

On the nest, eggs, and hatchlings of the Yellow-legged Thrush *Turdus flavipes flavipes* in Brazilian Atlantic Forest

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ABSTRACT: Here we present a description of a nest, eggs, and hatchlings of Yellow-legged Thrush (*Turdus flavipes flavipes*), from the Coastal Atlantic Forest of southeastern Brazil. The nest was found on 24 October 2011 containing two eggs. It was a “low cup/base” nest hidden inside the dense foliage of an epiphytic bromeliad, built mainly of hairy rhizomes of epiphytic ferns, and small amounts of moss, rootlets, and strips of palm leaves, not presenting the typical mud layers found in nests of other sympatric thrush species. Nest measurements were: outside diameter 14.2 cm, inside diameter 9.1 cm, outside height 12.4 cm, inside height 7.6 cm, and height above ground 1.49 m. Eggs were greenish blue with reddish brown blotches and spots more concentrated at the large end. On 27 October the nest contained two nestlings in early developmental stage, with mouth lining, swallow flanges, and bright yellow beaks, resembling the beaks of the adults. They were covered with a sparse light gray down, and had orange skin. The presence of an active nest at a location near sea level during the summer does not conform with existing information, in particular that this species occurs at low elevations only during the winter. It suggests that future studies involving breeding sites and movements of this species would be worthwhile.

KEYWORDS: Brazil; breeding biology; nesting; thrushes; Turdidae.

The Yellow-legged Thrush (*Turdus flavipes*) was formerly classified in the genus *Platycichla*, together with the Pale-eyed Thrush (*T. leucops*; Ridgely & Tudor 1994). However, molecular studies have not supported the separation of this genus from *Turdus* (Voelker *et al.* 2007). It holds five subspecies (*T. f. venezuelensis*, *T. f. melanopleura*, *T. f. xanthoscela*, *T. f. polionota*, and *T. f. flavipes*; Collar 2005). Three nests and eggs of *T. f. melanopleura*, from Trinidad, were described by Belcher & Smooker (1937), and Biancucci & Martin (2010) provide measurements of 46 nests from Venezuela. Wimer & Collins (1994) present data on the pterylosis of two nestlings, also from Venezuelan populations.

The nominal subspecies occurs in southeastern South America, from southeastern Brazil to southeastern Paraguay and northeastern Argentina, and is the only subspecies not distributed in northern South America (Ridgely & Tudor 1994; Collar 2005). To our knowledge, data on its nesting biology is limited to a description of three eggs from Rio de Janeiro (Oates 1905). The objective of our work is to describe a nest,

eggs, and hatchlings of *T. f. flavipes* from the coastal Atlantic Forest.

We found a nest of *T. f. flavipes* on 24 October 2011 at Serra do Mar State Park, Caraguatatuba, on the coast of São Paulo state, Brazil. This conservation unit holds 50,000 ha of coastal Atlantic Forest, at an elevation of about 60 to more than 800 m above sea level. The climate is tropical and annual rainfall can reach 3,600 mm, without a remarkable dry season (Morellato & Haddad 2000; Oliveira-Filho & Fontes 2000). The nest contained two eggs that were photographed but not measured. We revisited the nest on 27 October, when two hatchlings were observed.

The nest was located in an artificial forest gap of approximately 1 ha, where the administrative facilities of the conservation unit were located (23°35'S, 45°25'W; elevation 60 m). The form of the nest was “low cup/base” (Simon & Pacheco 2005) and it was hidden inside the dense foliage of an epiphytic bromeliad at a height of 1.49 m above the ground. The bromeliad was on the trunk of an exotic palm (*Phoenix* sp., Arecaceae; Figure 1). Nest

walls were built mainly with hairy rhizomes of epiphytic ferns (some containing live green leaves), varying from 1–2 mm in diameter. Moss, rootlets, and strips of palm leaves were also used in nest walls, while the incubatory chamber was lined with finer roots. A small amount of sandy forest soil rich in humic material (including decaying leaves) was found in the nest base. We measured the nest using metal calipers. Nest measurements were: outside diameter 14.2 cm, inside diameter 9.1 cm, outside height 12.4 cm and inside height 7.6 cm. Eggs were not measured, but were greenish blue with reddish brown blotches and spots more concentrated at the large

end (Figure 2a). Oates (1905) measured three eggs found in a nest and found them to be 3.74 x 2.03, 3.0 x 2.03, and 3.1 x 2.03 cm. Once eggs hatched, we observed the nestlings in an early developmental stage with their eyes still closed. Mouth lining, swallow flanges, and beaks were bright yellow, resembling the beaks of the adults. They were covered with a sparse light gray down, and had orange skin (Figure 2b). The nest was not observed until three weeks later, when we found it empty. We collected the nest and deposited in the ornithological collection of the Museum of Zoology of Universidade de São Paulo – MZUSP (# 2280).



FIGURE 1. Exotic palm (*Phoenix* sp.) and bromeliad where the nest was found (photograph by P. R. R. Oliveira Jr.).



FIGURE 2. Nest, a) eggs, and b) hatchlings of Yellow-legged Thrush, *T. f. flavipes*, at Serra do Mar State Park, Caraguatatuba, São Paulo, Brazil (photograph by M. N. Neto).

The nest we described here was remarkably different in relation to the nests reported by Belcher & Smooker (1937) for the Trinidad subspecies, *T. f. melanopleura*. Although we describe only one nest, so definitive conclusions cannot be drawn, it is useful to compare the nest to previous reports. According to these authors, nests were cups made of roots and mud, lined with moss and finer roots. Our nest had a distinct absence of mud, a characteristic that was also observed for the congeneric *T. leucops* in Ecuador (Marin & Carrion 1991), and in Colombia (Londoño 2005). Mud layers visible in the outer walls are typical features of the nests of other sympatric thrush species, i.e., Pale-breasted Thrush (*T. leucomelas*), and Rufous-bellied Thrush (*T. rufiventris*; Haverschmidt 1959; Lichtenstein 1998). The presence of mud in the nests of *T. f. melanopleura* (Belcher & Smooker 1937) was considered by Londoño (2005) to be the main difference between the nests of *T. flavipes* and *T. leucops*, but this was not supported by our observations. The abundant hairy rhizomes of epiphytic ferns used in nest walls, as well as the humic material found in the nest base were other unique aspects of our nest, not previously reported for other Neotropical thrushes (Haverschmidt 1959; Snow & Snow 1963; Dyrz 1983; Oniki & Willis 1983; Marin & Carrion 1991; Londoño 2005). Nest placement also diverged. In Trinidad all three of the *T. f. melanopleura* nests observed were located in ravines and rock faces on banks (Belcher & Smooker 1937), rather than in trees. However, this divergence must be viewed with caution because the number of nests described for both subspecies is still low. In *T. leucops*, for instance, nests can be placed in both embankments and trees (Marin & Carrion 1991; Londoño 2005; Halupka & Greeney 2009). Since we have found only one nest, we cannot assume that the characteristics we describe here are representative of the whole subspecies.

The color of the eggs we found matched the description presented by Oates (1905) for *T. f. flavipes*, as well as other Neotropical *Turdus* (Haverschmidt 1959; Snow & Snow 1963; Dyrz 1983; Oniki & Willis 1983; Marin & Carrion 1991; Londoño 2005). When the hatchlings were observed, a male and a female were repeatedly flying into the nest to feed them, indicating that both sexes shared nestling provisioning activities, as shown by Belcher & Smooker (1937) for *T. f. melanopleura*. The nest was found during the rainy season in southeastern Brazil, when other thrush species also breed in the region. Active nests of *T. leucomelas* and Creamy-bellied Thrush (*T. amaurochalinus*) were found in October in Itatiaia National Park, Rio de Janeiro (Alves 2007), and *T. leucomelas* nested from September to January at Sorocaba, in the countryside of São Paulo (P.V. Davanço, pers. comm.). In the Serra do Mar and Itatiaia mountain ranges, *T. flavipes* is believed to perform elevational migrations, staying at high elevations during the summer and in lowlands during the winter (Alves 2007). The presence of an active nest near sea level during the summer does not conform to existing information. The knowledge about bird migration in the Neotropics is scant, even for common species (Jahn *et al.* 2010), and a broader geographical perspective of the presence and movements of this species in future studies is worthwhile.

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