

Stellilabium colombianum Szlach. & Kolan. sp. nov. (Orchidaceae), a new species from Colombia

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Summary: A new species of the orchid genus *Stellilabium* is described and illustrated based on Colombian material. It can be distinguished from the similar species *S. pogonostali*x and *S. andinum* based on the lip middle lobe surface (ciliate only along middle part of margins), rounded lip apex and lower part of gynostemium being minutely ciliate with tufts consisting of short, hirsute hairs. Information on habitat and ecology of the new species is provided along with a key to identify the Colombian and Ecuadorian representatives of *Stellilabium*.

Keywords: biodiversity, Neotropics, new species, *Stellilabium*, Orchidaceae, determination key

The orchid genus *Stellilabium* was described first by SCHLECHTER (1914) to distinguish a single species of *Telipogon*, *T. astroglossus* Rchb. f., which the author found different from other representatives of this taxon in having similar tepals and a 3-lobed lip. At the end of 20th century, DRESSLER (1999) recognized a total of 30 species within *Stellilabium* and proposed to divide the genus into four sections, two of which were exclusively represented by Central American taxa. Interesting research results were published by WILLIAMS et al. (2005) who revealed based on the molecular analysis that *Stellilabium* is embedded within *Telipogon* and should be merged with the latter genus. Unfortunately, neither of the subclades of *Telipogon* s.l. has been characterized by common morphological characters. While WILLIAMS et al. (2005) concluded that “most of the species of *Stellilabium* are just small versions of *Telipogon* that often become leafless at maturity”, DRESSLER (2003) noticed that the two genera may be distinguished based on peduncle and rachis form (flattened in *Stellilabium* and cylindrical or triquetrous in *Telipogon*).

In the narrower, morphologically congruent concept, *Stellilabium* includes species with flattened stems, sub-basal, distichous and conduplicate leaves which are sometimes absent during flowering. The minute flowers are arranged in the racemose inflorescence and the sepals are similar to petals in shape and size. The lip is entire or 3-lobed. The short gynostemium is relatively robust, swollen just above the base, with the column part as long as the anther (or even shorter) and most often hairy or pubescent. The dorsal anther is motile, 2-chambered. Four pollinia in two pairs are produced. The apical clinandrium is obscure. The large stigma is elliptic and concave. The elongate rostellum is digitate-subulate, more or less hooked at the apex (DRESSLER 2003; SZLACHETKO & MYTNIK-EJSMONT 2009).

Currently *Stellilabium* includes around 50 species distributed from Mexico to Bolivia. In the most northern part of its range, the genus is represented by only three species (SOLANO GÓMEZ et al. 2011; BOGARÍN 2012; ARCHILA et al. 2015). Eleven species of *Stellilabium* were found in Costa Rica (DRESSLER 2003) and five were reported from Panama (CORREA et al. 2004). The highest diversity of the genus in South America was noticed in Ecuador (about 12 species; JØRGENSEN & LEÓN-YÁNEZ 1999; DODSON 2004; NEILL & ULLOA ULLOA 2011). Seven species

were reported from Colombia (ORTIZ VALDIVIESO & URIBE VÉLEZ 2007; PÉREZ ESCOBAR et al. 2011; BERNAL et al. 2015) and Bolivia (JØRGENSEN et al. 2014) while just three representatives of the genus have been found in Peru so far (SCHWEINFURTH 1961; BRAKO & ZARUCCHI 1993; CHRISTENSON & REPASKY 2008).

Since *Stellilabium* plants are rather difficult to find during the field studies due to its small flower size and ephemeral leaves, the representation of the genus in herbaria is relatively poor. Most of the species are characterized by a narrow geographic range and numerous of them are local endemics. However, three Andean species present a somewhat broader distribution. *Stellilabium alticola* was reported from Colombia, Venezuela, Ecuador and Peru, *S. pogonostalis* (Rchb.f.) Garay & Dunst. was found in Venezuela as well as in western Ecuador and Peru and *S. andinum* (L.O. Williams) Garay & Dunst. occurs in Venezuela, Colombia and Ecuador. Recent studies on Andean orchids revealed the existence of distinctive *Stellilabium* species which does not match with the morphological characteristics of any species known so far and is described here as a new species. Its taxonomic affinity and distribution information is provided in this study along with a key to identify the species of *Stellilabium* reported from Colombia and Ecuador.

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

Stellilabium colombianum Szlach. & Kolan., sp. nov. (Fig. 1)

Diagnosis. The new species appears to be related to *Stellilabium pogonostalis* (Rchb.f.) Garay & Dunst. but differs from it in the arrangement of lip and gynostemium covers.

Type. Colombia. Dept. Santander. Mpio. Gambita. Corregimiento del Taladro. Alto del Gaque, Alt. 1900 m. 5 March 1981, S. Diaz 2294 [Holotype: COL!].

Description. Plant small. Leaves up to 5, blades 25 mm long, 5 mm wide, linear-lanceolate, acute. Inflorescence 40 mm long, 4-flowered. Flowers produced simultaneously, tiny, non-resupinate, variable in colour, translucent, greenish or yellowish, tepals with purple spots, lip purple at the base. Floral bracts 3 mm long, ovate-lanceolate, acute. Pedicellate ovary 9 mm long, ovary triquetros. Dorsal sepal 4.2 mm long, 1.8 mm wide, oblong ovate, subacute, 1-veined. Petals 4.2 mm long, 2 mm wide, ovate, subacute, 1-veined. Lateral sepals 4.8 mm long, 2 mm wide, lanceolate-ovate, subacute, 1-veined. Lip ca 5.3 mm long and wide at the base, 3-lobed; the middle lobe ca 4.6 mm long, 2.7 mm wide, ligulate-obovate, broadest in the apical $\frac{2}{3}$, gradually narrowing in the apical part, apex rounded, 5-veined, ciliate along the middle part of the margins; lateral lobes 1.3 mm long, 0.6 mm wide, obliquely lanceolate, acuminate, flat. Gynostemium 2 mm long, tufts of hairs on both anther sides, short, hirsute, minutely ciliate below stigma. Rostellum linear.

Etymology. In reference to the country of origin of the type specimen.

Stellilabium colombianum, a new species from Colombia

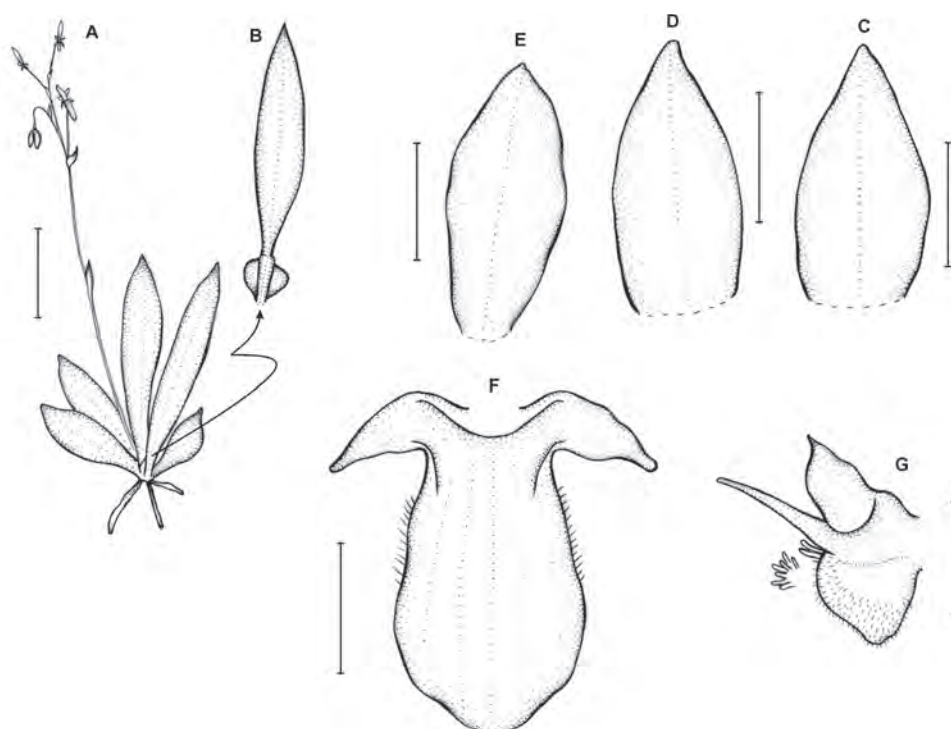


Figure 1. *Stellilabium colombianum*. A – habit, B – leaf details, C – dorsal sepal, D – petal, E – lateral sepal, F – lip, G – gynostemium. Scale bars = 10 mm (A), 2 mm (C–F), 1 mm (G). Drawn by A. Król from the holotype.

Distribution. This species is known exclusively from Colombian Western and Eastern Cordilleras of the Andes (Fig. 2).

Habitat and ecology. Populations of *Stellilabium colombianum* were found at the altitudes of about 1500–1970 m in Sub-Andean humid forest. It was reported growing on *Myrcia popayanensis* Hieron. (Myrtaceae).

Taxonomic notes. *Stellilabium colombianum* shares similar lip form with *S. pogonostalix* (Fig. 3) known from Ecuador, Peru and Venezuela and with Colombian *S. andinum*. In all aforementioned species, the lip is basally 3-lobed, with lateral lobes much smaller than the middle one, but lip of *S. andinum* and *S. pogonostalix* is hispid along the entire margins and lip of *S. colombianum* is ciliate just along the middle part of margins. The lip middle lobe of *S. andinum* and *S. pogonostalix* is acute to subacute, whereas in the new species it is rounded. The most distinguished difference between *S. pogonostalix* and *S. colombianum* is the gynostemium. The very characteristic feature of *S. pogonostalix* are tufts of setose hairs with stellate apices. The lower part of gynostemium of *S. colombianum* is minutely ciliate and tufts consist of short, hirsute hairs.

Specimens examined. Colombia. Cundinamarca. Mpio. Villa Gomez. Via Paima Vereda Potosí, 1625 m, 10 June 1993, A. Chaparro de Barrera & E. Barrera Torres 144 [COL!]; Monte Redondo, 1650 m, 15 December 1950, M. Schneider 401/1 [COL!]; Quetame. Monte Redondo, 1700 m, December 1951, M. Schneider 401/2 [COL!]; Sasaima. Vereda de Apocentos (old Apocentos ranch), 10–12 July 1960, H. Garcia Barriga 17250 [COL!]; the same loc., H. Garcia Barriga 17252 [COL!]; Risaralda. Mpio. Pueblo Rico. Vereda Monte Bello. Pastures of La Playa. Next to Rio Taiba, 5°13'35"N, 76°05'01"W, 1500 m, 3 October 2006, R. Arevalo, A. Tapasco, H. Tapasco,

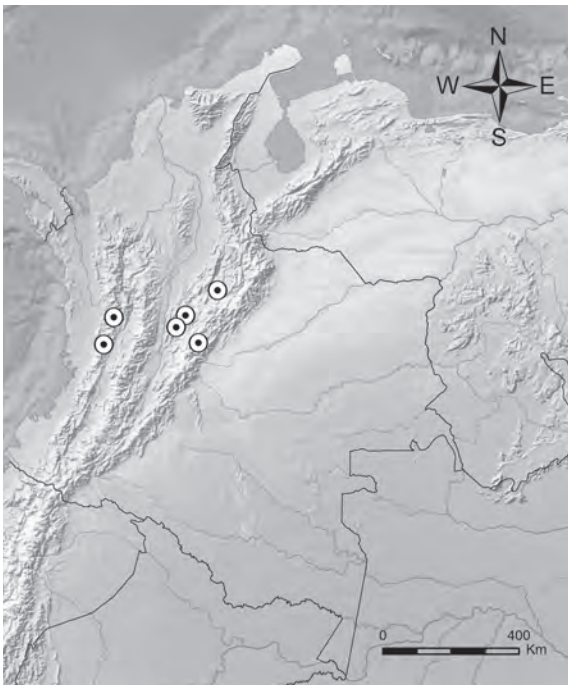


Figure 2. Distribution of *Stellilabium colombianum*.

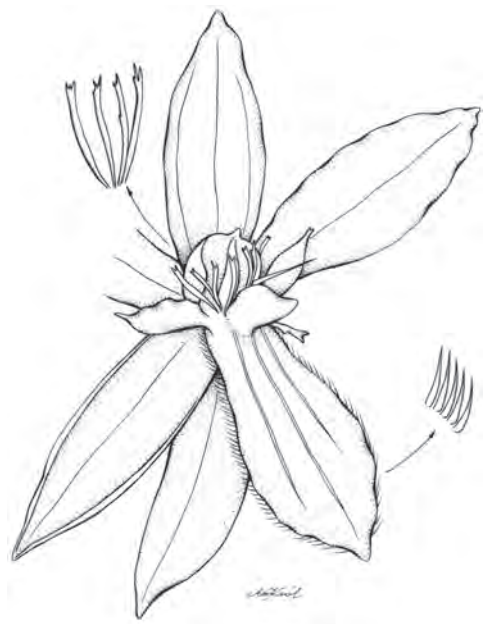


Figure 3. Flower of *Stellilabium pogonostalix*. Drawn by A. Król from the type.

J. Betancur & J. Agudelo 702 [COL!]; Valle del Cauca. Cordillera Occidental. Near Lituania, 1970 m, 4 April 1972, *A.M. Cleef & M. Cleef-van Rens* 2742 [COL!].

Key to species of *Stellilabium* reported from Colombia and Ecuador

- 1 Gynostemium glabrous *S. hirtzii* Dodson
- Gynostemium with tufts of hairs 2
- 2 Lip abruptly narrowing in the apical part *S. microglossum* (Schltr.) Dodson
- Lip gradually narrowing towards the apex 3
- 3 Petals broadly elliptic to almost orbicular 4
- Petals lanceolate to oblanceolate or ovate 9
- 4 Lip narrowing in the apical third, about equally broad towards basal $\frac{2}{3}$ *S. lankesteri* (Ames) Dressler
- Lip broadest near the base, narrowing towards the apex 5
- 5 Lip apex truncate *S. astroglossum* (Rchb. f.) Schltr.
- Lip apex not truncate 6
- 6 Lip with basal ligulate appendices *S. frymirei* Dodson
- Lip lacking distinctive basal appendices 7
- 7 Lip with a large pad in the centre, covered by stiff, erect hairs, lip margins minutely ciliate *S. amicum* Szlach. & Marg.
- Lip without central, hairy pad 8
- 8 Gynostemium wings broad, spreading *S. latialatum* Kolan., Medina Tr. & Lipińska
- Gynostemium wings small, non-spreading *S. morganiae* Dodson
- 9 Lip entire, lacking appendices at the base 10
- Lip 3-lobed or with distinct appendices at the base 11

Stellilabium colombianum, a new species from Colombia

- 10 Lip with a large hump-like protrusion in the lower half and here with retrorse spines *S. hystrix* Dodson
- Lip without hump-like protrusion *S. atropupureum* P. Ortiz
- 11 Flowers produced singly in succession 12
- Flowers produced simultaneously 14
- 12 Lip basal lobes small, rounded to obtuse 13
- Lip basal lobes prominent, acuminate *S. jostii* Dodson
- 13 Lip oblong to oblong-ovate, widest near the apical third *S. alticola* Dodson & R. Escobar
- Lip ovate, broadest near the middle *S. valdiviesoanum* Kolan. & Medina Tr.
- 14 Lip middle lobe apex rounded *S. colombianum* Szlach. & Kolan.
- Lip middle lobe apex acute or subacute 15
- 15 Gynostemium with long hairs *S. pogonostali* (Rchb. f.) Garay & Dunst.
- Gynostemium with very short hairs *S. andinum* (L.O. Williams) Garay & Dunst.

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