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# A new subspecies of Oriente Warbler *Teretistris fornsi* from Pico Turquino, Cuba, with ecological comments on the genus

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Se describe una nueva subespecie de Pechero *Teretistris fornsi* para el Pico Turquino, Provincia de Santiago de Cuba. Esta forma se diferencia de la que vive en el resto de Cuba por ser ligeramente mayor, especialmente en la cola, y con ciertas diferencias en el patrón de colorido. Se da una tabla con medidas morfológicas convencionales y el peso. Se hace un recuento sobre la historia natural del género, tomando como base información publicada, o inédita. Se da un mapa con todas las localidades reportadas para el género.

## Introduction

The endemic West Indian genus *Teretistris* is represented in Cuba by two allopatric species: Yellow-headed Warbler *T. fernandinae*, throughout the west of the island, and Oriente Warbler *T. fornsi* in the east<sup>5</sup>. The former was described by Lembeye<sup>21</sup> as *Anabates fernandinae*, based on a mounted specimen in Gundlach's private collection. But Cabanis, in 1855, erected the genus *Teretistris* for this species<sup>14</sup>. In his description Lembeye<sup>21</sup> provides measurements, morphological data and comments concerning habits and status. However, he did not discuss its distribution, nor did he designate a type-specimen, although this can be presumed to be Gundlach's specimen. Although subsequent authors have indeed considered this specimen to represent the holotype, it is important to confirm that the type is the unsexed specimen no. 20, labelled *Teretistris fernandinae*, from Gundlach's collection and subsequently deposited at Instituto de Ecología y Sistemática, Havana<sup>30</sup>. As no geographical variation within this species has been described, the lack of a type-locality can be considered to be relatively unimportant. Given that the type was from Gundlach's collection, who spent most of his early years in Cuba in Cárdenas, it is probable that it was obtained somewhere in northern Matanzas Province, within the environs of Cárdenas, Carlos Rojas or Bemba (now Jovellanos). AOU<sup>3</sup> mentions Las Villas Province as within the range of *T. fernandinae*, probably based on Bond<sup>6</sup>. This is correct, because Península de Zapata was formerly incorporated within this province, but presently belongs to Matanzas.

Yellow-headed Warbler is common in Cuba, Isla de Pinos and Cayo Cantiles, but is confined to the west of the main island, from Península de Guanahacabibes in extreme west Pinar del Río Province, to the environs of Itabo, Matanzas Province. It occurs on three keys—Cayo de las Cinco Leguas (Archipelago Sabana-Camagüey) north of Cárdenas on the north coast; and Cayo Cantiles and Isla de Pinos (Archipelago de los Canarreos) off the south coast. On the south coast, it occurs in Península de Zapata<sup>5,8,10,15</sup>.

*Teretistris fornsi* was described by Gundlach<sup>13</sup>. The type is a mounted specimen labelled *Teretistris fornsi* (no. 243), deposited with the type of *T. fernandinae* in his private collection. A syntype is in the American Museum of Natural History (hereafter AMNH), New York (no. 40019). Gundlach<sup>13</sup> considered it endemic to eastern Cuba, a view that has been followed by subsequent authors, including recent contributions<sup>5,6</sup>. However, Bond<sup>5</sup>, based on specimens taken by Rollo Beck at Pico Turquino, in 1917, reported this locality within the range of *T. fornsi* and its range was further extended to the coast of northern Camagüey (Nuevitás) and west (10 km north-west of Banao)<sup>7,28</sup>. In 1962, populations were discovered at two localities further west, on the north coast of central Las Villas Province, around El Dorado, Isabela de Sagua, and Salinas de Bidos, Itabo, Matanzas Province<sup>8,9</sup>. Subsequently, it was found on Cayo Coco<sup>23</sup> and, some years later, on other major keys of northern Camagüey and Ciego de Ávila provinces<sup>16,18,25</sup>. Thus *Teretistris fornsi* occurs from the northern environs of Playa de la Teja, Itabo, Matanzas Province (see Discussion and Fig.1), to the eastern tip of Punta de Maisí, Baracoa in Guantánamo Province, including Isabela de Sagua, Sierra de Cubitas, Archipelago Sabana-Camagüey, several localities in Granma, Las Tunas and Holguín, Santiago de Cuba (including Sierra Maestra), several massifs in the north and east of Guantánamo Province, as well as in coastal areas<sup>1,2,24–26</sup>.

With the exception of the south-east coastal populations, *T. fornsi* has a rather disjunct range, principally because of the scarcity of suitable habitat in most areas, with the exception of the southern coast. It is unclear whether central and western populations remained undiscovered until recently, or represent recent range expansions. There is virtually no sexual dimorphism, although females have shorter tails (Table 1) and geographical variation is very limited. All known populations are very uniform in their morphology, including size, with the exception of that inhabiting the highest ranges of Pico Turquino (see Discussion). This population I propose to name:

*Teretistris fornsi turquinensis* subsp. nov.

## Holotype

Instituto de Ecología y Sistemática, Havana, Cuba (hereafter IZ) 2343; adult female from Pico Real del Turquino, at 1,800 m elevation, Sierra Maestra, Santiago de Cuba Province; 29 March 1980; collected by O. H. Garrido.

## Paratypes

AMNH 166465; male and AMNH 166461-166462-166463; females from Pico Turquino; 20 August 1917; collected by Rollo Beck.

## Associated material

IZ 2342; female from La Emajagua, at 550 m elevation, Pico Turquino; 27 March 1980; collected by O. H. Garrido.

### Diagnosis

Specimens from Pico Turquino, compared to other populations, are larger, particularly in respect of tail length (Table 1); the grey crown and upperparts are darker, more uniform sooty grey, rather than greyish washed olive; flanks greyish, not brownish or broccoli brown; secondary fringes only very marginally paler, a feature which is more marked in western populations (Itabo); tail feathers darker, less broccoli brown. No observable differences in the underparts, lores, or undertail-coverts.

### Variation and comparison

All populations are remarkably similar in colour and pattern, with slight variations in size (Table 1). Apparently, specimens from the environs of Santiago de Cuba are slightly larger than other populations. Perhaps these are from similar elevations, rather than from sea level, but no altitude data are available.

Specimen IZ 2342, from La Emajagua, was collected at 550 m on Pico Turquino, not from above 1,440 m like the type and paratypes, and its colour pattern is more reminiscent of lower-elevation examples. This specimen is perhaps best considered as an intermediate.

Due to the isolation of the western populations, some variation in size, plumage pattern or coloration might be expected but is not the case. All populations are very similar.

### Natural history

Nothing is known of the natural history of the new montane form and very little has been published concerning the species as a whole until very recently, thus it is pertinent to summarise all available data on the genus (see Discussion).

Both *Teretistris fornsi* and *T. fernandinae* are gregarious, occurring in flocks of 4–16 year-round, except during the breeding season, when they are in pairs. At Pico Turquino in March, birds were paired. Both are ‘nucleus’ species in mixed-species flocks. The vocalisations are relatively similar to the human ear; typically uttering a loud and persistent rasping trill, repeated several times, and usually given by all flock members, particularly when alarmed.

They are principally insectivorous. Three orders of insects have been identified within stomach contents—mostly Coleoptera, with smaller quantities of Homoptera and Lepidoptera<sup>11</sup>—but they may also take other invertebrates, small fruits, caterpillars, spiders etc, hence their peculiar habit of literally ‘combing’ all vegetational substrates, from ground level to the middle canopy.

### Nesting

Virtually nothing has been published concerning the breeding biology of *Teretistris fornsi* since Gundlach<sup>13</sup>, who briefly described the location of a nest, and the number and colour of the eggs. Bond<sup>5</sup> apparently based his description and measurements upon Gundlach’s, while more recently García Sarmiento & Rojas Tito<sup>11</sup> offered the following: ‘The nest is placed on a horizontal limb or among parasitic plants and is composed of moss (*Tillandsia*), rootlets and fine grasses, but has no soft interior lining. Eggs, 2–3 white, with a slight bluish or greenish tinge, spotted and sometimes with various shades of brown and lilac at the larger end (20 x 14 mm—*T. fernandinae*; 19 x 14 mm—*T. fornsi*)’. Gundlach<sup>14</sup> writes regarding the nest of *T. fernandinae* ‘en Abril encontré un nido encima de una ramita horizontal, y otro encima de plantas parásitas (Orquideas); estaban hechos de Guajaca (*Tillandsia fasciculata* sw.), yerbas finas, raicitas y otras sustancias; pero sin el forro interior suave de otros pajaritos. Los 2–3 huevos son blancos, apenas con viso azulado y cubiertos cerca del extremo grueso de una corona de manchitas liláceas y pardo-rojizas. Sus diámetros son 0,020 x 0,014’. For *T. fornsi* he states: ‘el nido es también igual, así como el modo de anidar. Los huevos son blancos, con un viso apenas verdoso, con manchitas más o menos grandes liláceas, verdoso-pardas y dibujos morenos. Diámetros: 0.019 x 0.014 1/2 milímetros’.

García Sarmiento & Rojas Tito<sup>12</sup> studied the ecology and ethology of *Teretistris fornsi* at several localities around Santiago de Cuba. They found 27 nests and provide a list of plant species used in nest building. The nest is very closely concealed within a tree fork covered by *Tillandsia usneoides*. Soft materials, *Ipomea* sp., vines and other plants, small roots, feathers and small fragments of *Tillandsia usneoides* are used to construct the nest, but the interior is unlined. The 2–3 white eggs are marked with reddish-brown spots. Nests are placed at 0.9–1.1 m above ground and have the following measurements in mm: max. diameter 55.4; min. diameter 40.2; height 35.3; depth of the cup 23.2; weight 6.4 g. The breeding cycle occupies 26–28 days in March–July: nest construction takes 6–7 days, with eggs being laid 1–2 days after the nest is completed, incubation occupying 8–9 days, and the young leaving the nest after 10–11 days.

### Etymology

The name *turquinensis* alludes to Pico Turquino, the highest mountain in Cuba, located within the Sierra Maestra.

### Distribution

Confined to Pico Turquino (above 1,400 m), Sierra Maestra, Santiago de Cuba Province, Cuba.

### Discussion

*Teretistris* contains two allopatric species, which are partially parapatric only near ‘El Marquéz’, Itabo, Matanzas

Province. Both have rather long, strong and slightly curved bills, which permit them to forage in a variety of ways, and they flock while feeding. Flocks usually comprise more than six individuals, which occupy a determined area of a wood, with the number of flocks directly proportionate to the available habitat.

Flocks occupy different biotopes according to time of day. In early morning, they are very active, foraging above 5 m and giving long high trills relatively frequently. After c.10h00, flocks usually descend to 2–5 m, but remain very active. In the afternoon they are more variable in their behaviour, but usually feed lower, below 2 m, often scratching in ground litter. Yellow-headed Warbler possibly visits different habitat niches according to temperature, which is higher in the afternoon, forcing them to resort to cooler areas.

While foraging, they not only ‘comb’ the vegetation vertically, but also horizontally. This activity is more intense during the morning hours. Flocks regularly visit the same area at the same time on consecutive days, before swiftly moving on. The arrival of a flock is obvious due to the incessant trilled calls, used to keep the group in reasonably close contact. This habit, of exploring the wood by sections and in flocks permits these two species to ‘saturate’ all substructural niches and is perhaps one reason that makes these species ‘nuclear’ within a mixed flock.

Flock members maintain a distance of several metres from each other, although individuals may occasionally congregate, particularly in alarm, although they usually resume individual foraging very swiftly. Some hover, while others catch insects from the ground surface, either on the bare earth or among detritus, thus acting like Palm Warbler *Dendroica palmarum*, Ovenbird *Seiurus aurocapillus* or Northern *S. noveboracensis* and Louisiana Waterthrushes *S. motacilla* regarding habitat. Others forage very low, either among lower bushy vegetation, or within the vines of bushes, behaving like Black-throated Green *Dendroica virens* or Magnolia Warblers *D. magnolia*. Others hover around trunks and branches, as Yellow-throated Warbler *D. dominica*, or search bark and branch crevices and intersections, like Black-and-white Warbler *Mniotilta varia*. Some betray their presence by noisily searching bundles of dried leaves, either suspended or within parasitic plants, much like a Worm-eating Warbler *Helmitheros vermivorus*. Others forage at the extreme end of twigs or branches, or search the underside of leaves for caterpillars, spiders, etc., like Prairie Warbler *Dendroica discolor* and Northern Parula *Parula americana*. They also search flowers or parasitic plants for nectar, pollen or small insects, in the manner of Cape May Warbler *Dendroica tigrina*. Due to this combination of different foraging methods, I use the term ‘combing’ to describe their behaviour.

It is interesting to note that around Itabo, Matanzas Province, where both species occur, Yellow-headed Warbler occupies the interior and not coastal areas (unlike in other areas of this province, e.g. Punta de Hicacos), which are inhabited by Oriente Warbler. In this partially parapatric zone, the two are separated by less than 10 km. Further fieldwork to discover whether the two species come into contact is desirable.

Oriente Warbler is unknown from the southern keys, although it occurs on several larger ones off the north coast (see Fig. 1). The fact that it is found from sea level to highest altitudes, in coastal vegetation and deciduous woods, may indicate that its habitat preferences are not identical to Yellow-headed Warbler, although both are highly ubiquitous ecologically, corroborating the theory of ‘saturated niches’ in the West Indies<sup>20</sup>. Their behaviour in the breeding season, occurring in pairs rather than flocks, also supports Lack’s theory<sup>17,20</sup>.

In visiting Pico Turquino, I had hoped to find a Cuban counterpart of *Dendroica angelae* or *Dendroica parettra*, but instead *Teretistris fornsi* occupied higher elevations. Four taxa of *Anolis* lizards (two of them distinct species) and three frog species are endemic to higher parts of Pico Turquino<sup>27</sup>. Among birds, Cuban Pygmy-owl *Glaucidium siju*, Great Lizard-cuckoo *Saurothera merlini* and Cuban Green Woodpecker *Xiphidiopicus percussus* may be subspecifically different.

## Material examined

Eighty-five specimens: (17) Salinas de Bidos, Itabo, Matanzas Province; (two) El Dorado, Isabela de Sagua, Las Villas Province; (12) Cayo Coco, (one) Cayo Paredones, Ciego de Ávila Province; (one) Sierra de Cubitas, Camagüey Province; (five) Manatí, las Tunas Province; (one) Gibara, (five) Holguín, Holguín Province; (one) Verreón, Cabo Cruz, (one) Puerto Portillo, Granma Province; (six) Pico Turquino, Sierra Maestra, (one) Tiguabos, (one) Sardinero, (one) Ciudadamar, (one) Palmarito, (one) Santiago de Cuba, (three) El Guamá, (one) El Cobre, Santiago de Cuba Province; (three) Monte Verde, (five) Mata Abajo, (four) Boca de Jaibo, (five) Novaliches, (two) Caña Verga, (two) Maisí, Baracoa, Guantánamo Province. The syntype in AMNH, sent by Gundlach to Lawrence, probably originates from around Santiago de Cuba. The holotype (mounted) is from Gundlach’s collection.

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