

Variation in nest shape in White-rimmed Warbler *Basileuterus leucoblepharus*

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Um ninho ativo de *Basileuterus leucoblepharus* encontrado no município de Nova Friburgo, região serrana do estado do Rio de Janeiro, não condiz com o formato descrito em literatura. O ninho apresentava formato de cesto, sem cobertura superior e entrada lateral, característicos da espécie. Foram encontrados quatro ovos, um a mais do que o número citado em literatura.

White-rimmed Warbler *Basileuterus leucoblepharus* inhabits highland forests of south-east and south Brazil, north-east Argentina, eastern Paraguay and Uruguay^{17,20} They forage in lower to higher levels of the forest, as well as in semi-open areas²¹. *Basileuterus* are known to build nests on

the ground, often near saplings, bushes, rocks, or on earthen banks. Most nests are described as spherical with a side entrance^{2,5,7,9,10,13,14,16,18,20}. According to Ihering¹⁰, however, the nest of White-rimmed Warbler is ‘a well-elaborated cup made of grass mixed with slender roots and vegetal



Figure 1. Upper view of White-rimmed Warbler *Basileuterus leucoblepharus* nest showing the lack of a superior cover and the lateral entrance (Gustavo Silveira)



Figure 2. Nest site of White-rimmed Warbler *Basileuterus leucoblepharus*, hidden and supported by plants (Daniel Firme)



Figure 3. Detail of the nest material (see text) used by White-rimmed Warbler *Basileuterus leucoblepharus* (Gustavo Silveira)



Figure 4. Two eggs of White-rimmed Warbler *Basileuterus leucoblepharus* (Daniel Firme)

filaments with an extension of the posterior wall destined to cover it'.

Nest description

During field work on 15 February 2007 at Sítio Terra Fria, municipality of Nova Friburgo, at c.1,250 m (22°20'S 42°36'W), in the highlands of Rio de Janeiro state, we found an active nest of White-rimmed Warbler. The nest differed in shape from those of the same species described in the literature (e.g. Ihering¹⁰), particularly in the lack of a 'roof' and a lateral entrance (Fig. 1). Ownership of the nest was confirmed by observing a bird incubating the eggs. The nest, a low cup/base (*sensu* Simon & Pacheco²²) was constructed over some roots and leaves of *Anemia phyllitidis* (Schizaeaceae), *Asplenium* sp. (Aspleniaceae), *Aspidiaceae*, *Piper* sp. (Piperaceae), and Dicotyledonea that supported the nest on the side of a bank, 60 cm above ground (Fig. 2). The outer layer was composed of slender dead roots with dead grass and some moss along the outer edge. The inner layer was smoothly lined with slender vegetable filaments, thinner than those in the outer layer (Fig. 3). Externally, the nest was c.9 cm tall, egg chamber, 6 cm width by 3.5 cm deep. At the time of discovery the nest contained four eggs (Fig. 1), one more than found by Ihering¹⁰. The eggs had a pale ground colour with speckles forming a dense ring at the larger end (Fig. 4), as cited by Ihering¹⁰ for the species. Two eggs were collected during our first visit to Sítio Terra Fria in February 2007, but the nest was only collected during a second visit to the locality in July 2007. Both the eggs and nest were deposited in the Ornithological Section of the Museu Nacional collection in Rio de Janeiro.

Discussion

Besides the variation in shape, our description of the nest materials (see above) agrees with that of Ihering¹⁰. Between species, bird nests vary markedly in size, shape, appearance, materials used, site and placement^{1,3,4,8,11,12,15,19,24}. These variations can be influenced by factors such as altitude¹¹, climatic conditions¹⁹ material availability¹², vegetation and predation¹⁹.

The lack of a superior cover could be interpreted as an adaptive response to the natural cover offered by the plants where the nest was placed, suppressing the necessity to construct a 'roof'. Some similar cases have been reported in the literature, although they do not involve intraspecific variation. Wing-banded Hornero *Furnarius figulus* does not build the 'oven' nest typical of its genus, but instead a simple, open nest of grass in well-protected places, e.g. within epiphytic bromeliads or under house roofs²³. Such nest sites in effect provide a roof³. Another example of replacement of roof by a protected nest site is given

by Hilty & Brown⁸ for White-flanked Antwren *Myrmotherula axillaris*, which always has a large overhanging leaf or leaves above it, which may substitute a constructed roof.

Brewer¹ described intraspecific nest variation for some species (e.g. Common House Martin *Delichon urbicum*, Cliff Swallow *Petrochelidon pyrrhonota*, Acadian Flycatcher *Empidonax vireescens* and Hooded Oriole *Icterus cucullatus*). According to him, the same species do not always build their nests alike. He pointed out that birds may vary nest architecture in response to physical features surrounding the nest site. Similar variation in nest shape is described by Pacheco & Simon¹⁵ for Masked Water Tyrant *Fluvicola nengeta*. They reported two different types of nest in this species: the first an elongate oval nest, loosely supported on electric cables or bare ends of tree branches; the second type an oval nest, found only in places that provide better support, such as tree branches. A recent example of variability in nest architecture was given by Greeney⁶, who reported that nests of Spotted Barbtail *Premnoplex brunescens* from Ecuador had an internal lining, unlike those at higher latitudes, suggesting some geographic variation in nest architecture. Our record of a nest of White-rimmed Warbler lacking a roof reveals that this species also exhibits some degree of variation in nest architecture, probably taking advantage of the physical attributes of the site. Although the nest of *B. leucoblepharus* was already known, ours appears to be the first report of variation in shape. It is important to stress that nest samples are very small for most Neotropical birds. Thus, nest variation similar to that reported here is probably much more frequent than is currently described.

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References

1. Brewer, T. M. (1878) Variations in the nest of the same species of bird. *Amer. Nat.* 12: 35–40.
2. Buzzetti, D. & Silva, S. (2005) *Berços da vida: ninhos de aves brasileiras*. São Paulo: Ed. Terceiro Nome.
3. Collias, N. E. (1997) On the origin and evolution of nest building by passerine birds. *Condor* 99: 253–270.
4. Eisermann, K. & Brooks, D. M. (2006) Unusual and noteworthy nesting records for Guatemala. *Cotinga* 26: 48–51.

5. Euler, C. (1900) Descrição de ninhos e ovos das aves do Brasil. *Rev. Mus. Paulista* 4: 9–148.
6. Greeney, H. F. (2008) Nest construction behavior and variability in nest architecture and nest placement of the Spotted Barbtail (*Premnoplex brunnescens*). *Bol. Soc. Antioqueña Orn.* 18: 26–37.
7. Greeney, H. F., Martin, P. R., Dobbs, R. C., Lysinger, M. & Gelis, R. A. (2005) Observations on the breeding of *Basileuterus* warblers in Ecuador. *Bull. Brit. Orn. Club* 125: 129–125.
8. Guzmán-Velasco, A., Contreras-Balderas, A. J., García-Salas, J. A. & González-Rojas, J. I. (2001) An unusual Cactus Wren *Campylorhynchus brunneicapillus* nest. *Cotinga* 16: 27.
9. Hilty, S. L. & Brown, W. L. (1986) *A guide to the birds of Colombia*. Princeton, NJ: Princeton University Press.
10. Ihering, H. von (1900) Catálogo crítico-comparativo dos ninhos e ovos das aves do Brasil. *Rev. Mus. Paulista* 4: 191–300.
11. Kern, M. D. & Ripper, C. V. (1984) Altitudinal variations in nest of the Hawaiian Honeycreeper *Hemignathus virens virens*. *Condor* 86: 443–454.
12. Lent, R. A. (1992) Variation in Gray Catbird nest morphology. *J. Field Orn.* 63: 411–419.
13. Marini, M. Â. & Cavalcanti, R. B. (1993) Habitat and foraging substrate use of three *Basileuterus* warblers from central Brazil. *Orn. Neotrop.* 4: 69–76.
14. Marini, M. Â. & Cavalcanti, R. B. (1994) First description of the nest and eggs of a White-striped Warbler (*Basileuterus leucophrys*). *Orn. Neotrop.* 5: 117–118.
15. Pacheco, S. & Simon, J. E. (1992) Variações no padrão de nidificação de *Fluvicola nengeta* Linnaeus, 1766 (Aves, Tyrannidae). *Rev. Bras. Biol.* 55: 609–615.
16. Pinto, O. M. O. (1953) Sobre a coleção Carlos Estevão de peles, ninhos e ovos das aves de Belém (Pará). *Pap. Avuls. Dep. Zool., Sec. Agric.* 11: 111–222.
17. Ridgely, R. S. & Tudor, G. (1989) *The birds of South America*, 1. Oxford: Oxford University Press.
18. Santos, E. (1992) *Pássaros do Brasil*. Belo Horizonte: Ed. Villa Rica.
19. Schaefer, V. H. (1976) Geographic variation in the placement and structure of orioles nests. *Condor* 78: 443–448.
20. Sick, H. (1997) *Ornitologia brasileira*. Rio de Janeiro: Ed. Nova Fronteira.
21. Sigrist, T. (2006) *Aves do Brasil: uma visão artística*. São Paulo: Ed. Leitura Dinâmica.
22. Simon, J. E. & Pacheco, S. (2005) On the standardization of nest descriptions of neotropical birds. *Rev. Bras. Orn.* 13: 143–154.
23. Studer, A. & Vielliard, J. (1990) The nest of Wing-banded Hornero *Furnarius figulus* in north-eastern Brazil. *Ararajuba* 1: 39–41.
24. Willard, F. C. (1923) Some unusual nesting sites of several Arizona birds. *Condor* 25: 121–125.

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