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A new species of *Ornithocephalus* (Orchidaceae) from Colombia with notes on national genus representatives

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Summary: A new species of the orchid genus *Ornithocephalus, O. leslie-garayi*, is described and illustrated based on Colombian material. The novelty resembles *O. kruegeri* and *O. caveroi*. It differs from the former by the lip being strongly constricted between hypo- and epichile, the hypochile being ornamented with glandular, fleshy hairs exclusively in the basal part, the presence of the callus in shape of inverted 'U' in the lip hypochile and the suborbicular-transversely elliptic lip epichile, which is not apiculate. The new entity can be separated from its Peruvian congener *O. caveroi* by having about twice smaller flowers, different lip callus, epichile covered by fleshy glandular hairs (vs hirsute) and less bristle sepals and floral bracts. A key to identify Colombian *Ornithocephalus* representatives is provided.

Keywords: biodiversity, Neotropics, new species, sp. nov., Oncidiinae, *Ornithocephalus*

The orchid genus *Ornithocephalus* Hook. was described in 1824 based on a plant collected in Trinidad and named *O. gladiatus* Hook. Hooker did not compare the newly established taxon to any known representative of Orchidaceae. Pfitzer (1887) classified *Ornithocephalus* within 'Odontoglosseae', but Schlechter (1915) separated *Ornithocephalus* and the six other genera *Hofmeisterella* Rchb. f., *Platyrhiza* Barb. Rodr., *Phymatidium* Lindl., *Cryptarrhena* Lindl., *Chytroglossa* Rchb. f. and *Zygostates* Lindl. from other oncidioid orchids by establishing the new subtribe Ornithocephalinae Schltr. This position of *Ornithocephalus* was generally accepted by subsequent researchers who included in Ornithocephalinae also new described genera: *Caluera* Dodson, *Centroglossa* Barb. Rodr., *Dipteranthus* Barb. Rodr., *Dunstervillea* Garay, *Eloyella* Ortiz, *Hintonella* Ames, *Rauhiella* Pabst & Braga, *Sphyrastylis* Schltr. and *Thysanoglossa* Porto & Brade (e.g. Dressler 1993; Toscano de Brito 1999). Based on gynostemium morphology, Szlachetko (1995) divided this group into two separate subtribes: Hintonellinae Szlach. and Ornithocephalinae which were included in the newly created tribe Ornithocephaleae Szlach. within Vandoideae. This proposal did not acquire general acceptance. In 2001, based on results of molecular analyses Ornithocephalinae, Pachyphyllinae and Telipogoninae were included in the broad concept of Oncidiinae (Williams et al. 2001).

Ornithocephalus representatives are epiphytic, small to medium-sized plants with abbreviated stems. Their leaves are equitant, elliptic-oblong to linear, fleshy or coriaceous. Inflorescences arise from the axils of leaf-sheaths. Flowers are small, white or greenish-white. The lip is subsessile, entire or lobed. The gynostemium is elongate, curved down just above stigma, with obscure column foot. Four pollinia in two pairs are produced. The apical clinandrium is narrow. Stigma is very small, oblong, concave.

While the generic separateness of *Ornithocephalus* was not questioned, the distinction between *Sphyrastylis* Schltr. and *Ornithocephalus* was problematic. Schlechter (1920) described his new genus based on incomplete material lacking anther and pollinarium. He paid attention

to the malleolate gynostemium, very narrow clinandrium and pandurate rostellum, characters missing in *Ornithocephalus*. Additional characters separating both genera are stem form (abbreviated in *Ornithocephalus* vs elongated, pendent in *Sphyrastylis*), position of inflorescence (erect in *Ornithocephalus* vs ascending in *Sphyrastylis*) and flower colour (white or green-white in *Ornithocephalus* vs yellow to yellow-green in *Sphyrastylis*). Intermediate characters were found in rostellum morphology in *S. urceilabris* P. Ortiz & R. Escobar and *S. tsubotae* P. Ortiz, what induced Toscano de Brito & Dressler (2000) to transfer all species of *Sphyrastylis* (including *Oakes-Amesia* C. Schweinf. & P.H. Allen) into *Ornithocephalus.* In this concept, *Ornithocephalus* embraces about 80 species distributed from Mexico through Central America, West Indies and northern South America (to Bolivia in the south). Borders between species of *Ornithocephalus* remain an open question which is briefly discussed below.

During the course of studies on Colombian oncidioid orchids, a new species of *Ornithocephalus* was found and it is described here as new. Until now, 16 species of this genus have been reported from Colombia (Bernal et al. 2016), including six species previously classified in *Sphyrastylis.*

Materials and methods

Herbarium specimens of oncidioid orchids from herbaria AAU, AMES, B, BM, CHOCO, COL, CUVC, HUA, JAUM, K, MEDEL, MO, P, RPSC, UGDA, VALLE and W were examined according to standard procedures. Each studied sheet was photographed and data from the labels were taken. 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 compared with existing type material.

Taxonomic treatment

Ornithocephalus leslie-garayi Szlach. & Kolan. sp. nov. Fig. 1–2.

Diagnosis. Similar to *O. kruegeri* Rchb. f. from which it is distinguished by the lip being strongly constricted between hypo- and epichile, the hypochile being ornamented with glandular, fleshy hairs exclusively in the basal part, the presence of the callus in shape of inverted 'U' in the lip hypochile and the suborbicular-transversely elliptic lip epichile, which is not apiculate. The new entity can be compared with Peruvian *O. caveroi* D.E. Benn. & Christenson, in having a similar lip form. *O. caveroi* has about twice larger flowers, different lip callus, consisting of ovoid central callus and lateral erect-incurved oblong calli. Its epichile is covered with hirsute hairs and sepals and floral bracts are more bristle.

Type. Colombia, no locality data, *L.A. Garay 881* [holotype: AMES!, isotypes: AMES!]

Description. Plant up to 10 cm tall. Leaves up to 12, blade up to 7 cm long, 0.5 cm wide, oblong-linear, slightly falcate, acute. Inflorescence about 3 cm long, rather laxly 20–25-flowered, rachis densely glandular, peduncle ca. 2 cm long, glandular. Pedicel and ovary about 4 mm long, pubescent. Floral bracts ca. 5 mm long, obliquely ovate, obtuse, basally concave, margin serrate. Dorsal sepal 2.2 mm long, 1.3 mm wide, oblong-obovate, with a small apiculus at the apex, 1-veined margin irregularly, rather sparsely ciliate. Lateral sepals 2 mm long and wide, obliquely suborbicular-obovate, cochleate, rounded at the apex, 1-veined, margin densely ciliate-serrate, incurved apically. Petals 2.6 mm long, 3 mm wide, transversely elliptic, somewhat

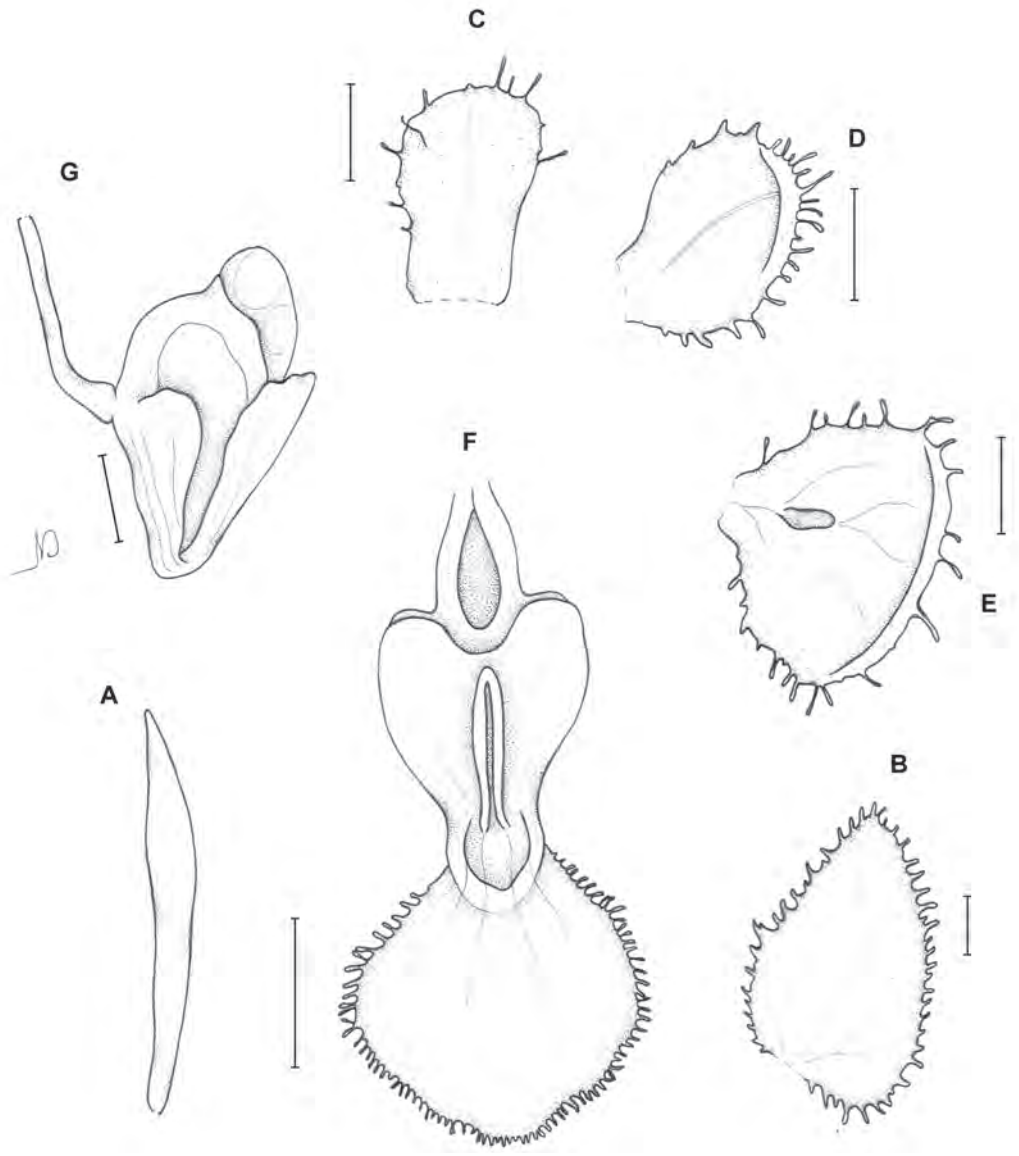

Figure 1. *Ornithocephalus leslie-garayi*. A – leaf; B – floral bract; C – dorsal sepal; D – petal; E – lateral sepal; F – lip, front view; G – lip and gynostemium, side view. Scale bars B–G = 1 mm. Drawn by N. Olędrzyńska from the holotype.

oblique, rounded at the apex, cochleate, 1-veined with several short branches, with a small, central thickening, margin irregularly ciliate-serrate, incurved apically. Lip bipartite, pandurate in outline, ca. 4 mm long, 1.5 mm wide across hypochile, 2.5 across epichile, cordate at the base; hypochile 2 mm long, subcordate, ornamented with glandular, fleshy hairs in the basal half, margin entire; epichile suborbicular-transversely elliptic, margin ciliate-serrate, upcurved in natural position; disc 4-veined, deeply concave and constricted between hypo- and epichile, in the basal half ornamented with callus in shape of an inverted 'U'. Gynostemium 2.5 mm long, typical for the genus.

Etymology. Dedicated to Dr Leslie A. Garay (1924–2016), an eminent American orchidologist of Hungarian origin, who collected the type specimen.

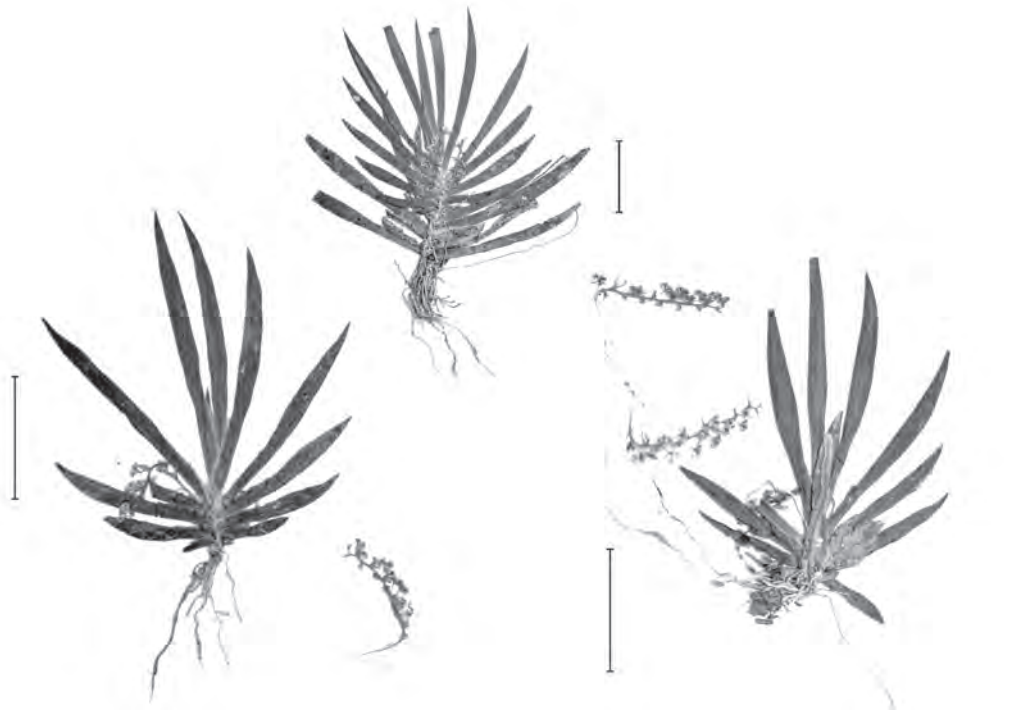

Figure 2. *Ornithocephalus leslie-garayi*, habit. Scale bars = 3 cm.

Taxonomic notes. *O. leslie-garayi* is similar to *O. caveroi* which was collected in southern Peru, in Puno province ca. 1500 km distant from the Colombian border. Both species share a similar lip form which is pandurate with epichile incurved towards the gynostemium, but the two species can be separated based on a series of morphological characters. *O. caveroi* has flowers about twice larger than in the new species and a different lip callus which consists of an ovoid central part and lateral erect-incurved, oblong calli. The epichile of *O. caveroi* is covered with hirsute hairs and its sepals and floral bracts are more bristle.

Seven Colombian *Ornithocephalus* s. str. species (*O. bicornis* Lindl., *O. bonplandii* Rchb. f., *O. gladiatus* Hook., *O. kalbreyerianus* Kraenzl., *O. lehmannii* Schltr., *O. micranthus* Schltr., *O. stenoglottis* Rchb. f.) are characterized by the linear-ligulate lip epichile, what makes them unmistakable and easily separable from the new species.

Among the other six representatives of the genus in Colombia, a more or less panduarate lip is observed only in *O. dolabratus* Rchb. f., *O. kruegeri* Rchb. f. and *O. polyodon* Rchb. f. The latter species can be easily distinguished from *O. leslie-garayi* by petals being smaller than lateral sepals. Unlike the new species, the lip epichile of *O. dolabratus* is triangular. In *O. kruegeri*, the lip is just slightly constricted near the middle, the whole lip hypochile is pilose and the lip epichile is obovate-flabellate in outline, with a small apiculus at the apex.

Additional notes. Most often, *O. stenoglottis* Rchb. f. is considered as a synonym of *O. bicornis* Lindl., however, the two species can be distinguished based on the form of the lip middle lobe: in *O. stenoglottis* it is serrate, while in the latter taxon it is entire. Likewise, *O. bonplandii* Rchb. f. and *O. gladiatus* Hook., which are usually referred as conspecific, can be separated based on the shape of the lip apex (truncate or rounded in *O. gladiatus*, acute in *O. bonplandii*). Finally,

O. ciliatus Lindl. differs from *O. kruegeri* Rchb. f. in having an undivided lip. We do believe that *O. stenoglottis* Lindl., *O. bonplandii* and *O. kruegeri* should be treated as separate species.

Key to Colombian *Ornithocephalus* s. str.

1 Lip 3-lobed or bipartite 2
– Lip entire 12
2 Lip epichile (middle lobe) linear-ligulate, at least 3 times longer than wide 3
– Lip epichile (middle lobe) ovate to transversely elliptic, not more than twice longer than wide 8
3 Lip middle lobe serrate 4
– Lip middle lobe entire 5
4 Sepals serrate-ciliolate ..... *O. stenoglottis* Rchb. f.
– Sepals entire, glabrous ..... *O. lehmannii* Schltr.
5 Petals neither unguiculate nor spathulate ..... *O. bicornis* Lindl.
– Petals shortly unguiculate or spathulate 6
6 Sepals ligulate ..... *O. kalbreyerianus* Kraenzl.
– Sepals elliptic to obovate 7
7 Lip apex truncate or rounded ..... *O. gladiatus* Hook.
– Lip apex acute ..... *O. bonplandii* Rchb. f.
8 Lip epichile more or less ovate, distinctly longer than wide ..... *O. polyodon* Rchb. f.
– Lip epichile transversely elliptic, about equally long and wide 9
9 Petal margin entire ..... *O. dolabratus* Rchb. f.
– Petal margin irregularly ciliate-serrate 10
10 Lip hypochile broader than epichile ..... *O. minimiflorus* Senghas
– Lip hypochile narrower or subequal in width to epichile 11
11 Lip hypochile pilose throughout, epichile obovate-flabellate ..... *O. kruegeri* Rchb. f.
– Lip hypochile covered with fleshy hairs in the basal half only, epichile suborbicular-transversely ..... *O. leslie-garayi* Szlach. & Kolan.
12 Lip linear-navicular ..... *O. micranthus* Schltr.
– Lip subrectangular to ovate 13
13 Petals slightly longer (for about 0.3 mm) than sepals ..... *O. cochleariformis* C. Schweinf.
– Petals distinctly longer than sepals ..... *O. ciliatus* Lindl.

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