

Status and distribution of the doraditos (Tyrannidae: *Pseudocolopteryx*) in Paraguay, including a new country record

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ABSTRACT: The doraditos (*Pseudocolopteryx* spp.) are a little-known group of small, yellow-breasted tyrants, distributed mainly in southern South America. All five species occur in Paraguay, including *Pseudocolopteryx citreola*, here documented in the country for the first time. The distribution and habitat preferences of the species in Paraguay are clarified, and well-documented records for the three rarest species *P. acutipennis*, *citreola*, and *dinelliana* are listed in full. Owing to the difficulty in distinguishing between the species, a field key is provided to assist observers in making correct field identifications.

KEY-WORDS: *Pseudocolopteryx acutipennis*, *Pseudocolopteryx citreola*, *Pseudocolopteryx dinelliana*, *Pseudocolopteryx flaviventris*, *Pseudocolopteryx sclateri*, migrant.

INTRODUCTION

The doraditos, genus *Pseudocolopteryx* Lillo 1905, are a group of small tyrants (Tyrannidae) with their center of distribution in the southern cone of South America (Traylor & Fitzpatrick 1982). Though the populations of most species are migratory or undergo local movements, some are resident and others display complex patterns of seasonal movements that differ throughout their range (Fitzpatrick 2004). The doraditos are typically associated with marshes, seasonally inundated natural grasslands, and scrub habitats close to water, but they may also be encountered in a wider variety of drier scrub and grassland habitats and even crop fields (Stotz *et al.* 1996; Fitzpatrick 2004; Roesler 2009).

Five species of doradito are currently recognized (Remsen *et al.* 2013): Subtropical *Pseudocolopteryx acutipennis* (Sclater & Salvin, 1873); Dinelli's *P. dinelliana* (Lillo, 1905); Warbling *P. flaviventris* (Lafresnaye & D'Orbigny, 1837); Crested *P. sclateri* (Oustalet, 1892); and the recently revalidated Ticking *P. citreola* (Landbeck, 1864). They are characterized by their skulking behavior, generic yellow underparts, and greenish or brownish upperparts (Ridgely & Tudor 2009). Observations are often frustratingly brief and species-level identification

represents a challenge that is exacerbated by plumage wear and poorly known juvenile plumages.

All doraditos give rather quiet, scratchy calls, but only in the last decade has the importance of these vocalizations for identification become apparent, and vocal analyses were an important factor in the recent revalidation of the cryptic *P. citreola* (Abalos & Areta 2009). Further study of patterns of vocalizations may shed more light on species limits in this complex, with *P. acutipennis* in particular perhaps representing several cryptic species (Bostwick 2004).

Paraguay, with its location in the center of South America, is particularly interesting for the study of migrants, yet it remains one of the most underwatched countries on the continent. Given the paucity of observers, it is no surprise that the secretive doraditos have managed to elude many visitors, and as late as 1940 Laubmann reported only the two most widespread species, *P. sclateri* and *P. flaviventris*, as present in the country (Laubmann 1940). In order to coordinate observer effort and update published distributional data, here we critically review the status and distribution of the genus in the country, confirm the presence of *P. citreola* in Paraguay and provide a basic field key to the species to assist inexperienced observers in making an accurate identification.

METHODS

Records of doraditos in Paraguay were compiled from the published literature, museum specimens, on-line databases (e.g. Worldbirds www.worldbirds.org, eBird www.ebird.org), the Guyra Paraguay Biodiversity Database (www.guyra.org.py), the authors' own field observations and through consultations with ornithologists and birdwatchers. All records with information regarding plumage or vocalizations were reviewed based on current knowledge of key identification features (see field key) and distribution (the latter based on confirmed identifications). Noteworthy distributional records lacking identification details were treated as hypothetical.

RESULTS AND DISCUSSION

Subtropical Doradito *Pseudocolopteryx acutipennis*

Rarely recorded in Paraguay, its distribution is restricted to the Humid Chaco and correlates approximately with the watershed of the Paraguay River. Currently the species is known from just 10 records in 6 localities in Paraguay (Figures 1 and 3).

Short (1972) described the habitat of the species as "brushland and shrubbery in the xeric chaco," and "dry subtropical forest," but all Paraguayan records correspond to marshes and bushy wetlands in Humid Chaco or Pantanal-type habitats, consistent with the habitat preference of

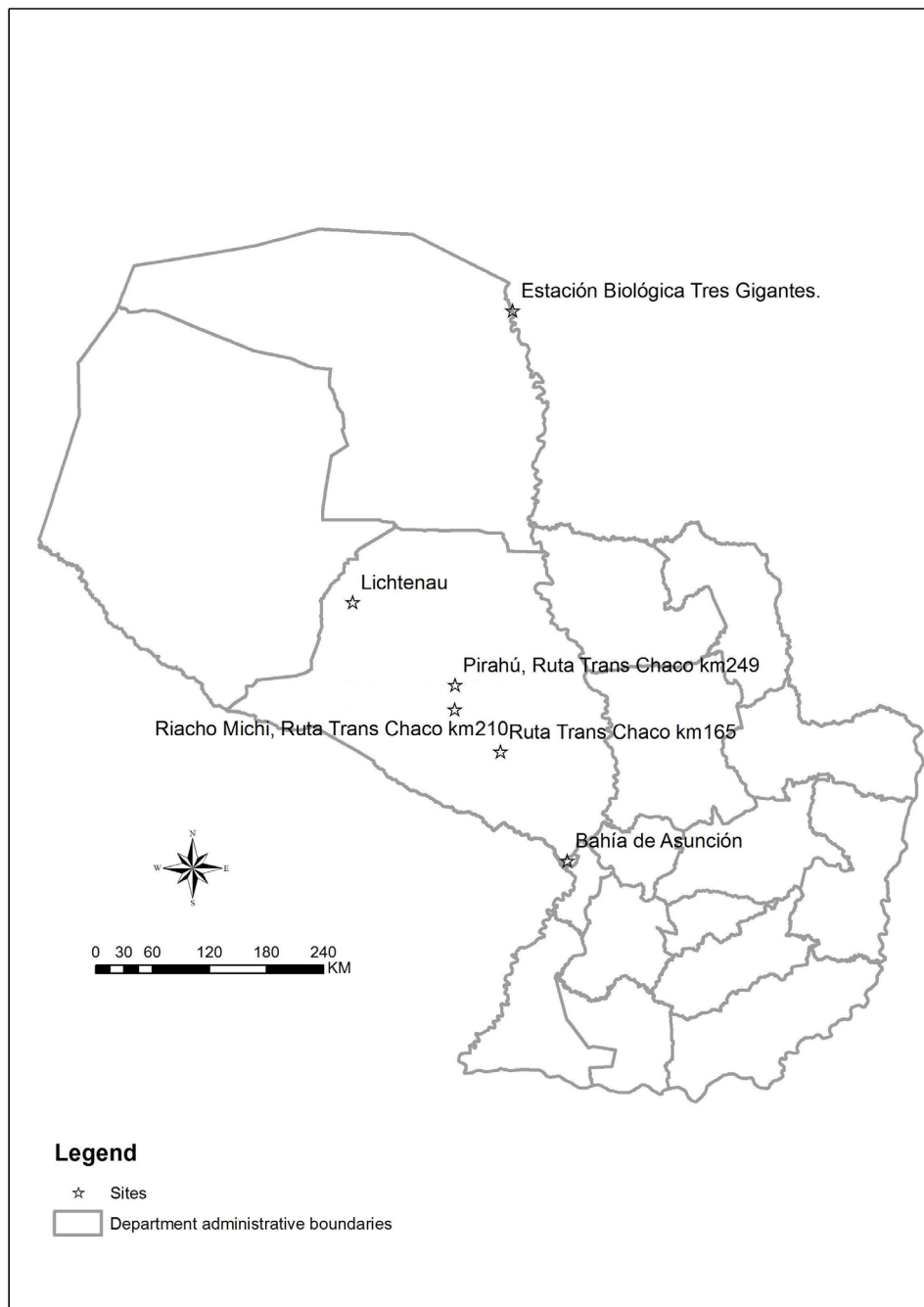


FIGURE 1. Map of localities with Subtropical Doradito *Pseudocolopteryx acutipennis* records in Paraguay.

presumed migrants (Jensen *et al.* 2009). Although Roesler (2009) notes that the species is not closely tied to water during the breeding season in the central Argentine Pampas, the speculation that the species “may breed in the western fringes of the Paraguayan...Chaco” (Short 1972), the most arid part of the Chaco, was presumably based only on this being the part of Paraguay closest to the species’ known range at the time (in the Andes). Guyra Paraguay (2004, 2005) list it as a possible resident/breeder in Paraguay based on record phenology, but no breeding activity has ever been reported. Given the possibility that more than one species may be involved in what is currently called *P. acutipennis* (Bostwick 2004), caution is perhaps advisable when interpreting the limited data.

Ticking Doradito *Pseudocolopteryx citreola*

On 5 September 2010 at an extensive Humid Chaco wetland at Km 165 on the Ruta Trans-Chaco (see Figure 1), Departamento Presidente Hayes (24°15'S, 58°16'W), an unfamiliar doradito song was heard from dense marshy vegetation by PS. It had the strange buzzy timbre of *P. dinelliana* but the phrases were different and lacked the high notes characteristic of that species. The bird did not respond to playback of *P. dinelliana*, so playback of the call of other doraditos was attempted. Upon playback of a recording of *P. citreola* a bird resembling a *P. flaviventris* emerged from cover. From this point on the bird did not sing, instead giving only occasional and quiet *tic* calls.

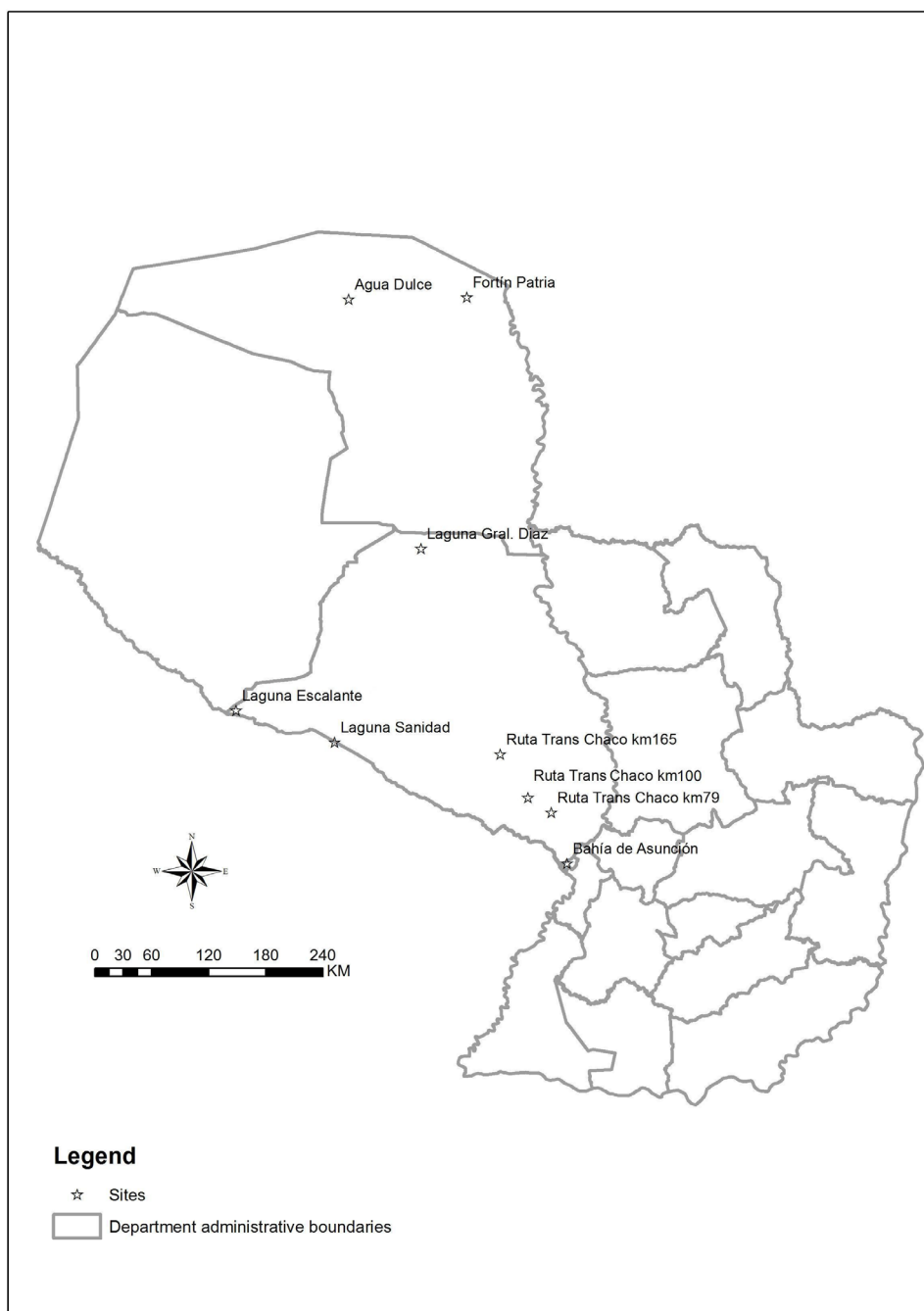


FIGURE 2. Map of localities with Dinelli's Doradito *Pseudocolopteryx dinelliana* records in Paraguay.

Playback of the song of *P. flaviventris* caused the observed individual to lose interest (similar to the behavior noted by Abalos & Areta 2009), but it returned again with the re-playing of the *P. citreola* recording, further supporting its identity. The bird was photographed by PS (Figure 4) and a poor-quality video of it reacting strongly to playback was taken by Robert Wynands (FAUNA Paraguay Photo Database 2013b). Unfortunately no recording equipment was available to the observers to record the vocalizations.

The complex taxonomic history of this form is discussed by the SACC committee in Proposal 420 (Jaramillo 2010). It is indistinguishable from *P. flaviventris* in the field except for its vocalizations, with examined specimens being slightly larger and somewhat longer winged (Abalos & Areta 2009). Abalos & Areta (2009) found the species in different types of habitats including chilcales (*Baccharis salicifolia*), tamariscales (*Tamarix gallica*), brushland of pájaro bobo (*Tessaria absinthioides*) with tamarisks, tamarisks and chilcales, and lagoons with reeds (*Typha* sp. and *Juncus* sp.). The Paraguayan bird was observed in an extensive marsh typical of the Humid Chaco, dominated by *Cyperus giganteus* (Cyperaceae) and *Thalia geniculata* (Maranthaceae).

This observation represents the first record of *P. citreola* in Paraguay and confirms its presence in a fourth country in the Southern Cone in addition to Chile, Argentina, and Bolivia. The record sheds further light on the migratory movements of this species as it shows an eastward movement in addition to the northward migration along the Andes as discussed in Abalos &

Areta (2009). Little can be said regarding the status of the species in Paraguay based on this single record, but it may be presumed to occur in passage or perhaps as a winter visitor.

Dinelli's Doradito *Pseudocolopteryx dinelliana*

Pseudocolopteryx dinelliana is a Near Threatened species (Birdlife International 2012) known from a total of 19 confirmed records from 9 localities in Paraguay, all of which are associated with the drainage basin of the Paraguay River (Figures 2 and 5). The majority of these records (11) come from a single well-watched site, the Bahía de Asunción, Departamento Central. Additional published reports from eastern Paraguay are best treated as hypothetical due to a lack of corroboratory documentation combined with the poor understanding of the complexities of doradito identification at the time. These include two sights records (of presumably the same bird) from Estancia San Antonio, Departamento Alto Paraná in July 1992 (Brooks *et al.* 1993), and a third-hand report from Lago Ypacaraí, Departamento Paraguari on 7 August 1995 (Lowen *et al.* 1996). A report from the Refugio Biológico Mbaracayú, Departamento Canindeyú on 15 September 1993 by Pérez Villamayor & Colmán Jara (1995) was treated as hypothetical by Straube (2003), and later confirmed to be in Brazilian territory (Pérez-Villamayor *et al.* 2014). Though a specimen was collected it has since been lost.

Short (1972) described the habitat of the species



FIGURE 3. Subtropical Doradito *Pseudocolopteryx acutipennis*, Tres Gigantes, Departamento Alto Paraguay, 16 November 2012 (Photo number FPAVE3774PH in FAUNA Paraguay online photo archive www.faunaparaguay.com; Photo by Paul Smith).



FIGURE 4. Ticking Doradito *Pseudocolopteryx citreola*, Km 165 on the Ruta Trans-Chaco, Departamento Presidente Hayes, 5 September 2010 (Photo number FPAVE41PH in FAUNA Paraguay online photo archive www.faunaparaguay.com; Photo by Paul Smith).

as brushland and shrubbery in the xeric Chaco, but the known distribution in Paraguay is associated principally with Humid Chaco or Pantanal-type habitats in the watershed of the Río Paraguay and there are just a handful of records from the xeric Chaco (Ridgely & Tudor 2009; this paper).

Guyra Paraguay (2004) gave the extreme dates for the species in Paraguay as 24 April to 10 August, but an observation at the large wetland at Km 165 of the Ruta Trans-Chaco, Departamento Presidente Hayes (24°15'S, 58°16'W) on 18 October 2004 by PS and RPC extended the later date by more than two months (Guyra Paraguay 2005). In 2009 singing birds were located during six visits to Bahía de Asunción, Departamento Central, between 4 September and 18 October. A peak count of six individuals was made on 20 September (RPC, PS, AJL) and the first photographs (Figure 5) and recordings of the bird's vocalizations in Paraguay were also obtained (FAUNA Paraguay 2013c).

Hayes *et al.* (1994) considered the species to be a southern austral migrant, defined as a species that breeds to the south or west of the country in more temperate areas, and that migrates to Paraguay during the colder

austral winter months. Guyra Paraguay (2004, 2005) similarly considers the species a winter visitor. The presence of singing birds during the early breeding season suggests that breeding might occur, but doraditos have been recorded singing during migration in northwestern Argentina (K. Roesler in litt. 2013) and so confirmation of the status of Paraguayan populations is required.

Warbling Doradito *Pseudocolopteryx flaviventris*

Considered an uncommon winter visitor to Paraguay (Guyra Paraguay 2005), with extreme dates 23 March to 28 November (Hayes 1995). *P. flaviventris* is fairly widespread in the Humid Chaco, Paraguayan Pantanal, and Oriental region. Short (1972) described the habitat of the species as shrub and brushland in open country, but all Paraguayan records are from marshes and bushy wetlands.

The discovery of *P. citreola* in Paraguay creates uncertainty regarding the precise distribution of this species in Paraguay. The possibility that at least some reports of *P. flaviventris* in fact refer to the cryptic *P. citreola* cannot be discounted and field work is required to better understand the limits of their distributions.

A recently fledged juvenile of the *flaviventris* "morphotype" was captured in a mist net on 25 August 2005 (Figure 6) a few hundred meters from the banks of the Río Paraná at the now defunct Arroyo Mboi Kae (27°21'S, 55°52'W), on the outskirts of Encarnación, Departamento Itapúa (FAUNA Paraguay 2013d; Smith *et al.* 2013). The bird was a weak flyer and is possibly suggestive of local breeding, though the proximity of the site to the Río Paraná introduces the possibility that the bird may have crossed over from Argentina. Based on the known breeding distributions of *P. citreola* and *P. flaviventris* (Abalos & Areta 2009), this individual might reasonably be assumed to be of the latter species. The northern extent of the known breeding range of *P. flaviventris* in Argentina is the Iberá marshes in Provincia Corrientes, but breeding in southern Misiones is also suspected (M. Pearman *pers. comm.*). Belton (1994) considers the species resident in Rio Grande do Sul, Brazil, at approximately the same latitude. This record suggests that the species may breed further north than is currently known and is perhaps even resident in extreme southern Paraguay.

Crested Doradito *Pseudocolopteryx sclateri*

The most widespread and commonly encountered doradito in Paraguay, *P. sclateri* (Figure 7) is associated with reedbeds, wet grasslands, and low shrubbery near water (Short 1972; Fitzpatrick 2004). Considered a breeding resident (Guyra Paraguay 2005), there is some suggestion of seasonality at the Bahía de Asunción,



FIGURE 5. Dinelli's Doradito *Pseudocolopteryx dinelliana*, Bahía de Asunción, Departamento Central, 20 September 2009 (Photo number FPAVE1776PH in FAUNA Paraguay online photo archive www.fauparaguay.com; Photo by Paul Smith).

with birds more frequently observed during the austral winter and spring (RPC, AJL). The distribution is to some degree associated with the Río Paraguay, with most records in the western half of the Oriental region and fewer in the Humid Chaco and Pantanal regions. The most easterly record is of a bird at Arroyo Mboi Kae (27°21'S, 55°52'W) observed on the outskirts of Encarnación, Departamento Itapúa, by PS during July 2005 near the banks of the Paraná River (Smith *et al.* 2013). The most westerly record is at Defensores del Chaco National Park, Departamento Boquerón, and the most northerly at Fortín Patria, Departamento Alto Paraguay (19°55'S, 58° 35'W).

Conclusions



FIGURE 6. Warbling Doradito *Pseudocolopteryx flaviventris*, Arroyo Mboi Kae, Encarnación, Departamento Itapúa, 25 August 2005 (Photo number FPAVE1781PH in FAUNA Paraguay online photo archive www.faunaparaguay.com; Photo by Paul Smith).



FIGURE 7. Crested Doradito *Pseudocolopteryx sclateri*, Arroyos y Esteros Km 100, Departamento Paraguari, 11 November 2008 (Photo number FPAVE3453PH in FAUNA Paraguay online photo archive www.faunaparaguay.com; Photo by Paul Smith).

TABLE 1: Paraguayan records of Subtropical Doradito *Pseudocolopteryx acutipennis*.

Location	Department	Coordinates	Date	Source
Lichtenau	Presidente Hayes	22°50'S, 59°40'W	9 December 1970	AMNH 802830 (Short 1972)
Lichtenau	Presidente Hayes	22°50'S, 59°40'W	27 April 1973	AMNH 810650 (Short 1976)
Riacho Michi, Ruta Trans Chaco km210	Presidente Hayes	23°51'S, 58°28'W	9 December 1988	F. Hayes, D. Snider & R. Perrin sight record (Hayes 1995)
Pirahú, Ruta Trans Chaco km 249	Presidente Hayes	23°37'S, 58°42'W	10 August 1994	F. Hayes sight record (Hayes 1995)
Bahía de Asunción	Central	25°17'S, 57°38'W	28 August 2004	RPC, AJL; sight record of two individuals
Estación Biológica Tres Gigantes	Alto Paraguay	20°04'S, 58°09'W	27 June 2008	S. Centrón; sight record
Bahía de Asunción	Central	25°17'S, 57°38'W	8 May 2009	RPC; sight record
Bahía de Asunción	Central	25°17'S, 57°38'W	27 September 2010	AJL, R.Cardoso, S.Centrón, C. Morales; sight record
Ruta Trans Chaco km165	Presidente Hayes	24°15'S, 58°16'W	11 February 2012	PS; sight record
Estación Biológica Tres Gigantes	Alto Paraguay	20°04'S, 58°09'W	16 November 2012	PS; photograph (Figure 3; FAUNA Paraguay 2013a)

TABLE 2: Paraguayan records of Dinelli's Doradito *Pseudocolopteryx dinelliana*.

Location	Department	Coordinates	Date	Details & Source
Laguna Gral. Diaz	Presidente Hayes	22°18'S, 59°01'W	20 July 1945	FMNH 152593 (Hayes <i>et al.</i> 1994)
Laguna Escalante	Presidente Hayes	23°50'S, 60°46'W	3 August 1960	MAK 601593 (Steinbacher 1962)
Ruta Trans Chaco km79	Presidente Hayes	24°48'S, 57°47'W	9 May 1990	P. Scharf; sight record of two birds (Collar <i>et al.</i> 1992; Hayes 1995)
Ruta Trans Chaco km 100	Presidente Hayes	24°47'S, 58°23'W	16 June 1990	P. Scharf; sight record of one bird (Collar <i>et al.</i> 1992; Hayes 1995)
Fortín Patria	Alto Paraguay	19°55'S, 58°35'W	22 March 2002	J. Klavins, A. Esquivel; sight record
Agua Dulce	Alto Paraguay	19°57'S, 59°42'W	24 April 2004	J. Klavins; sight record
Ruta Trans Chaco km165	Presidente Hayes	24°15'S, 58°16'W	18 October 2004	RPC, PS; sight record
Laguna Sanidad	Presidente Hayes	24°08'S, 59°50'W	9, 10 October 2004	RPC, H. del Castillo, E. Coconier; sight record of five singing birds
Bahía de Asunción	Central	25°17'S, 57°38'W	4 September 2009	RPC, AJL, D. Díaz; sight records of two individuals
			12 September 2009	RPC, AJL; sight records of three individuals
			20 September 2009	PS, RPC, AJL; sight records of six individuals (FAUNA Paraguay 2013c)
			1, 16, 18 October 2009	RPC, AJL; sight records of three, one, and one individuals, respectively
			17, 24 August 2012	RPC, AJL; sight records of three and four individuals respectively
			4, 7, 11 September 2012	RPC, AJL; sight records of two individuals

The information presented here represents a summary of the little that is known about the distribution and seasonality of doraditos in Paraguay. Though certain inferences can be made regarding movement patterns in Paraguay in reference to records in neighboring countries, the scarcity of data available for most species, the confusion created by identification difficulties and the heterogenic seasonal movements that some species exhibit across their wide geographic ranges mean that further study is required to confirm these conclusions. However one clear pattern that emerges is a strong association between the Paraguayan distribution of most species and the watershed of the Río Paraguay, which is presumably due, in part, to the greater availability of wetland and low-lying grassland habitats in this region.

At the local level clarification of the ranges and seasonality of *P. citreola* versus *P. flaviventris* is a priority, whilst confirmation of potential breeding of the Near

Threatened *P. dinelliana* would contribute to a better understanding of its status and hence conservation. Significant habitat loss in the nominally protected Important Bird Area, the 522-ha Bahía de Asunción Ecological Reserve (where the species was consistently observed singing and may have bred) during the construction of the Asunción bayside road (Costanera de Asunción) that started in 2010 is cause for concern, and the impact of this loss on Paraguayan populations of the species has yet to be determined. Further research to clarify the specific status of *P. acutipennis* throughout the range would also be desirable in order to begin to interpret the seasonal patterns observed in Paraguay.

Positive identification of doraditos requires familiarity with the species and in particular with their vocalizations. With bird watching still in its infancy in Paraguay, and very few experienced birders active in the field, all species are likely under-recorded, seriously hampering our understanding of the distribution of these species in the country. To date no nest of any species

has been reported from Paraguay and, in general, much remains to be learned about the taxonomy, distribution, natural history, and movements of these unobtrusive little flycatchers. It is hoped that this introductory paper will contribute to a better range-wide understanding of the

biology and conservation requirements of this charismatic but complex group.

Here follows a basic field key to the species to assist inexperienced observers with identification:

- | | |
|---|--------------------------------------|
| 1a Contrastingly dark bifurcate crest | <i>Pseudocolopteryx sclateri</i> |
| 1b Crestless | 2 |
| 2a Head with distinct and contrasting rufous coloration, most notable on the crown | 3 |
| 2b Head without contrasting rufous tinge, being uniform brownish or greenish | 4 |
| 3a Vocalizations harsh and scratchy, “tick tick tick tick-tick-tick-you.” Head movements accompanying each note first raise the head slowly, and as the velocity of the notes increases, the head is lowered rapidly with shaky movements | <i>Pseudocolopteryx citreola</i> |
| 3b Vocalisations weak and squeaky, “u-eet-u, u-éet.” Head movements accompanying the song are even and rhythmic | <i>Pseudocolopteryx flaviventris</i> |
| 4a Head and upperparts dull greenish-olive, underparts bright golden-yellow. No supercilium and adults do not usually show wing bars (though juveniles have both wing bar AND supercilium!). Scratchy song includes low liquid notes | <i>Pseudocolopteryx acutipennis</i> |
| 4b Head and upperparts dull greenish, underparts bright golden-yellow with slight olive tinge on the flanks. Often shows a hint of a supercilium and wing-bars at all ages. Scratchy song ends with high note, “tick-tick-ticktickaZEEP” | <i>Pseudocolopteryx dinelliana</i> |

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