

## Description of the nest and eggs of the Rusty Flowerpiercer *Diglossa sittoides hyperythra* from Venezuela

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The flowerpiercers (genera *Diglossa* and *Diglossopsis*: Thraupidae) are comprised of 18 species (Mauck and Burns 2009, IBC 2015) which feed primarily on nectar. They are characterized by a modified bill, which allows them to pierce the base of flowers and, thus, have access to the nectar that otherwise would be out of reach. In addition to nectar, they also feed on insects and fruits (Skutch 1954, Hilty 2003). Flowerpiercers occur in the highlands of Central and South American, typically between 800–3400 m asl, where they are residents of shrubby areas, woodland borders, plantations and even urban areas (Hilty 2003, Restall *et al* 2006). In general, little is known about the breeding biology of members of these genera, including eight nests of 18 species (Greeney 2014).

Rusty Flowerpiercer *Diglossa sittoides* has six subspecies of which *D. s. hyperythra* has the most northern distribution, and it is found only in Venezuela and Colombia (Clements *et al* 2015). In Venezuela, this subspecies occurs from north Cojedes and Yaracuy, throughout Coastal Cordillera mountains in Carabobo, Aragua, Distrito Capital to Miranda, where it occupy open areas at the forest edges between 800–2500 m asl, usually in low densities (Hilty 2003, Restall *et al* 2006, Mauck and Burns 2009).

On September 06, 2015 at 10:00 h, we found a nest of the Rusty Flowerpiercer placed 0.7 m above the ground in the bifurcation of a small tree branch that grow in a small but dense undergrowth area, near a secondary forest of Instituto Venezolano de Investigaciones Científicas, Altos de Pipe, Miranda state (10°24'11"N–66°58'49"W, ±1700 m asl), close to Technologic Center building (7 m) and the main road of the research institute (10 m). This forest was bordered by several groups of *Callistemon citrinus* (Myrtaceae), an exotic tree where we regularly have observed both sexes of the Rusty Flowerpiercer feeding on nectar, and very close to the study nest (2.5 m). We found this nest once we noticed a Rusty Flowerpiercer female flying away from the mentioned area. It was well hidden and camouflage due to a combination of construction materials and few female feathers. Construction materials were basically vegetation parts, such as leaves and grass stalks (external), as well as rootlets, moss and fern petioles (internal) (Fig 1). As previously reported (Simon and Pacheco 2005), the nest was a simple cup shape. We took notes about its dimensions with a ruler (0.1 mm

accuracy). Nest dimension were (mm): outer-cup depth (Od): 63.5; inner-cup depth (Id): 32.0; cup-rim length (Rl): 46.8; cup-rim wide (Rw): 32.1; cup-rims thickness (Rt): 14.7 (Fig 2).

Inside the nest we found two pale blue eggs with cinnamon flecking of capped type (Harrison 1979), slightly heavier near the broader end, similar to the eggs previously described for *Diglossa brunneiventris* (Vaicenbacher *et al* 2014), *D. baritula* (Skutch 1954) and *D. albilatera* (Sclater and Salvin 1879, Greeney *et al* 2010). Eggs were measured with a Mitutoyo Digimatic Caliper (0.01 mm resolution; 0.02 mm accuracy). Measures were (mm): 12.92 x 17.33, and 12.77 x 16.99. Also, both of them were weighed with an Ohaus Scout® Pro electronic balance (0.01 g resolution; 0.01 g accuracy). Weights were (g): 1.47 and 1.43.

We followed the nest until September 30, and throughout this period, we only observed the female incubating in the nest. Thus, we assumed that the male does not participate in the incubation or nestlings care. The nest was prematurely abandoned because the nearby undergrowth vegetation was pruned. As result, we could not establish an approximate hatching date, or study reproductive events such as the care and nestlings success. Nonetheless, we could collect



FIGURE 1. Nest and eggs of the Rusty Flowerpiercer *Diglossa sittoides hyperythra* found at Instituto Venezolano de Investigaciones Científicas, Miranda state, northern Venezuela. Photo: H. Rodríguez-García.

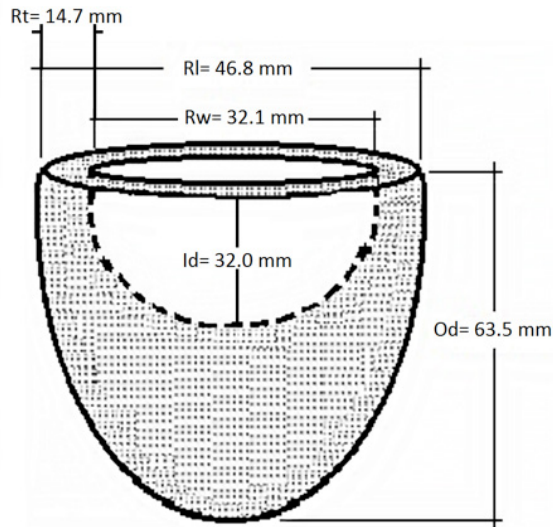


FIGURE 2. Diagram and measures of the Rusty Flowerpiercer *Diglossa sittoides hyperythra* nest found at Instituto Venezolano de Investigaciones Científicas, Miranda state, northern Venezuela. Outer-cup depth (Od); Inner-cup depth (Id); Cup-rim length (Rl); cup-rim wide (Rw); cup-rims thickness (Rt).

the nest and eggs. The nest was deposited at Phelps Ornithological Collection (Caracas, Venezuela), and identified with the code: Thrapp-020. Meanwhile, the eggs were deposited at Organisms Biology Laboratory (IVIC), as a part of a shell pore study.

Nests of *Diglossa* vary in locations; both between and within species, but all described nests have been located in low shrubs, supported by multiple branches or stems, or on rock ledges and mossy trunks (Vaicenbacher *et al* 2014). The current nest was only 0.7 m above the ground, which may be the lowest nest recorded. In contrast to nest, there is little variation in the color and shape of the eggs of *Diglossa*; all described eggs have been oval with colors that can vary between pale blue and turquoise, with cinnamon or lavender markings (Goodfellow 1901, Skutch 1954, Vaicenbacher *et al* 2014). Eggs from the current nest had fine flecking with some heavy blotching (Fig 1), very similar to the patterns described for *D. brunneiventris* (Vaicenbacher *et al* 2014), *D. caerulescens* and *D. cyanea* (Londoño 2009).

This is likely the first description of the nest of *D. sittoides hyperythra*, although eggs of this species were described over a century ago (Nehrkorn 1899, Ogilvie-Grant 1912). Nevertheless, additional information about the nests, eggs, incubation period and care of nestlings are needed to provide a full perspective of breeding biology of the *Diglossa* genus.

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