ISSN (impresso/printed) 0103-5657
ISSN (on-line) 2178-7875

Revista Brasileira de Ornitologia

Volume 21 / Issue 21
Número 2 / Number 2
Junho 2013 / June 2013

www.ararajuba.org.br/sbo/ararajuba/revbrasorn.htm

Publicada pela / Published by the
Sociedade Brasileira de Ornitologia / Brazilian Ornithological Society
Belém - PA

Revista Brasileira de Ornitologia

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Capa: Primeiros registros documentados para o Brasil do combatente *Philomachus pugnax* (Scolopacidae; à esquerda; foto de Marco Rocha), noivinha-castanha *Xolmis rubetra* (Tyrannidae; ao centro; foto de Gina Bellagamba) e suiriri-cinza *Tyrannus dominicensis* (Tyrannidae; à direita; foto de Fábio Olmos). Nesta edição, Dias *et al*., Oliveira *et al.* e Olmos *et al.* apresentam e discutem estes primeiros registros documentados para a avifauna Brasileira.
Cover: First documented Brazilian records for the Ruff *Philomachus pugnax* (Scolopacidae; left; photo by Marco Rocha), Rusty-backed Monjita *Xolmis rubetra* (Tyrannidae; center; photo by Gina Bellagamba), and Grey Kingbird *Tyrannus dominicensis* (Tyrannidae; right; photo by Fábio Olmos). In this issue, Dias *et al*., Oliveira *et al.,* and Olmos *et al.* present and discuss these new documented records for the Brazilian avifauna.

ISSN (impresso/printed) 0103-5657
ISSN (on-line) 2178-7875

Revista Brasileira de Ornitologia

Volume 21 / Issue 21
Número 2 / Number 2
www.ararajuba.org.br/sbo/ararajuba/revbrasorn.htm Junho 2013 / June 2013

Publicada pela / Published by the
Sociedade Brasileira de Ornitologia / Brazilian Ornithological Society
Belém - PA

Revista Brasileira de Ornitologia

Artigos publicados na *Revista Brasileira de Ornitologia* são indexados por:
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Registro no ZooBank
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FICHA CATALOGRÁFICA

Revista Brasileira de Ornitologia / Sociedade Brasileira de Ornitologia. Vol. 20, n.1 (2012) -
Belém, A Sociedade, 2005 -
v. : il. ; 30 cm.

Continuação de:. Ararajuba: Vol.1 (1990) - 13(1) (2005).

ISSN: 0103-5657 (impresso)
ISSN: 2178-7875 (on-line)

1. Ornitologia. I. Sociedade Brasileira de Ornitologia.

Revista Brasileira de Ornitologia

Volume 21 – Número 2 – Junho 2013 / Issue 21 – Number 2 – June 2013

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ARTICLE

Home range size of the Collared Crescentchest, *Melanopareia torquata* (Melanopareiidae) during the reproductive period in southeastern Brazil

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Received on 5 June 2012. Accepted on 30 January 2013.

ABSTRACT: The Collared Crescentchest (*Melanopareia torquata*) is an endemic bird of the Brazilian Cerrado that is regionally threatened with extinction. The goal of the present study was to estimate the Collared Crescentchest's home range size during the reproductive period in a preserved reserve of Cerrado, where its population is small and declining. Data was obtained in October and November 2007 from 10 to 44 radio-locations for a total of 10 individuals. Only five individuals had their home range accumulation curves stabilized (average 36.4 ± 7.4 radio-locations). With the method of fixed Kernel (95%) average home range was 1.51 ± 0.52 ha and the core area (75%) was 0.68 ± 0.23 ha. I found that the species occupies a small home range during the reproductive period and that there was no home range overlap among the birds, although, some of them were observed very close to a neighbor's area. The small home ranges and the large availability of its preferred habitat indicate that area alone is not a limiting factor explaining the population decline of the species in the area.

KEY-WORDS: endemic bird, savanna, home range.

The Collared Crescentchest (*Melanopareia torquata*, Family Melanopareidae) is an insectivorous bird endemic to the Cerrado (Silva & Bates 2002) in Brazil and eastern Bolivia and northeastern Paraguay (Ridgely & Tudor 1994). It is most common in secondary and open savanna areas within the Cerrado, especially with greater density of tall shrubs where it is commonly observed near or on the ground and may also use armadillo and rodent holes (Kanegae & Reis 2011, Kanegae *et al.* 2012). The nest is globular and built in a grass clump close to the ground. Both males and females share incubation and care of young (Kanegae *et al.* 2010).

The Collared Crescentchest is "endangered" according to the List of Endangered Animals in the state of São Paulo, where it is found in two fragmented reserves, the "Estação Ecológica de Itirapina" (hereafter EEI) and the "Estação Ecológica de Águas de Santa Bárbara" (2,712 ha) (São Paulo 2009). Its population in the EEI is small, around 57 individuals (Kanegae 2011), and declining (Willis 2004).

Studies of home range dynamics are important not only to understand spatial distribution, but also for management and conservation strategies and determining reserve minimum size (Woodroffe & Ginsberg 1998, Wiktander *et al.* 2001, Bellis *et al.* 2004). Here, I estimate home range size of the Collared Crescentchest during the reproductive period at EEI.

MATERIAL AND METHODS

Study Area.-The study was carried out at the Estação Ecológica de Itirapina (EEI), a conservation area of 2,720 ha located in the state of São Paulo, in southeastern Brazil (22°15¢S; 47°49¢W, 700-750 m in elevation). The Collared Crescentchest was studied in contiguous areas that form a mosaic of grassland with sparse shrubs (*campo sujo*) and *parque cerrado*, which is dominated by shrubs and herbaceous plants with some tree cover (Ribeiro & Walter 1998). Mean annual precipitation is 1,376 mm with a dry season between April and September (rainfall ranging from 32 to 88 mm monthly) and a rainy season between October and March (rainfall ranging from 117 to 257 mm; DAEE Posto D4-014, Itirapina, SP). The mean monthly temperatures in 2006 ranged between 19.5º and 21.9º

C in the dry season and 18.9º - 21.7º C in the rainy season (DAEE Posto D4-014, Itirapina, SP).

Radio transmitters.- I captured birds in October and November 2007, both during the morning (6 h - 12 h) and afternoon (16 h - 18 h). Birds were captured in 12 x 2 m mist-nets using playback to attract them. Captured birds were banded with a metal band (provided by National Research Center for the Conservation of Wild Birds - CEMAVE) and a unique combination of colour bands on the other leg. Blood samples (0.1 ml) were taken from all captured birds from the jugular vein for genetic sex determination (Griffiths *et al.* 1998).

I used a total of 12 radio transmitters (Holohil Systems model LB-2) to track Collared Crescentchest individuals. Each transmitter weighted 0.52 (3.3 % of the birds' weight). Several types of techniques to attach the transmitters to the back of the birds were used. Initially, I used a non-latex eyelash glue (modified from Raim 1978) in two birds, a Cyanocrylate based glue on ten birds, and Super-Bonder (Bowman *et al*. 2002) in seven birds. Neither technique worked well. I then tried a bag tied onto the back of the bird with ribbon (weight = 0.1 g, modified from Hill *et al.* 1998) on which the transmitter was taped (90% polyester and 5% nylon), thereby forming a 0.1g backpack (Navjot & Oliphant 1992, Kenward 2001, Millspaugh & Marzluff 2001). An LA 12-Q (AVMA) receiver with a Yagi antenna with three elements was used to track the birds.

For greater accuracy during radio-location, I practiced detecting radio transmitters placed under clumps of grasses in the Cerrado before we attached them to the birds. The birds were monitored during the breeding season in October and November 2007. I monitored birds in intervals of around 5 hours distributed in the beginning and end of the morning and late afternoon. Only the strongest signal was used for the bird point detection, which was recorded by GPS (Global Positioning System, Garmin - Etrex Summit). As the Collared Crescentchest is a territorial species that moves little during the observer's approach (*pers. obs.*), records were noted based on the direct observation (visual or auditory) method (White & Garrott 1990).

Data analysis.- Home range was estimated using the Minimum Convex Polygon (MCP) and Fixed Kernel methods (FK) with least-square-cross-validation parameters (Mohr 1947) (Table 1) using the TRACKER 1.1 program. Despite some problems with MCP (White & Garrot 1990, Burgman & Fox 2003, Borger *et al.* 2006), this method is simple and easy to calculate._I calculated the area accumulation curve for each individual tracked based on the 95% MCP (Minimum Convex Polygon; Odum & Kuenzler 1955, Leary *et al.* 1998) to determine when the number of sightings was sufficient to estimate home range size. The first five points of radio-locations were selected to calculate the home range using the 95% MPC. Then, these procedures were repeated until all points were included. The point of stabilization in the accumulation curve was that where the addition of data points represented less than a 1% increase in home range size (Leary *et al.* 1998).

RESULTS

Techniques used to attach the radio transmitter.- In October and November of 2007, 20 individual Collared Crescentchests were captured and 13 birds had the radio transmitters fall off due to the inefficacy of the first two techniques (eyelash glue and cyanoacrylate based glue) used (Table 1). Five of these individuals were recaptured and the transmitter was reattached with the backpack technique. In the end, I tracked 10 individuals for which I had > 10 radio-recordings, including seven with radios attached with the backpack technique and three with the transmitter attached with cyanoacrylate glue.

The first technique with eyelash glue was used in five individuals and lasted three to five days. The second technique, the cyanoacrylate based glue, was used in 10 individuals and remained attached from 3 to 11 days. Finally, the backpack technique was tested in seven individuals, two of which were preyed upon. Around one week after the individual bird predations, their former territories were rapidly occupied by another vocalizing bird, which indicates competition for a higher quality territory. Recaptured animals showed no physical damage as a result of the bonding techniques employed.

Variation in home range and core area. - The number of radio-locations of individual birds monitored ranged from 10 to 44. The individuals monitored were 10 males that occurred in *campo sujo* (n = 2 individuals), *parque cerrado* (n = 5 individuals) and in areas with both vegetation types (n = 3 individuals). Area accumulation curves for home range size measurements stabilized for five birds only (24 to 44 radio locations), with an average of 36.4 ± 7.4 radio-locations. Area accumulation curves did not stabilize for four of the individual birds that had < 24 radio-locations and another individual (M6), even though it had 35 radio-locations (1.04 ha).

Home range size in individuals with stabilized accumulation curves varied from 0.59 ha to 1.63 ha (mean ± standard deviation, 1.09 ± 0.34 ha, Table 1). Home ranges calculated with the fixed Kernel method ranged from 0.78 ha to 2.2 ha and had an average of 1.51 ± 0.52 ha. The core area (75%) of home ranges also showed a wide variation, from 0.43 ha to 1.0 ha, with an average of 0.68 ± 0.23 ha. Despite the small home range size, some radio-locations were observed very close to a neighbors' home range, as observed for M7 and M4, and M4 and M6. However, there was no home range overlap among the individuals monitored.

TABLE 1. Estimates of home range size of 10 males of the Collared Crescentchest *Melanopareia torquata* (identification number of individuals - ID) monitored during October and November of 2007 at EEI in the southeastern region of the State of São Paulo, Brazil. The phytophisionomies where birds were captured were Cs: *campo sujo*, and Pc: *parque cerrado*. The techniques used to attach the radio transmitter on the bird's back were cyanocrylate based glue, eyelash glue, and a backpack with ribbon. Some individuals were recaptured and had the radio transmitter attached again, but with the backpack technique. Home range sizes were calculated with the 95% Minimum Polygon Convex (MPC) and Kernel techniques. The core area 75% was calculated exclusively based on the Kernel technique. Dates represent the first and last day of the bird tracking. In bold are the males monitored during the nesting period.

Individuals (ID)	Habitat	Technique (captures)	Monitoring period (number of days)	Recapture period (number of days)	Technique (recapture)	Locations	MCP 95% (ha)	Kernel 95% (ha)	Core area 75% (ha)
M1	Pc	Cyanocrylate	16–21 Oct (5)	N	-	10	0.55	1.22	0.29
M2	Pc	Eyelash glue	6–10 Nov (2)	27-01 Nov (6)	Backpack (rec [2])	11	0.22	0.79	0.44
M3	Cs + Pc	Cyanocrylate	15–20 Oct (6)	N	-	15	0.97	1.68	0.83
M4	Cs + Pc	Cyanocrylate	15-25 Oct (9)	N	-	21	1.25	2.20	0.55
M5*[1]	Pc	Eyelash glue	7-9 Oct (2)	26–12 Nov (14)	Backpack (rec)	24	0.59	0.78	0.43
M6	Cs + Pc	Cyanocrylate	12–20 Oct (4)	2-24 Nov (19)	Backpack	35	1.04	1.01	0.81
M7*	Cs	Cyanocrylate	12–20 Oct (4)	2-24 Nov (19)	Backpack	37	1.05	1.62	0.48
M8*	Cs	Backpack	7-25 Nov (18)	N	-	38	0.56	0.87	0.16
M9*	Pc	Backpack	8 -24 Nov (16)	N	-	39	0.54	0.66	0.24
M10*	Pc	Cyanocrylate	13–15 Oct (2)	15 Oct - 7 Nov (20)	Backpack	44	1.63	1.78	1.0

[1]* home range curve stabilized
[2]* recaptured individuals

Two individuals (M8 and M9) were monitored when attending nests with nestlings. Their nests were located at the edge of the core area of their home ranges. Both individuals had a similar number of radio-locations and home range sizes (around 0.55 ha with MPC, and 0.75 ha with FK, Table 1).

DISCUSSION

Variation in home range and core area.- Home ranges of Collared Crescentchests EEI varied significantly among individuals. Males with nests had home range sizes around 0.55 ha (MPC) to 0.75 ha (FK), smaller than in the other individuals analyzed. They participated in the care of offspring with periodic visits to the nest, which probably affected calculations of home range size due to the energetic cost to maintain them (Kanegae *et al.* 2010).

The home range size of Collared Crescentchests was much smaller than those reported for other typical Cerrado bird species. The home range of *Neothraupis fasciata* (Emberizidae) was 3.7 ± 0.6 ha (weight 28.6 g, n = 38 groups monitored with flocks of 2-7 individuals) in areas of sparse and typical Cerrado (Duca 2007). A similar result was obtained for the same species by Alves (1990), who estimated a home range size of 4.3 ha (one group monitored with three individuals). Larger species of the family Corvidae, such as the jay *Cyanocorax cristatellus* (134 g), live in groups of about ten individuals and have an estimated home range size of 172 ± 46 ha; however, during the reproductive period the occupied area decreases considerably, being restricted to 29 ha around the nest (Amaral & Macedo 2003).

For small species of flycatchers such as *Culicivora caudacuta*, it is estimated that home range size is at least 17.5 ha (5.7 g, two groups with three to seven individuals monitored) in open field and open Cerrado areas (Sousa & Marini 2007). Other Cerrado flycatchers found in pairs or in mixed-species flocks, such as *Suiriri affinis* (20.6 g, n = 12 groups monitored), had an estimated home range of 14 ± 1.9 ha in typical and dense Cerrado. *Suiriri islerorum* (20.1 g, n = 11 groups) has an estimated home range area of 11.2 ± 0.6 ha in a sparse Cerrado (Lopes & Marini 2006). In contrast, home range sizes of species associated with *campo rupestre* were calculated for *Knipolegus lophotes* (32 g, n = 2 pairs, 6.5 and 7.7 ha; Ribeiro *et al.* 2002), *Embernagra longicauda* (2.52 ± 0.77 ha with MPC and 3.35 ± 0.90 ha with Kernel; Freitas & Rodrigues 2012), *Poospiza cinerea* (16.10-17.10 g, one pair, 15.02 ha with MPC and 16.56 ha with Kernel; Costa & Rodrigues 2013) and *Schistochlamys ruficapillus* (two groups, average of 6.4-8.4 ha) (Domingues & Rodrigues 2007).

These home range comparisons show that differences in home range size may be correlated with flock size and body weight. Individuals with a large body masses need more energy to live, reflecting in a more extensive home range. The same is true for species that occur in monospecific flocks, which can be as small as *Culicivora caudacuta*, a species that needs wide foraging areas for maintenance. The core area is more often used than any other area within the home-range and likely contains the places of lodging, shelter and the most important food resources (Burt 1943, Kaufmann 1962, Ewer 1968). In this study, the location of nests at the edge of the core area, may indicate that males, despite participating in the care of offspring (Kanegae *et al.*, 2010), do not do it very intensely. Furthermore, a study with crows, *Corvus corax,* indicated a distinct behavior where the core area of males and females is centered around the nest and food resources (Roth *et al.* 2004). The core area can also be associated with centers of vocalizations, as observed by males of *Dendroica cerulea* who selected locations with a high density of trees (*Carya cordiformis*) for perching (Barg *et al*. 2006).

Techniques used to attach the radio transmitter. -The radio transmitter attachment technique is a limitation factor to be considered in our study. The high temperatures in the Cerrado may have contributed to the detachment of the radio-transmitter. During the studied months, the mean daily temperatures ranged from 18.1º ± 2.4º C to 31.1º ± 4.3 º C (ADEE Tour D4-014, Itirapina, SP). Daily temperature variations were high, around 13º C on average, reaching up to 20º C. Moreover, birds movements between clumps of grasses and shrubs can pull off the radio transmitter. It was not possible to test whether the backpack technique contributed to predation. However, it performed better than the non-latex eyelash glue and the cyanoacrylate based glue because the period of attachment on the bird was longer.

Final considerations.- The home range size estimates of the Collared Crescentchest indicate that there are large areas of *campo sujo* (around 800 ha) and *parque cerrado* (571 ha) for population expansion. The small population of the species in the EEI (Kanegae 2011) and its decline (Willis 2004) indicate that other factors are preventing the species to expand its population. Factors such as the presence of predators (snakes, jays and falcons) and intra- and interspecific competition could affect the Collared Crescentchest population and inhibit its expansion in the EEI. Importantly, the expansion of exotic grasses (*Urochloa decumbens* and *Melinis minutiflora*) could alter the Collared Crescentchest's microhabitat and inhibit the expansion of its population as well (Kanegae *et al.* 2012). Therefore, it is of paramount importance to understand the Collared Crescentchest's interactions with biotic factors to develop conservation strategies and improve its population size in the EEI.

ACKNOWLEDGMENTS

I would like to thank José Carlos Motta-Junior for revising this paper and also Stephanie Severs for English revision and providing constructive suggestions. I thank the CEMAVE, the Instituto Florestal do Estado de São Paulo (IF), and the Estação Ecológica de Itirapina for authorization to study birds and their support. I acknowledge Severino Lucena, Marina Telles, Matheus Reis and Gisele Levy for their field assistance and Fábio Monteiro and Marco Granzinolli for analysis suggestions. I thank CAPES for the doctorate scholarship and Instituto de Biociências da Universidade de São Paulo, Idea Wild, The E. Alexander Bergstrom Memorial Research Award, Neotropical Grassland Conservancy, W. J. and Virginia W. Moorhouse Memorial, Pamela and Alexander F. Skutch, and Birder's Exchange for the financial support and donation of equipment.

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Associate Editor: James Roper.

Revista Brasileira de Ornitologia, 21(2), 114-119
June 2013

ARTICLE

Prevalence of *Chlamydia* in free-living birds in Distrito Federal, Brazil

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Received on 19 October 2012. Accepted on 8 April 2013.

ABSTRACT: *Chlamydia* is a genus of obligate intracellular bacteria that may cause lethal endemic avian chlamydiosis, epizootic outbreaks in mammals, and respiratory psittacosis in humans. At present few studies have been carried out on the prevalence of this microorganism in neotropical free-living avian species. The aim of this study was to investigate the prevalence of *Chlamydia* in the free-living avian species in Distrito Federal (DF), Brazil. We anayzed blood samples and cloacal swabs of 53 avian species from two conservation units in DF. The detection of *Chlamydia* was performed by amplification of a major outer membrane gene (*omp*A) fragment by a nested polymerase chain reaction. The prevalence of *Chlamydia* was observed in 83% of the avian species studied. In most of them, we found evidence that *Chlamydia*-positive individuals were shedding the bacterium in their feces, representing a significant source of infection for other wild and domestic avian species, and particularly for humans.

KEY-WORDS: Avian chlamydiosis; *Chlamydia psittaci*; Ornithosis; PCR assay; Psittacosis.

INTRODUCTION

Chlamydia is a genus of gram-negative and obligate intracellular bacteria that have been found in many vertebrate species such as mammals (Takáčová *et al*. 2010) and birds (Kaleta & Taday 2003). Most avian strains belong to *Chlamydia* (formerly *Chlamydophila*) *psittaci* but occasional detection of *C. abortus* (Herrmann *et al*. 2000), *C. pecorum* and *C. trachomatis* has been reported (Sachse *et al*. 2012). Infections caused by *Chlamydia psittaci* range from asymptomatic infections to serious outbreaks of the disease according to the species and the host. This bacterium is excreted in the feces and nasal discharges of infected birds. Some infected birds can appear healthy and shed the organism intermittently over long periods, contributing to the dissemination of the agent and representing a significant source of infection for other birds (Fudge 1996).

Chlamydia psittaci can also infect humans. Transmission from birds to humans can occur mainly via contaminated aerosol and airborne dust, causing symptoms associated with atypical pneumonia (Andersen & Vanrompay 2003). This disease is of public health significance because of the popularity of birds as pets and placement of birds in childcare facilities and rest homes (Harkinezhad *et al*. 2009).

In more recent times, advances in the field of molecular biology have allowed for the development of extremely sensitive and specific *Chlamydia* detection methods based on amplification of the MOMP genes, *omp*A or *omp*B genes, by the polymerase chain reaction (PCR, for review see Kaleta & Taday, 2003). The PCR increases the sensitivity and specificity of detection of pathogenic microorganisms by amplifying target DNA molecules by a factor of up to 10^6 (Saiki *et al*. 1988).

Recently, Kaleta and Taday (2003) presented a review of the avian host range of *Chlamydia psittaci* that contains 469 different domestic, pet and free-living bird species comprising 30 orders. It became clear by this review that some groups of birds (e.g., psittacines and domestic pigeons) are frequently investigated. However, other orders (e.g. passerines) received less attention. Thus, although free-living-birds are recognized as important reservoirs of this bacterium in nature (Brand 1989), there are only few studies reporting the occurrence of this microorganism in free-living neotropical avian species (Raso *et al.* 2006, Uhart *et al.* 2006).

The objective of this study was to investigate the prevalence of *Chlamydia* in the free-living avian species in Distrito Federal (DF), Brazil, based on PCR assay. Distrito Federal is embedded in the Cerrado biome, the Brazilian savanna. This biome is considered one of the

25 world's hotspots for biodiversity conservation and has relatively high avian diversity, with more than 830 bird species (Silva 1997), 456 (54%) of which occurs in DF (Faria 2008).

MATERIAL AND METHODS

The survey was conducted in two conservation units in DF: Águas Emendadas Ecological Station (ESECAE) (15°34'27"S; 47°36'28"W) and Gama/Cabeça-de-Veado Environmental Protection Area (APAGV) (15°55'63"S; 47°52'24"W). These units have 10,547 and 25,000 ha, respectively, and are ~ 60 km from each other.

During 2009 and 2010, birds were captured using five to eight mist nets (12 m x 2.5 m x 36 mm). The nets were opened from 6am to 6pm for two to four days, giving a total of 48 and 288 net-hours in ESECAE and APAGV, respectively. The birds were banded with numerical plastic (rings to avoid collecting samples in duplicate, and were released after samples were obtained at the capture sites (license IBAMA/SISBIO number 14341-1). Bird identification was made based on Sigrist (2007) and classified as resident or migrating based on Sick (1997).

From each captured bird, we collected three drops of blood from brachial vein using disposable needles and capillary tubes, and cloacal swabs using sterile cotton tips. For some individuals, it was only possible to collect one type of sample (cloacal swab or blood). Blood and swab samples were placed in microtubes containing absolute ethanol and ethanol 70%, respectively. Total genomic DNA was extracted by digestion with proteinase K/SDS followed by purification using the standard phenol-chloroform-isoamyl alcohol method (Bruford *et al*. 1998) for blood samples, and purification with saturated NaCl (6M) (Abrão *et al*. 2005) for cloacal samples.

The detection of *Chlamydia* in our samples was performed by amplification of a gene MOMP (Major Outer-Membrane Protein) fragment by nested PCR, using two primers pairs described by Buxton *et al*. (1996): primers A and B for first reaction, and primers B and C for the second reaction. As this methodology can detect different *Chlamydia* species (see Buxton *et al*. 1996 for details), our study allows the determination of the chlamydial prevalence in birds. Each reaction consisted of an initial step of 95°C for 7 min., 20 cycles of 95°C (1 mdnain.), 60°C (40 s), 72°C (40 s), and a final extension of 72°C for 10 min. The semi-nested PCR reaction was similar, except that 1.5 µL of the amplified product was added and 35 cycles with annealing temperature at 52^{oC} was performed. Positive (*Clamydia* DNA) and negative control (water instead of DNA) samples were included in each run. Semi-nested PCR products were analyzed by electrophoresis in 1.5% agarose gels stained with ethidium bromide and visualized under ultraviolet light.

When at least two individuals per species were sampled in both areas, we compare the prevalence level between the two areas using Fischer exact test. The efficiency between the two sampling methods (blood and swab) to detect *Chlamydia* in our samples in each area was evaluated using the Wilcoxon Signed Rank test. We used a nonparametric test procedure because the Shapiro-Wilk normality test shows that our data cannot be considered as normally distributed. All statistic analysis were performed using the R package version 3 (R Core Team 2012).

RESULTS

We sampled 229 birds (41 in ESECAE and 188 in APAGV) of 53 species (44 passerine and nine non-passerine species) belong to 19 families (Table 1). We collected 156 cloacal swab and 174 blood samples in ESECAE, and 38 swab and 38 blood samples in APAGV (Figure 1). All birds captured did not show evidence of clinical disease during field work. However, the prevalence of *Chlamydia* was detected in 44 of 53 (83%) bird species studied (Table 1). *Chlamydia* was detected in all bird families studied, except in Conopophagidae (Table 1), but only one individual of that family was analyzed. In all migratory and in three out of four endemic species studied were detected *chlamydia*-positive individuals (Table 1).

For all birds investigated, 70.7% and 80.5% were *Chlamydia*-positive in APAGV and ESECAE, respectively (Table 1, Figure 1). However, considering only the seven species sampled in both areas, the *Chlamydia* prevalence was higher exclusively in *Elaenia cristata* sampled in ESECAE than those sampled in APAGV ($p = 0.007$). In both areas, the frequency of *Chlamydia*-positive individuals using cloacal swabs as DNA source was higher ($p < 0.029$) than that using blood samples (Figure 1).

DISCUSSION

This is the first extensive study of *Chlamydia* prevalence in free-living avian species of the Brazilian Cerrado and the second one in free-living birds in Central Brazil. Raso *et al*. (2006) previously detected this parasite in free-living nestlings of two parrot species in the Pantanal of Mato Grosso do Sul, Brazil. Most of the species studied here were analyzed for the first time. Our results showed that *Chlamydia* had a wide host range in free-living species in DF avifauna, including three migratory species (Table 1). It is well established that migratory species have the potential to disperse certain pathogenic microorganisms. Migratory species can either facilitate rapid spread of infections to other birds across regions, especially those species that congregate before, during or after migration, and can introduce it

to new localities. Some chlamydial strains not normally pathogenic to wild avian hosts can be highly virulent for domestic birds and humans (Hubalek 2004).

Chlamydia prevalence appears to be higher in birds sampled in ESECAE than those sampled in APAGV. The high prevalence found in ESECAE may be due to biased sample in that area. Alternatively, may be influenced by anthropic habitat perturbation. ESECAE has smaller area than APAGV and the site where birds studied were sampled in ESECAE is a regeneration pasture area that has been suffering intense pressure from surrounding human communities. These conditions may be contributed to reduction of available natural area and consequently increase of host population density. High host density has been considered one of those factors that may increase transmission efficiency of the parasite (Dobson 1988). However, more data are necessary to confirm our results.

Cloacal swab samples seem to be more sensitive to *Chlamydia* diagnosis than blood samples. This result is in accordance with previous studies (Raso *et al*. 2006) and evidence that, although none of the birds studied showed clinical signs suggestive of chlamydiosis, they may be shedding the microorganism actively in feces.

Our results showed that *Chlamydia* had wide host range in the DF avifauna. We find evidence that *Chlamydia*-positive birds were shedding the microorganism through the cloaca, representing a significant source of infection for other birds and humans. However, more studies are necessary to better understand the contribution of these species in spread the pathogen for other wild and domestic bird species, and particularly for humans. It is particularly important in the case of *T. melancholicus* since this species also occur in urban areas, and it may spread the bacterium in the urban environments.

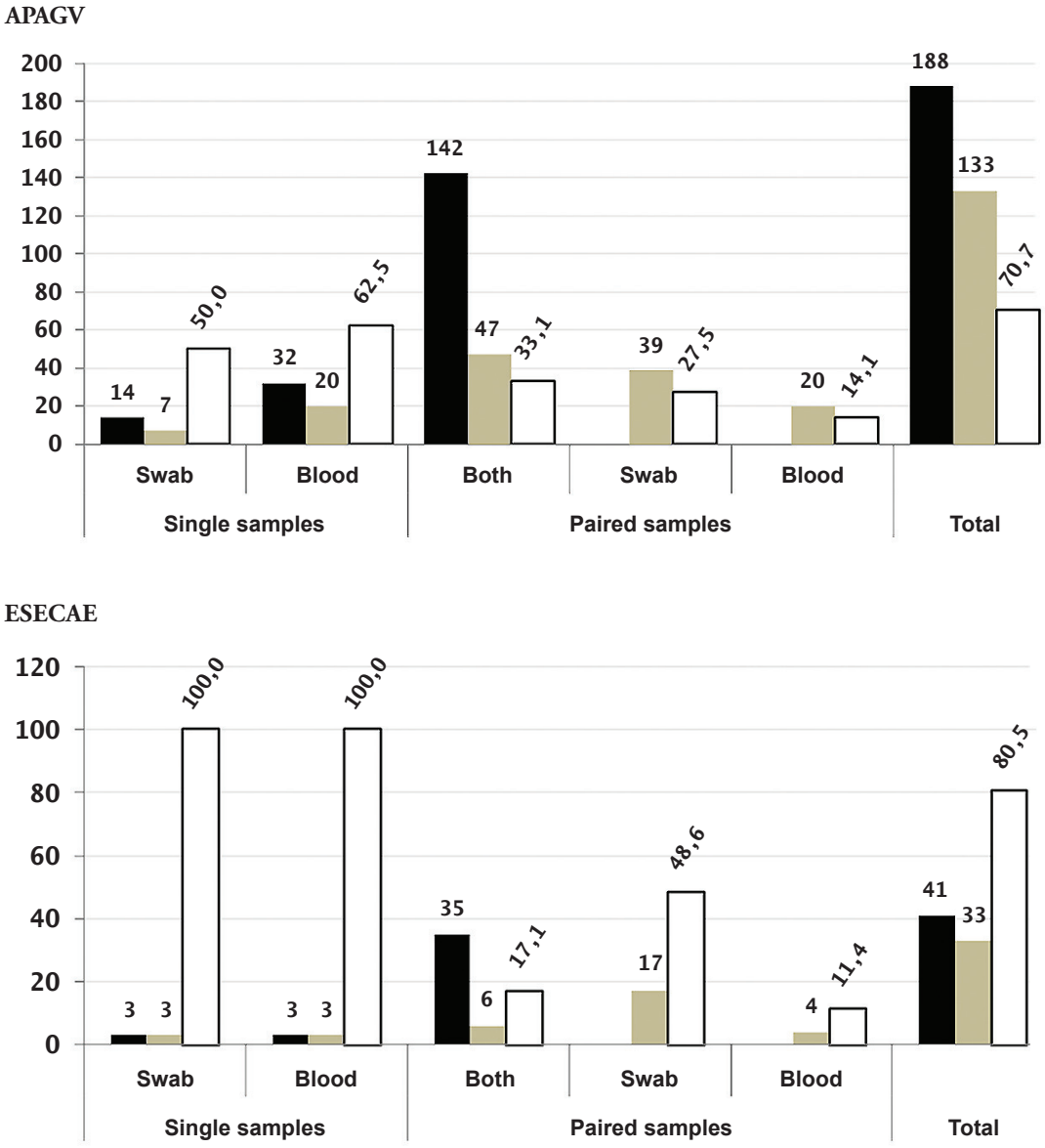

FIGURE 1. Number of birds sampled (black), number (gray) and percentage (white) of *Chlamydia*-positive individuals in two conservation units in Brazilian Cerrado: APAGV and ESECAE (see material for abbreviation). Single samples represent birds sampled with only one procedure, while paired samples represent birds sampled with both procedures.

TABLE 1. *Chlamydia* prevalence in several avian species sampled in two conservation units (APAGV and ESECAE) in Distrito Federal, Brazil.

Order - Family	**APAGV**			**ESECAE**		
Species	**N_I**	**N_{I+}**	**%**	**N_I**	**N_{I+}**	**%**
Tinamiformes - Tinamidae						
Crypturellus parvirostris				1	1	100
Columbiformes - Columbidae						
Columbina minuta				1	1	100
Columbina passerina				1	0	0
Columbina talpacoti				1	0	0
Apodiformes - Trochilidae						
Eupetomena macroura				1	0	0
Amazilia fimbriata	1	1	100			
Amazilia lactea	1	0	0			
Coraciiformes - Alcedinidae						
Chloroceryle americana				1	1	100
Piciformes - Picidae						
Picumnus albosquammatus	2	1	50			
Passeriformes						
Conopophagidae						
Conopophaga melanops	1	0	0			
Furnaridae						
Furnarius rufus				5	4	80
Hylocryptus rectirostris[E]	1	1				
Dendrocolaptidae						
Lepidocolaptes angustirostris				2	2	100
Sittasomus griseicapillus	1	0				
Tyrannidae						
Tyrannus melancholicus[M]				1	1	100
Arundinicola leucocephala				1	1	100
Myoipagis viridicata	1	1	100			
Pitangus sulphuratus				4	3	75
Elaenia mesoleuca[M]	7	7	100			
Elaenia cristata	16	3	19	4	4	100
Elaenia chiriquensis[M]	25	17	68	3	3	100
Elaenia obscura	5	2	40			
Elaeinia spectabilis	3	0	0			
Hemitriccus margaritaceiventer	1	1	100			
Pseudocolopteryx flaviventris	1	1	100			
Myiophobus fasciatus	2	2	100			
Myiarchus tyrannulus	2	2	100			
Pipridae						
Antilophia galeata[E]	12	6	50			
Polioptilidae						
Polioptila dumicola				2	2	100
Troglodytidae						
Cantorchilus leucotis	3	2	67			

Order - Family	APAGV			ESECAE		
Species	**N_I**	**N_{I+}**	**%**	**N_I**	**N_{I+}**	**%**
Turdidae						
Turdus leucomelas	10	7	70	3	3	100
Turdus rufiventris	3	3	100			
Vireonidae						
Cyclarhis gujanensis	2	2	100	1	1	100
Coerebidae						
Coereba flaveola	6	2	33	1	1	100
Thraupidae						
Neothraupis fasciata[E]	2	0	0			
Thlypopsis sordida	3	3	100			
Schistochlamys melanopis	3	2	67			
Tangara cayana	4	4	100	2	2	100
Tangara palmarum	3	3	100			
Tachyphonus rufus	2	2	100			
Ramphocelus carbo	2	2	100			
Saltator similis	16	14	88	3	2	67
Saltator maximus	3	3	100			
Emberezidae						
Geothlypis aequinoctialis	9	7	78			
Basileuterus hypoleucus	3	3	100			
Basileuterus leucophrys[E]	2	2	100			
Basileuterus flaveolus	2	2	100			
Zonotrichia capensis	9	8	89			
Arremon flavirostris	3	3	100			
Volatinia jacarina	13	12	92			
Lanio cucullatus	1	0	0			
Icteridae						
Gnorimopsar chopi				3	1	33
Fringillidae						
Cyanoloxia brissonii	2	2	100			
Total	**188**	**133**	**70.7**	**41**	**33**	**80.5**

E = endemic species; M = migratory species in the Distrito Federal; N_I = number of individual analyzed; N_I+ = number of *Chlamydia*-positive individuals; % - prevalence rates.

ACKNOWLEDGMENTS

We thank Tania F. Raso for positive comments which improved our study, and José Vanderlei and Dario Henrique for technical assistance. We are also grateful to the Director and employees of ESECAE and Reserva Ecológica do IBGE, and the anonymous reviewers for their valuable comments and suggestions to improve the quality of the paper. This study was supported by FAPDF and V. Ribeiro by a PIBIC/UFG scholarship.

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Associate Editor: Caio Graco Machado.

Revista Brasileira de Ornitologia, 21(2), 120-123
June 2013

ARTICLE

Fixed cytogenetic cells suspension: an alternative for obtaining DNA of birds

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Received on 16 July 2012. Accepted on 16 March 2013.

ABSTRACT: Fixed cytogenetic cells suspension: an alternative for obtaining DNA of birds. Birds are especially sensitive to biological sampling and the stress related to this procedure can influence important clinical parameters and even threaten the life of the animal. In genetic studies preference has been given to less invasive sampling to obtain DNA. Good quality and quantity of genomic DNA are crucial steps for successful amplification by the polymerase chain reaction (PCR) and, therefore, for research and diagnostic purposes. Here, we extracted DNA from small volumes of cell suspension fixed and frozen for up to nine years, previously used for cytogenetic analysis of different Psittaciformes species. We compared two protocols of DNA extraction (Cell lysis and Phenol/chloroform). Only the phenol/chloroform method provided adequate DNA for PCR amplification, providing suitable DNA for molecular sexing, suggesting that it can also be used for other genetic analyses and avoiding recapture to collect tissue samples.

KEY-WORDS: CHD gene; Molecular sexing; Psittacidae, Psittaciformes, feather pulp

INTRODUCTION

The most recent survey published by the Brazilian Ornithological Records Committee in 2011 (CBRO 2011) has shown that Brazil is home to 1,832 bird species, representing one of the richest avifauna of the world. Both cytogenetic analysis and molecular biology have contributed to the identification of cryptic species, comprehension of the evolutionary mechanisms among different groups, establishment of the taxonomic relations among different taxa, sex identification for reproduction of birds in captivity, and studies about sex ratios in wild populations.

The description of the short-term culture technique of feather pulp by Sandness (1954) enabled the study of rare wild living birds or birds from zoos representing the less invasive sampling which provides the best results for the study of avian karyotypes (Christidis 1989). Such cells, after properly cultured, can persist in fixative at -20° C for a long time, resulting in good quality metaphases when defrosted (Christidis 1989, Coleman & Tsongalis 1997).

There are several non-destructive and non-invasive methods of tissue sampling that can also be used for molecular genetic analysis of birds, such as: blood samples (Haig *et al*. 1997, Paterson & Snyder 1999, Bouzat 2001), feather pulp (Marsden & May 1984, Viala *et al*. 2006), fresh adult feathers (Bello *et al*. 2001, Viala *et al*. 2006), feces (Robertson *et al*. 1999), urine (Nota & Takenaka 1999), and egg shells (Chilton & Sorenson 2007).

When working with birds, it becomes a priority to adopt less invasive sampling procedures, reducing the amount of physical restraint and the associated dangerousness generated by stress. It is also recommended to optimize the use of remnant tissues collected for further analyses, especially in the case of endangered species (Gaunt & Oring 1999).

In human beings with Down syndrome, the DNA extracted from bone marrow cells and lymphocytes of peripheral blood cultures, kept frozen for four years after cytogenetic analysis, allowed the execution of other important genetic evaluations on those patients (Amorim *et al*. 2007).

Our objective was to verify if the cells obtained for cytogenetic analysis from young feather pulps of six Psittaciformes species and stored in fixative solution at -20° C for up to nine years could be used to extract good quality DNA for molecular studies. We also compared the phenol/chlorophorm and cell lysis methods for obtaining DNA to determine the most suitable technique for reusing the samples in other research projects, avoiding recaptures.

MATERIAL AND METHODS

For DNA extraction, we used a short-term culture of young feather pulps from eight individuals of six Psittaciformes species, following Sandness (1954) with some modifications. Samples were collected at RIOZOO Foundation, Rio de Janeiro, Brazil, and cultured for cytogenetic analyses between 1999 and 2006. Following the analysis, the remnant tissue was stored at -20 ºC in fixative solution (methanol: acetic acid 3:1) (Coleman & Tsongalis 1997) for up to nine years. The species and their respective years of cell culture and fixation were: *Pionites leucogaster* (Kuhl 1820), 1999; *Diopsittaca nobilis* (Linnaeus 1758), 1999; *Anodorhynchus hyacinthinus* (Latham 1790), 1999a; *Anodorhynchus hyacinthinus* (Latham 1790), 1999b; *Ara ararauna* (Linnaeus 1758), 2001; *Ara chloroptera* (Gray 1859), 2001; *Amazona aestiva* (Linnaeus 1758), 2003; and *Ara ararauna* (Linnaeus 1758), 2006. After defrosting, the samples were centrifuged at 1000 rpm for 10 min. The supernatant was discarded and about 50 to 100 µg of the cell pellet was transferred to a 1.5 mL plastic tube which was held open and upside down for 4 h over a paper towel to ensure that the fixative evaporated completely. Two DNA extraction protocols were tested: phenol/chlorophorm (Sambrook *et al*. 1989) and cell lysis (Khatib & Gruenbaum 1996). At the end of the extraction, 100 µL of ultra-pure water were added to each sample. The suspension was placed in a boiling water bath at 37º C for 2 h to attain the complete DNA dissolution. DNA quantification of phenol/chlorophorm extractions were performed using a fluorometer. The DNA obtained from both methods was submitted to a polymerase chain reaction (PCR) using the primers P2 (5′-TCTGCATCGCTAAATCCTTT-3') and P8 (5′- CTCCCAAGGATGAGRAAYTG-3′) (Griffiths *et al*. 1998). These sequences are currently used for the molecular sexing of birds, and in the present study allow the comparison of the results with those obtained by cytogenetic analysis. Each 10 µL reaction contained 2 µl of DNA (5 ng/µL), 1 µL of each primer (10 µM), 5 µL of Green Master Mix (Promega®), and 1 µL of nuclease-free water (Promega®). The reaction profile used was 94 °C for 2 min, then 40 cycles of 94 °C for 15 s, 50 °C for 20 s, 72 °C for 25 s, followed by 72 °C for 1 min. Samples of a male *Agapornis* spp. and a female *Nymphicus hollandicus* were used as a positive control. We also used a negative control for all reactions containing water instead of DNA to check for contaminants. PCR products were analyzed by eletrophoresis using 2% agarose gel stained with 5% ethidium bromide solution (10 mg/ml) on a transiluminator with UV light.

RESULTS

We studied eight individuals of Psittaciformes. In all samples analyzed, only the phenol/chlorophorm method provided good quantity and quality of DNA to PCR amplification. Concentration varied strongly between extracts, from 13 to 224 ng/µL (Table 1), with a mean value of 107.5 ng/µL.

Six out of eight samples analyzed showed satisfactory PCR amplification. Samples from *Pionites leucogaster* 1999 and *Ara ararauna* 2001 did not provide constant results, presenting both evident and weak amplification.

The sex of all individuals whose samples showed PCR amplification (Figure 1, Table 1) was compatible with the previous cytogenetic results.

TABLE 1. Species studied and year of cytogenetic cell culture with the respective DNA concentration extracted using the phenol/chloroform method, quantified with a fluorometer. Also shown, the sex of the individuals obtained by the Polymerase Chain Reaction (PCR) with P2 and P8 primers (Griffiths *et al*., 1998).

Species (year of cell culture)	DNA quantification (ng/µL)	Molecular sexing
Ara ararauna (2001)	170	female
Diopsittaca nobilis (1999)	108	female
Amazona aestiva (2003)	224	male
Anodorhynchus hyacinthinus (1999 a)	56	female
Anodorhynchus hyacinthinus (1999 b)	149	female
Pionites leucogaster (1999)	13	female
Ara ararauna (2006)	39	male
Ara chloroptera (2001)	101	female

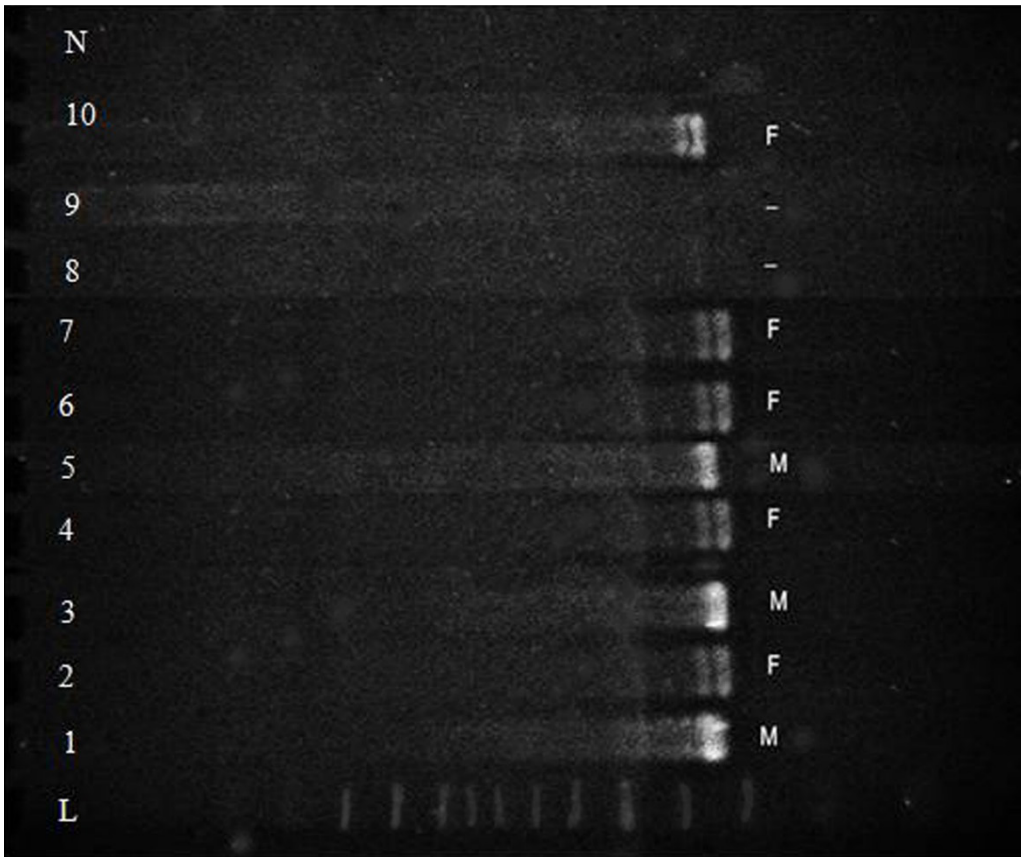

FIGURE 1. PCR products analyzed in 2% agarose gel amplified with P2 and P8 (Griffiths *et al*., 1998) primers from DNA extracted from cells of young feather pulps stored in fixative. The year of cell culture preparation is in parentheses. L - 100-bp DNA ladder; 1 - *Agapornis* spp. (male control); 2 - *Nymphicus hollandicus* (female control); 3 - *Ara ararauna* (2006); 4 - *Diopsittaca nobilis* (1999); 5 - *Amazona aestiva* (2003); 6 - *Anodorhynchus hyacinthinus* (1999a); 7 - *Anodorhynchus hyacinthinus* (1999b); 8 - *Pionites leucogaster* (1999); 9 - *Ara ararauna* (2001); 10 - *Ara chloroptera* (2001); N - Negative control, M - Male, F - Female, – Not amplified.

DISCUSSION

Several samples did not allow for conclusive results in some trials, which may be related to the small DNA concentration, such as in the case of *Pionites leucogaster* 1999 and the poor DNA quality of *Ara ararauna* 2001. The cell lysis technique, although faster and cheaper, did not prove to be a good alternative for DNA extraction from fibroblasts frozen in fixative solution, yielding higher impurity levels that can interfere with primer annealing (Roux 1995). The phenol/chlorophorm extraction is longer, more expensive, and more toxic (Fernandes *et al*. 2004). However, due to the use of proteinase K and successive washes and centrifugations, it yields DNA of excellent quality that can be used for several molecular analyses (Sambrook *et al*. 1989). In this report, we describe the DNA extraction from fibroblasts fixed for cytogenetic analyses and stored at -20 ºC for up to nine years. This storage period is longer than the one previously described for DNA extraction from lymphocytes of peripheral blood and bone marrow cells of human beings with Down Syndrome, whose samples had been kept frozen for four years (Amorim *et al*. 2007). Although blood, and recently, feathers, are the choice tissues to access genomic DNA in birds, the young feather cells fixed and frozen for cytogenetic analyses constitute an important alternative for molecular studies of birds, including endangered species, where such sample collection usually represents a restrictive component for scientific research.

ACKNOWLEDGMENTS

The author thanks the RIOZOO Foundation for allowing access to the birds, and the Research Foundation of the State of Rio de Janeiro (Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro – FAPERJ) for financial support provided to DMN and the undergraduate scholarship awarded to AARF.

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Revista Brasileira de Ornitologia, 21(2), 124-125
June 2013

SHORT-COMMUNICATION

Nesting of the Rufous-tailed Hawk *Buteo ventralis* on a rocky wall in southern Chile

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Received on 24 January 2013. Accepted on 4 June 2013.

ABSTRACT: We report the first record of nesting of the Rufous-tailed Hawk (*Buteo ventralis* Gould) on a rocky substrate. The nest was recorded in southern Chile, on the west coast of South America. It was a platform 50 cm wide and 80 cm high, built with branches of the roble (*Nothofagus obliqua*), on a rocky wall about 30 m above the ground.

KEY-WORDS: nest, breeding, behavior, Rufous-tailed Hawk, temperate forest.

The Rufous-tailed Hawk (*Buteo ventralis* Gould) is a specialized raptor endemic to the temperate forest of southern South America (35 ° - 55 ° S) due to its high dependence of this type of environment for nesting (Clark 1986, Trejo *et al.* 2006). Only 15 nests are reported for this species (Housse 1945, Behn 1947, Figueroa *et al.* 2000, Rivas-Fuenzalida *et al.* 2011, Norambuena *et al.* 2012), all of them built on tall trees (> 25m) in primary and secondary temperate forests or in exotic plantations of the monterey pine *Pinus radiata* surrounded by native forest (Rivas-Fuenzalida *et al.* 2011). In this paper we report a new nest and the first record of Rufous-tailed Hawk nesting on a rocky substrate.

On 2 November 2012 we recorded a pair of light-morph Rufous-tailed Hawks nesting on the northern slope of the cerro Illi, municipality of Lago Ranco, southern Chile (40°16'S; 72°12'W, 150 m a.s.l.). The cerro Illi is a government property of ~ 1.750 ha, with elevations between 80 to 850 m a.s.l., mostly (60%) covered with primary temperate forest of coihue (*Nothofagus dombeyi*) and ulmo (*Eucryphia cordifolia*) and to a lesser extent (~ 30%) by secondary forest of roble (*Nothofagus obliqua*), laurel (*Laurelia sempervirens*) and lingue (*Persea lingue*) and steep rocky outcrops (~10%) (CEA 2013). The nest was ~ 50 cm high and ~ 80 cm wide, built with fresh and dry branches of roble (Figure 1), on a small rocky ledge at ~ 30 m above the ground, on a rocky wall of ~ 120 m wide and ~ 40 m high. Above the nest (~ 3m) another rocky ledge protected the nest from sunrays during the hottest hours. The rocky wall was in a highly altered ravine of native forest of roble, laurel and lingue, with emergent trees at the top of the wall, which were used as perch by the pair of Rufous-tailed Hawks. Nearby (~ 200 m) at the foot of the ravine there was a meadow where the pair hunted. This pair started to nest in this site during the 2008-2009 breading season. Previously the rocky wall was occupied by a small colony (<5 pair) of black-faced ibises (*Theristicus melanopis*), which was displaced from the area by the pair of Rufous-tailed Hawks (M. Garcés *pers. comm.*).

During 12 hours of observation we recorded carrying of branches to the nest, four of these by the male and one by the female. From the behavior displayed by the pair (see Norambuena *et al.* 2012), we estimate that incubation was already in process, coinciding with the dates of incubation previously reported for the species (Housse 1945, Rivas-Fuenzalida *et al.* 2011, Norambuena *et al.* 2012). Incubation was done mainly by the female with short replacements (<10 min) by the male.

The absence of records of nesting on rocky substrate by the Rufous-tailed Hawk could be explained by the lack of surveys of this species in environments of the Andean Cordillera (see Rivas-Fuenzalida *et al.* 2011). Explanations for nest building on a rocky ledge by this pair are not mutually exclusive and may include: (a) an opportunistic response to tap a nest previously built by another bird, (b)

FIGURE 1. Nest of the Rufous-tailed Hawk (*Buteo ventralis*) on a rocky ledge, Lago Ranco, Southern Chile. November 2012.

an adaptive response to avoid adverse weather conditions (i.e., strong wind, snow) in the high peaks of cerro Illi, or (c) a functional response for get food more quickly and effectively in areas of prairie nearest to the nest. However, additional information is needed to clarify and verify these explanations, and further exploration of this species in environments with rocky outcrops in the Andes are needed to understand the importance of these environments to the nesting of the Rufous-tailed Hawk.

ACKNOWLEDGEMENTS

We would like to express our thanks to the Project 3553-42-LE12 of the Ministerio de Bienes Nacionales de Chile and executed by the Centro de Estudios Agrarios y Ambientales CEA. AMP thanks the Dirección General de Investigación y Postgrado of the Universidad Católica de Temuco, Project DGIPUCT Nº CD 2010-01 and Project Mecesup UCT 0804. We also thank to Patricia Möller, Marilyn González and Rodrigo Santander for their cooperation in the fieldwork. HVN also thanks to the CONICYT-PCHA/Doctorado Nacional/2013-21130354 scholarship.

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Associate Editor: Ivan Sazima

Revista Brasileira de Ornitologia, 21(2), 126-128
June 2013

SHORT-COMMUNICATION

First documented record of the Ruff *Philomachus pugnax* (Scolopacidae) in Brazil

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Received on 15 March 2013. Accepted on 15 April 2013.

ABSTRACT: On 24 February 2013 a single Ruff *(Philomachus pugnax)* was photographed at Lagoa da Pampulha, a reservoir in Belo Horizonte, state of Minas Gerais in central Brazil. Subsequently the site was revisited, and on 2 March 2013 two juvenile individuals were found to be present with at least one remaining until 10 March 2013. This is the first documented record of the Ruff for Brazil after two sight records from Rio Grande do Sul in 1985 and 1998.

KEY-WORDS: Palearctic, vagrant, rarity, shorebird, Neotropics.

The Ruff *Philomachus pugnax* (Linnaeus, 1758) is a charismatic shorebird in the family Scolopacidae remarkable for its lekking strategies (Lank *et al.* 1995). This species has a wide Palearctic distribution, breeding across Eurasia and wintering widely across Europe, Africa and Asia (Piersma *et al.* 1996). Ruffs are generally regarded as annual vagrants to North America, although breeding behaviour has been observed in Canada and Alaska (Reynolds 1984, Rockwell *et al.* 2009). Further south the species is a fairly regular vagrant to the Caribbean (e.g., Ebels 2002, Kenefick & Hayes 2006) and has occurred in Central America in Mexico, Costa Rica, Panamá and Puerto Rico (Ridgely & Gwynne Jr. 1989, Mackinnon *et al.* 2011). South American vagrants are restricted to two sight records from Brazil (Mauricio & Dias 2000, Pacheco 2000), a "Bogotá" trade specimen of unknown origin (Hellmayr & Conover 1948), sight records from Peru (Oatman *et al.* 1980) and Venezuela (Altman & Parrish 1978) and photo-documented records from French Guiana (Renaudier *et al.* 2010). Here we present the first documented record of Ruff from Brazil and discuss the species' vagrancy in a South American context.

On the 24 February 2013 D. F. D. and R. P. R. were birding at the Lagoa da Pampulha (19º50'47" S; 43º59'15" W), a 260 ha urban reservoir in the municipality of Belo Horizonte, Minas Gerais (*cf.*, Beato *et al.* 2003) when they encountered an unusual shorebird with which they were not familiar. D. F. D. posted an image of the bird onto the Brazilian avian photoarchive Wikiaves (Dias 2013, Figure 1), where A. C. L. noticed the photo and recognized the bird as a Ruff, a species with which he has extensive experience in the Old World. The bird was seen foraging in shallow water with muddy banks colonised by Common Water Hyacinth *Eichhornia crassipes* and Water Lettuce *Pistia stratiotes.* At the same location, other shorebirds present included Solitary Sandpiper (*Tringa solitaria*), Greater Yellowlegs (*T. melanoleuca*), Lesser Yellowlegs (*T. flavipes*) and White-backed Stilt (*Himantopus melanurus*). Following release of the news online, the reservoir was revisited by many birders who discovered that two individuals were in fact present (Figure 2), with at least one remaining until 10 March 2013. Pictures and videos were posted online facilitating size comparisons of the two Ruffs alongside the comparably sized Lesser Yellowlegs (*e.g.*, Figure 1). Hayman *et al.* (1991) lists the lengths of Lesser Yellowlegs as 230-250 mm and male and female Ruff as 260-320 mm and 200-250 mm respectively, which suggests that both birds are probably females. However we cannot rule out the possibility that that individuals may be rare faeder males (those that try and obtain sneak copulations) although this seems highly unlikely given the frequency of these individuals in the population (*e.g.*, Karlionova *et al.* 2007). Ageing the two individuals is simpler, both individuals being juveniles on account of the buffish edges to the dark scapulars and wing coverts (Figure 2, Hayman *et al.* 1991).

FIGURE 1. Juvenile Ruff at the Lagoa da Pampulha, 23 February 2013 (D. F. D.).

FIGURE 2. Two juvenile Ruffs *Philomachus pugnax* with Lesser Yellowlegs *Tringa flavipes* at the Lagoa da Pampulha, 2 March 2013 (M. Rocha).

There are two previous sight records of Ruff for Brazil, the first concerned a juvenile (probably a male) seen by T. A. Parker, T. S. Schulenberg and a bird tour group on 30 October 1985 at the headquarters of Estação Ecológica do Taim in Rio Grande do Sul (Sick 1993, Pacheco 2000, T. S. Schulenberg *in litt.* 2013). Subsequently R. A. Dias observed a single first summer male with four Greater Yellowlegs (*Tringa melanoleuca*) at Capão Seco, Rio Grande do Sul on 29 June 1998 (Mauricio & Dias 2000). Speculation on the origin of these individuals is difficult but they must either represent: a) vagrants to North America from Europe that have subsequently migrated south to winter in South America; b) direct Transatlantic vagrants to Brazil from Europe or Africa or; c) members of a tiny Arctic North American 'pseudovagrant' population that are trying to winter in South America (*cf.*, Lees & Gilroy 2004). Resolving this question without recourse to ringing recoveries or satellite tags would be impossible and we strongly advocate the use of such technologies to reveal the migratory behavior of vagrants.

Given the lack of physical evidence (photographies, recordings and specimens) the Ruff currently sits on the secondary list of the CBRO (2011) as a "probable occurrence", as outlined in the journal "Nattereria" (CBRO 2000). As such, this record, extensively documented by many observers and photographers, should allow the species to be returned to the primary list of the CBRO.

ACKNOWLEDGEMENTS

We thank T. Schulenberg for comments on the 1985 record, M. R. Barroeta, J. Gill, S. Piner and Y. Verkuil, for comments on identification and ageing of the Ruffs and M. Rocha for letting us use his images.

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Revista Brasileira de Ornitologia, 21(2), 129-132
June 2013

SHORT-COMMUNICATION

Roost of Leaftossers (genus *Sclerurus*) in the Brazilian Amazon: hints of the low density in fragmented environments

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Received on 2 October 2012. Accepted on 1 April 2013.

ABSTRACT: Leaftossers are characteristic of primary forest, but have a low density or are absent from fragmented environments. We found leaftossers to use buttress roots of large trees as dormitories. In fragmented forests, these large trees are scarce, due to high mortality and logging. I suggest that the absence of these large trees may explain the low density of *Sclerurus* populations in anthropogenically altered environments.

KEY-WORDS: Roosting behavior; BDFFP; buttress roots; fragmentation.

The genus *Sclerurus* comprises a group of specialist birds that capture insects and other small animals in rainforest leaf-litter (Skutch 1969, Ridgely & Tudor 1994). Six species with similar ecology and behavior are described for the genus, which occurs from Mexico and Central America to Brazil (Ridgely & Tudor 1994). They live close to the ground and build their nest in banks or among the roots of fallen trees (Sick 1997).

Leaftossers occupy mainly primary forest (Aleixo 1999) and are considered sensitive to anthropic changes (Remsen 2003). These birds are rare in forest fragments, secondary forests, and logged areas (Ribon *et al*. 2003, Silva *et al*. 2012). Many species of birds are poorly adapted to fragmented environments, and they occur in low abundance or are absent altogether in these landscapes (Remsen 2003). Nevertheless, the subtleties of this inability to survive in altered areas are poorly known.

Here, I report five sightings of *Sclerurus* individuals roosting between buttress roots of large trees (Figure 1). These records were obtained at three locations in Amazonian Brazil during 2009: 1) areas of the Biological Dynamics of Forest Fragments Project (BDFFP; 02°24'17"S; 59°54'08"W) located 70 km north of Manaus; 2) Adolpho Ducke Reserve (03°00'00"S; 59°52'40"W) located 10 km from the city of Manaus, and 3) Island of Maraca Ecological Station (ESEC Maraca), located in northern Roraima (03°39'69"N; 61°47'34"W). All observations were obtained in primary lowland forests.

In just two cases was it possible to identify the *Sclerurus* species involved with these sightings, respectively adults of *Sclerurus mexicanus* and *Sclerurus rufigularis*. Because *Sclerurus caudacutus* is also known to occur at these study sites, it is possible that this species may have been involved with encounters of unidentified birds. In all instances, birds were seen at heights ranging from 1.6 to 2.0 meters (Figure 2) among buttress roots of trees that exceeded 70 cm in diameter at breast height (dbh). One of the birds was observed during three consecutive nights as it slept between the buttresses roots of the same tree.

This type of roosting behavior was recently described for *Sclerurus* by Van Els & Whitney (2011). Leaftossers have a unique, stiff tail structure, presumably as an adaptation to vertical perches; however, this adaptation is not well understood because these birds do not have the habit of foraging on vertical perches (Remsen 2003). Therefore, one possible explanation for their characteristic tail structure may be related to a behavior of these birds to sleep on roots in a climbing position, as do woodcreepers (Van Els & Whitney 2011).

Observations from Ecuador, Bolivia (Van Els & Whitney 2011) and now from the Brazilian Amazon, suggest that vertical roosting may be a common behavior in *Sclerurus*. Leaftossers may exhibit some degree of fidelity to dormitory trees, since in one case we found an individual using the same tree for three consecutive nights.

FIGURE 1. *Sclerurus mexicanus* sleeping between the buttress roots of a large tree.

FIGURE 2. Large tree with buttress roots where *Sclerurus mexicanus* was found sleeping.

I found leaftossers roosting exclusively between buttress roots of large trees (>70 cm DBH). These roots provide support for many genera of large trees. In the Amazon, these trees occur naturally at low densities across the forest, however, fragmentation increases mortality rates of large trees in particular (Laurance *et al*. 2000), so that they are uncommonly encountered in anthropogenically influenced areas. In unprotected forest remnants, large trees with buttress roots are also rare because of their commercial value as timber.

In the BDFFP reserves, between 2007 and 2009, censuses revealed 5962 individual trees with buttresses at the base of their trunks in a total of 70 ha sampled. These trees belong to 184 genera, with the 10 most common genera making up 64.6% of all individuals sampled. Many of these were economically important species, such as *Protium* and *Puteria* (accounting for 38% of the sample), commonly used in the timber industry for construction, and by local communities (Silva 1977, Ribeiro *et al*. 1999, Lorenzi 2002). In this dataset, when only trees greater than 70 cm DBH are considered, all individuals belong to genera commonly used for timber in construction, naval, and the furniture industries, such as *Dinizia*, *Caryocar*, and *Swartzia* (Silva 1977, Ribeiro *et al*. 1999).

Tall trees with large buttress roots, similar to those we found leaftossers using, are uncommon in forest fragments, reaching their highest abundance in continuous forest (A. Andrade *pers. comm*.). The absence of these large trees may be an important factor explaining the low densities of leaftossers in fragmented and degraded environments, from which they often disappear (Stouffer & Bierregaard 1995, Ferraz *et al*. 2003), especially in unprotected areas where illegal logging exists.

Knowledge of the natural history of tropical species is fundamental for understanding their vulnerability under the processes of habitat degradation. Additional studies may test the relationship between *Sclerurus* population parameters and the presence of large trees with exposed buttress roots. Large-scale logging and changes to the physical forces, microclimate, and disease acting on large trees in fragmented forests decrease their abundance, which may be a limiting factor for the presence of leaftossers in fragmented environments.

ACKNOWLEDGMENTS

I sincerely thank Marcelino Dantas, André Nogueira, and Priscilla Miorando for the photographs, Ana Andrade by assistance with knowledge about plants, Gabriel Maccrate and *Catherine* Louise Bechtoldt for the help with translation and Mario cohn- haft, Marina Anciães, Carlos Gussoni and anonymous reviewers for the great contributions. This is publication number 623 of the BDFFP.

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Associate Editor: Alexander C. Lees

Revista Brasileira de Ornitologia, 21(2), 133-135
June 2013

SHORT-COMMUNICATION

First documented record of Grey Kingbird, *Tyrannus dominicensis* (Passeriformes: Tyrannidae) in Brazil

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Received on 22 February 2013. Accepted on 29 April 2013.

ABSTRACT: Two individuals of *T. dominicensis*, a migrant from the region between the Southern United States and the Caribbean, were observed and photographed in an area of mangroves and pastures at Praia do Goiabal, Calçoene, Amapá, confirming the presence of the species in Brazil.

KEY-WORDS: Amapá, Brazil, Grey Kingbird, *Tyrannus dominicensis.*

The Grey Kingbird *Tyrannus dominicensis* is a migratory flycatcher breeding from the extreme southeastern USA, through Central America and the Caribbean, south to Colombia, Venezuela, Trinidad and Tobago and Guiana. Northern populations are migratory and winter along the east coast of Central America and northern South America, with inland records as far south as the llanos of Colombia in Meta (Restall *et al.* 2007, McMullan *et al.* 2010).

On 22 November 2012, we visited Praia do Goiabal (02°36'06"N; 50°50'44"W) near the town of Calçoene, state of Amapá, northern Brazil. The area is a broad mud-sand beach strongly influenced by the discharge of the Amazonas river, backed by a narrow dune belt, and inland by extensive mangroves and tidal marshes. Goiabal is a known hotspot for migratory shorebirds on the Amazonian coast (Rodrigues 2007) and at the time of our visit we recorded flocks of tens to hundreds of *Calidris pusilla, C. minutilla, C. alba, Tringa flavipes, T. melanoleuca* and *Charadrius semipalmatus* together with smaller numbers of *Calidris canutus, Arenaria interpres* and *Pluvialis squatarola*.

While driving the access road to the beach, in an area just behind the dune belt where the road cuts through mangrove trees and marsh used as pasture, we recorded a pair of Grey Kingbirds foraging near to each other and a few Tropical Kingbirds *T. melancholicus.* They were immediately told apart from Tropical Kingbirds by their whitish-grey throat, chest and belly (showing no yellow), mouse-grey crown and back, and robust beak (Figures 1 and 2). The birds were observed for several minutes as they sallied for insects from fence poles, and low power wires bordering the road, with no obvious interaction between them and the Tropical Kingbirds.

Prior to our record there exists a single report of *Tyrannus dominicensis* for Brazil, based on a sight-only record on the island of Maracá, Roraima state (Moskovits *et al.* 1985). Naka *et al.* (2006), in their review of the avifauna of Roraima, were not able to confirm this record and until now the species had remained hypothetical on the standard Brazilian bird list (CBRO 2011).

Grey Kingbirds were never recorded in several bird inventories carried in Amapá (Novaes 1974, Novaes 1978, Silva *et al.* 1997, Schunk *et al.* 2008, Aguiar & Naiff 2010), but only a few have focused in coastal areas (Souza *et al.* 2008, Aguiar *et al.* 2010). The species is a fairly common visitor to coastal French Guiana from late-September to early April (Restall *et al.* 2007) so its regular presence in similar habitats in neighbouring Amapá at the same time is to be expected. The absence of previous records is more likely a result of limited coverage of the area by ornithologists than actual rarity.

ACKNOWLEDGEMENTS

Our trip to Amapá was facilitated by Lana Oliveira (IEF-AP). Miguel Milano helped with the logistics of the trip and proved to be a birder in-the-making, despite his claims to the contrary. Kurazo M. O. Aguiar contributed with helpful insights on the manuscript.

FIGURE 1. Grey Kingbird *Tyrannus dominicensis* photographed on 22 November 2012 at Praia do Goiabal, Calçoene, Amapá. Photo by FO.

FIGURE 2. Grey Kingbird *Tyrannus dominicensis* photographed on 22 November 2012 at Praia do Goiabal, Calçoene, Amapá. Photo by FO.

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Associate Editor: Alex C. Lees

Revista Brasileira de Ornitologia, 21(2), 136-140
June 2013

SHORT-COMMUNICATION

Successful translocation of a nestling Ornate Hawk-Eagle (*Spizaetus ornatus*) in southern Brazil

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Received on 13 April 2013. Accepted on 4 June 2013.

ABSTRACT: The translocation of individuals or populations is a management strategy that is widely used in conservation, especially for rare or threatened species. In September 2005, an Ornate Hawk-eagle (*Spizaetus ornatus*) nest with a nestling was found near the newly-constructed Barra Grande dam, on the Pelotas River, in northern Rio Grande do Sul. The nest was 1.20 m above the water surface and at risk of be submerged, and both the nestling and its nest were transported to a safe location 380 m away from the original location and 30 m above the high water level of the reservoir. After translocation the nestling was monitored for 60 days, until fledging. Translocation was considered successful due to the acceptance of the translocated nestling by the adults, inferred by the observation of parental care and nest defense after translocation. The *in situ* management that we report may be a useful alternative for *ex situ* management, at least in specific cases. It also must warn us of the need to have a raptor monitoring and rescue program during the construction of hydroelectric plants.

KEY-WORDS: Atlantic Rain Forest, Management, Raptors, Rio Grande do Sul.

The IUCN (1998) definition of translocation is a "deliberate or mediated movement of wild individuals or populations from one part of their range to another." It is a widely-used management technique, especially for conservation purposes, though the objective may vary (Wolf *et al.*1998, Fischer & Lindenmayer 2000, Saenz *et al.* 2002, Beck *et al.* 2007, Ruffel *et al.* 2009). In some cases translocation has successfully led to the re-establishment of populations of threatened, endangered or rare species (Griffith *et al.* 1989, Nicoll *et al.* 2004). Despite these successes, most translocation attempts fail. Habitat quality, the position of the release site in relation to the historical distributional range (core *versus* periphery), the type of release technique (hard *versus* soft release), the number of individuals released, the origin (wild or captive) and age of individuals, predation and the presence of potential competitors can all influence the results of translocation (Wolf *et al.* 1998, Campbell-Thompson *et al.* 2012, Sheean *et al.* 2012). In many cases in which translocations failed, outcomes cannot be evaluated effectively because of a lack of objectivity or a short period of analysis (Miller *et al.* 1999, Fischer & Lindenmayer 2000). Nevertheless, in some cases, this management approach can be the best option for a species, when appropriate planning has been carried out (Marini & Marinho-Filho 2006).

The Ornate Hawk-eagle *Spizaetus ornatus* (Daudin, 1801) has a large distribution, occurring from México to Argentina (Ferguson-Less & Christie 2001). Although present throughout virtually all of Brazil, it is rare outside the Amazon basin (Sick 1997). It is neither nationally nor globally threatened (MMA 2003, IUCN 2008), but the Ornate Hawk-eagle has become scarce in the Atlantic Rain Forest biome. It is regionally threatened in the states of Minas Gerais (Machado *et al.* 1998), São Paulo (São Paulo 1998), Rio de Janeiro (Bergallo *et al.* 2000), Espírito Santo (Espírito Santo 2002) and Paraná (Mikich & Bérnils 2004). In the state of Rio Grande do Sul, the species had been considered probably extinct (Marques *et al.* 2002), although a population was found recently in the northeastern portion of the state (Mendonça-Lima *et al.* 2006).

Here we report on the translocation of a nestling Ornate Hawk-eagle with its nest in Rio Grande do Sul, southern Brazil. The data presented here derive from the Monitoring and Rescue of Fauna and Flora Project activities during the construction of the Barra Grande Hydroelectric Power Station (HPS), carried out by

Bourscheid S. A. – Engenharia e Meio Ambiente. The Barra Grande HPS is located in the Pelotas River basin, in the boundary between the states of Rio Grande do Sul and Santa Catarina, Brazil. This region is inside the Atlantic Rain Forest biome, within a region where river hillsides support seasonal semideciduous forest, and upland areas consist of Araucaria moist forest and native grasslands (Marcuzzo *et al.* 1998). The region has been intensively modified by human activities, and natural areas have been almost completely replaced by croplands, exotic pastures and monocultures of exotic trees (e.g. *Pinus* spp.). However, remnants of pristine and old growth secondary forest still can be found, especially in some valleys of the Pelotas River and nearby rivers and streams.

On September 22th 2005, an active Ornate Hawk-eagle nest was found on the margin of the Barra Grande HPS reservoir, in the municipality of Esmeralda, Rio Grande do Sul (27°56'55"S; 51°1'59"W). In the nest there was a nestling around two months old (Joenck *et al.* in press). At that time, the reservoir was not completely filled (around 20 m below the maximum fill level), and the nest was only 1.20 m above the water surface. The water level was advancing 1m/day on average, so the nest was at immediate risk of being submerged and the nestling was at risk of drowning. Due to the urgency of the situation, we chose to immediately translocate the nestling with the nest to a safer place, which seemed to be the most reasonable way to try to ensure the survival of the chick without the need for *ex situ* captive-rearing.

On September 23th, we selected the release site, a açoita-cavalo tree (*Luehea divaricata,* Tiliacea) about 35 m high, 380 m from the original site and 30 m above the maximum fill level of the reservoir. On the next day the translocation was accomplished. The translocation began at dawn with three motor-boats and a team with ten members (three biologists, one veterinarian and six assistants) allocated exclusively for the translocation. First the release site was prepared to receive the nest and then the nest and nestling were removed (at 10:00 AM). It was a large, heavy nest, so we removed the top of the nest and transferred it to an artificial structure, previously prepared for the purpose, to help with transportation and settling on the new site (Figure 1). During the process of translocation and settling of the nest, a veterinarian who specialized in wildlife was present at all times to take care of the nestling. At 12:03 PM, the nestling appeared to enter a state of neurogenic shock and showed signs of entering cardiorespiratory arrest, and the veterinarian administered an intramuscular dose of 0.5 ml Dexamethasone (1 mg/kg) to prevent arrest. We performed the translocation and release as quickly as possible to reduce stress on the nestling and the adults. The nestling was banded (ring CEMAVE, X05651) and a blood sample was taken for sex identification (a female). After four hours, the nestling was released on the nest and was under observation for approximately 30 minutes to assess its health conditions (Figure 2).

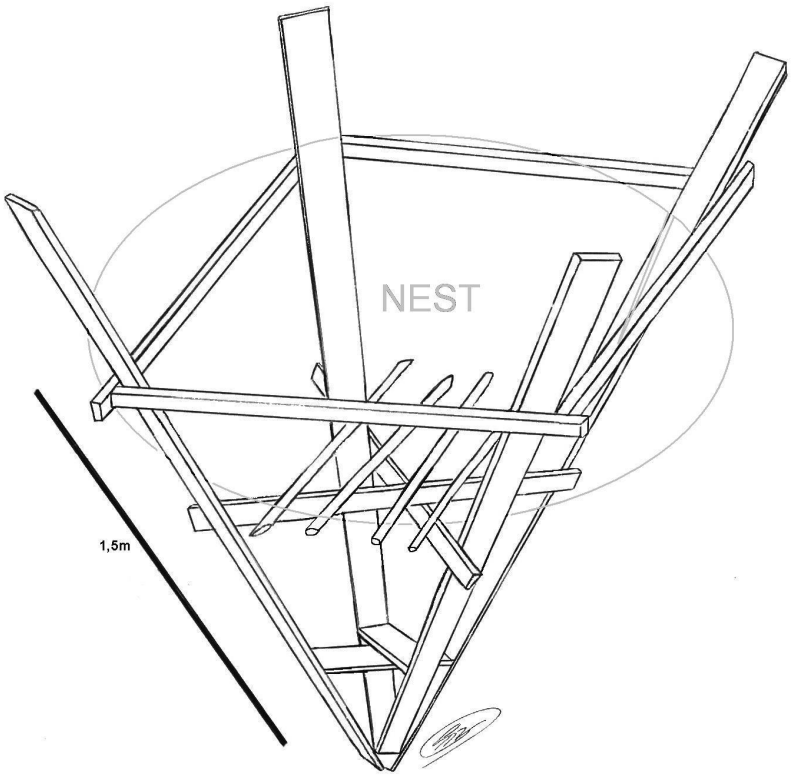

FIGURE.1. Support structures for helping transport the nest and nestling of the Ornate Hawk-Eagle (Drawing by C. M. J.).

FIGURE 2. Nest and nestling of the Ornate Hawk-Eagle (*Spizaetus ornatus*), translocated in the state of Rio Grande do Sul, Brazil.

After release, the site was not visited for 48 hours to prevent any additional human-induced stress to the nestling, to ease the adaptation of the nestling, and to help with the adult's acceptance of the new site. The nestling was healthy and had been fed recently and, although there was a small risk that nestling would be underfed during that 48 h, we thought it necessary to allow the birds to acclimate.

To assess the effectiveness of translocation (survival of the nestling, adults' acceptance of the new site, continuity of parental care), on September 26th 2005, we started monitoring the nestling from an observation point 380 m from the new location. On the first five days, assumed to be critical for the adult's acceptance of the nest new location, the site was monitored daily. This period was considered crucial for the nestling's survival, as it would allow us to remove the nestling to an appropriate rehabilitation unit if the parents rejected it. In the remaining period – about 60 days – observations were done occasionally, totaling four days of monitoring spaced about one or two weeks apart.

During the monitoring, we observed the adults bringing food to the nestling and protecting the nest location against others birds. In the first day, an adult expelled a king vulture (*Sarcoramphus papa*) that approached the nest. The observed nestling-adult interactions were limited to calling and food delivery, but during all periods of monitoring, at least one adult was observed close to the nest. In the period in which the juvenile was monitored, it was observed feeding itself, preening and undertaking flying exercises. On the 13th day after translocation, we observed the first departures of the juvenile from the nest, on a reconnaissance flight of the surroundings. On the 34th day after the translocation, the juvenile was observed resting 50 m from the tree where the nest was. On the 47th day the juvenile still was near the nest, approximately 70 m away. On the 59th day after the translocation, which coincided with the end of the Monitoring and Rescue of Fauna and Flora Project at the Barra Grande HPS, we made a final visit to the nest site, but we did not observe the juvenile.

The case described here has singularities that were crucial for the success of the translocation. Our main objective was to keep the nestling alive until fledging, an outcome that was successfully achieved. Although a long monitoring period after fledging would be ideal to confirm the survival of the individual, several logistical and financial constraints made it not possible. One important point that contributed to the success of the translocation was the proximity of the original and release

sites, both of which were inside the Ornate Hawk-eagle adults' territory. Habitat quality of the release site is an important element for the success of translocation (Wolf *et al.* 1998). We therefore chose a location close to the original nest site, keeping the environmental qualities similar. Observations in the following years confirmed that the adults maintained a breeding territory in the same area, though they used a different site for nesting, near the release site (F. Z. *pers. obs*.). The high energetic investment in each offspring (Ornate Hawk-eagles typically fledge one juvenile every two years, Whitacre *et al.* 2012) is another factor that may have fundamental importance for the adults' acceptance of the relocated nestling.

We chose *in situ* rather than *ex situ* management because it has lower anthropogenic impact, it is less expensive, and it could increase the probability of juvenile survival. Translocation procedures (including the capture, transportation and release) that involve captivity could be more harmful to the animal's welfare, causing stress to the individual (Massei *et al.* 2010). The *in situ* management helped reduce the time the nestling was in captivity. In addition to lowering the stress levels as a result of reduced exposure to humans, keeping the individual in its natural habitat allowed it to adopt natural behaviors and increased the probability of successful integration into the habitat (Greenwood 1996, Bell & Merton 2002).

Captive-bred raptors have lower probability of survival than wild-reared raptors (Brown *et al.* 2006, Evans *et al.* 2009, but see Evans *et al.* 1999, Nicoll *et al.* 2004). Releasing the nestling after raising it in captivity could therefore be impractical or impossible. A juvenile that has not received any parental care may not have had an opportunity to learn how to fly, hunt and to recognize potential prey, predators and competitors. These reduced opportunities could greatly reduce the probability of survival of a captive-reared juvenile, especially in species with long period of parental care (Sunde 2008, Campbell-Thompson *et al.* 2012), like the Ornate Hawk-eagle (where parental care is longer than a year; Klein *et al.* 1988, Whitacre *et al.* 2012).

Also, translocations are very expensive and often fail to solve the problem (Massei *et al.* 2010, Fortúbel & Simonetti 2011). The cost varies depending on the organism. For carnivores, translocating one individual costs about US$ 3,756 ± 357 (mean ± SD) (Fontúrbel & Simonetti 2011), while for birds it is about US$ 4,473 ± 1,711 (range = US$ 1,960 to US$ 6,613) (Miller & Mullette 1985, Martínez-Abraín *et al.* 2011, Baker *et al.* 2012). We did not calculate exactly how much was spent on the translocation, but the cost of building and maintaining a rehabilitation center was estimated at about US$ 165,000 (N. J. E. Silveira *in litt.*). Actually, most of the costs (employee salaries, taxes and equipment, such as boats and cars) applied in the translocation also would be necessary in *ex situ* management and we understand that the main cost is indeed for maintain the rescued animals in quarantine until their release. Thus we agree with Martínez-Abraín *et al*. (2011), that most of the cost is typically related to the duration that the individual is maintained in captivity. Also, the *in situ* translocation was cheaper than a capture-captivity-release approach, which should include a hacking procedure, with a long period of supplying food until the juvenile starts to hunt independently (Campbell-Thompson *et al*. 2012).

This translocation of an Ornate Hawk-eagle nestling demonstrates the effectiveness of keeping an individual at risk of death *in loco*. Despite this, we emphasize the importance of careful operational planning to consider all risks, consequences and possible alternative actions. As suggested by Fischer & Lindenmayer (2000), it is also important that the purposes of the operation are well-determined and that a later tracking protocol is defined so as to evaluate the relocation efficacy. It does not matter that efforts (personal and financial) are expended for translocation if the outcome is not appropriately assessed.

Finally, constructions of dams, especially ones that flood large areas, have many implications for biodiversity, and it is important to make decisions to minimize the impacts on fauna and flora. Cases like the one related here, of nests being submerged in hydroeletric power stations reservoirs, surely are not uncommon, so a careful and well-designed monitoring program during the reservoir filling is critical to avoid such events. We hope that our experience with this Ornate Hawk-eagle nest helps others to make the best decisions to keep species found in similar situations safe.

ACKNOWLEDGEMENTS

We thank all colleagues from Bourscheid S. A. Engenharia e Meio Ambiente for support and friendship during the whole work of monitoring and rescuing fauna and flora in Barra Grande HPS, especially those who helped during the translocation. We also thank BAESA/COBG for permission to publish this data. We express gratitude to the Brazilian Institute for the Environment and Natural Renewable Resources (IBAMA) and Mônica Koch for support and translocation permission and to Ana Paula Brandt, who found the nest and immediately asked for ornithologists C. M. J. and F. Z.'s help. We also appreciate Jan Karel, F. Mähler Jr., José Fernando Pacheco, Alexander Lees, Edwin Campbell-Thompson and one anonymous referee for their valuable comments that improved the first draft of the manuscript. We appreciate the improvements in English usage made by Rebecca Cramer through the Association of Field Ornithologists' program of editorial assistance. We dedicate this article to the biologist Carlos Daniel Peixoto, our colleague and dear friend, who died during the performance of fauna monitoring tasks.

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Associate Editor: Alexander C. Lees

Revista Brasileira de Ornitologia, 21(2), 141-143
June 2013

SHORT-COMMUNICATION

155 years after Reinhardt: the second specimen of *Bartramia longicauda* (Charadriiformes: Scolopacidae) from the state of Minas Gerais, Brazil

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Received on 21 January 2013. Accepted on 25 March 2013.

ABSTRACT: The Upland Sandpiper (*Bartramia longicauda*) is a Nearctic migrant that presents few seasonal records in several Brazilian states. In the state of Minas Gerais, southeastern Brazil, the only known specimen was collected on 26 October 1855 by the Danish naturalist J. T. Reinhardt in Capivari, near Andrequicé (18º17'S; 44º59'W, *c.* 800 m). On 10 October 2010, a male of *B. longicauda* was collected at Pampulha Airport (19º50'S; 43º57'W, *c.* 785 m), Belo Horizonte. This specimen was prepared as a study skin and deposited in the bird collection of the Museu de Ciências Naturais, Pontifícia Universidade Católica de Minas Gerais, under number MCNA 1874. This appears to be the second specimen of *B. longicauda* from the state of Minas Gerais and the only deposited in a Brazilian institution. Although scarce, the majority of records of this species in Minas Gerais occurred in the months of October and November, which suggests a rapid passage through the state this time of year. More information must be obtained to elucidate the route of this species and the period when it passes through Minas Gerais.

KEY-WORDS: *Bartramia longicauda*; falconry; migratory species; ornithological collections.

Among the 24 species of sandpipers (Scolopacidae) recorded in Brazil, 22 are northern visitors (Sick 1997). The majority of species (20) is described as arriving in Brazil in greater numbers from the end of August onwards (Sick 1997). The Upland Sandpiper, *Bartramia longicauda* (Bechstein, 1812), is one of those Nearctic migrants that present few seasonal records in several Brazilian states (Valente *et al*. 2011). In its migration, the species does not travel along the Brazilian Atlantic coast, but instead flies directly from Colombia and Venezuela to the upper Amazon, reaching Central Brazil and, later, Paraguay and Argentina (Meyer de Schauensee 1982, Sick 1984). Only in the extreme southern Brazil, does this species reach the coast (Sick 1997).

Until recently, the only species' record in the state of Minas Gerais was based on a specimen collected on 26 October 1855 by the Danish naturalist Johannes Theodor Reinhardt (1816-1882) in a *vereda* palm grove, in Capivari, near Andrequicé (18º17'S; 44º59'W, *c.* 800 m), in the central region of Minas Gerais (Pinto 1952, Krabbe 2007). This specimen was deposited in the Zoological Museum, University of Copenhagen, Denmark (Krabbe 2007). Dornas & Figueira (2012) mistakenly took this record as obtained in the Environmental Protection Area of Lagoa Santa Karst, Minas Gerais.

In recent years, photographs of the species were obtained in the Serra da Canastra National Park (Endrigo 2008, Andrade 2010, Biancalana 2010), where the species had not been previously recorded (Silveira 1998, Bessa *et al.* 2011), as well as in the municipality of Sacramento (Cerchi 2010) and in the Pampulha Airport, in the city of Belo Horizonte, where, on 21 October 2010, a group of eight individuals was recorded (Carvalho 2010, Pedersoli 2010). In this latter locality, fauna control routines are performed by G. D. M. C., G. N. C. P. and J. S. L. to prevent and reduce aircraft collisions with wildlife.

On 10 October 2010, a male of *B. longicauda* was collected with the technique of falconry at Pampulha Airport (19º50'S; 43º57'W, *c.* 785 m). This technique is widely used to prevent aviary risks at airports and is recommended by the International Bird Strike Committee

(IBSC), and also recognized by the Brazilian Center for Investigation and Prevention of Aeronautical Accidents (CENIPA 2012).

A male of the Harris's Hawk, *Parabuteo unicinctus* (Temminck, 1824), was used to capture the sandpiper, with the occurrence of death of the prey. The collected specimen of *B. longicauda* had completely ossified skull and testes measuring 4 x 1.8 mm. It was prepared as a study skin and deposited in the bird collection of the Museu de Ciências Naturais, Pontifícia Universidade Católica de Minas Gerais, under accession number MCNA 1874 (Figure 1). This appears to be the second specimen of *B. longicauda* for the state of Minas Gerais and the only deposited in a Brazilian institution.

Although scarce, the species' records in Minas Gerais (except that by Endrigo 2008: 42-43) occurred in the months of October and November, which suggests a rapid passage through the state this time of year. The record at the Pampulha Airport, located within the urban area of a large city (Belo Horizonte, the state capital), shows that the species uses altered areas during its migratory passage. Nevertheless, more information must be obtained to elucidate the route of this species and the period in which it crosses Minas Gerais.

FIGURE 1. Specimen of *Bartramia longicauda* (MCNA 1874) obtained at the Pampulha Airport, Belo Horizonte, Minas Gerais, Brazil. Photo by M. F. V.

ACKNOWLEDGEMENTS

We thank INFRAERO SBBH - Pampulha for the logistical and financial support. IBAMA provided permission for the collecting specimens through the management plan of Pampulha Airport (process IBAMA 02015.014894/2007-66, permission 138/2010 NUFAS/MG).

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Associate Editor: Luís Fábio Silveira

Revista Brasileira de Ornitologia, 21(2), 144-146
June 2013

SHORT-COMMUNICATION

First record of the Rusty-backed Monjita, *Xolmis rubetra* (Passeriformes: Tyrannidae) for Brazil

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Received on 20 October 2012. Accepted on 4 June 2013.

ABSTRACT: First record of Rusty-backed Monjita *Xolmis rubetra* (Passeriformes: Tyrannidae) for Brazil. Three individuals of the Rusty-backed Monjita (Passeriformes: Tyrannidae), a migratory species so far considered endemic to Argentina, were located in open grasslands in the municipality of Uruguaiana on the western edge of Rio Grande do Sul, in August 2012. This is the first record for the Brazilian territory.

KEY-WORDS: Rio Grande do Sul; Rusty-backed Monjita; Uruguaiana, winter migrant.

Three individuals of *Xolmis rubetra* (Figure 1) were sighted on August 15, 2012 in a typical rural property (29º58'47.7"S; 56º28'45.9"W) in the municipality of Uruguaiana, Rio Grande do Sul, Brazil. The birds were feeding on the ground when felt the human presence and gave brief flights, staying around for a few minutes until they flew away. Several field trips were made to the same site and nearby areas but the birds were not sighted again. This is the first record of the species for the country (CBRO 2011).

Photographs documenting this record have been published at the WikiAves website (Oliveira 2012) The species was identified based on the following morphological characteristics: face and chest striated with clear belly; back and sides of belly brown; wings black, appearing predominantly white when the bird flies (tertiary and upper coverts); dark tail rimmed with white thread; and broad white eyebrow (Figure 2). Similar looking *Xolmis salinarum*, considered a subspecies of *X. rubetra* by some, is not migratory and has no streaks on the face, neither brown on the side of the chest (De La Peña & Rumboll 1998).

Uruguaiana is located in extreme western of Rio Grande do Sul (Brazil) on the border with Argentina, in the geomorphological unit of the Paraná Basin Plateau (Herrmann & Rosa 1990). Climate is humid temperate with winter and summer well defined. The relief has the presence of flat and undulating grassy hills characterized by herbaceous grassland vegetation.

X. rubetra was considered, until now, an endemic species from Argentina (Narosky & Yzurieta 2010). Records were obtained in the provinces of Cordoba, Buenos Aires, Santa Fe (Marelli 1933, Tognelli 2001, Mollo *et al*. 2010). Barattini (1945) cited *X. rubetra* for the Paisandú department, Uruguay, situated on the banks of the Uruguay River and about 200 kilometers to the south of Uruguaiana. However, due to the lack of physical evidence and reliable information, the species was not included in subsequent lists of birds of Uruguay (Azpiroz 2003, Claramunt & Cuello 2004).

X. rubetra presents migratory behavior, nesting in southern Argentina (Narosky & Yzurieta 2003) and migrating in winter to the northern provinces of the country (De La Peña & Rumboll 1998, Narosky & Yzurieta 2010).

The time of record coincides with the winter migratory behavior of the species, as observed with other species with occasional occurrence in the western parte of Rio Grande do Sul, and may be regular during the winter with a small number of individuals. His occasional occurrence may have gone unnoticed until now because of the shortage of ornithologists and birdwatchers in the region.

The species is called Monjita Castaña in Spanish and Rusty-backed Monjita in English. Considering that in Brazil almost all species of the genus are called Noivinha ("little bride"), we suggest the Portuguese name noivinha-castanha for *X. rubetra* (Figure 1).

FIGURE 1: *Xolmis rubetra* photographed in field on August 15, 2012 in the city of Uruguaiana, RS, Brazil.

FIGURE 2: *Xolmis rubetra* photographed in field on August 15, 2012 in the city of Uruguaiana, RS, Brazil.

ACKNOWLEDGMENTS

To Adrián Azpiroz for the assistance with bibliographic sources and species identification.

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Revista Brasileira de Ornitologia, 21(2), 147-149
June 2013

SHORT-COMMUNICATION

New altitudinal record for *Xolmis irupero* (Passeriformes: Tyrannidae) in Bolivia

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Received on 22 November 2012. Accepted on 8 April 2013.

ABSTRACT: New altitudinal record for *Xolmis irupero* (Passeriformes: Tyrannidae) in Bolivia. On 7 June 2012 I observed a White Monjita *Xolmis irupero* near the locality of Huanacuni Grande, in eastern Cochabamba (central Bolivia), at 2370 m a.s.l. This is the first record of this species in Cochabamba Department and represents a new altitudinal record, 1000 m above the known range.

KEY-WORDS: Cochabamba; Monjita Blanca; Noivinha; White Monjita.

The White Monjita *Xolmis irupero* is a highly distinctive tyrannid, entirely white except for the external primaries and the tip of the tail, which are black, as are the bill and feet. It is widespread from northern Bolivia south to central Argentina, Uruguay, Paraguay and Brazil (in the south and northeast); where inhabits savannas, shrublands, wetlands, pasturelands and urban areas between sea-level to 1400 m (Ridgely & Tudor 1994). Its known distribution in Bolivia includes the lowlands of the country, in Beni, Chuquisaca, Santa Cruz and Tarija Departments (Hennessey *et al*. 2003). Because it has a very large range and there is no evidence that its population is declining, the species is listed as Least Concern (BirdLife International 2012); it is fairly common almost throughout its range (subspecies *X. i. irupero*), but not so in northeast Brazil where an isolated population of the subspecies *X. i. nivea* occurs (Fitzpatrick *et al*. 2004). White Monjitas are considered non-migrants in northeastern Argentina (Wilson 1973) whereas their movements in Bolivia have not been clearly documented (Hennessey *et al*. 2003). They breed between September to December and may use tree cavities and abandoned nests of Rufous Horneros *Furnarius rufus* to nest (Wilson 1973).

On 7 June 2012, while birding in Huanacuni Grande (17º53'16"S; 64º58'02"W) (Figure 1), a locality in the interface between the Puna and the Interandean Dry Valleys in Cochabamba Department, central Bolivia, I observed and photographed a White Monjita flying between different perches in a recently harvested maize crop (Figure 2). I observed the bird at 12h 45 min. and followed until it flew into a nearby dry ravine out of sight. This observation was made just after a cold air mass from the south (*surazo*) reached the area; the weather was cold and the sky cloudy. The site was quite degraded semideciduous montane forest (less than 5% original vegetation remaining), otherwise dominated by crops and scattered houses.

This is the first record of the White Monjita for Cochabamba Department and the highest locality where this species have been observed – 2370 m – the previous highest reported elevation being 1400 m (Hennessey *et al*. 2003).

White Monjitas are conspicuous where they occur, so lack of previous records in the region and at this elevation suggests that the observed individual was a vagrant from lower elevations.

ACKNOWLEDGEMENTS

To Fabricio Claure and Luis Castellón who helped during field work. An anonymous reviewer provided thoughtful suggestions to improve the submitted version of this note. The observation was made while I was monitoring Andean Condor populations, as part of an Asociación Armonía's project supported by The Peregrine Fund.

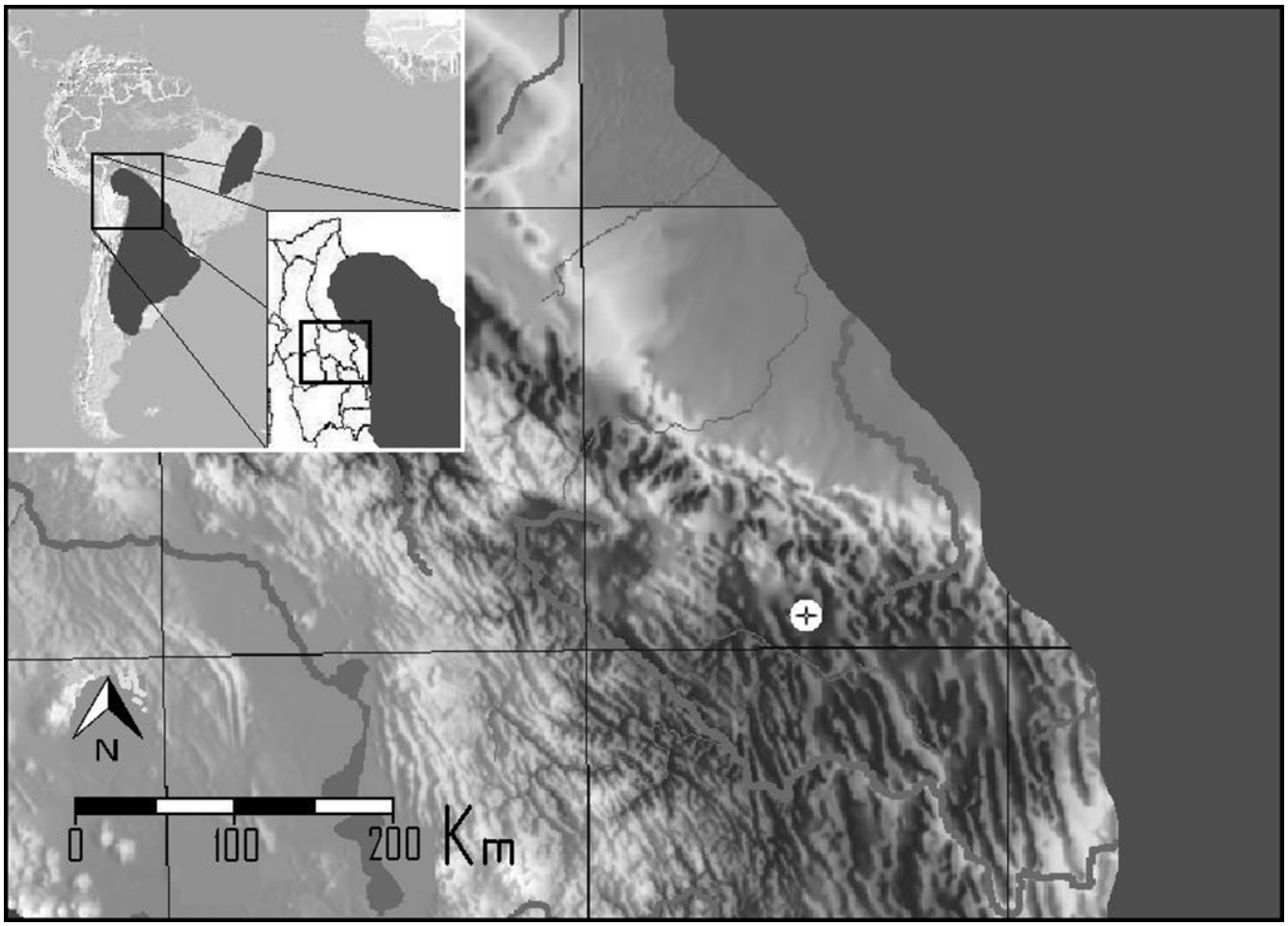

FIGURE 1. Map showing the locality of the observation (white spot), c.100 km west of the known range of *Xolmis irupero* in Bolivia. Inset maps show the distribution of the species in South America and Bolivia (grey shading) based on BirdLife International (2012).

FIGURE 2. White Monjita in Huanacuni Grande, Cochabamba, Bolivia. 7 June, 2012.

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Articles

Fargione, J.; Hill, J.; Tilman, D.; Polasky, S. & Hawthornez, P. 2008. Land clearing and the biofuel carbon debt. *Science,* 319: 1235-1238.

Santos, M. P. D. & Vasconcelos, M. F. 2007. Range extension for Kaempfer's Woodpecker *Celeus obrieni* in Brazil, with the first male specimen. *Bulletin of the British Ornithologists' Club,* 127: 249-252.

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Sick, H. 1985. *Ornitologia brasileira, uma introdução,* v. 1. Brasília: Editora Universidade de Brasília.

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Remsen, J. V. & Robinson, S. K. 1990. A classification scheme for foraging behavior of birds in terrestrial habitats, p. 144-160. In: Morrison, M. L.; Ralph, C. J.; Verner, J. & Jehl Jr., J. R. (eds.). Avian foraging: theory, methodology, and applications. Lawrence: Cooper Ornithological Society (Studies in Avian Biology 13).

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Pinheiro, R. T. 2009. [WA589090, *Celeus obrieni* Short, 1973]. www.wikiaves.com/589090 (access on 05 March 2012).

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Revista Brasileira de Ornitologia

Volume 21 – Número 2 – Junho 2013 / Issue 21 – Number 2 – June 2013

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ISSN 0103-5657

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