Notes on breeding birds from the Villano River, Pastaza, Ecuador

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Presentamos nueve registros reproductivos de especies de aves amazónicas realizados en el área del río Villano, provincia de Pastaza, Ecuador. Detallamos medidas de los huevos de tres especies y de nidos de dos especies. Además, describimos dos comportamientos de los adultos de Tinamú Chico *Crypturellus soui* y Chotacabras Negruzco *Nyctipolus nigrescens* de posible evasión a los depredadores durante la anidación, y comentamos sobre las observaciones de biología reproductiva de estas dos especies y de las palomas perdices Zafiro *Geotrygon saphirina*, Rojiza *G. montana*, Pauraque *Nyctidromus albicollis*, Carpintero Lineado *Dryocopus lineatus*, Querula Golipúrpura *Querula purpurata*, Saltarín Coroniazul *Lepidothrix coronata* y Saltador Golianteado *Saltator maximus*. Estos registros contribuyen al conocimiento de la historia natural y temporadas reproductivas de las aves de esta región del Ecuador.

The breeding biology of many species of tropical birds is poorly known[14,20]. Comparatively few data have been published concerning the reproductive ecology of birds in the lowlands of eastern Ecuador, with first nest descriptions still being reported[2,9,11,12]. Despite increased knowledge of Neotropical birds in recent years, basic natural history data remain critical to better understand avian ecology[7,14]. Even for abundant species with broad geographic ranges, more data are needed to fill information gaps concerning life history and behaviour[14]. Information about breeding, including nest architecture and placement, may clarify phylogenetic relationships, understand selective pressures on breeding biology and enable conservation by predicting potential impacts of land-use practices on bird populations[21,22,31]. We present breeding data for nine species from remote field sites along the Villano River in the lowlands of Pastaza prov., eastern Ecuador.

Study area and Methods

Records were gathered opportunistically from February to December 2008 and 2013 at seven locations along the Villano River, Pastaza prov., Ecuador. The area has a hilly terrain characterised by vast tracts of rainforest interrupted by many small indigenous communities and scattered oil wells. An oil pipeline runs parallel to the Villano River and a road joining the main indigenous communities west to Puyo, Pastaza, has been constructed recently[1,2]. Climate is wet with an estimated annual precipitation of 4,508.18 mm and mean temperature of 21.4ºC, according to 2008–13 data from the nearest meteorological station in Puyo[17]. We visited each of the seven sites for 12–15 days during biodiversity assessment work; access was via helicopter. Elevation and coordinates were obtained using a GPS. In some cases, measurements of nests and eggs were taken, but due to the short time in the field at each site, we were unable to undertake sustained observations of individual nests. Taxonomy follows Remsen *et al*.[23].

Species accounts

Little Tinamou *Crypturellus soui*

Two unmarked pinkish eggs were located in a small depression on the ground next to a small shrub (Melastomataceae) at Site 1 (01°27'S 77°26'W; 320 m) on 25 February 2008. The eggs were placed on plant debris, with a few dry leaves surrounding the nest. Species identification was subsequently confirmed from photographs. A single individual was observed at the nest, probably a male, given parental care among Tinamidae[13,27]. While incubating, the adult covered the eggs with its chest and upper belly, while the tail and rump were raised (Fig. 1). There is considerable regional variation in season for this species, with peaks in February (early dry season) in Costa Rica and April–July and December–January in South America (wet season)[4,5,27]. Our record coincides with the wet season as elsewhere in South America.

Sapphire Quail-Dove *Geotrygon saphirina*

A white egg was observed on a simple platform nest constructed of sticks and rootlets, c.3 m above ground at Kurintza (01°30'S 77°30'W; 352 m) on 3 November 2013. Next afternoon, an adult was found incubating. We were unable to take measurements of the nest because the tree was too slim to climb, but we estimate that its diameter was <20 cm. Photographs were taken by tying a camera to a pole (Fig. 2). The nest comprised many sticks and a few leaves, and was sited adjacent to a stream,

Figure 1. Adult Little Tinamou *Crypturellus soui* incubating two eggs, Villano River, prov. Pastaza, eastern Ecuador, 25 February 2008 (Galo Buitrón-Jurado)
Figure 2. Adult Sapphire Quail-Dove *Geotrygon saphirina* incubating one egg (b), Kurintza, Villano River, prov. Pastaza, eastern Ecuador, 4 November 2013 (Héctor Cadena-Ortiz)
Figure 3. Two adult Blackish Nightjars *Nyctipolus nigrescens* roosting near their nest, (b) the egg, Villano River, prov. Pastaza, eastern Ecuador, October 2013 (Héctor Cadena-Ortiz)

like previous nests found in north-east Ecuador, thereby supporting a preference for nesting near watercourses[11].

Ruddy Quail-Dove *Geotrygon montana*
A nest with an incubating adult was discovered on a log 2 m above ground within mature *terra firme* forest at Site 1 on 20 February 2008. The nest comprised a simple platform mainly of dry leaves and small sticks, and was sited in a depression on a trunk. Approximate measurements of the nest were 40 × 25 cm, with a 3 cm-deep cup of dry coriaceous leaves. On a second visit, on 5 March, the nest was empty. Nests of this species in Ecuador have been

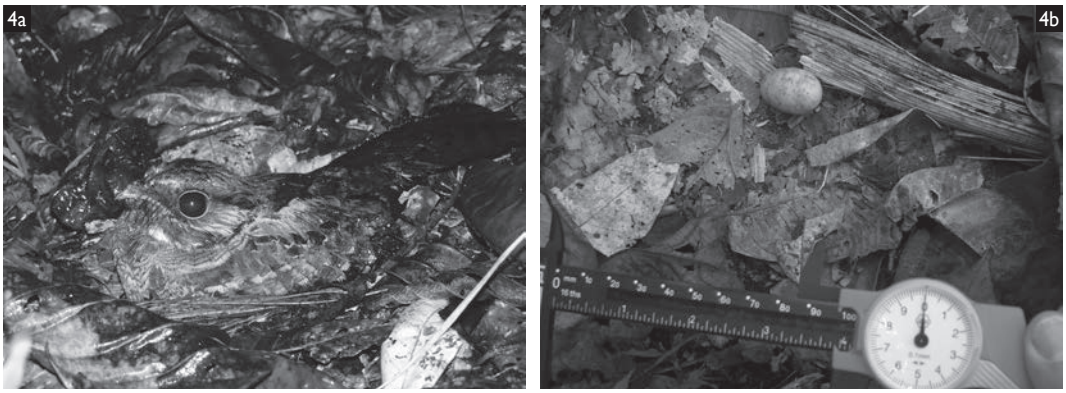

Figure 4. Adult Common Pauraque *Nyctidromus albicollis* incubating single egg (b), Villano River, prov. Pastaza, eastern Ecuador, 5 September 2013 (a: Jorge Brito; b: Héctor Cadena-Ortiz)

found in January, March and November[12]. Previous records and our observations suggest that breeding could occur January–June during the wet and early dry seasons, as also reported for Colombia[16].

Blackish Nightjar *Nyctipolus nigrescens*
An adult was found incubating a single creamy-buff egg with lilac and brown to black spots and blotches at Site 3 (01°28'S 77°31'W; 400 m) on 12 October 2013. The egg measured 26.6 × 18.6 mm and was deposited on the ground in a simple unlined nest[22], in an open area adjacent to a pipeline. Our data are comparable to previous reports of clutch size and nesting sites[3,18,29]. Each time that we visited the nest during the day, the incubating adult flushed. Once, both adults were roosting on a branch near the nest and bobbed up and down when we approached to photograph them (Fig. 3). This display is probably performed to distract intruders away from the nest (injury-feigning)[29].

Common Pauraque *Nyctidromus albicollis*
A nest was found in leaf litter within regenerating forest, 100 m from a cleared area adjacent to an oil facility, at Site 1 on 5 September 2013 (Fig. 4). Six days later, an adult was observed at the same unlined nest[22], incubating a single pinkish-buff egg, with irregular pale brown spots, measuring 36.2 × 21.1 mm. This egg was larger but similar in coloration to two eggs reported from El Salvador (30.6 × 21.9 mm and 30.2 × 21.6 mm)[30]. There is another report of two eggs from Brazil, found on a 30 cm-high sandy bank heavily strewn with dead leaves[20]. Our record is from the dry season, matching data from the Brazilian Amazon, where reproductive peaks have been documented in June–September, i.e. the months with lower rainfall[20]. However, seasonality among Amazonian populations of this species is still poorly known[20].

Lineated Woodpecker *Dryocopus lineatus*
We observed an adult carrying a faecal sac from a hole, c.50 cm in diameter, 12 m above ground in a dead trunk next to a man-made clearing at Site 1 on 21 June 2008. Another nest of the species in Ecuador was found in September[9]. Our data agree with a record from Central America where nest cavities are usually located 6–20 m above ground in dead trees near edges of clearings[19].

Purple-throated Fruitcrow *Querula purpurata*
A juvenile accompanying two adults was observed near a loose platform of sticks at Site 1 on 21 February 2008. The nest was c.8 m above ground, among a group of small branches covered by many lianas, and was similar in appearance to those described from Ecuador and Panama, i.e. weak-looking platforms of sticks and vines[6,24]. As for Little Tinamou, our record was during the wet season.

Blue-crowned Manakin *Lepidothrix coronata*
On 29 November 2013, at Tarangaro (01°23'S 77°23'W; 370 m), a female was found incubating two slightly pinkish eggs, with pale brown blotches, measuring 18.9 × 12.1 mm and 18.3 × 11.4 mm, respectively. The nest was 4.9 cm in diameter on the outside with an external height 2.9 cm. It was placed between small horizontal branches, 50 cm above ground, in a small sapling within *terra firme* forest. The nest was a low open cup[25], mainly of twigs and parts of leaves, but lacking green moss, which material is frequently found in nests in Costa Rica[28]. This may indicate some variation in materials used by *L. coronata*. Nest shape and egg size are similar to previous descriptions from Ecuador[8,15].

Figure 5. Adult Buff-throated Saltator *Saltator maximus* incubating two eggs (b), Tarangaro, prov. Pastaza, eastern Ecuador, 21 September 2008 (Galo Buitrón-Jurado)

Buff-throated Saltator *Saltator maximus*
An adult was observed incubating at a nest at Tarangaro in the afternoon of 21 September 2008. When approached, the bird flew off, revealing the presence of two blue eggs marked with small dark brown spots forming a semicircle at the blunt end. The nest was an open cup concealed by many green leaves, its base being constructed of long dry ones, with many twigs and plant material. It was similar to previous nests reported in the literature[26] (Fig. 5). The eggs were not measured.

These data further our understanding of seasonality and breeding biology of birds in Ecuador[9,10,12,29], and of poorly known life-history traits, like egg sizes[14]. Our data should aid additional analyses and syntheses of the breeding ecology of groups such as tinamous, pigeons and nightjars, whose behaviours are still scarcely known.

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