

A nest of Orange-throated Tanager *Wetmorethraupis sterrhopteron*

Since its discovery⁷ in 1963, Orange-throated Tanager *Wetmorethraupis sterrhopteron* stands as one of the most distinctive and striking new bird species to be described in the past half-century. This spectacular tanager is restricted to humid foothill forests in south-east Ecuador and northern Peru^{8,11}. Despite being found in disturbed as well as intact habitats, its limited range has led BirdLife International¹ to consider it Vulnerable. As little has been published on its behaviour or ecology, and the species' breeding biology is completely unknown, we provide brief observations made at a nest in extreme south-east Ecuador.

DSW, MH, JM & Xavier Muñoz discovered the nest on the morning of 30 January 2012 by a dirt road east of the río Nangaritzza and c.6 km south of the village of Orquídeas, prov. Zamora, Ecuador, at an approximate elevation of 1,000 m. The nest was located in disturbed tropical broadleaf forest, and we observed active logging nearby. Canopy height was c.15–20 m with just a few larger trees, i.e., *Ocotea* sp. (Lauraceae), *Ficus* sp. (Moraceae) emerging above younger trees including many second-growth colonisers such as *Inga* (Mimosaceae) and *Cecropia* spp. (Cecropiaceae). Most of the understorey vegetation in the forest around the nest had been cleared. In general, habitat

in the region is highly fragmented, and the forest surrounding the nest was c.10 ha.

While observing three adult-plumaged *Wetmorethraupis* moving through the canopy of the forest fragment from a dirt road, we noted that they were repeatedly visiting a particular site within a palm tree and further observations using binoculars and telescope revealed that at least two birds were constructing a nest.

The nest was c.10 m above the steeply sloping ground, in the uppermost fronds of a walking palm *Socratea exorrhiza* (identified as probably this species by A. Henderson, New York Botanical Garden, pers. comm.). Although we were unable to examine it closely, on this or subsequent visits, it appeared to be an open-cup nest, supported from below by the woody rachis of a palm frond, with little or no material interwoven with the long-bladed leaflets on either side. The nest was c.1.5 m from the base of the frond and 3 m from its tip. At least externally, it appeared to be constructed primarily of twigs and other dead plant material. Some twigs bore mosses and lichens, but moss was apparently not an important component of the nest's external architecture. The nest was c.20–30 cm in external diameter and overhung by an adjacent frond shading and concealing it from above. Adults made multiple trips to the nest once every c.3–4 minutes over a 30-minute period on 30 January. Once, a bird sang while carrying either grass or a piece of palm frond to the nest. When HFG examined the presumably completed nest on a subsequent visit, he could detect no such material from below, suggesting that grass-like materials may form the nest lining.

HFG & R. A. Gelis visited the locality on 16 February–9 March, and spent 4–6 hours each day in the nest's vicinity. During the first four days, they detected tanagers only periodically, with the entire group of 4–5 adults moving noisily through the canopy around the nest. Unfortunately, they had

not yet relocated the nest itself and did not observe any activity therein. However, they observed no adults carrying food or nest material. As the terrain is very steep, the group was only detected >300 m from the nest on several occasions (moving to or from the nest). Therefore, based on the ease with which this species is detected by its loud vocalisations, we consider that most of the periods of absence were spent in forest fragments other than that of the nest, and that the adults may have moved 1 km or more during these forays. Based on the extensive experience of HFG with other (albeit not closely related) species with similar nesting and foraging habits to *Wetmorethraupis* (i.e., *Aphelocoma*, *Cyanocorax*, *Cyanolyca* (Corvidae), *Sericossypha* (Thraupidae), we believe that incubation was underway on 16–19 February. On the morning of 20 February HFG located the nest during a period of adult absence. For fear of disrupting their behaviour, he observed the adults for four hours (08h00–12h00) from a vantage point that permitted approaches to the nest to be observed, but precluded viewing the nest itself. During this period the group visited the nest area three times, and at least three birds approached the nest. HFG did not observe food-carrying by adults, but visits to the nest were brief (1–3 minutes). While the possibility exists that the birds were switching places with, or provisioning, an incubating adult, their behaviour strongly suggests that they were feeding young. Food items may have been too small to detect or were perhaps regurgitated. On 21 February HFG videotaped the nest at 06h00–13h00. The recording revealed that the nest was not visited during this period, but adults were detected in the vicinity twice (by their vocalisations). Until 28 February tanagers were detected just four times in the forest around the nest. It is probable that the nest was empty at this time, almost certainly due to depredation given that <3 weeks had elapsed from construction

to feeding. It follows that, if our interpretation of adult behaviour is correct, the incubation period is c.18–20 days.

On the morning of 22 February, at 09h15, HFG observed a large flock of Russet-backed Oropendolas *Psarocolius angustifrons* and Yellow-rumped Caciques *Cacicus cela* foraging in the canopy and subcanopy near the nest. Two oropendolas visited the nest, but flew off after just 3–4 seconds with empty bills. Just as most of the flock had passed, five *Wetmorethraupis* arrived and vocalised loudly from nearby perches. None of the tanagers approached the nest or otherwise acted aggressively towards the icterids, but all five continued to vocalise as they left with the rapidly moving flock. It is possible that this same flock of icterids, which frequented the area during our visits, was responsible for degrading the tanagers' nest.

HFG made final observations at the nest on 7 March. At 07h45 he heard vocalisations in the vicinity. On his arrival he observed four birds, one of them 15 m from the nest with a 10–15 cm twig in its bill. However, all four moved quickly from view through the forest canopy, still vocalising, until they were no longer detectable when >150 m from the nest. It is probable the adults were removing material from the old nest in preparing to re-nest at a new site.

Our observations strongly suggest that *Wetmorethraupis* is a cooperative breeder, a trait shared with numerous other genera of Thraupidae⁵. Molecular data indicate that *Wetmorethraupis* is closely related to *Bangsia*¹² for which all described nests have been mossy domes constructed in epiphyte clumps or supported by small branches^{3,6,10,13}. Although we could not closely examine the nest of *Wetmorethraupis*, it appears in almost every respect quite dissimilar to those of the species' putative closest relatives. However, the nest and behaviour we describe are largely similar to those of White-capped Tanager *Sericossypha albocristata*, another large,

monotypic tanager of uncertain taxonomic affinities⁵. Both are large canopy dwellers, both travel in (frequently) monospecific flocks, and both vocalise loudly and frequently, and often move over long distances. Though the only description of a *Sericossypha* nest also lacks details⁴, its architecture (bulky, loose-stick, open cup) and placement (atop a broad substrate) are apparently similar to *Wetmorethraupis*. Interestingly, the nests of *Nemosia* spp. tanagers^{9,14,15}, the putative relatives of *Sericossypha*^{5,12}, are markedly dissimilar to those of Orange-throated and White-capped Tanagers. As both latter species are infrequently included in phylogenetic analyses, their true affinities are unclear^{2,12}. It remains to be seen if they are more closely related than currently believed, or if the similarities above represent convergent evolution.

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