

## Three new species of *Oliveriana* from Colombia

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Three new orchid species — *Oliveriana puracensis* Szlach., Kolan. & Ołędryńska, *O. pseudoegregia* Szlach., Kolan. & Ołędryńska, and *O. guarinae* Szlach., Kolan. & Ołędryńska — are described and illustrated based on Colombian material. An identification key to *Oliveriana* species is provided. Taxonomic affinities of the new species are discussed and information about their distribution and habitats is provided.

The orchid genus *Oliveriana* was described by Reichenbach (1876) based on *O. egregia*, which the author found similar to *Koellensteinia* and *Stenocoryne*. While the three genera are somewhat similar in the floral characters, they may be easily distinguished by several other features. The gynostemium of *Oliveriana* is organized in accordance with the general plan characteristic for oncidoids, e.g. with two pollinia, a lacking column foot and a short rostellum with a multi-layered viscidium. In comparison with *Oliveriana*, *Koellensteinia* and *Stenocoryne* have four superposed pollinia, the column foot is prominent, the rostellum is elongate and the viscidium is lamellar.

*Oliveriana* was not included in Pfitzer's (1887) first classification system of Orchidaceae, but later he included the genus in Trichopiliaceae (Pfitzer 1897), which is currently recognized as the subtribe Trichopiliinae, together with *Trichopilia* and *Helcia*. Schlechter (1915) combined Pfitzer's (1897) Trichopiliinae under Aspasiinae in which he also included *Aspasia*, *Binotia*, *Cochlioda* and *Leucohyle*. Pfitzer's (1897) concept was reconsidered by Szlachetko (1995) and Szlachetko and Mytnik-Ejsmont (2009), who

placed *Oliveriana* in Trichopiliinae on the basis of the gynostemium morphology, e.g. with a prominent apical clinandrium exceeding the anther, and ciliate or irregularly denticulate on the margins. In most morphological (Dressler & Dodson 1960, Dressler 1993) and molecular (Neubig *et al.* 2012) studies the genus was included in Oncidiinae, which in the broadest sense contains approximately 1700 species representing over 50 genera (Chase *et al.* 2005) widely distributed in tropical and subtropical regions of the New World.

Although there is no consensus on the division of the oncidoid orchids into smaller, morphologically clearly defined taxa and the generic delimitation within the broad concept of Oncidiinae is still debated (e.g., Chase 1987, Williams *et al.* 2001a, 2001b, Szlachetko & Górniak 2006, Szlachetko & Mytnik-Ejsmont 2006, Chase *et al.* 2009, Cetzal-Ix *et al.* 2012), the separation of *Oliveriana* as a distinct genus was never questioned.

The representatives of *Oliveriana* have ovoid, ancipitous pseudobulbs subtended by several foliaceous sheaths. The lateral, erect inflorescence is longer than the conduplicate, articulate

leaves and it consists of several to many resupinate flowers. The lip is fused to the gynostemium for most of its length and its free part is reflexed, usually distinctly 3-lobed. The gynostemium is rather short and stout, without a column foot. The long column part is fused with the lip margins in the lower half. The incumbent, operculate anther is almost flat, ellipsoid, 2-chambered. The narrow connective is often densely glandular. The two pollinia are obliquely obovoid, shallowly cleft at the apex, and hard. The stigma is elliptic and deeply concave. The small, suberect rostellum is ligulate and the remnant has an apical, oblique, shallow plate surrounded by two obscure triangular, acute lobules. The single, thin viscidium is oblong-ovate or oblong-elliptic, and sticky on the outer surface.

The genus consists of only six, mostly Andean species distributed from Peru and Bolivia to Colombia and Guyana. The occurrence of four of them was reported in Colombia (Ortiz-Valdivieso & Uribe-Vélez 2007) and two species, *O. lehmannii* and *O. ortizii*, are known to occur exclusively in that country, above 2000 m a.s.l.

Our examination of Colombian specimens of *Oliveriana* revealed three undescribed species.

***Oliveriana puracensis*** Szlach., Kolan. & Olędrzyńska, *sp. nova* (Figs. 1 and 2).

TYPE: Colombia. Dept. Cauca. Mpio. San Sebastian. Corregimiento Valencia. Vda. La Hoyola. Zona de amortiguación del Parque Nacional Puracé. Base de Cerro Los Remedios. Finca La Soledad. Alt. 3235 m. 31 Mar. 1995 *L.J. Rubiano & C. Moreno* *O. 437* (holotype COL).

ETYMOLOGY: In reference to the place of collection, Parque Nacional Natural de Puracé.

Pseudobulbs 6 cm long, 0.8 cm wide, narrowly ovoid, bifoliate. Leaves petiolate; blade 21 cm long, 2 cm wide, oblanceolate, acute; sheath 15 cm long, 1.7 cm wide; petiole 5 cm long. Inflorescence about 43 cm long, laxly 20-flowered. Flowers pale purple. Floral bracts 5 mm long. Pedicel 15–20 mm long. Ovary about 6 mm long. Tepals thick, stiff. Dorsal sepal 11–13 mm long, 5.2–6 mm wide, oblong-elliptic, obtuse. Petals 10–15 mm long, 5.5–7 mm wide obliquely oblong-elliptic, obtuse. Lateral sepals

connate for about 2/3 their length forming a synsepal 12.5–18 mm long, 5.8–6.6 mm wide, free apices subobtuse. Lip distinctly 3-lobed, 18 mm long, 22 mm wide across the middle lobe; lateral lobes 8.5 mm long, 5 mm wide, oblong-obovate, obtuse, margins irregular; isthmus narrow, 6 mm long; middle lobe 12 mm long, 22 mm wide, bilobulate, with a small, obtuse apicule in bottom of sinus, lobules suborbicular, margins irregular; callus very short, elevated, extending to isthmus base, papillate in basal part, then dividing into three lamellae. Gynostemium 8 mm long, rather slender.

DISTRIBUTION AND HABITAT: So far known only from the Colombian Central Cordillera, where it was found growing epiphytically in the high-montane forest at about 3235 m a.s.l. It flowers in March.

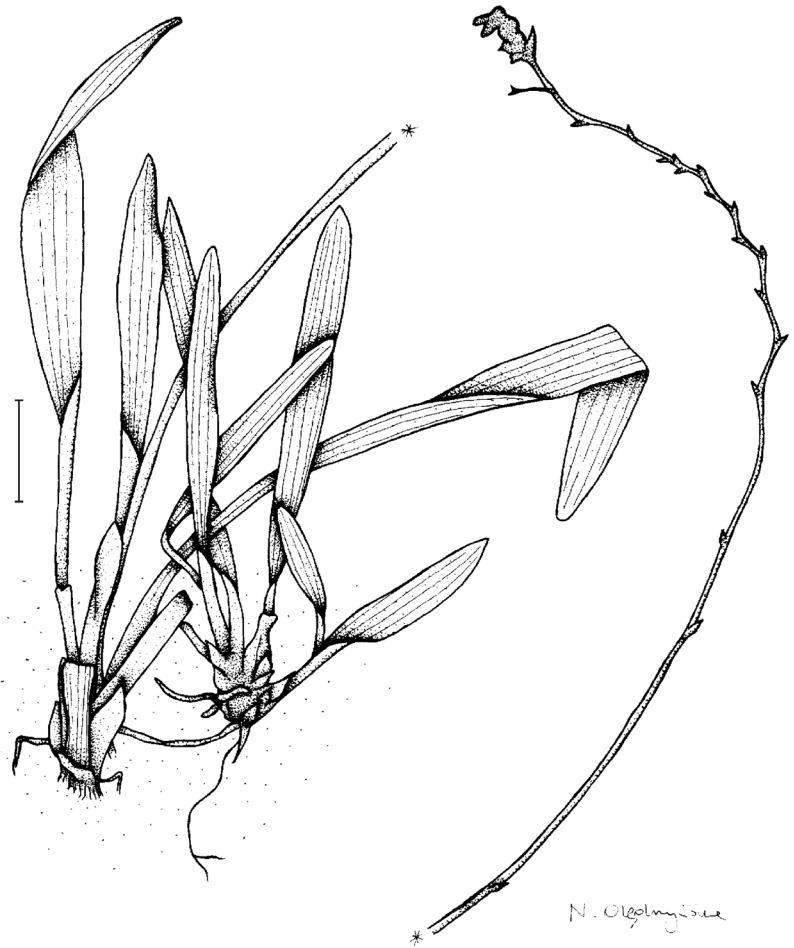
TAXONOMIC NOTES: The species has a peculiar lip form, with especially large, wing-like lateral lobes and a very prominent lip middle lobe, divided into two suborbicular lobules. There is no other species of *Oliveriana* with such lip morphology. Additionally, *O. puracensis* is the only species of the genus with pale purple flowers. In all other species known so far the flowers are dull-colored, greenish, whitish, yellowish or a blend of those colors.

***Oliveriana pseudoegregia*** Szlach., Kolan. & Olędrzyńska, *sp. nova* (Fig. 3).

TYPE: Colombia. Dept. Risaralda. Mun. Santuario. Parque Nacional Natural Tatamá, sector Cascadas. 5°07'17"N, 76°02'26"W. Alt. 2589 m. 7 Jan. 2006 *R. Arévalo 451* (holotype COL).

ETYMOLOGY: An allusion to the similarity of the flower morphology to *O. egregia*.

Rhizome repent. Pseudobulbs distant, enclothed with 3 foliaceous sheaths, unifoliate at apex. Leaf petiolate; blade up to 15 cm long, 3.5 cm wide, oblong-elliptic to oblong-obovate, subacute; petiole 5 cm long. Inflorescence 15 cm long. Flowers cream-coloured with purple lines, fleshy. Floral bract about 6 mm long. Pedicel about 10 mm long, ovary about 10 mm long. Dorsal sepal 27 mm long, 10 mm wide, elliptic, apex obtuse, 5-veined. Petals 23 mm long, 9.5 mm wide, elliptic, subobtuse, 3-veined. Lateral



**Fig. 1.** *Oliveriana puracensis* (drawn by N. Ołędzińska from the holotype). — Habit. Scale bar = 6 cm.

sepals oblong-elliptic, subobtuse, 3-veined. Lip fused with gynostemium base, strongly convex, 15 mm long, 16 mm wide, 3-lobed; lateral lobes ovate, truncate; middle lobe reduced to a minute, triangular apicule 1 mm long; disc with three fleshy ridges starting from base, disappearing at apex. Gynostemium about 6 mm long, short, stout.

**DISTRIBUTION AND HABITAT:** So far known only from the Western Colombian Cordillera, where it was found growing epiphytically in humid montane forest at about 2500–2600 m a.s.l. Flowering in January.

**TAXONOMIC NOTES:** This species resembles *O. egregia*, described on the basis of the material collected at Colombian Department of Antioquia, with equally large flowers. The species are easily separable from each other by the lip form.

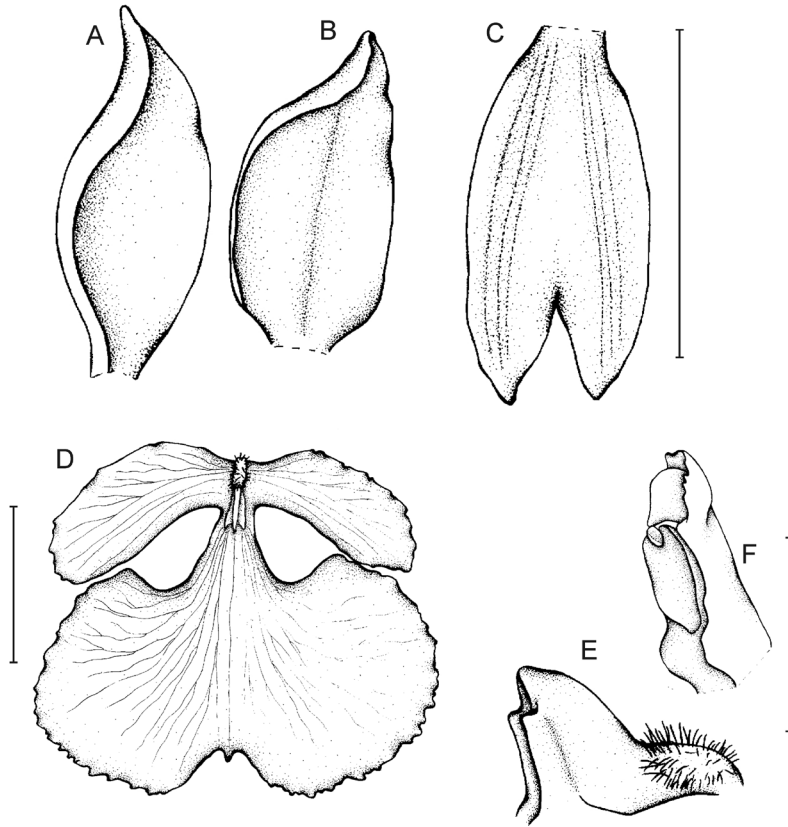
In *O. egregia* the lateral lip lobes are semicircular, and the middle lobe is lanceolate-triangular, prominently longer than the lateral lobes. The lateral lip lobes of *O. pseudoegregia* are reniform, and the middle lobe is reduced to a minute, triangular apicule, nearly equal in length to the lateral lobes.

***Oliveriana guarinae*** Szlach., Kolan. & Ołędzińska, *sp. nova* (Fig. 4).

**TYPE:** Colombia. Dept. Valle del Cauca. Yotoco. 4 Apr. 1980 *I. Guarín O. 124* (holotype COL).

**ETYMOLOGY:** Dedicated to the collector of the type specimen.

Plants caespitose. Pseudobulbs very obscure. Leaves up to 52 cm long and 1.5 cm wide,



**Fig. 2.** *Oliveriana puracensis*, dissected perianth (drawn by N. Olędzżyńska from the holotype). — **A:** Dorsal sepal. — **B:** Petal. — **C:** Lateral sepals. — **D:** Lip. — **E** and **F:** Gynostemium. Scale bars = 10 mm.

linear, acute. Inflorescence distinctly shorter than leaves, up to 15 cm long, laxly 5-flowered. Flowers small, sepals and lip fleshy. Floral bracts 12 mm long. Pedicel 5 mm long, ovary 5 mm long. Tepals 1-nerved. Dorsal sepal 12 mm long, 3.5 mm wide, linear to linear-lanceolate, acute. Petals 9 mm long, 1.5 mm wide, linear-lanceolate to narrowly lanceolate, acute, somewhat oblique. Lateral sepals 13 mm long, 1.5–2 mm wide, linear, acute, somewhat subfalcate. Lip sessile, 10 mm long, 4 mm wide, entire, oblong-elliptic, shortly apiculate, with large, prominent callus occupying lower part of lip; callus 3-lobed, elevated, middle part somewhat grooved, ciliate, lateral lobes longer, glabrous. Gynostemium 5.5 mm long, erect, rather slender, free from the gynostemium.

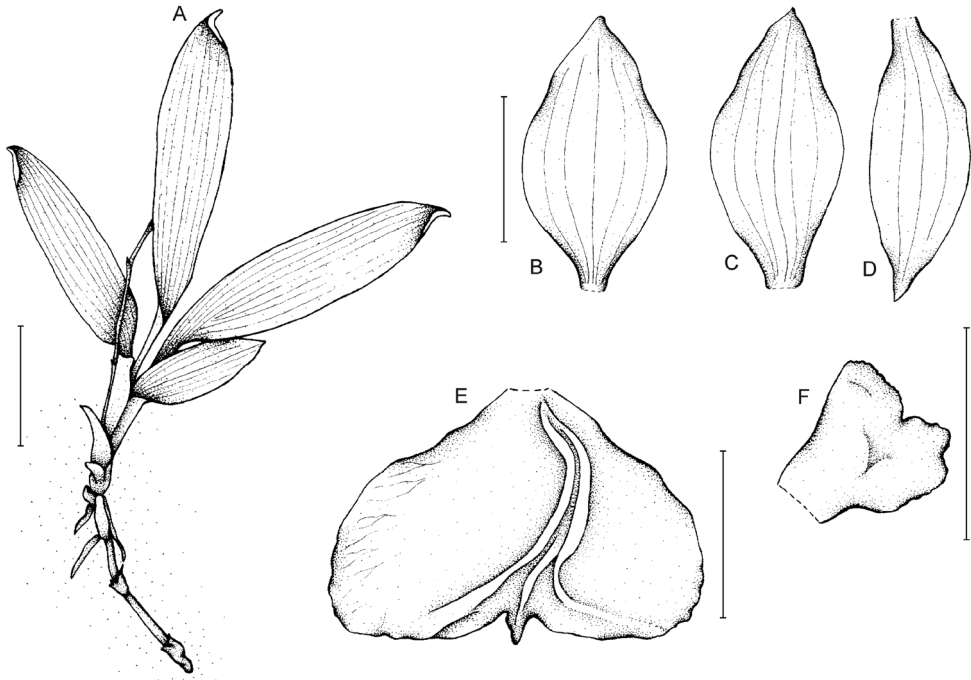
**DISTRIBUTION:** So far known only from the Western Colombian Cordillera. It flowers in April.

**TAXONOMIC NOTES:** The species appears to be rather isolated in the genus, and therefore

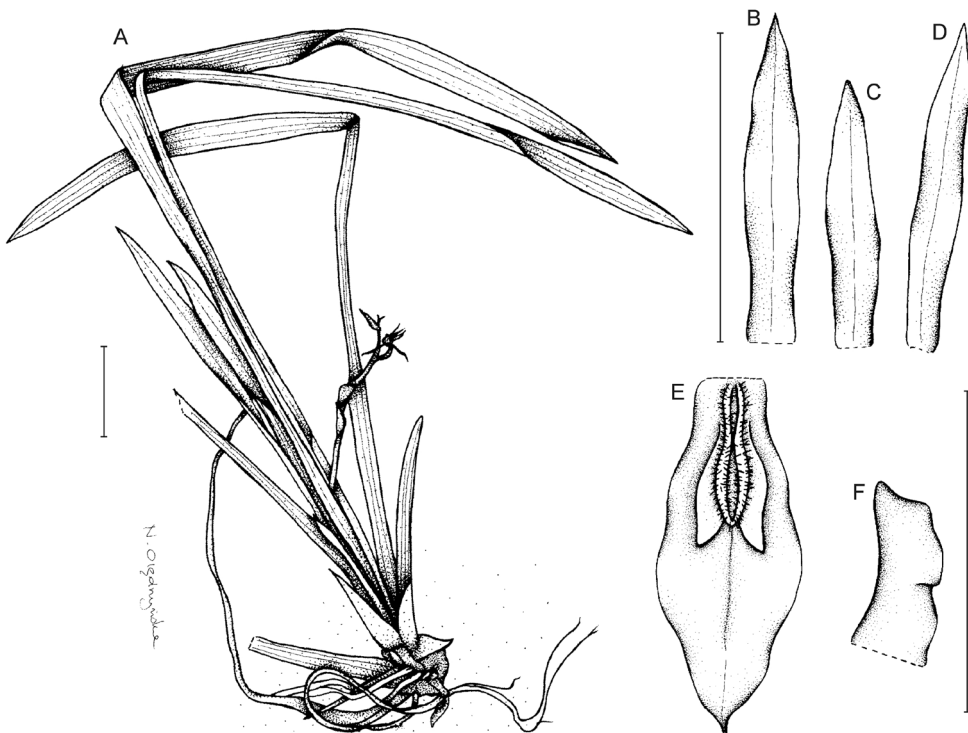
easily distinguishable. It does not produce prominent pseudobulbs, the leaves are very long and narrow, somewhat grass-like, while the lip and gynostemium are free. The last character is unique in *Oliveriana*, as in all species described so far the lip and gynostemium are basally connate. Additionally, the lip of *O. guarinae* is unlobed, oblong-elliptic, and in the lower part covered by prominent callus.

#### Key to the species of *Oliveriana*

1. Lip unlobed ..... *O. guarinae*
1. Lip variously 3-lobed ..... 2
1. Lip middle lobe bilobulate ..... *O. puracensis*
1. Lip middle lobe entire ..... 2
2. Lip lateral lobes exceeding middle lobe ..... 3
2. Lip lateral lobes not exceeding middle lobe ..... 4
3. Lip lateral lobes rounded ..... *O. lehmannii*
3. Lip lateral lobes truncate ..... *O. pseudorgregia*
4. Sepals up to 15 mm long ..... 5
4. Sepals over 20 mm long ..... 6
5. Lip lateral lobes oblong-ovate ..... *O. ortizii*
5. Lip lateral lobes suborbicular ..... *O. brevilibia*



**Fig. 3.** *Oliveriana pseudoegregia* (drawn by N. Ołędryńska from the holotype). — **A:** Habit. Scale bar = 5 cm. — **B:** Dorsal sepal. — **C:** Petal. — **D:** Lateral sepal. — **E:** Lip. — **F:** Gynostemium. Scale bars for **B–F** = 10 mm.



**Fig. 4.** *Oliveriana guarinae* (drawn by N. Ołędryńska from the holotype). — **A:** Habit. Scale bar = 5 cm. — **B:** Dorsal sepal. — **C:** Petal. — **D:** Lateral sepal. — **E:** Lip. — **F:** Gynostemium. Scale bars for **B–F** = 10 mm.

6. Lip callus papillose ..... *O. ecuadorensis*  
 6. Lip callus not papillose ..... 7  
 7. Lip longer than wide ..... *O. simulans*  
 7. Lip wider than long ..... *O. egregia*

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The Curator and staff of the National Colombian Herbarium are thanked for their kind hospitality and assistance during our visits and making material available on loan. The research described here was supported by the Polish Ministry of Science and Higher Education (research grant no. 8124/B/PO1/2011/40).

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