

New species of *Telipogon* (Orchidaceae) with glabrous gynostemium from South America

Dariusz L. Szlachetko, Marta Kolanowska & Monika Lipińska

Summary: Three new species of the Neotropical orchid genus *Telipogon*, *T. tachirensis*, *T. ventaquemadensis* and *T. amiro-medinae*, are described and illustrated. All novelties are characterized by a non-hairy gynostemium. They may be distinguished from similar taxa based on inflorescence form, relative petal size as well as lip shape, venation and ornamentation. A key to identification of *Telipogon* section *Brevicaules* with glabrous gynostemium is provided.

Keywords: biodiversity, Neotropics, new species, orchids, taxonomy

In 1816, Karl Kunth described *Telipogon* for the first time, a Neotropical genus which name derives from the Greek words *telos* (end or point) and *pogon* (beard), what was an allusion to the hairs on the column. At first, he included only two species within the taxon, *Telipogon angustifolius* Kunth and *Telipogon latifolius* Kunth. Later on, during 19th century, more than 40 new species of *Telipogon* had been described by Reichenbach. Up to date, the number of all ever known *Telipogon* species reaches about 200–250 (COLLANTES & MARTEL 2015) and their distribution range extends from Mexico, Central America and the Caribbean to the Andes, southwards to Bolivia (DODSON 2003; BOGARÍN 2012). Plants of *Telipogon* are mostly miniature, epiphytic or moss growing terrestrials found in cloud forests at 500 to 3600 meters altitude (COLLANTES & MARTEL 2015). They have two growth forms: compact with short stems and many short, few-flowered inflorescences and elongated and vine-like with fewer long, many-flowered inflorescences.

In 1919, KRÄNZLIN divided *Telipogon* into two groups based on their habit. The first one, named *Brevicaules*, embraced plants with abbreviated stems, and the other, named *Caulescentes*, which included the nominal species *T. angustifolius* Kunth was characterized by elongated stems (KRÄNZLIN 1919). Further divisions within sections were based on venation of petals and lip. KRÄNZLIN recognized a single species distinguished from the others by a glabrous gynostemium, *T. croesus* Rchb.f. An other representative of the genus, *T. hausmannianus* Rchb.f., which also lacks any hairs on clinandrium, was surprisingly considered by the author as conspecific with *T. latifolius* Kunth. Both species were included in section *Brevicaules*. A third *Telipogon* representative with glabrous gynostemium, *T. venustus* Schltr., was described in 1920. This orchid differs from both *T. croesus* and *T. hausmannianus* by the elongate stem, small leaves up to 2 cm long and a lip being obovate in outline, longer than wide.

Both *Telipogon croesus* and *T. hausmannianus* were considered as separate taxa by FOLDATS (1970), DUNSTERVILLE & GARAY (1972), ROMERO-GONZÁLEZ & CARNEVALI (2000) and ORTIZ VALDIVIESO & URIBE-VÉLEZ (2007). In 2009, a new species resembling *T. hausmannianus*, named *T. esperanzae* P. Ortiz, was described from Colombia (ORTIZ VALDIVIESO 2009).

Our studies on South American representatives of *Telipogon* and related taxa revealed the existence of three distinctive species with abbreviated stems and glabrous gynostemium which are described here as new.

Materials and methods

Herbarium specimens were examined according to the standard procedures. Every studied sheet was photographed and data from the labels were taken. Both vegetative and generative characters of each plant were examined (leaves, inflorescence architecture, shape and size of the floral bracts, flower morphology and gynostemium structure) and were compared with existing type material.

Taxonomic treatment

Telipogon tachirensis Szlach., Kolan. & Lipińska, sp. nov. (Fig. 1)

Diagnosis. Species resembling *T. hercules* Rchb. f. distinguished by completely glabrous gynostemium, 7-veined petals and larger lip which is transversely elliptic, shortly mucronate, 15-veined and adorned with the tuft of soft hairs at the base.

Type. Venezuela. Tachira. Headwaters of Rio Quinimari along Quebrada Agua Negra on trail to Paramo de Judío (Apure border), 5 km S of San Vicente de La Revancha, 15 km S of Providencia, SE of Santa Ana. Montane rain forest, Alt. 2100–2400 m, 7°25'N 72°25'W, 23 Oct. 1984, *S. Knapp & J. Mallet 6819* [Holotype: US!; Isotype: US!]

Description. Epiphyte. Stem abbreviated, ca 2 cm long. Leaves 4–5 per stem, up to 7 cm long and 1.3 cm wide, elliptic-oblongate, acute. Inflorescence up to 5.5 peduncle cm long including, peduncle ca 5 cm long, raceme 2-flowered. Flowers relatively large, yellow with red veins and maroon gynostemium. Floral bracts 10 mm long, cucullate, ovate, acute. Pedicel and ovary 30 mm long, triquetrous. Sepals similar, keeled on the back side. Dorsal sepal 23 mm long, 7 mm wide, concave, ovate-lanceolate, acute, 3-veined. Lateral sepals 23 mm long, 7 mm wide, concave, obliquely ovate-lanceolate, acute, 3-veined. Petals 30 mm long, 28 mm wide, transversely rhombic-orbicular in outline, acuminate, lower half of margins papillate, veins 7, apically branching, densely anastomosing. Lip 30 mm long, 40 mm wide, transversely elliptic, shortly mucronate at the apex, ecallose, base papillate with a tuft of soft hairs, otherwise glabrous, margins papillate in the basal third, veins 15, apically branching, densely anastomosing. Gynostemium 8 mm long, completely glabrous, rostellum much elongate, ca 5 mm long.

Etymology. In reference to the place of collection of the type specimen.

Notes. This species is morphologically similar to *Telipogon hercules* Rchb. f. described from Northern Peru. The most distinguishing character of our new species is the completely glabrous gynostemium. The lip of the new species is larger (30 × 40 mm vs 34 × 36 mm) and has a different form. It is transversely elliptic, shortly mucronate at the apex in our new species, and transversely elliptic-orbicular, shortly acute at the apex in *T. hercules*. The lip is adorned with the tuft of soft hairs at the lip base in *T. tachirensis*. The lip base of *T. hercules* is just papillate. Both species can be separated by the character and number of lip and petals veins. Petals of *T. tachirensis* are 7-veined (vs 14-veined), and the lip is 15-veined (vs 29). Moreover, the veins are apically branching and densely anastomosing in the new species (vs simple).

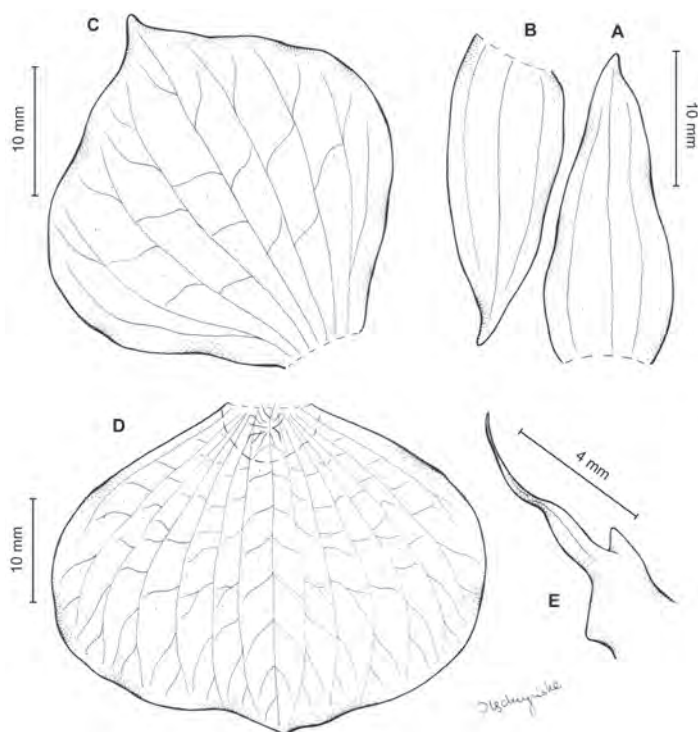


Figure 1. *Telipogon tachirensis* – dissected perianth. A – dorsal sepal; B – lateral sepal; C – petal; D – lip; E – gynostemium. Drawn by N. Olędzka from the holotype.

***Telipogon ventaquemadensis* Szlach., Kolan. & Lipińska, sp. nov. (Fig. 2)**

Diagnosis. Species resembling *T. hausmannianus*, distinguished by very long, many-flowered inflorescence, transversely-elliptic, completely glabrous lip, 9-veined petals and 5-veined lateral sepals.

Type. Colombia. Dept. Boyacá. Ventaquemada, bosques al occidente de la carretera Central en el km 106, Alt. 2900 m, 2 Dec. 1972, L. Uribe Uribe 6752 [Holotype: COL!]

Description. Epiphyte. Stem short, about 5.5 cm long. Leaves narrowly oblong-elliptic 9 cm long, 1.5 cm wide. Inflorescence about 25 cm long, including peduncle about 13.5 cm long, raceme about 13-flowered. Flowers golden-yellow with purple lines. Pedicel and ovary about 34 mm long, triquetrous. Floral bracts about 8 mm long, cucullate, ovate, acute. Dorsal sepal 17 mm long, 7 mm wide, oblong-ovate, obtuse, 3-veined. Petals 22 mm long, 24 mm wide, broadly elliptic, acute, 7-veined. Lateral sepals 17 mm long, 7 mm wide, narrowly ovate, obtuse, 3-veined. Lip 22 mm long, 32 mm wide, transversely-elliptic, rounded at the apex, glabrous, 15-veined, veins anastomosing; disc ecalled. Gynostemium about 7 mm long, lacking any hairs, papillate at the base, rostellum much elongate, ca 7 mm long.

Etymology. In reference to the place of collection of type specimen.

Notes. This species resembles *T. hausmannianus* and *T. croesus*, but unlike in these orchids, the inflorescence of *T. ventaquemadensis* is very long, and the lip is completely glabrous, not papillate along margins and without any hairs at the base. Moreover, the lip of *T. hausmannianus*

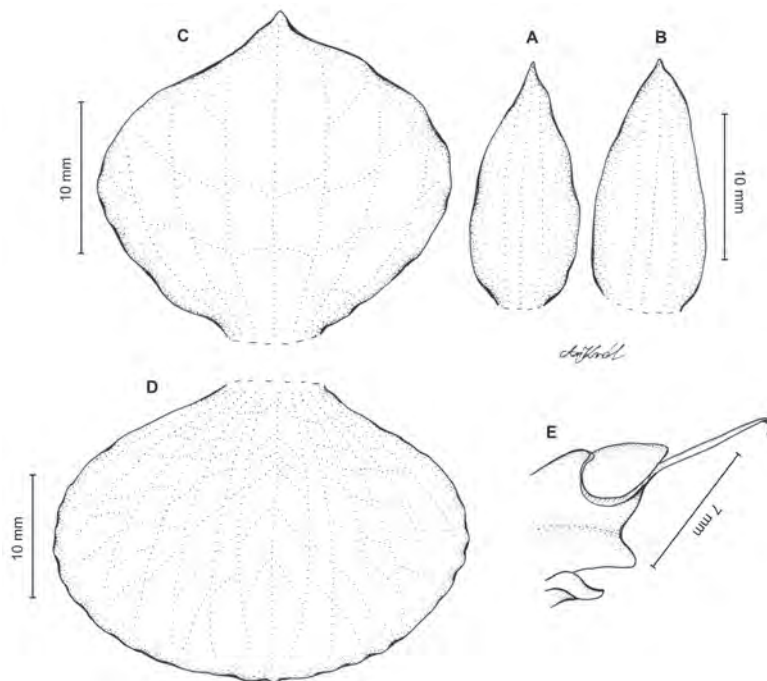


Figure 2. *Telipogon ventaquemadensis* – dissected perianth. A – dorsal sepal; B – lateral sepal; C – petal; D – lip; E – gynostemium. Drawn by A. Król from the holotype.

is suborbicular-obovate (25 × 28 mm), the petals are 9-veined and lateral sepals 5-veined. In *T. croesus* the lip is 13-veined and petals margins are papillate in the lower quarter.

***Telipogon ramiro-medinae* Szlach., Kolan. & Lipińska, sp. nov. (Fig. 3)**

Diagnosis. Species similar to *T. croesus*, distinguished by much larger, 13-veined, cross-venulate, apically truncate lip and transversely rhombic petals.

Type. Colombia. Dept. Putumayo. Valle de Sibundoy. Near San Francisco, N1 11.993 W76 51.680, Alt. 2391 m, 6 Sep. 2014, *R. Medina T. S16/39* [Holotype: JAUM!]

Description. Epiphyte. Stem short, about 2 cm long. Leaves narrowly oblong-oblongate up to 7 cm long, 1.5 cm wide. Inflorescence about 10 cm long, including peduncle about 7.5 cm long, raceme about 3–4-flowered. Flowers golden-yellow with purple lines. Pedicel and ovary about 20 mm long, triquetrous. Floral bracts up to 15 mm long, cucullate, ovate, acute. Sepals similar, keeled on the back side. Dorsal sepal 17 mm long, 5.5 mm wide, oblong-ovate, obtuse, 3-veined. Petals 18 mm long, 14.5 mm wide, transversely rhombic, acute, 7-veined. Lateral sepals 16 mm long, 5 mm wide, narrowly ovate, acute, 1-veined. Lip 15.5 mm long, 18 mm wide, transversely-elliptic, acute at the apex, papillate at the base, 15-veined, lateral veins dichotomous, veins not anastomosing; disc ecallous. Gynostemium about 5.5 mm long, lacking any hairs, papillate at the base, rostellum much elongate, ca 5 mm long.

Etymology. Dedicated to Ramiro Medina Trejo, orchid enthusiast and collector of the type specimen.

Notes. This species resembles *T. croesus* which, however, has a much larger (23 × 34 mm), 13-veined (vs 15-veined), cross-venulate (vs not anastomosing), apically truncate (vs acute) lip.

New *Telipogon* with glabrous gynostemium

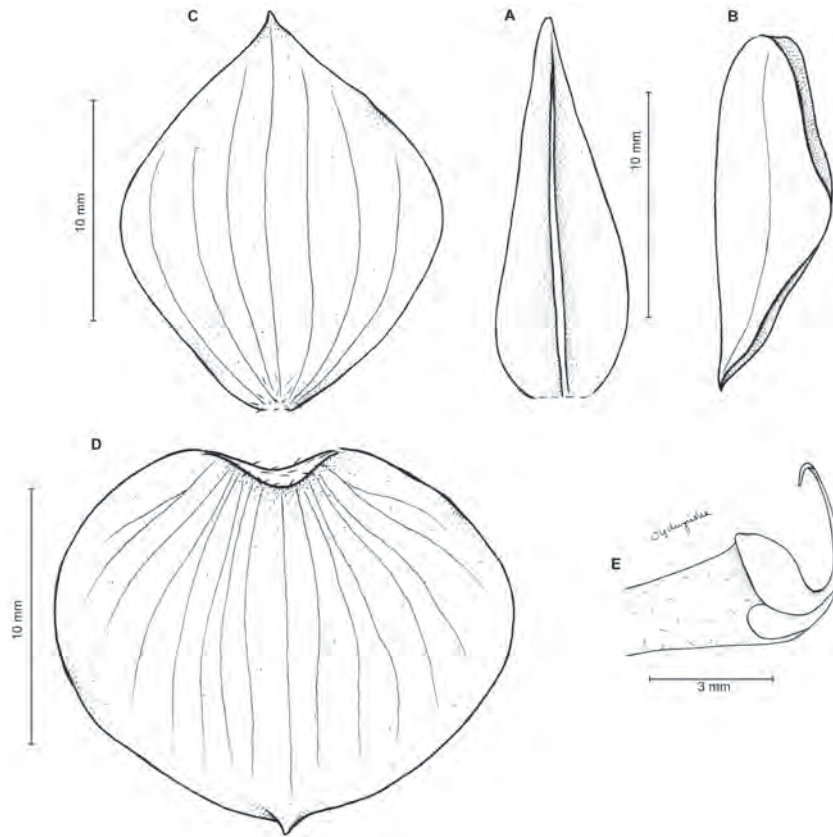


Figure 3. *Telipogon ramiro-medinae*. A – dorsal sepal; B – lateral sepal; C – petal; D – lip; E – gynostemium. Drawn by N. Olędrzyńska from the holotype.

Moreover, petals of *T. croesus* are about 20 mm long and wide (vs 18×14.5), broadly obovate in outline (vs transversely rhombic).

Key to the species of *Telipogon* section *Brevicaules* with glabrous gynostemium:

1. Inflorescence elongate, with more than 10 flowers *T. ventaquemadensis*
- Inflorescence short, 2–4-flowered 2
2. Petals much longer than sepals *T. tachirensis*
- Petals and sepals subequal in length 3
3. Petals 7-veined 4
- Petals 9- or 15-veined 5
4. Lip 15.5×18 mm, 15-veined, veins not anastomosing *T. ramiro-medinae*
- Lip 23×34 mm, 13-veined, cross-venulate *T. croesus*
5. Flowers small, tepals ca 15 mm long, petals 13-veined, lip 21-veined *T. esperanzae*
- Flowers small, tepals ca 20 mm long, petals 9-veined, lip 15-veined *T. hausmannianus*

Acknowledgements

We are grateful to the curators and staff of the herbaria cited in this work for access to their facilities and for loan of specimens. We would like to thank Natalia Olędrzyńska and Anna Król

who prepared line drawings of new species. The research described here was supported by the Grantová Agentura České Republiky (GA ČR; grant nr 14-36098G).

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Addresses of the authors:

Dariusz L. Szlachetko
Monika Lipińska
Department of Plant Taxonomy and Nature Conservation
Faculty of Biology
University of Gdańsk
ul. Wita Stwosza 59
80-308 Gdańsk
Poland

Marta Kolanowska (corresponding author)
Department of Plant Taxonomy and Nature Conservation
Faculty of Biology
University of Gdańsk
ul. Wita Stwosza 59
80-308 Gdańsk
Poland
Department of Biodiversity Research
Global Change Research Institute AS CR
Bělidla 4a
603 00 Brno
Czech Republic
E-mail: martakolanowska@wp.pl

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Autor(en)/Author(s): Szlachetko Dariusz L., Kolanowska Marta, Lipinska Monika M.

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