, ej: D. Caro (datos no publ.), C. Gómez (com. pers.).

La bibliografía debe estar ordenada alfabéticamente por autor y cronológicamente cuando haya varias citas del mismo autor. Se deben escribir los apellidos de todos los autores y sus iniciales capitalizándolos. Cuando el autor sea una institución, cítela por su nombre completo en el texto la primera vez seguido en mayúscula sostenida por su acrónimo en paréntesis, que deberá ser usado en adelante y en la bibliografía. Cuando un manuscrito ha sido aceptado pero todavía no ha sido publicado y se encuentra en imprenta cítelo como "en imprenta", sin fecha, y cuando hace parte de una publicación seriada reemplace el número de volumen o número y páginas por "0:00". Los nombres de las publicaciones seriadas deben escribirse completos y en cursiva. Recomendamos seguir el siguiente estilo la bibliografía:

- Libros

Autor (Año) Título. Editorial o institución que publica. Ciudad de publicación. Si se cita un libro colegiado, se cita el nombre del editor o editores con (ed.) o (eds.). Ej:

Hilty, S. & Brown W. (1986) A Guide to the Birds of Colombia. Princeton University Press. Princeton.

Chaves, M.E. & Arango, N. (eds.) (1998) Informe nacional sobre el estado de la biodiversidad 1997, Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, PNUMA, Ministerio del Medio Ambiente, Bogotá.

- Artículos

Autor (Año) Título. *Revista* volumen (o número): páginas del artículo. Ej:

Kattan, G., Alvarez, H. & Giraldo, M. 1994. Forest fragmentation and bird extinctions: San Antonio eighty years later. *Conservation Biology* 8: 138–146.

Pacheco, A. (en prensa). Biología reproductiva del Loro Orejiamarillo (*Ognorhynchus icterotis*) en el Municipio de Roncesvalles, Departamento del Tolima. *Conservación Colombiana* 0:00.

- Capítulos o contribuciones dentro de un libro

Autor (Año) Título. Páginas en: Editor (ed.). *Título libro*. Editorial o institución que publica. Ciudad de publicación. Ej:

Rosselli, A. & Estela, F. 2002. *Vireo caribeus*. Págs. 367–370 en Renjifo, L.M., Franco–Maya, A.M., Amaya–Espinel, J.D., Kattan, G.H. & Lopéz–Lanús, B. (eds.) *Libro rojo de aves de Colombia*. Instituto de investigación de Recursos Biológicos Alexander von Humboldt & Ministerio del Medio Ambiente. Bogotá.

- Artículos publicados en el Internet o extractos de páginas electrónicas

Autor (Año) Titulo. Institución que publica. Disponible en URL [última fecha de acceso]

FAO 2001. *Global forest resources assessment 2000: main report. Food and Agriculture Organization of the United Nations*. Forestry Paper No. 140. Disponible en http://www.fao.org/forestry/index.jsp [descargado en febrero de 2006].

Unidades de medida. Recomendamos usar el Sistema Internacional de Unidades (SI) para todas las unidades de medida. Este puede ser revisado en el URL del "Bureau International des Poids et Measures" http://www.bipm.fr/en/home/. Escriba las unidades usando un espacio intermedio después de los números, así: 33 ºC ó 273 ha.

Numeración en el texto. Cuando un número va acompañado de una unidad siempre se deberá escribir como un número arábigo. Los miles se deberán marcar con un espacio y las fracciones decimales con puntos. Cuando los números no van seguidos de unidades, los dígitos de cero a nueve se escriben con palabras y de 10 en adelante con números arábigos. Para separar un intervalo, al igual que en cualquier otra oportunidad que se quiera usar un guión en el texto, se deberá usar el guión corto (–) y no el guión de no separación (-). Es recomendable no usar en cifras decimales más de tres dígitos.

Fechas y horas. Las fechas se deben escribir como día, mes y año, así: 11 de septiembre de 2006 ó 11 septiembre 2006 y use el sistema de 24 horas, así: 21.00 en vez de 9:00 P.M. ó 9:00 p.m., 6.00 en vez de 6:00A.M. ó 6.00 a.m.

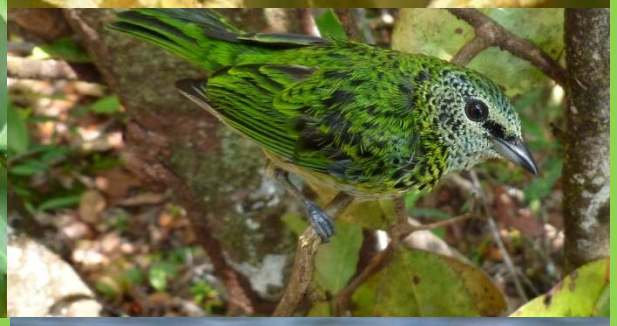
La aceptación de los manuscritos dependerá de un proceso riguroso de la revisión de su calidad académica. La coordinación editorial y un miembro del Comité Editorial

asociado con el área correspondiente al trabajo remitido, hacen una primera evaluación a fin de verificar el cumplimiento de los requisitos de presentación exigidos por la revista. Los manuscritos que no sean originales, que tengan serias deficiencias en su estructura, que presenten una pobre redacción o no se ajusten a las normas editoriales, serán devueltos para su adecuación antes de ser considerados para revisión por el Comité Editorial.

Los trabajos que pasen la primera etapa serán enviados a por lo menos dos árbitros expertos en el área de conocimiento respectiva, cuyas identidades serán desconocidas para los autores a través de todo el proceso de evaluación. Para notas cortas (menos de dos páginas) el uso de un solo árbitro con comentarios del comité editorial es también posible. Para asegurar la imparcialidad en la evaluación, las identidades de los autores también resultan desconocidas para los árbitros (proceso de evaluación doblemente ciego). Los árbitros disponen de dos semanas para remitir un concepto detallado sobre los siguientes aspectos u otros: el título refleja el tema del escrito, el resumen es claro y permite conocer con claridad el contenido y los elementos básicos del escrito, las palabras clave son pertinentes, la organización y redacción del manuscrito, la originalidad y alcance del trabajo presentado, claridad y delimitación del problema, la justificación es coherente con el problema abordado, la descripción de la metodología utilizada es clara y pertinente, existe formalidad en la escritura, existe relación entre la temática abordada teóricamente y los objetivos y la metodología utilizada, es rigurosa la presentación y discusión de los resultados, la consistencia entre resultados y conclusiones y la pertinencia y precisión de las referencias bibliográficas citadas. Los árbitros pueden enviar sus comentarios o corecciones sobre el manuscrito mismo electrónicamente o en un documento o correo aparte.

Cuando la recomendación de los árbitros coincide, se toma la decisión de aceptar o rechazar el trabajo. Si se rechaza, éste junto con los comentarios de los árbitros, es devuelto a los autores con la recomendación de corregirlo y considerar su publicación en otra revista o en otro número de la revista. La decisión de rechazar un trabajo es definitiva e inapelable. Si se acepta con la recomendación de hacer modificaciones, éste junto con los comentarios de los árbitros, es devuelto a los autores para que preparen una versión revisada y corregida, para lo cual disponen de dos semanas. Los autores deben remitir la versión corregida junto con detalles enviados al editor enumerando los cambios realizados de acuerdo con las recomendaciones hechas por los árbitros.

Anotar las correcciones utilizando subrayado para la pronta identificación. El Editor toma la última decisión acerca de la aceptación de la versión corregida considerando el concepto de los árbitros y las correcciones hechas por los autores. Los árbitros pueden hacer sus aportes en relación con la bibliografía u otro aspecto que no incida en el contenido del manuscrito, de igual manera, pueden hacer recomendaciones al Comité Editorial de la Revista (sólo será conocido por éste) al redactar un concepto de evaluación general del trabajo en el cual incluya las apreciaciones más importantes de su valoración, sugerir las observaciones, modificaciones, controversias y ajustes que estimen convenientes (aunque no se recomiende para publicación).



Fundación ProAves
Carrera 20 No. 36–61
Bogotá, Colombia
Tels: +57-1-245.5134 /340.3239
Fax: +57-1-340.3285
Email: fundacion@proaves.org

ISSN 1900-1592
9 771900 159006

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