

NOTA BREVE/BRIEF NOTE

NEST AND CHICKS OF *Pseudoscops clamator* (AVES: STRIGIDAE) IN THE HIGHLAND PLATEAU OF THE SABANA DE BOGOTÁ, COLOMBIA

Nido y polluelos de *Pseudoscops clamator* (AVES: STRIGIDAE) en el altiplano de la sabana de Bogotá, Colombia

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ABSTRACT

The Striped Owl (*Pseudoscops clamator*) has a wide geographic distribution despite that there is scarce information on its reproductive biology. In this study, we present the first published nesting records of *P. clamator* for Colombia. We provide data on its nesting habits and reproductive biology from observations between April and May 2013 of a nest found in a plantation of *Eucalyptus globulus* in Cajicá, Cundinamarca, Colombia. The ground nest is similar to those described from Argentina, Brazil, and Suriname; with a clutch of two where only one chick survived and left the nest after 25-30 days. We found in the owl diet, Brazilian guinea pig (*Cavia aperea*) and Eared Dove (*Zenaida auriculata*). Little is known about other species preyed by the Striped Owl or whether this species has more than one reproductive cycle in the Bogotá highland plateau. Future studies should further examine these aspects to assess the possibilities for expansion of *P. clamator* in the Bogotá highland plateau.

Keywords: Andes, Neotropics, nesting biology, nocturnal raptors, owls, Strigiformes.

RESUMEN

El búho rayado (*Pseudoscops clamator*) tiene amplia distribución geográfica, y a pesar de ello la información sobre su biología reproductiva es dispersa. En este estudio presentamos el primer registro de nido de *P. clamator* para Colombia. Brindamos datos sobre su anidación y reproducción, basados en observaciones de un nido encontrado en una plantación de *Eucalyptus globulus* entre abril y mayo de 2013 en Cajicá, Cundinamarca, Colombia. El nido encontrado sobre el suelo es similar a otros previamente descritos en Argentina, Brasil y Surinam, con una nidada de dos individuos, donde sólo sobrevivió un polluelo que dejó el nido luego de 25 a 30 días de nacido. Encontramos en la dieta del búho, curíes (*Cavia aperea*) y paloma sabanera (*Zenaida auriculata*). Poco se conoce sobre otras especies que son depredadas por el búho rayado o si esta especie presenta más de un ciclo reproductivo al año en la Sabana de Bogotá. Estos aspectos deben ser examinados en futuros estudios para evaluar las posibilidades de expansión de *P. clamator* en la Sabana de Bogotá.

Palabras clave: Andes, anidación, búho, Neotrópico, rapaces nocturnas, reproducción, Strigiformes.

The Striped Owl *Pseudoscops clamator* (Vieillot, 1807) is a Neotropical resident bird, occurring from southern Mexico to northern Argentina, with a disjunct distribution in northern South America (del Hoyo *et al.*, 1999; Thurber *et al.*, 2009; Enríquez, 2015). This owl inhabits forests, open ecosystems, pastures, crops, wetlands and urban parks (Thurber *et al.*, 2009). It is mainly nocturnal but occasionally hunts during the daytime and at dusk, preying upon birds, insects and small rodents (Delgado *et al.*, 2005; Thurber *et al.*, 2009; Lo Coco *et al.*, 2012; Chaparro-Herrera *et al.*, 2015). Despite its wide geographic range, there is scarce information on its nesting ecology and reproductive biology. Recent studies have documented the diet and reproduction of *P. clamator* in Central America, Brazil, Argentina and Colombia (Isacch *et al.*, 2000; Pautasso and De la Peña 2001; Motta-Junior *et al.*, 2004; Delgado *et al.*, 2005; Thurber *et al.*, 2009; Tittarelli and Villarreal 2009). The records for *P. clamator* in Colombia come from Sinú-Córdoba, the Cauca River watershed, the city of Medellín, and the Sabana de Bogotá (Hilty and Brown 1986; ABO 2000; Delgado *et al.*, 2005; Estela and López-Victoria, 2005; Botero and Jaramillo, 2011). These areas have been highly transformed by agricultural activities and urban expansion (Etter and van Wyngaarden, 2000; Camargo-Ponce de León, 2007). In particular, the Bogotá highland plateau in the Eastern Andes, is inhabited by more than eight million people (DANE, 2009), and only a few isolated remnants of natural ecosystems remain. However, despite such profound modifications, this area still harbors around 200 bird species, including the Striped Owl (ABO, 2000). This owl was first recorded in the Bogotá highland plateau in 1997 at the Conejera wetland, and probably reproduced there in 1998 (ABO, 2000). Since then, this owl has been recorded more frequently and has become a resident bird, present in several areas dominated by pastures and wetlands, but there is no documented information on its reproduction in this geographical area. Here, we report the nest, eggs, and chicks of *P. clamator* in a suburban area of the Bogotá highland plateau.

Our study was carried out during April and May 2013 in the campus of Universidad Militar Nueva Granada, municipality of Cajicá, department of Cundinamarca, Colombia (4°56'34"N, 74°00'43"W; ~2550 m a.s.l.). The campus covers 75.5 ha and is dominated by pastures of *Cenchrus clandestinus* that cover nearly 70 % of the area (Sánchez *et al.*, 2015). The remaining area of the campus consists of buildings, roads, greenhouses, and scattered gardens; as well as several artificial wetlands under the influence of the Bogotá River on the eastern border of the campus (Barrera-Niño and Sánchez, 2014). There is also a plantation of *Eucalyptus globulus*, covering almost 400 m² near the river, with 10-15 m high trees and a ground cover dominated by grass, *C. clandestinus*, 30-50 cm high; as well as patches of secondary growth containing trees such as *Diplostegium* sp. and *Baccharis* spp., patches of *Rubus* sp., and *Phytolacca* sp.

shrubs. Scattered throughout the *Eucalyptus* plantation there are also planted trees of *Cedrela montana*, *Duranta mutisii* and *Senna* sp. (Sánchez *et al.*, 2015).

We found a nest with two chicks on 5 April 2013 in the *Eucalyptus* plantation (Fig. 1A). We made observations of the nest, using Bushnell® binoculars (10 × 42mm) and a Canon® camera EOS Rebel T3i with EF 70-300mm lens, and followed the chicks' development. Every twenty days, we registered visible features as changes in plumage coloration, body size and vegetation cover, around the nest site.

The nest was at the base of a *Eucalyptus* tree, without much elaboration and with some leaf litter and chick feathers (Fig. 1B y 1D). The nest was 20-30 cm in diameter with 50 cm tall grasses surrounding it. On a second visit on April 25th, we only found one juvenile and one adult. The adult made a defensive display extending its wings and oscillating its body, without making any alarm call during our observations (Fig. 1E). On May 5th the nest was found to be empty, and we did not record the presence of either the juvenile or the adults (Fig. 1B). We also found two eggs on the ground next to a *Eucalyptus* tree on 5 May 2013, 12 m away from the nest site of *P. clamator* described above. Its location and the fact that leaf litter and some feathers belonging to *P. clamator* surrounded the eggs, suggested that they belonged to *P. clamator* (see Martínez *et al.*, 1996; Tittarelli and Villarreal, 2009; Enríquez, 2015). The eggs were ellipsoid, and white but stained on the sides by ground material. One of the eggs was broken, possibly predated, and the other was complete but dried (Fig. 1C). The broken egg measured 42.1 × 35.5 mm the other 42.4 × 35.1 mm (Fig. 1C). These measurements are within the range recorded for *P. clamator* eggs (Thurber *et al.*, 2009). These eggs were collected and stored at the ecology and biodiversity laboratory in the Universidad Militar Nueva Granada.

Based on our observations on April 5th and the information in Holt *et al.* (1992) and Martínez *et al.* (1996), we estimated that the two chicks were eight to ten days old, since they had white downy plumage covering most of their bodies, salmon coloration on the dorsum, gray-black beak, open eyes, but could not yet rise on their own legs (Fig. 1D). According to our previous estimation the chicks were 25 to 30 days old on April 25th, since the chick had yellow-ochre feathers on the dorsum and belly, with some salmon tint, incomplete and not well defined facial disk, rufous eyes, and black spots that covered ~60 % of the facial disk (Fig. 1E).

We also found 30 owl pellets 15-20 m from the nest with chicks (data not analyzed), and next to them a carcass of a Brazilian guinea pig *Cavia aperea* (Fig. 1F) and feathers of Eared Dove *Zenaida auriculata*. The carcass was identified using Zúñiga *et al.* (2002) and the feathers based on our personal field experience. The measurements of the nest described here, as well as the vegetation characteristics around it, are similar to descriptions of *P. clamator* nests in other geographic areas in Argentina, Brazil and Suriname (Haverschmidt,



Figure 1. Pictures of the study site and of the nest and chicks of *Pseudoscops clamator* in the campus of the Universidad Militar Nueva Granada in the Bogotá highland plateau, Eastern Andes, Colombia. *Eucalyptus globulus* plantation where the nest was found (1A). Nest on the ground (1B). Abandoned eggs (1C). Chicks on nest (1D). Juvenile and adult making defense display (1E). Carcasses of Brazilian guinea pig *Cavia aperea* found near the nest (1F).

1968; Wetmore, 1968; Blendinger *et al.*, 1987; Martínez *et al.*, 1996; Tittarelli and Villarreal, 2009). Elsewhere, nests have been recorded close to the ground, but typically on thick branches ~45 cm above the ground. Finding only one juvenile on our second visit suggests that one of them died, as has been reported for other owl species (del Hoyo *et al.*, 1999). The defensive display, spreading the wings from side to side

has been described previously for *P. clamator* (Thurber *et al.*, 2009), and appears to be a common behavior for several owl species (del Hoyo *et al.*, 1999).

According to the literature, *P. clamator* juveniles leave the nest after 25 to 30 days (Thurber *et al.*, 2009), which likely explains why the nest was empty 30 days after the first observation of the chicks. Incubation in this species

has been estimated at 30 to 33 days (Thurber *et al.*, 2009), suggesting that eggs were probably laid at the beginning of March. A clutch of two has been reported previously, though two to four eggs may be laid and is considered normal. A clutch of 2-3 eggs appears to be typical in northern South America, but up to five eggs have been recorded in Argentina (Wetmore, 1968; Haverschmidt, 1968; Blendinger *et al.*, 1987; Martínez *et al.*, 1996; Pautasso and De La Peña, 2001; Thurber *et al.*, 2009; Tittarelli and Villarreal, 2009).

In the Bogotá highland plateau there may be more than one reproductive cycle per year, since chicks and juveniles have been recorded both at the beginning and at the end of the year in several wetlands in the city of Bogotá (S. Córdoba-Córdoba, pers. obs. Feb, 2014). The occurrence of *P. clamator* both in urban and suburban areas in the Bogotá highland plateau suggests that *P. clamator* is able to successfully inhabit moderately, human-transformed environments, making it possible for this species to expand its distribution even to high mountain areas, where it was not previously recorded. Food availability may limit the nesting possibilities for this species and it may be restricted to areas near aquatic environments, probably due to the presence of rodents such as *C. aperea*, which are mostly found in wetlands in the Bogotá highland plateau (Sánchez, 2010; Mendoza and Sánchez, 2014). Our results are complementary to those presented for other nests near water courses and lakes, such as in Argentina (Blendinger *et al.*, 1987; Martínez *et al.*, 1996; Pautasso and De La Peña, 2001; Tittarelli and Villarreal, 2009), even though the Striped Owl may also reproduce in forests and open areas with shrubs and herbaceous vegetation (Tittarelli and Villarreal, 2009; Chaparro-Herrera *et al.*, 2015). However, the timing of reproduction in the Bogotá highland plateau should be studied, as well as prey selection, since the reproduction of this species has been reported to be prey dependent (Pautasso and De La Peña, 2001). Consumption of rodents such as *C. aperea*, with a body mass of 270-720 g (Morales *et al.*, 2004), suggests that *P. clamator* (body mass ca. 350-485 g-Dunning 2007) is able to capture big preys, and probably requires such prey items to have a positive reproductive fitness, as proposed by Pautasso and De La Peña (2001) and Motta-Junior *et al.* (2004). Other prey items reported for the Bogotá highland plateau, such as rodents, including *Rattus rattus*, *R. norvegicus* and *Mus musculus* (Sánchez, 2010), may also help fulfill the energetic requirements for a successful reproduction (Pautasso and De La Peña, 2001).

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CONFLICT OF INTEREST

The authors declare that they have not conflict of interest.

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