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A NEW SPECIES OF *TELIPOGON* (ONCIDIINAE) FROM BOLIVIA

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Abstract. *Telipogon minutus*, from the Carrasco National Park in the Bolivian Yungas, is proposed as a new species. Plants of *T. minutus*, which reach up to 4 cm in height, are the smallest known Bolivian *Telipogon*. The new species is characterized by its oblong to ovate labellum, which is weakly sub-auriculate and retuse at the base, with a semi-circular stigma, a column with two lateral lobes and a mammillary protuberance at the apex, and two tufts of setae with trifurcate apices. A description, figures, and a distributional map of the new taxon are provided, along with a discussion of the differences between the new species and morphologically similar *Telipogon* species.

Resumen. *Telipogon minutus*, procedente del Parque Nacional Carrasco en las Yungas de Bolivia, es propuesta como una nueva especie. Las plantas de *T. minutus*, que alcanzan hasta 4 cm de altura, son las más pequeñas de los *Telipogon* conocidos en Bolivia. La especie se distingue por su labelo oblongo a ovado, con la base retusa y ligeramente subauriculada, un estigma semicircular, y una columna con dos lóbulos laterales, una protuberancia mamilar en el ápice, y dos grupos de setas que se trifurcan en el extremo. Se proporciona una descripción detallada, las figuras, y un mapa de su distribución geográfica, así como una comparación con especies de *Telipogon* morfológicamente similares.

Keywords/Palabras clave: Andes, Bolivian Yungas, Los Yungas de Bolivia, miniature *Telipogon*, Orchidaceae, taxonomía, taxonomy, *Telipogon* miniatura

Introduction. *Telipogon* Kunth (Orchidaceae: Oncidiinae) is a diverse neotropical orchid genus, with 255 species (POWO, 2024). It is found from southern Mexico and the Caribbean to Panama and along the Andes from Venezuela to Bolivia (Martel *et al*., 2017), from where 19 species of *Telipogon* have been recorded (POWO, 2024; Vásquez *et al*., 2014). Among these are the so-called miniature *Telipogon* (i.e., those previously included in the former genus *Stellilabium* Schltr.; Martel *et al*., 2017; Reina-Rodríguez *et al*., 2019), six of which are known from Bolivia: *T. boliviensis* (R.Vásquez & Dodson) N.H.Williams & Dressler, *T. calueri* N.H.Williams & Dressler, *T. kukwae* (Szlach. & Mytnik) J.M.H.Shaw, *T. pampatamboensis* (Dodson & R.Vásquez) N.H.Williams & Dressler, *T. perlobatus* (Senghas) N.H.Williams & Dressler, and *T. roberti* N.H.Williams & Dressler (Vasquez *et al*., 2014). The discovery of the new species proposed here suggests that the number of miniature *Telipogon* species recorded for Bolivia could continue to increase in the coming years.

In 2018, during fieldwork in the Carrasco National Park, Cochabamba Department of Central Bolivia, several unidentified specimens of a miniature *Telipogon* were collected. These specimens did not match the descriptions of any known *Telipogon*, and after careful revision, we determined them to represent a new species. The new species resembles *T. huancavelicanus* Collantes & C.Martel, a miniature *Telipogon* from southern Peru (Martel *et al*., 2017). Below, we provide a detailed description, illustration, and distribution map of the proposed taxon.

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Materials and methods. Specimens were collected in the Carrasco National Park during the development of the Ivirizu hydroelectric project in 2018. In the field, photographs were taken with a Canon EOS Rebel T5, equipped with a Canon 100 mm F2.8 lens. Vegetative parts were dried as herbarium vouchers, and flowers were preserved in a solution consisting of glycerin (12 %), ethanol (70 %), and water (18 %). The vouchers were deposited in the "Martín Cárdenas" National Forest Herbarium (BOLV) in Cochabamba. The distribution map was prepared using the software ArcGIS 10.3. The conservation status of the new species was assessed using the IUCN (2017) criteria.

Taxonomic Treatment

Telipogon minutus M.Zárate & C.Martel, ***sp. nov.*** Fig. 1–2.

TYPE: Bolivia. Cochabamba: Prov. Carrasco, Parque Nacional Carrasco, camino de Sehuencas a Yanamayu, 17°24'S 65°14'W, 1320 m, 11 Aug 2018, *M. Zárate et al. 6330* (holotype, BOLV 34911!).

Diagnosis: Similar to *Telipogon huancavelicanus* Collantes & C.Martel, but differing by its obovate petals (vs. oblanceolate petals), the oblong-ovate labellum (*vs*. sub-pandurate), the base of the labellum sub-auriculate and retuse (*vs*. base with two well defined, divergent auricles), the semicircular stigma (*vs*. rectangular) the anterior border of the stigma swollen into a mammillary dome (*vs*. without a mammillary dome), only two tufts of setae emerging from lateral lobes of the column (*vs*. three tufts of setae), and the setae trifurcate at the apex (*vs*. irregularly branched at the apex).

Plant epiphytic, up to 4 cm long (including the inflorescence), erect. *Roots* 1.0–1.2 mm in diameter, adventitious. *Leaves* 3, sub-coriaceous, greenish-yellow, conduplicate at the base, distichous; *blade* 5.3–14.3 × 1.9–3.9 mm, narrowly elliptic to oblong, margin entire, apex acute. *Inflorescence* terminal, a successively 2–4-flowered raceme, up to 3 cm long; peduncle with 1–2 basal bracts. *Floral bracts* 1.5–2.1 mm long, oblong when extended, conduplicate, apex acute. *Ovary* triquetrous, 4.5–7.2 mm long, pedicellate, pedicel nearly 2 mm long. *Flowers* non-resupinate, 9.8 × 10.0 mm, sepals greenish-yellow; petals wine in color at the base and greenish yellow or yellowish towards the apex, veins light maroon; labellum maroon in the basal third, light maroon in the middle third and yellow at the apex, veins light maroon. *Sepals* 5.1–5.4 × 2.1–2.4 mm, retrorse, greenish-yellow, 3-veined, 1-carinate abaxially dorsally, basally concave, apex acute to sub-acute or apiculate, margin entire, *lateral sepals* elliptic; *dorsal sepal* broadly ovate, sub-triangular. *Petals* 6.4–6.5 × 1.9–2.1 mm, 3-veined, incurved in a natural position, lanceolate, apex acute, margin serrulate. *Labellum* 6.1–6.3 × 3.9–4.3 mm, 5–7-veined, oblong to ovate, ecallose, papillose below the middle third, and sub-auriculate at the base, apex acute, margin serrulate below the apical third. *Column* 1.5 × 1.0 mm, stout, maroon, ciliate all over, the anterior of the stigma swollen into a mammillary dome, laterally bilobed from which each tuft of setae is born; *setae* purplish maroon, 1.5–2.0 mm long, three-forked; *stigma* 0.5–0.6 mm, semi-circular; *rostellum* triangular, erect, reflexed when pollinarium is removed. *Anther cap* cordiform, bilocular. *Pollinarium* 1.0 × 0.5 mm; *pollinia* 4, obovoid, complanate, convex-concave, in 2 unequal pairs, the outer pair larger, the inner pair smaller; *caudicles* hyaline; *viscidium* ancistrous.

Etymology: From the Latin *minutus*, meaning "very small," referring to the small size of the plants. *Telipogon minutus* is the smallest species among the Bolivian *Telipogon*.

Ecology and distribution: *Telipogon minutus* is only known from Yanamayu, in the Carrasco National Park (Fig. 3). The vegetation where the plant was found is classified as lower pluvial forest and Yungas palm grove, part of the Peruvian-Bolivian Yungas Province of the Tropical Andean region (Josse *et al.*, 2007; Navarro, 2011).

Individuals of *T. minutus* grow in the tree canopy, between Johansson's zones IV and V, which have high levels of sunlight exposure. Plants of this species flower between July and August, although floral buds can be observed from May. Each flower of *T. minutus* can last approximately three weeks, indicating that some miniature *Telipogon* species may have long-lasting flowers comparable to that of large-flowered *Telipogon* (Martel *et al.*, 2016).

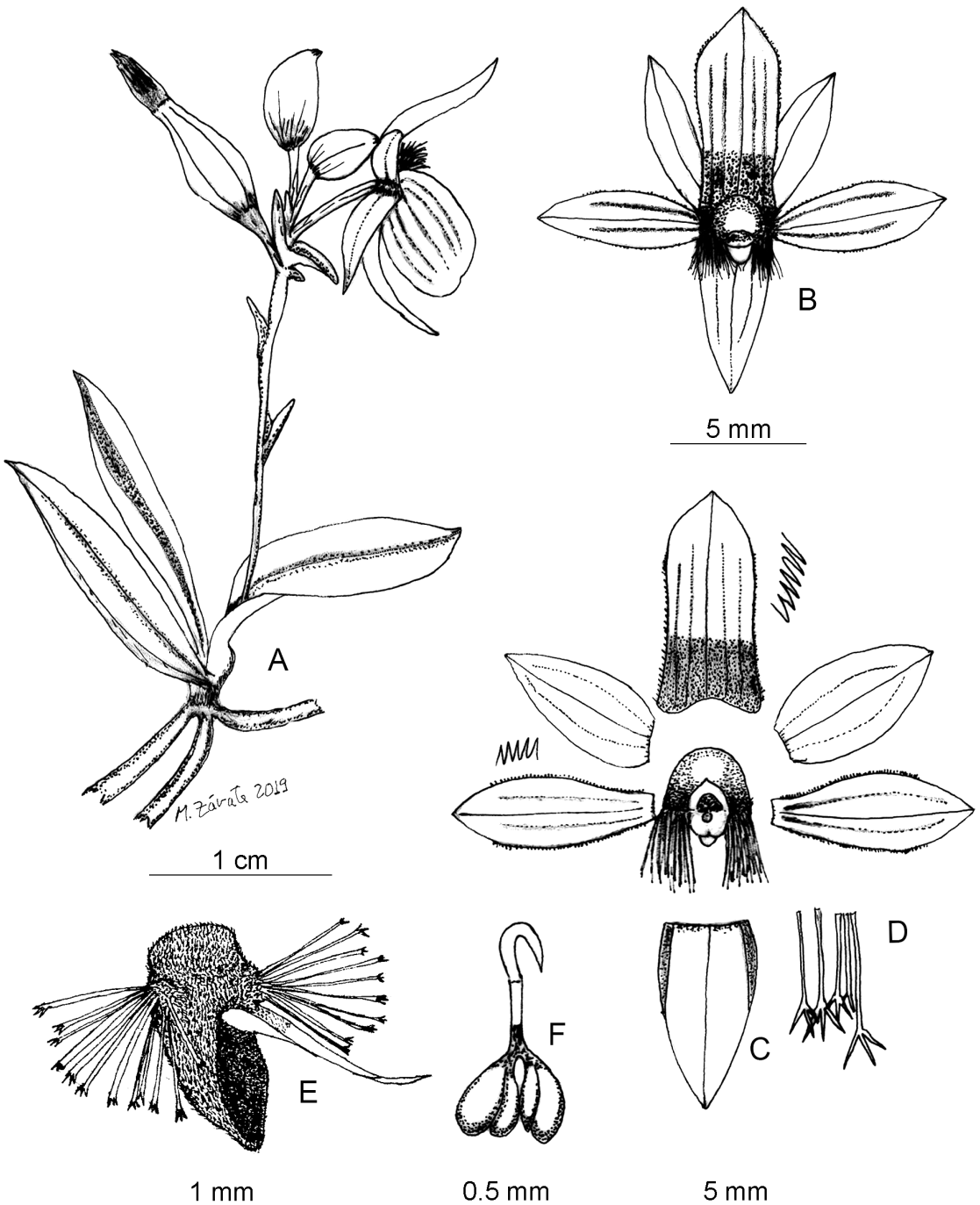

Figure 1. Line drawing of *Telipogon minutus* M.Zárate & C.Martel. **A**. Habit. **B**. Flower, frontal view. **C**. Dissected flower. **D**. Columnar setae. **E**. Column portion, side view. Note that the setae are borne from the columnar lobe and the rostellum are curved because the pollinarium has been removed. **F**. Pollinarium. Drawn by M. Zárate based on *M. Zárate et al. 6330* (BOLV).

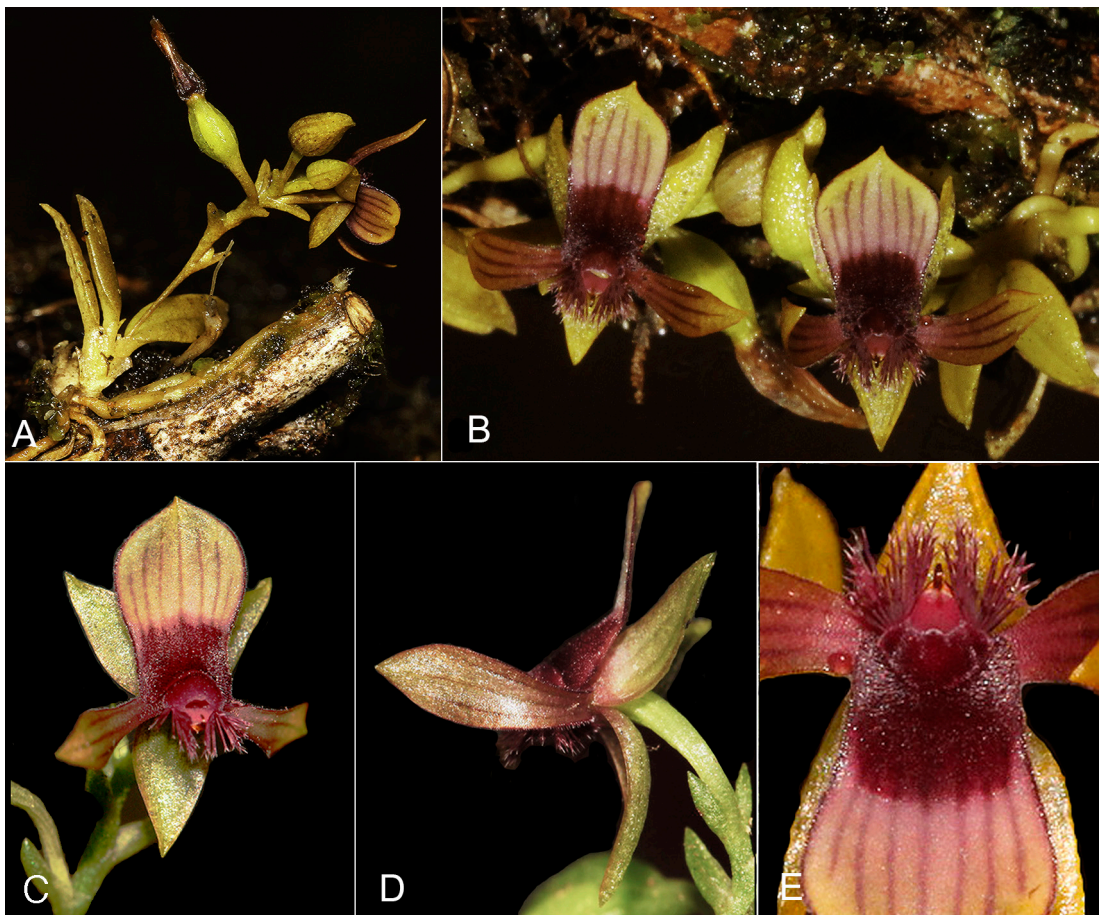

FIGURE 2. *Telipogon minutus*. **A**. Epiphytic habit on a small tree branch, side view. **B**. Flowers, frontal view. Note the maroon coloration at the labellum base and the two tufts of setae on the column. **C**. Detail of flower. **D**. Flower, side view. **E**. Column, close-up view from above. Photographs by M. Zárate.

MORPHOLOGICAL AFFINITIES: *Telipogon minutus* is the smallest plant among the *Telipogon* species recorded so far in Bolivia (Fig. 2). The species resembles *T. bennettii* (Dodson & R.Escobar) N.H.Williams & Dressler and *T. huancavelicanus*, particularly in the shape of the labellum and the presence of tufts of setae in the column. However, *T. minutus* is easily distinguished by the absence of pseudobulbs (*vs*. pseudobulbs present in *T. bennettii*), a sub-auriculate labellum (*vs*. developed auricle in *T. huancavelicanus*), a mammillary dome on the anterior area of the column (*vs*. column without a mammillary dome in *T. bennettii* and *T. huancavelicanus*), two tufts of setae on the column (*vs*. three tufts in *T. huancavelicanus*), three-forked setae (*vs*. unbranched setae in *T. bennettii* and cylindrical branched segments in *T. huancavelicanus*) and a semi-circular stigma (*vs*. sub-circular stigma in *T. bennettii* and rectangular in *T. huancavelicanus*). *Telipogon minutus* can also be confused with *T. kukwae*, as both are miniature *Telipogon* species found in central Bolivia and present with furcate tufted setae. However, *T. minutus* has lanceolate, glabrous 3-nerved petals (*vs*. linear-lanceolate, densely ciliate throughout, 1-nerved), a mammillary dome on the dorsal area of the column (*vs*. lacking a mammillary dome), and two tufts of three-forked setae on the column (*vs*. three tufts and biforked in *T. kukwae*).

CONSERVATION STATUS: The conservation status of *Telipogon minutus* cannot be assessed at this time, as the species is known from only two populations. According to the IUCN Red List criteria (IUCN, 2017), its status must therefore be classified as Data Deficient (DD).

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Author contribution. MZ found the plants, took photographs *in situ*, collected the plant material, and drew the botanical illustration. MZ and CM identified the taxon as new, prepared the description, and wrote the manuscript.

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Conflict of interest. The authors declare no conflict of interests.

Figure 3. Distribution map of *Telipogon minutus*. Prepared by M. Zárate.

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