

Rediscovery of *Nyctibius leucopterus* (White-winged Potoo) in the Atlantic Forest of Brazil

Bret M. Whitney ¹, José Fernando Pacheco ², Luís Fábio Silveira ³ and Rudi R. Laps ⁴

¹ Museum of Natural Science, 119 Foster Hall, Louisiana State University, Baton Rouge, Louisiana, USA 78703.

E-mail: Ictinial@cs.com

² Comitê Brasileiro de Registros Ornitológicos, Rua Visconde de Ouro Preto, 71, ap. 103, 22250-180, Rio de Janeiro, RJ, Brasil.

E-mail: jfpacheco@terra.com.br

³ Departamento de Zoologia, Universidade de São Paulo, Rua do Matão, Travessa 14, no. 101, Butantã, 05508-900, São Paulo, SP, Brasil. E-mail: lfsilveira@uol.com.br

⁴ Pós-Graduação em Ecologia, Universidade Estadual de Campinas/Fundação Universidade Regional de Blumenau. Correspondence address: FURB/DCN, Rua Antônio da Veiga, 140, 89010-971 Blumenau, SC, Brasil. E-mail: rudilaps@uol.com.br

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RESUMO. Redescoberta do Urutau-de-asa-branca *Nyctibius leucopterus* na Mata Atlântica brasileira. O primeiro registro documentado de *Nyctibius leucopterus* na Mata Atlântica do leste do Brasil, desde sua descoberta e descrição no início do século XIX, é circunstanciado: gravações de áudio e filmagens na Reserva Biológica de Una, sul da Bahia, em 1 de novembro de 1999. Quatro encontros subsequentes, provenientes da mesma região, são relatados.

PALAVRAS-CHAVE: Brasil, Mata Atlântica, *Nyctibius leucopterus*, Urutau-de-asa-branca.

ABSTRACT. The first documented record of *Nyctibius leucopterus* in eastern Brazil, since its discovery and description at the beginning of XIX century, is detailed: one individual was tape-recorded and video-taped at Una Biological Reserve, southern Bahia, at 1 november 1999. Four subsequent records for the same region is provided.

KEY WORDS: Brazil, Atlantic Forest, *Nyctibius leucopterus*, White-winged Potoo.

Nyctibius leucopterus (White-winged Potoo) was described by Maximilian A. Philipp, Prinz zu Wied-Neuwied (Wied 1821). The type, a female, is held at the American Museum of Natural History (AMNH 5867). Until quite recently (Cohn-Haft 1993, Grantsau *et al.* 1999), this distinctive potoo remained known only from this specimen, collected near the present town of Vitória da Conquista in southern Bahia, Brazil (see discussion of this locality below), and another old specimen at the Academy of Natural Sciences (ANSP 22022) labeled from "Brazil".

Cohn-Haft (1993) reported the rediscovery of *Nyctibius leucopterus* near Manaus, Amazonas, Brazil, and suggested the possibility that those birds represented an undescribed taxon based on significantly smaller size of the single Manaus specimen in comparison with the two above-mentioned skins (although the ANSP specimen could have been taken anywhere in "Brazil", including near Manaus). Cohn-Haft's paper included a detailed description and sound spectrogram of the song, and he archived recordings of Manaus *N. leucopterus* at the Cornell Laboratory of Ornithology, Macaulay Library of Natural Sounds, at the Bioacoustical Archive of the Florida Museum of Natural History (where published by Hardy *et*

al. 1997 and subsequent editions), and at the UNICAMP archive in Campinas, São Paulo, Brazil. He also generously distributed copies of original recordings to various colleagues, including us. Since that time, and entirely as a result of documentation of the voice by Cohn-Haft and co-workers near Manaus, *N. leucopterus* has been found in several widely separated localities in Amazonia and the Guianas. But the toptypical Atlantic Forest population remained shrouded in mystery. Nearly two centuries had passed without a record. Several attempts to relocate it in humid forest in southern Bahia and northern Espírito Santo in the 1990s using tape-recording playback and whistled imitations of songs of Amazonian birds had been fruitless. Old questions became more poignant with each passing year. Could the Atlantic Forest bird be extinct (Cohn-Haft 1999)? Destruction of all forest habitats in southern Bahia and elsewhere in lowland eastern Brazil has left only a small and fragmented percentage intact. If the White-winged Potoo survives in the Atlantic Forest... what is its voice? Could it be so different that birds have failed to respond to presentation of the Amazonian song? Is Wied's female specimen, as the only one known to have come from the Atlantic Forest, truly representative of that population?

Early on the morning of 1 November 1999, we visited the Una Biological Reserve in coastal southern Bahia (15°11'S, 39°04'W) to search for *Nyctibius leucopterus*. As we walked into the reserve, BMW periodically whistled an imitation of the song of Guianan/Amazonian *N. leucopterus*. Shortly after a sliver of moon had crested the horizon (about 04:45), a *Nyctibius leucopterus* responded by singing back five times! Four of the songs were tape-recorded. The bird was not seen that morning, but on a second visit, on 4 November, it or another individual (we were a few hundred meters further down the road) responded aggressively to BMW's imitations, repeatedly flying across the road, sometimes quite low, and delivering both calls and songs, which continued even after daylight. This bird was seen and tape-recorded well, and it was video-taped singing from the top of a dead tree. The bird was not collected, as it is on the official Brazilian list of endangered species (IBAMA 1992). This territory was revisited on the evenings of 23-25 December 1999 by J. M. Barnett, G. Kirwan, and J. Minns (pers. comms.), and they saw a single bird well on the early morning of 25 December. Most recently, at 04:35 on 27 Jan. 2000, under a full moon, two *N. leucopterus*, stimulated to sing by RRL's whistled imitation, were heard by RRL and C. A. Borchardt Jr. a few hundred meters from the above sightings. Finally, at 04:40 on 5 April 2000, RRL heard the spontaneous song of one *N. leucopterus* at the Ecoparque de Una, several km northwest of the entrance to Una Biological Reserve, in similar habitat.

The descriptions of the song and calls provided by Cohn-Haft (1993) closely match the vocalizations we heard and tape-recorded at Una. Spectrograms of songs from Una (figure 1) show considerable variation in the duration of the long, whistled note (3.63-4.62s, mean of nine songs from one individual 4.02 s), although none are quite as short as the single example shown by Cohn-Haft (1993, figure 1; about 3.2 s). Songs of the Atlantic Forest bird(s) were initiated at approximately 0.2 kHz lower frequency, and maintained a more level frequency (0.04-0.18 kHz frequency shift, mean descent of nine songs from one individual 0.11 kHz) than the song illustrated in Cohn-Haft (1993; compare figure 1A and B with his figure 1). Similar intra-individual variation in the songs of *N. leucopterus* has been noted in other regions of the species's distribution (BMW pers. obs.). Variation appears to become exaggerated following artificial stimulation. For example, individuals may shorten or lengthen the continuous note in the song (which may influence frequency shift), and appear to be more likely to do so with repeated stimulation. Vocalizations have played an important role in species-level taxonomy of potoos, as summarized by Cohn-Haft (1999). Determination of the extent of vocal differentiation between Manaus and Atlantic Forest *N. leucopterus* requires study of larger samples to examine

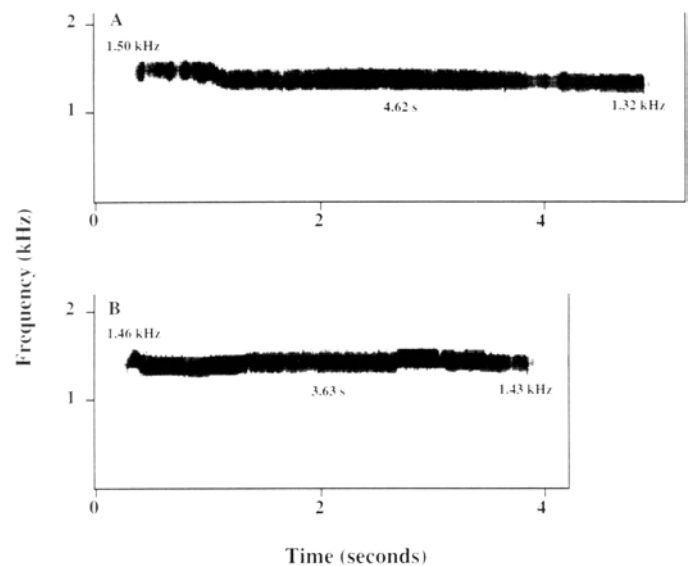


Figure 1. Spectrograms of songs of *Nyctibius leucopterus* recorded at Una Biological Reserve, Bahia, Brazil, 4 November 1999. Note the difference in duration and frequency descent between A (first of nine consecutive songs) and B (eighth song). All songs were recorded after repeated whistled imitation of the song from the Manaus region stimulated a previously silent potoo to sing. Spectrograms produced with "Canary" 1.2.1 of the Bioacoustics program at the Cornell Laboratory of Ornithology, Ithaca, New York (default settings, 75% overlap), and "Canvas" 3.0.4 of Deneba Software, Miami, Florida. Recordings by B. Whitney.

the limits of individual variation in both regions (and other areas of the distribution including geographically intermediate ones), and some control for anomalies in songs possibly resulting from variable amounts of artificial stimulation and other factors. At this point, however, it is evident that both songs and calls of *Nyctibius leucopterus* from across its known range show remarkable uniformity (BMW pers. obs.).

Unfortunately, we were unable to survey other areas of the Una Biological Reserve or Ecoparque de Una to determine whether *N. leucopterus* seemed to be present in densities similar to those near Manaus. However, given the homogeneous soil type and general forest structure of at least the eastern half of the Una Biological Reserve, we predict that numerous individuals are resident in that area and similar habitats throughout coastal southern Bahia. Forest in the eastern sector of Una grows on quartzitic soil; sand content is close to 100% at the surface. Average canopy height where we observed the bird(s) was 20-25m, with most trees having trunks less than about 30 cm diameter at breast height and narrow canopies. Canopy height averages lower than this in many areas of the reserve.

This forest at Una Biological Reserve is structurally similar to the Guianan and Amazonian forests in which *N. leucopterus* has been found, although many of those forests have taller average canopy height. More importantly, perhaps, all of them are in blackwater drainages. Despite

numerous searches in many regions of western Amazonia, Amazonia south of the Amazon, and the Atlantic Forest, we have found the birds only in forests growing on especially nutrient-poor soils (i.e., sand or deeply weathered clays). Around Manaus, Cohn-Haft (pers. comm.) has found *N. leucopterus* only in forest on deeply weathered clay soils. We suggest that further specific searches for *N. leucopterus* in the Atlantic Forest be concentrated in sandy-soil, blackwater areas. We know so little of this population, however, that opportunistic attempts to elicit a response to tape playback or whistled imitation should be continued in various forest habitats.

The type locality for *Nyctibius leucopterus* is generally understood to be near Conquista (= Vitória da Conquista) in southern Bahia as stated unequivocally in Wied's (1821:227) description, although Cohn-Haft (1993) considered it ambiguous. More specifically, Wied worked at and near Fazenda Preguiça, which was placed at 15°00'S, 40°45'W by Paynter and Traylor (1991:496), and more closely defined as 14°50'S, 40°39'W by Vanzolini (1992:137). Wied's description is detailed and it is obvious that he recognized that the specimen represented a true novelty. He apparently collected the bird himself ("I obtained it" or "I acquired it" or "I got it"), as he made it clear in the preceding paragraph that a specimen of the Long-tailed Potoo from the same area had been brought to him by others. For some unknown reason, Wied failed to mention Conquista as a locality for *N. leucopterus* in his later, more formal work (1830:311-317). (The two localities he did list, "Nazaré das Farinhas" and "Caravellas", are located in southern Bahia to the north and south, respectively.). This notwithstanding, we see no objective reason to reject Wied's first locality, unambiguously wedded to the original description, in preference to any locality he listed subsequently. Thus, we propose the type locality continue to be "near Vitória da Conquista, Bahia". (Moreover, the 1830 account, as pointed out by Cohn-Haft [1993], includes description of behaviors obviously relevant to caprimulgid species rather than any species of *Nyctibius*). We have not attempted to locate and visit "Fazenda Preguiça" and, although no thorough searches have been conducted, we have not located any sandy-soil, blackwater forests near Vitória da Conquista. It will now be a priority to find such habitat, if it exists, and to survey other forests structurally similar to that in the eastern sector of Una Biological Reserve.

As a final note, another "rediscovery" of *Nyctibius leucopterus* in Bahia was reported by Grantsau *et al.* (1999). A potoo that had been hit by a motor vehicle at an unspecified locality "in coastal northern Bahia" was brought to them at the "Centro de Triagem de Aves Silvestres" (CETAS) on 19 March 1998. It was prepared as a study skin (Museu de Ciências Naturais da CETAS/CETREL, MCNC 380) and identified as an adult male

Nyctibius leucopterus based on 1) its small size and different proportions of the head/body vs. the tail relative to five *N. griseus* "from the same region" (no data on these provided), and 2) its "accentuated, contrasting white wing coverts". Grantsau *et al.* (1999) included detailed "in-life" drawings of Wied's type, MCNC 380, a specimen of *N. griseus* from Urucurituba, Pará, and another of *N. griseus* from "São Paulo" (the latter two in Grantsau's private collection, numbers 7451 and 1315, respectively). This illustration would leave little doubt that their specimen represented the rediscovery of *N. leucopterus* in the Atlantic Forest. Indeed, in a version of the story released some weeks earlier over the internet (www.ao.com.br/ao89.htm) and in newspapers (Bonalume 1999, Lima *et al.* 1999) that featured only the above drawings, it seemed that we finally had the long-awaited proof that the White-winged Potoo yet survived in the Atlantic Forest, and that Grantsau and his colleagues, at least, knew of a definite locality of occurrence. Fortunately, Grantsau *et al.* (1999) also included three good black-and-white photos of their specimen (MCNC 380) alongside a specimen of *N. griseus* (for which they provided no museum number or locality). In addition, RRL visited the CETAS/CETREL museum and made color photographs of MCNC 380, which he distributed to the rest of us. It is clear from these sets of photos that MCNC 380 is not an example of *Nyctibius leucopterus*. In surprising disagreement with their description and the drawing provided over the internet and in Grantsau *et al.* (1999), the specimen lacks any clear white on the wing coverts (even the most weakly marked individuals of *N. leucopterus* show conspicuous white; BMW pers. obs.!) Assuming that Grantsau *et al.* (1999) correctly determined that MCNC 380 is an adult, then its small size is intriguing. If age was not diagnosed carefully by an experienced preparator (determination of both extent of cranial ossification and presence/absence of bursa of Fabricius), however, then the small size of the specimen could easily be explained by immaturity. Cohn-Haft (1999) reported that young potoos leave the nest when about 2/3 the size and weight of adults and, while perfectly capable of flight, they continue to be fed by their parents for some time. In their article, Grantsau *et al.* (1999) state that they have found *N. griseus* in the area they have been searching for *N. leucopterus*. It would be interesting to hear tape recordings of any potoos from the still-undivulged locality from whence came MCNC 380. Collection of additional specimens from coastal northern Bahia is encouraged.

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