

First record of the White-chinned Swift *Cypseloides cryptus* in the state of Acre, Brazil, with notes on its breeding biology

Renata Neves Biancalana^{1,3} and Agimiro Magalhães²

¹ Laboratório de Evolução e Diversidade II, Programa de Pós-graduação em Evolução e Diversidade, Universidade Federal do ABC. Av. dos Estados, 5001, Bangu, CEP 09210-580, Santo André, SP, Brazil.

² Comunidade Pé da Serra, Parque Nacional Serra do Divisor, Mâncio Lima, AC, Brazil.

³ Corresponding author: renata.biancalana@gmail.com

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ABSTRACT: We report the first photographic record of the White-chinned Swift *Cypseloides cryptus* breeding in the state of Acre in Brazil and include notes on breeding biology for this species. Four nests were found during the 2015 breeding season in waterfalls of the Serra do Divisor National Park. Egg laying started in early January, during the late rainy season, followed by an interval of one month between a second attempt, when three eggs were found in early April. Nests were cup shaped, made of mud, interwoven rootlets and bryophytes and constantly exposed to mist and dripping water. Nestlings were monitored from hatching in early May, to fledging in late June/early July. Our findings document the White-chinned Swift as a breeding resident in the region.

KEY-WORDS: Amazon, Apodidae, nestlings, waterfall.

Breeding season is the optimal period to observe and document Cypseloidine swifts behavior and biology due to their presence near nest sites. Many swifts in this subfamily are known to build nests in the same crevices and niches used in previous years in rock walls, near or behind waterfalls and in wet caves (Whitacre 1989, Marín & Stiles 1992, Chantler 1999). Although Amazonian lowlands are not generally considered to have the typical breeding sites for those swifts, the northern region of the Serra do Divisor mountain range on the border between Brazil and Peru has many waterfalls that could provide appropriate nest sites (Scarcello 1999).

Unidentified Cypseloidine swifts (*i.e.*, *Cypseloides*, *Streptoprocne*) and White-collared Swifts (*Streptoprocne zonaris*) were observed in flight during rapid assessments performed on the Peruvian side of the Sierra del Divisor and in the Juruá Valley, but with no detections of nests (Vriesendorp *et al.* 2007). In Brazil, observations of White-collared Swifts were made only in western Acre, on the west margin of the Purus River; recently the species was found breeding in Serra do Divisor National Park (SDNP) (Guilherme 2012, Biancalana 2015a).

Potential species to occur in the region would be the Chestnut-collared Swift (*Streptoprocne rutila*), the White-collared Swift, the White-chested Swift (*Cypseloides lemosi*), and the White-chinned Swift (*Cypseloides*

cryptus), the closest recorded site for the latter would be in Abra Patricia region of Peru, more than 400 km away (Schulenberg *et al.* 2007, Vriesendorp *et al.* 2007, Roesler *et al.* 2009). Lane *et al.* (2003) suggested that White-chinned Swifts could also be present in the Yavarí Valley, somewhat closer to SDNP, where they were seen flying with other swift species.

Only two previous records for breeding White-chinned Swifts are recorded in Brazil, both in the region of Presidente Figueiredo and Rio Preto da Eva, state of Amazonas (Whittaker & Whittaker 2008, Brito *et al.* 2015).

An unidentified species of *Cypseloides* was observed by RNB flying over the Mõa River on 17 July 2014. On the following day, an empty nest typical in locality and construction of a Cypseloidine swift was photographed behind Ar Condicionado Waterfall. Regular monitoring of this and other waterfalls started in the beginning of the rainy season (mid October) of 2014, in order to locate other possible nesting sites.

All observations took place in Serra do Divisor National Park, located in the state of Acre. The park borders the municipalities of Cruzeiro do Sul, Mâncio Lima, Rodrigues Alves, Porto Walter and Marechal Thaumaturgo. Several waterfalls can be found in the more mountainous north part of the park (Scarcello 1999). Ar

Condicionado (7°26'46.26"S; 73°41'17.60"W) is a waterfall 4 m high that can be reached by foot on a short trail from the M6a River. Another trail leads to a small rock canyon at Igarap6 do Amor where there are two waterfalls, Amor and Est6tua Waterfalls (7°26'39.01"S; 73°40'2.07"W). The access from Amor to Est6tua is made via a wooden ladder. Both waterfalls are more than 10 m high, but the water flow is low. Elevation at the three waterfalls is 286 m a.s.l.

On 23 February 2015, AM observed an unidentified adult swift adult sitting on a nest behind Est6tua Waterfall. The nest, N1, was in a dark crevice 4 m above the ground, cup shaped, made with mud and interwoven rootlets and covered with fresh moss and liverworts. The exterior was damp. When approached, the adult flushed and a chick approximately two weeks old with dark grey semiplumes covering the body was observed. The identity of the bird as a White-chinned Swift was made by RNB. Age was

estimated based on plumage described in other White-chinned Swift studies (Mar6n & Stiles 1992). One week later the nest was empty. No other nests or adults were observed at this location during the following month.

A second breeding attempt occurred in early April, when two more nests were found, one at Ar Condicionado Waterfall, N2, and one at Amor Waterfall, N3. Nest N2 was positioned on a horizontal ledge with constant dripping water less than 1.4 m above the ground. It was less than 1 m away from the nest observed in July 2014. One adult was observed incubating an egg and did not leave the nest until approached (Figure 1). N3 was located at Amor Waterfall, 3 m from the ground. Although it was some distance from the water, the area was in constant mist and very humid. The previously discovered N1 at Est6tua Waterfall was reused in a second breeding attempt. Both N1 and N3 were positioned in dark crevices and were cup shaped and covered with bryophytes.



FIGURE 1. Adult White-chinned Swift in its nest on 15 April 2015, at Ar Condicionado Waterfall, Serra do Divisor National Park, Brazil. Photo: Agimiro Magalhães.

One dull white egg was observed in each of the three nests early April and incubating adults were seen during weekly visits. Between 4 and 6 May, all three eggs hatched. The naked hatchlings had pinkish skin and their eyes were closed. Adults were seen together with them until the nestlings were 2 to 3 weeks old.

The nestlings were sluggish and silent, did not display any agonistic behavior when approached or picked up, but held firmly to the nest lining. Nestlings at two weeks of age were covered with semiplumes except on the head where semiplumes only covered the crown (Figure 2).



FIGURE 2. Two weeks-old White-chinned Swift on 18 May 2015, at Estátua Waterfall, Serra do Divisor National Park, Brazil. Photo: Agimiro Magalhães.

The plumage of the nestlings from 4 weeks onward was sooty dark gray with the head paler than the rest of the body. The feathers on the back, rump, crown and primaries had very thin white fringes (<0.2 cm), whereas the feathers in the lower abdomen and around the vent had broader white tips (around 0.5 cm). The feathers on the alula were also white-tipped. Two lines of pale feathers, one at each side of the nostrils, extended up to the forehead. Between 8 and 9 weeks, at the end of June to early July, the three nestlings successfully fledged.

This is the first photographic record of the White-chinned Swift breeding in the state of Acre and the first record of the species for western Amazon of Brazil. Apodidae species are extremely overlooked in Brazil and in other Latin American countries. Their cryptic habits and almost strict aerial life make them difficult to identify in the field. In addition, the absence of information regarding their breeding biology makes it difficult for most ornithologists to discover new nesting sites during the months of the breeding season. When the adults are not in their nests it is almost impossible for the untrained eye to find the nests, which are in most cases behind waterfalls or in dark crevices. Due to their fragile structure and constant exposure to water spray, they collapse after the nestlings fledge, and few nests remain to be found.

Small swifts of the genus *Cypseloides*, like the Sooty Swift and the White-chinned Swift, usually start their breeding period in Brazil after the beginning of the rainy season, not before, like other Cypseloidinae, such as the Great Dusky Swift (*Cypseloides senex*) or the White-collared Swift (*Streptoprocne zonaris*) (Marín & Stiles 1992, Biancalana 2015b). Looking at the proper places, such as small to medium sized waterfalls along the species range during the rainy season should reveal more breeding sites in the Brazilian Amazon. Just recently, in 2004, a new bird species was identified in Serra do Divisor, the Acre Antshrike (*Thamnophilus divisorius*), indicating that the region is still poorly explored despite its rich biodiversity (Whitney *et al.* 2004).

Nests were only identified when adults were incubating due to the cryptic nature of nest sites. The nest site, construction, and materials used were similar to reports of other populations of this species breeding in Brazil, Costa Rica and Venezuela (Ayarzaguena 1984, Marín & Stiles 1992, Whittaker & Whittaker 2008).

Considering that incubation period lasts 30 days on average, and the first nestling observed was two weeks old in late February, we suggest that egg laying started in early January, followed by incubation, and hatching in mid February. The second breeding attempt started with egg

laying in early April, with hatching occurring between 4 and 6 May and fledging late June to early July. Thus, the suggested breeding period for the species in western Acre spans from early January up to late June/early July. This is similar to the population of Amazonas, where they started to breed later in the wet season (Whittaker & Whittaker 2008, Brito *et al.* 2015).

Nestling development was similar to that observed by Marín & Stiles (1992) in Costa Rica, except that the nestlings in the present study did not display agonistic behavior when picked up.

Careful searches of other waterfalls in Serra do Divisor should reveal the presence of more nests of the White-chinned Swift as well as new records of other Cypseloidine swifts.

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