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FIRST NESTING REPORT OF THE WEST PERUVIAN SCREECH-OWL (*OTUS ROBORATUS*)

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Primer registro de anidación del Autillo Roborado (*Otus roboratus*).

Key words: *Otus roboratus*, West Peruvian Screech-Owl, nesting, breeding season, dry forest, Ecuador.

INTRODUCTION

The genus *Otus*, with a cosmopolitan distribution, is comprised of species that occur in a variety of habitats, such as foothill forest, humid montane forest, dry forest, savannas, plantations and urban areas (Marks *et al.* 1999). Very little is known about the breeding biology of most species of Neotropical *Otus*. Indeed, details of nest sites and clutch size appear to be available for only 3 of the 14 species thought to breed in South America (Holt *et al.* 1999).

The West Peruvian Screech-Owl (*Otus roboratus*) occurs in the dry forests of southwestern Ecuador and northern Peru. It has been recorded as far north as Jauneche, in the Los Ríos prov., Ecuador (Williams & Tobias 1996), and to the south, from extreme northwestern Peru as far south as dep. Lambayeque (subspecies *pacificus*) (Johnson & Jones 1990, Holt *et al.* 1999). Additionally, an isolated population (nominate subspecies) occurs in the dry Marañón valley of northern Peru (Johnson & Jones 1990, Williams & Tobias 1996, Ridgely & Greenfield 2001).

Recorded mostly below 1200 m a.s.l., this species inhabits tropical deciduous forest, secondary woodland and open dry scrub (Johnson & Jones 1990, Ridgely & Greenfield 2001). However, it has also been recorded at 1800 m a.s.l. near Sozoranga, in the Loja prov., Ecuador (Holt *et al.* 1999), and as high as 2100 m a.s.l. in San Damián, dep. Ancash, Peru (Johnson & Jones 1990). Although it has been reported as fairly common (Parker *et al.* 1996), little is known about its natural history. Only distributional records and data on plumage variation of a few captured individuals have been published (Best *et al.* 1993, Parker *et al.* 1995, Williams & Tobias 1996). Here, we report the first nest known for the West Peru-

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FIG. 1. Nest of the West Peruvian Screech-Owl (*Otus roboratus*) in a *Tabebuia chrysantha*-dominated secondary forest, El Faique, Loja prov., southwestern Ecuador. Photo by Juan F. Freile/Archivo EcoCiencia.

vian Screech-Owl and briefly discuss the breeding cycle of this species.

FIELD OBSERVATIONS

An occupied nest of the West Peruvian Screech-Owl (*pacificus* subspecies) was found by a local assistant on 28 April 2001, during the course of a rapid ecological assessment, at 520 m a.s.l, in El Faique (04°07'09"S, 80°24'21"W), Loja prov., southwestern Ecuador (see Santander *et al.* 2001). The nest was located 2.7 m above the ground in a hole of a live *Tabebuia chrysantha* tree (Bignoniaceae), presumably excavated after the fall of a branch, in an old secondary semideciduous forest dominated by this tree species (Fig. 1). The entrance of the nest cavity was oblong, while its interior was oval in cross section with the base slightly enlarged. Measurements (cm) were as follows: Entrance length = 42, maximum entrance width = 14, minimum entrance width = 10, depth = 38, inner diameter = 11. The nest floor had little plant material, mostly small pieces of bark and some finer material resembling sawdust.

At the time we inspected the nest (2 May 2001), we found a gray morph adult (presum-

ably a female, see Marks *et al.* 1999) inside the nest cavity. As we climbed to the nest, the adult flew directly into the forest. The nest contained two oval white eggs approximately 3 cm in length. We visited the nest the next morning but did not find the adult inside; the two eggs were still present.

On 4 April 2001 at Achiotes, Loja prov. (04°03'39"S, 80°16'43"W, 330 m a.s.l.), 15.5 km northeast of El Faique, we mist-netted an adult female West Peruvian Screech-Owl also in grayish plumage, with an enlarged incubation-patch. Its morphometric measurements were: exposed culmen 17.1 mm, culmen width at base 6.5 mm, tarsus 31.3 mm, wing 141.0 mm (flattened), tail 68.8 mm.

The two birds recorded were identified from other *Otus* species by their small size, grayish plumage with indistinct blackish facial rim and dense streaking in the underparts, as well as by the habitat they occupied, and their distributional range (Ridgely & Greenfield 2001). The West Peruvian Screech-Owl is also the only *Otus* species found in deciduous habitats in western Ecuador (Holt *et al.* 1999, Ridgely & Greenfield 2001).

DISCUSSION

The discovery of this nest at El Faique and the capture of an adult in breeding condition at Achiotes a month before allow us to suggest that laying and incubation in the West Peruvian Screech-Owl in this part of its range take place during April and May. If we take into account the courtship period and the time required for chick growth and fledging (see Thomas 1977, Marks *et al.* 1999), the breeding season of this species might well extend from March to June. Nevertheless, it is important to note that breeding cycles in birds of the Tumbesian Region of endemism probably vary from year to year depending on the time of onset of rains (P. Coopmans pers. com.).

Best *et al.* (1996) found that the breeding periods of 58 species of birds of several dry forest sites in southwestern Ecuador coincide with the rain season, from January through March. It has also been reported that Neotropical insectivorous owls, which inhabit regions with marked climatic seasons (wet and dry periods), breed in the dry season or toward the end of it, because this enables them to take advantage of higher insect abundance during the ensuing wet season (Marks *et al.* 1999). The period in which we found the nest and the adult in breeding condition corresponds to the end of the wet season, which usually has heavy rains in southwestern Ecuador (Munday & Munday 1992). It seems possible that in this year, as a consequence of the heavy rains (reported by local people), the forests remained humid for an extended period of time during the transition between dry and wet seasons. This has presumably helped sustain large insect populations, allowing these species to breed relatively late in this season. In the Tumbesian Region the dry season extends from June through September, and the wet season from January through March, with two transitional periods in October–December and April–May (Munday & Munday 1992, Best & Kessler 1995).

There are evidences of breeding activity in museum specimens of the West Peruvian Screech-Owl that are consistent with the general trend reported for Neotropical insectivorous owls. Specimens in breeding conditions have been collected in August 1989 and 1992 in two nearby localities, Celica and Mangaurcu, Loja prov., Ecuador (ANSP 185163, 185165, 181480), and in August 1975 in Chignia, dep. Piura, Peru (LSUMZ 80428). However, breeding activity is also evident in specimens collected in February 1981 in Las Pampas, dep. Lambayeque, Peru (LSUMZ 100629) and in May 1977 in Río Tocto, dep. Lambayeque, Peru (LSUMZ 87277). These two records and the information we report in

this note are apparently out of the regular breeding period that might be expected for an insectivorous owl. Local climatic variations or differences in the onset and length of the dry and wet seasons among different years are probably involved. This situation should be taken cautiously because there is notable variation in climatic conditions among different areas and different years in the Tumbesian Region, mainly due to the influence of the El Niño Southern Oscillation (ENSO) (see Best & Kessler 1995). Some other museum specimens collected in the same months and same localities as those in breeding condition (e.g., MECN 0771, ANSP 181534, 181535, KU 86719, August 1989, and MECN 6301, ANSP 185164, August 1992) apparently were not breeding. The availability of nesting sites seems to be a limitation for breeding in this screech-owl (Marks *et al.* 1999) and probably accounts for this difference in breeding activity.

The breeding season of the West Peruvian Screech-Owl apparently depends on climatic conditions that vary from year to year and get more humid during the El Niño years. This climate-related variation has been reported in southwest Ecuador for the Anthony's Nightjar (*Caprimulgus anthonyi*), a nocturnal and insectivorous species (Robbins *et al.* 1994). Furthermore, variability in local climatic conditions which affects southwestern Ecuador (see Best *et al.* 1996) could generate differences in the breeding cycles of bird species.

When first found the two eggs were already in the nest. In the Eastern Screech-Owl and the Flammulated Owl (*Otus asio* and *flammeolus*) (the only species of *Otus* in America in which the egg-laying interval is known) the interval between which eggs are laid varies from one to two days (Reynolds & Linkhart 1987, Gehlbach 1995, Holt *et al.* 1999). If this is the rule for *Otus* species, we can assume that, in this case, the complete clutch size of the West Peruvian Screech-Owl consists of two eggs. A similar clutch size has also been reported for the Tropical Screech-Owl (*Otus choliba*) in Venezuela (Thomas 1977).

The information we present contributes to our knowledge of the natural history of this poorly known species. Additional information about this species' natural history, habitat preferences, and probable vulnerability to extinction would be highly desirable, even though currently it is not considered a threatened species (BirdLife International 2000).

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