Cave Swallow *Petrochelidon fulva* and Couch's Kingbird *Tyrannus couchii*: a discussion of two difficult cases of potential records for Colombia based on museum specimens

Petrochelidon fulva y Tyrannus couchii: una discusión de dos casos difíciles de registros potenciales para Colombia, con base en especímenes de museos

Yojanan Lobo–y–HenriquesJC
Project BioMap, Bird Group, the Natural History Museum, Tring, HP23 6AP, United Kingdom.
Fundacion ProAves, Carrera 20 Nº 36–61 Bogota D.C. e–mail: lobo.y.henriques.yojananjc@gmail.com

Abstract. I report and discuss regarding two potentially new avian species records for Colombia, Cave Swallow (*Petrochelidon fulva*) and Couch's Kingbird (*Tyrannus couchii*). These are based on a specimen housed at the Field Museum of Natural History and a database entry, respectively. The Cave Swallow was supposedly collected in Cartagena but the collection locality seems doubtful, whilst the specimen of Couch's Kingbird was from Providencia but was eliminated from the collection and it does not exist any longer. Both date from the second half of the 19th century. These specimens evidence once more the importance of online databases and museum's biological collections in the study of biodiversity and the need for critical review of all records.

Keywords: *Petrochelidon fulva, Tyrannus couchii*, Colombia, museum specimens, Project BioMap.

Resumen. Reporto y discuto sobre dos registros de aves potencialmente novedosos para Colombia, la Golondrina Leonada (*Petrochelidon fulva*) y el Sirirí de Couch (*Tyrannus couchii*). Estos registros, se basan en un espécimen de museo depositado en el Museo Field de Historia Natural y en un registro de la base de datos, respectivamente. P. fulva fue presuntamente colectada en Cartagena pero la localidad parece ser dudosa, mientras que el espécimen de T. couchii provino de la isla de Providencia, aunque fue eliminado de la colección y ya no existe. Ambos especímenes fueron colectados durante la segunda mitad del siglo 19. Estos especímenes evidencian una vez más la importancia de las bases de datos en–línea y las colecciones biológicas de museos para el estudio de la biodiversidad y la necesidad de realizar una revisión rigurosa de todos los registros.

Palabras clave: *Petrochelidon fulva, Tyrannus couchii*, Colombia, especímenes de museo, Proyecto BioMap.

Introduction

Cave Swallow, *Petrochelidon fulva* (*sensu lato*) Vielliot, 1807, is a species found in two main disjunct areas in the western hemisphere, with eight described subspecies (Dickinson 2003). One disjunct population occurs in southern USA, eastern Mexico and the Antilles of the Caribbean (Strickler & West 2011). The other occurs in western Ecuador and western Peru. In recent years, molecular data has supported a return to Ridgway (1904)'s taxonomy (Remsen Jr. *et al.* 2014), separating the southern populations as the Chestnut–collared Swallow Petrochelidon fulva Peale, 1848. The Cave Swallow (*sensu lato*) is found at elevations ranging from 0 to 2,100 m, where it occupies habitats such as the northern temperate grassland, pastures and agricultural lands, and second–growth scrub (Stotz *et al.* 1996). Individuals of the northern populations of this species are intra–tropical migrants that have been expanding their breeding distribution north during the last decades (Strickler & West 2011), with several fall vagrant records in the northeast and the midwest USA (Engel *et al.* 2011). On the other hand, the limits of their wintering range remains poorly known, with relatively recent records in the Pacific lowlands of Guatemala and in eastern Panama (Hilty & Brown 1986; Strickler & West 2011).

Couch's Kingbird, *Tyrannus couchii* Baird, 1858, is a monotypic species found in southern Texas (USA), eastern Mexico, Belize and northeastern Guatemala. It was previously treated as conspecific with the widespread Tropical Kingbird, *Tyrannus melancholicus* Vielliot, 1819, because of a possible small area of hybridization in southern Veracruz, Mexico (Amadon *et al.* 1979). However, research has shown that the species differ markedly in voice (Brush 1999) and occur in broad sympatry in eastern Mexico and Yucatán peninsula (Howell & Webb 1995). Couch's Kingbird is found at elevations ranging from 0 to 800 m; where it occupies habitats such as the tropical deciduous forest, gallery forest and secondary forest and edge (Stotz *et al.* 1996) with Tropical Kingbird more common in modified habitats. Similarly to the Cave Swallow, Couch's Kingbird has been extending its distribution slightly north into the southern USA, although not as extensively as the first species (Brush 1999). It is considered to be a partial migrant in the north of its range, with populations being reduced in the north during the boreal winter, but the extent of southern movements is not yet understood (Howell & Webb 1995).

Both Cave Swallow and Couch's Kingbird are fairly common species in terms of abundance and have their

centers of abundance fall in the lower tropical zone (Stotz *et al.* 1996). The IUCN has categorized both as species of low concern, because they have broad distributions and their populations seem to be increasing (BirdLife–International 2014a; BirdLife–International 2014b).

Here, I report and discuss two possible new records for Colombia of both species based on specimen data from the Field Museum of Natural History.

Results

Record of the Cave Swallow (*Petrochelidon fulva*).

A specimen (FMNH #24949), identified as *P. f. fulva* Vieillot 1808, was collected by G.E. Fowle. The specimen states a collection locality of Cartagena (Department of Bolivar, Colombia). Cartagena is a large city, with the historic city centre at around 10.424°N, 75.551°W. According to the specimen label, the bird was collected in 1881, but no specific date is listed. Identification to species level is correct owing to the lack of black on the throat and extensive chestnut on the forehead and sides of the head (instead of whitish and pale buff) in comparison to the similar Cliff Swallow (*Petrochelidon pyrrhonota* Vieillot, 1817), which is a fairly common passage migrant in Colombia (Hilty & Brown 1986). Identification to the nominate subspecies is supported because of the relatively dark cinnamon colour in the forehead and rump, and the extensive rufous streaking on the flanks (Engel *et al.* 2011) (Fig. 1). This specimen was originally part of the collection held by C. B. Cory, which passed latter in his life to the Field Museum of Natural History, where he was a curator for several years (Osgood 1922).

First record of the Couch's Kingbird (*Tyrannus couchii*) for Colombia.

A specimen of *Tyrannus couchii* Baird 1858 (FMNH #43096), is no longer extant in the collections but was databased at FMNH. According to the database, it was collected by an 'unknown collector' on an 'unknown date at Old Providence (Department of Archipielago de San Andres, Providencia y Santa Catalina, Colombia). Similar to the previous specimen, it was originally part of the Cory Collection before it was added to the FMNH collection. The original catalogue of the Field Museum's Bird collection indicates that this specimen was discarded probably in the early 1900s because it was thought it to be from a 'dubious' location (J. Bates & D. Willard *in litt*. 2014).

Regular sightings and captures of Neotropical migratory vagrant birds not recorded previously in the archipelago are reported, some of them after major tropical storms (Salaman *et al.* 2008; Pacheco–Garzon 2011; Ward–Bolivar & Lasso–Zapata 2012). Such storms are relatively common during the boreal autumn in the Caribbean. Because Couch's Kingbird engages in seasonal movements and Isla Providencia is not far from the natural range of the species, the locality is plausible.

There are at least 180 more specimens at FMNH originally from the Cory Collection taken from the archipelago all with unknown dates and most were collected by R. Henderson (Project BioMap 2006). Additionally, inspecting the database further, we found 60 more specimens taken from the same area attributed to R. Henderson that may or may not have been part of the Cory Collection and another 18 originally from the Cory Collection that were collected by J. G. Wells (1 specimen) or by unknown collectors (17 specimens).

Figure 1. Pictures of the putative Colombian specimen of the Cave Swallow (*Petrochelidon fulva*).

Among the specimens collected by the same collector were those of several endemic taxa: the Providencia subspecies of Thick–billed Vireo (*Vireo crassirostris approximans*), San Andres Vireo (*Vireo caribaeus*), the San Andres subspecies of Tropical Mockingbird (*Mimus gilvus magnitrostris*), the Providencia subspecies of Bananaquit (*Coereba flaveola tricolor*) and the San Andres subspecies of Bananaquit (*Coereba flaveola oblita*). These specimens highlight that Henderson was in the archipelago, and no other species are unusual for the region. These data support the proposition that the specimen in question was collected by R. Henderson during winter 1886-1887 (Paynter 1997). However, the identification of this particular specimen cannot be verified versus Tropical Kingbird (which has not been recorded in the archipelago) or other possible species because it is no longer extant in the collection.

Discussion

In order to assess the veracity of records, expert-based drawn polygons and new putative localities were compared. For the Cave Swallow (InfoNatura 2009), a Cartagena record of the nominate subspecies (considered "endemic" to La Hispaniola) would fall approximately 913 km southwest (azimuth ≈ 209°) from the southernmost tip of La Hispaniola, just northeast of Isla Beata. This locality is *c*.826 km south (azimuth ≈ 167°) from the southernmost tip of Jamaica and *c*.1,625 km southeast (azimuth ≈ 126°) from Chacmool in Yucatan, Mexico (Fig. 2).

The fact that the nominate subspecies is considered endemic and resident to La Hispaniola casts some doubt over the identity of the specimen. Another possible hypothesis is that this individual belongs to subspecies *cavicola* Barbour & A. C. Brooks, 1917. *P. f. cavicola* is similar to the nominate, but differs in the presence of deeper tones of iridescent blue on the crown and wider white streaks on the back (Garrido *et al.* 1999), features that cannot be clearly evaluated in the specimen under scrutiny. This subspecies is distributed slightly further northwest in Cuba and the Isle of Pines. Unlike the nominate, it is apparently migratory; although its distribution during the non–breeding season is not known (Garrido *et al.* 1999).

Another more plausible possibility is that this specimen was collected in eastern Mexico or the Caribbean. One of the tags attached to the specimen has pen script written by H. B. Conover that reads "Cartagena U. S. Colombia S. A. coll. G. E. Fowle". The same tag has on the other side another note, written by C. E. Hellmayr, that reads "See a Yucatan Cardinalis…24861" (J. Bates & D. Willard *in litt*. 2014). The FMNH has a specimen under this catalogue number, listed in both their database and BioMap database as the Northern Cardinal *Cardinalis cardinalis*, and in the tag with the same information on locality and collector as the Cave Swallow specimen (J. Bates & D. Willard 2014, *in litt*.). The distribution of the Northern Cardinal includes part of southwestern, central and eastern USA, Mexico and north Guatemala and Belize (Howell & Webb 1995), which suggests that possibly both specimens may well have been collected in some area in eastern Mexico or the Caribbean and erroneously assigned Cartagena as locality. At least there is another specimen similar to this one where apparently "Cartagena, Colombia" has been assigned mistakenly, for unknown reasons. This is also the case of the nominate subspecies of White–naped Brush–Finch (*Atlapetes albinucha*). *A. a. albinucha* was originally described by d'Orbigny & Lafresnaye in 1838 with a type locality of "Cartagena, Colombia", but this was later corrected to "Caribbean slope of Mexico" (Paynter 1964, 1970), because the subspecies only occurs in southern Mexico and not in Colombia. Similar kinds of errors in online museum databases are apparently not uncommon, although they have been reported to occur at low frequencies (≤≈0.5 per 1,000 specimens) (Peterson *et al*. 2004).

Despite the clear uncertainty in the locality of collection for this specimen of the Cave Swallow, in the last several decades, there have been a few records of vagrant Cave Swallows in Central America (Ridgely & Gwynne Jr. 1989; InfoNatura 2009); possibly individuals of P. f. pallida Nelson, 1902 wintering in south Central America. Similarly, there have been sight records of Cave Swallows from Trinidad & Tobago, Bonaire, Curação and Aruba (Restall *et al.* 2006). Cartagena is approximately c.450 km east (azimuth ≈ 70°) from the nearest records in Panama (Fig. 2). These records support the notion that very likely the species may occur in the Colombian Caribbean as vagrant (Hilty & Brown 1986). However, this particular specimen cannot be cited as evidence of this.

For Couch's Kingbird, a record in Providencia in relation to the expert-drawn polygon (InfoNatura 2009), would be some 843 km southeast (azimuth ≈ 103°) from the southernmost area of its known distribution at Pony Ville (near Lake Izabal) in eastern Guatemala (Fig. 3). There is no reason to doubt the identification of this record, although it cannot be corroborated. I consider the record of Couch's Kingbird likely to constitute an example of vagrancy during the non breeding season, presenting additional evidence of a partially migratory population. However, in the absence of an available specimen for study, this record must be treated as equivalent to a sight record and unconfirmed. Hopefully, further studies in San Andres and Providencia will result in records of this interesting potential vagrant for Colombia.

The fact that these records have been found whilst inspecting the Darwin–Hernandez database from Project BioMap (Project–BioMap 2006), nearly 10 years after it was compiled, illustrates the continued value of this project to Colombian ornithology. Equally, these records highlight that there is always additional information to be gleaned from the world's great natural history collections and the importance of critically evaluating all records available in likewise online databases using different sort of methodologies to check consistency in the information (Hijmans *et al.* 1999; Peterson 2004; Verhelst 2011).

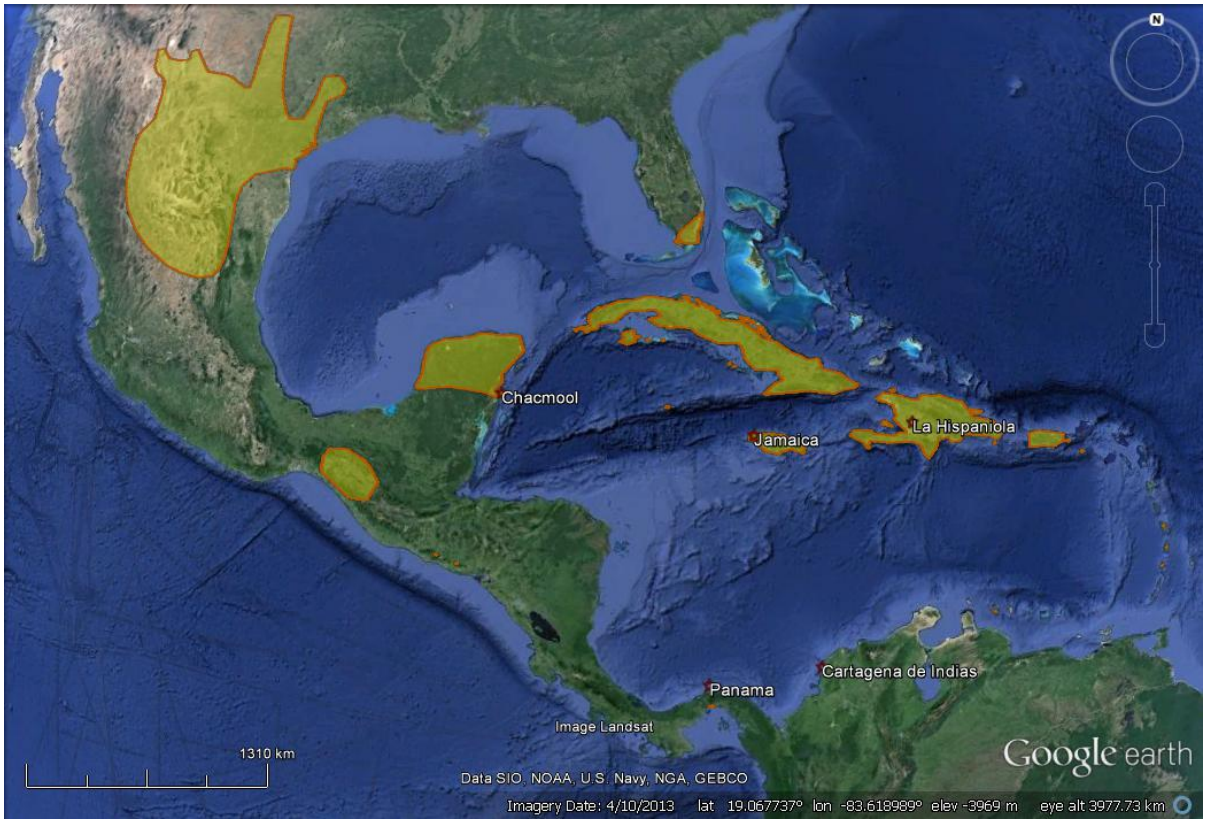

Figure 2. Distribution of the Cave Swallow, *Petrochelidon fulva*, visualized in Google Earth. Polygon based on NatureServe data from the 'Maps of the Birds of the Western Hemisphere' (InfoNatura 2009).

Figure 3. Distribution of the Couch's Kingbird, *Tyrannus couchii*, visualized in Google Earth. Polygon based on NatureServe data from the 'Maps of the Birds of the Western Hemisphere' (InfoNatura 2009).

Acknowledgments

This work was made possibly thanks to the access that has granted the BioMap Alliance to the museum datasets of Colombian specimens available in the Internet (http://biomap.net). I would like to thank Mary Hennen, who took and emailed the pictures of the Cave Swallow. Also to John Bates, David Willard, Thomas Donegan and Paul Salaman who made valuable comments on this manuscript.

References

Amadon, D., Mayr, E., Snow, D. W., Traylor Jr., M. A. & Zimmer, J. T. (eds.) 1979. *Check–list of Birds of the World: a Continuation of the Work of James L. Peters*. Cambridge, MA: Museum of Comparative Zoology, University of Harvard.

BirdLife–International. 2014a. Species factsheet: *Petrochelidon fulva*. Downloaded from http://www.birdlife.org on 21/09/2014. URL http://www.birdlife.org.

BirdLife–International. 2014b. Species factsheet: *Tyrannus couchii*. Downloaded from http://www.birdlife.org on 21/09/2014. URL http://www.birdlife.org.

Brush, T. 1999. Couch's Kingbird (*Tyrannus couchii*). *The Birds of North America Online* (A. Poole, Ed.). Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/437 doi:10.2173/bna.437. In: Ithaca: Cornell Lab of Ornithology.

Dickinson, E. C. (ed.) 2003. *The Howard and Moore Complete Checklist of the Birds of the World: Revised and Enlarged Edition*. London: Christopher Helm.

Engel, J. I., Hennen, M. H., Witt, C. C. & Weckstein, J. D. 2011. Affinities of three vagrant Cave Swallows from Eastern North America. *Wilson Journal of Ornithology* 123(4): 840-845.

Garrido, O. H., Peterson, A. T. & Komar, O. 1999. Geographic variation and taxonomy of the cave swallow *(Petrochelidon fulva*) complex, with the description of a new subspecies from Puerto Rico. *Bulletin of the British Ornithologists' Club* 119: 80-91.

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

Hijmans, R. J., Schreuder, M., De la Cruz, J. & Guarino, L. 1999. Using GIS to check co–ordinates of genebank accessions. *Genetic Resources and Crop Evolution* 46(3): 291–296.

Howell, S. N. G. & Webb, S. 1995. *A Guide to the Birds of Mexico and Northern Central America*. Oxford: Oxford University Press.

InfoNatura. 2009. Animals and Ecosystems of Latin America [web application]. 2007. Version 5.0. URL http://www.natureserve.org/infonatura/.

Osgood, W. H. 1922. In Memoriam: Charles Barney Cory. Born January 31, 1857-Died July 31, 1921. *Auk* 39(2): 151-166.

Pacheco–Garzon, A. 2011. Estudio y conservacion de las aves de la Isla de San Andres. *Conservación Colombiana* 16: 4-54.

Paynter, R. A. 1964. The type locality of *Atlapetes albinucha*. *Auk* 81: 223-224.

Paynter, R. A. (ed.) 1970. *Check–list of Birds of the World: A Continuation of the Work of James L. Peters*. In consultation with E. Mayr. Cambridge (Worcester, MA): Museum of Comparative Zoology, Cambridge & The Hefferman Press Inc.

Paynter, R. A. 1997. *Ornithological Gazetteer of Colombia*. Cambridge: Harvard Museum of Comparative Zoology.

Peterson, A. T. N.-S., Adolfo G Pereira, Ricardo Scachetti (2004) Detecting errors in biodiversity data based on collectors' itineraries. *Bulletin of the British Ornithologists' Club* 124.

Project–BioMap. 2006. Darwin–Hernández Database of Colombian Bird Specimens in Natural History Museums. Downloaded from http://www.biomap.net on 26/09/2014. In: Project BioMap and the BioMap Alliance – Conservacion Internacional Colombia – Instituto de Ciencias Naturales de la Universidad Nacional de Colombia.

Remsen Jr., J. V., Cadena, C. D., Jaramillo, A., Nores, M., Pacheco, J. F., Perez-Eman, J., Robbins, M. B., Stiles, F. G., Stotz, D. F. & Zimmer, K. J. 2014 Version [14th September 2014]. A classification of the bird species of South America. American Ornithologists' Union. http://www.museum.lsu.edu/~Remsen/SACCBaseline.html.

Restall, R., Rodner, C. & Lentino, M. 2006. *Birds of Northern South America: an Identification Guide*. V. 1: Species Accounts. London: Christopher Helm.

Ridgely, R. S. & Gwynne Jr., J. A. 1989. *A guide to the birds of Panama, with Costa Rica, Nicaragua, and Honduras*. Princeton, NJ: Princeton University Press.

Ridgway, R. 1904. The birds of North and Middle America. *Bulletin U.S. National Museum* 50, pt. 3.

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

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

Strickler, S. & West, S. 2011. Cave Swallow (*Petrochelidon fulva*), The Birds of North America Online (A. Poole, Ed.). Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/141 doi:10.2173/bna.141. In: Ithaca: Cornell Lab of Ornithology.

Verhelst, J. C. 2011. Avifaunal Distribution in Colombia: Current Diversity and Potential Refugia Under Climate Change. In: Geography, London: King's College London – University of London.

Ward–Bolivar, V. & Lasso–Zapata, J. 2012. Primeros registros del Pato Serrucho Pechicastaño (Mergus serrator) para las islas de Providencia y San Andrés, Caribe Colombiano. *Ornitología Colombiana* 12: 47-50.