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Notes on the genus *Hofmeisterella* (Orchidaceae), with the description of a new species from Colombia

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A new species of the orchid genus *Hofmeisterella*, *H. biglobulosa* Kolan., Szlach. & R. Medina Trejo, is described and illustrated. It is easily distinguished from *H. eumicroscopica* by the presence of globular projections on the lip disc. Brief taxonomic notes on *Hofmeisterella* and *Telipogon* are provided.

The orchid genus *Hofmeisterella* is a monospecific Neotropical taxon that was described by Reichenbach (1852). That author found *H. eumicroscopica* morphologically similar to *Telipogon* and *Trichoceros*, but the differences were sufficient to keep *H. eumicroscopica* as a distinct taxon. While there is a general consensus on the generic distinctness of *Hofmeisterella*, its taxonomic position is uncertain. Pfitzer (1887) placed it in the subtribe Odontoglossinae together with e.g. *Odontoglossum*, *Oncidium*, *Solenidium, Ornithocephalus*, *Lockhartia* and *Phymatidium*. Subsequently that subtribe has been split into several taxa. Several authors placed *Hofmeisterella* in the broad concept of Oncidiinae (Williams *et al*. 2005, Sandoval-Zapotitla *et al*. 2010, Neubig *et al*. 2012). However, Schlechter (1915) placed it in Ornithocephalinae, Dressler (1993) in Telipogoninae and Szlachetko and Mytnik-Ejsmont (2009) in Hintonellinae (Ornithocephaleae).

Hofmeisterella was monospecific until Nauray Huari and Galán de Mera (2009) proposed to include *Telipogon falcatus* in it. Those authors found the two species similar in having lanceolate, acute petals, a triangular-lanceolate, acuminate lip and in the presence of bristles on the lip and gynostemium. That transfer is, however, unfounded based on morphological and molecular data. The two genera differ in vegetative and floral characters. During the examination of the Colombian specimens of *Telipogon s. lato* we found clear differences in the tepal form between *T. falcatus* and *Hofmeisterella*. In the latter genus, all tepals are similar, linear-lanceolate, while the former has narrowly ovate sepals and oblong-lanceolate petals. Unlike *T. falcatus*, the gynostemium of *Hofmeisterella* is glabrous. We provide a comparison of the morphology of *Hofmeisterella* and *Telipogon* (Table 1), and illustrate the gynostemium structure (Fig. 1) as well as the perianth segment form (Fig. 2) of *H. eumicroscopica* and *T. falcatus* (Fig. 2). A close relationship between *T. falcatus* and *Hofmeisterella* was also questioned in the molecular analysis made by Williams *et al*.

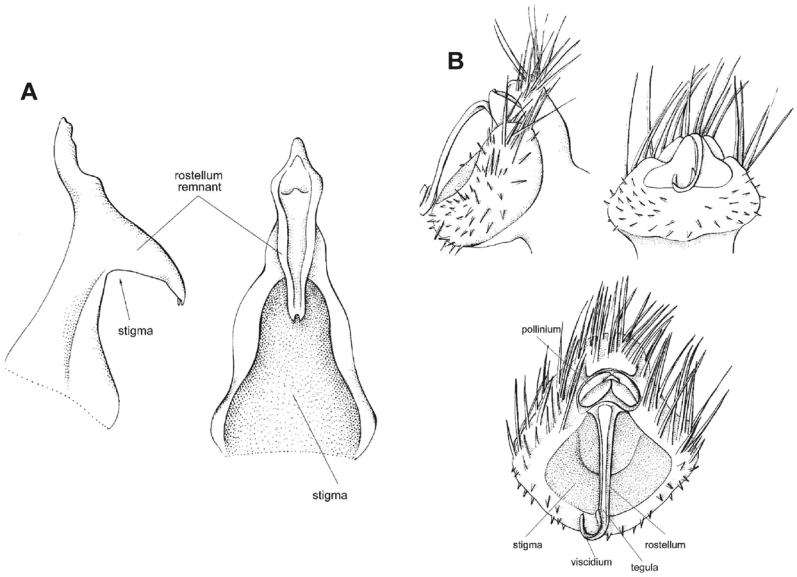

Fig. 1. Gynostemium structure. — **A**: *Hofmeisterella* (from Heidelberg BG O-21485, HEID). — **B**: *Telipogon* (from *Jenny Vo-414*, UGDA-DLSz).

(2005). *Telipogon falcatus* appears to be sister to a group of South American species comprising of *T. ariasii*, *T. frymieri*, *T. chrysocrates*, *T. andicola*, *T. pulcher* and *T. dalstromii*. *Hofmeisterella*, on the other hand, is sister to a clade composed of *Stellilabium* and *Telipogon* species.

Table 1. Morphological comparison of *Hofmeisterella* and *Telipogon*.

Character	*Hofmeisterella*	*Telipogon*
Pseudobulbs	absent	absent
Leaves	non-articulate, laterally flattened	articulate, conduplicate
Inflorescence	lateral	terminal or appearing so
Tepals	similar	dissimilar
Lip	entire	entire
Gynostemium	elongate, erect, malleolate in upper part, delicate, glabrous	short, erect, relatively robust, swollen just above base, usually covered by various kinds of hair
Column foot	obscure	absent
Anther	ventral, incumbent, operculate, ellipsoid-obovoid at base, slightly elongate above, obscurely 2-chambered	dorsal, erect, motile, dorsiventrally compressed, ellipsoid-cordate, 2-chambered
Pollinia	4 in two pairs, superposed, dissimilar, slightly concave or flat on inner surface, convex on outer surface, ellipsoid, hard	4 in two pairs, dissimilar, slightly dorsiventrally compressed, obovoid to obliquely obovoid, relatively soft
Caudicles	sticky, amorphous	sticky, amorphous
Clinandrium	apical, narrow	apical, obscure
Stigma	large, triangular-ovate, concave	large, elliptic, concave
Rostellum	elongate, conical-digitate, gently bent down, obtuse at apex; remnant conical-digitate, canaliculate on dorsal surface, slightly notched at apex	elongate, linear-subulate, more or less hooked and twisted at apex; remnant linear-subulate, canaliculate on upper surface, acute, rather rigid
Viscidium	single, small, elliptic, thin, lamellate	single, oblanceolate, thin, lamellate, hooked and/or slightly twisted
Tegula	single, linear, widened at apex only, thin, lamellate	single, linear with triangular apex, base sometimes twisted, thin, lamellate

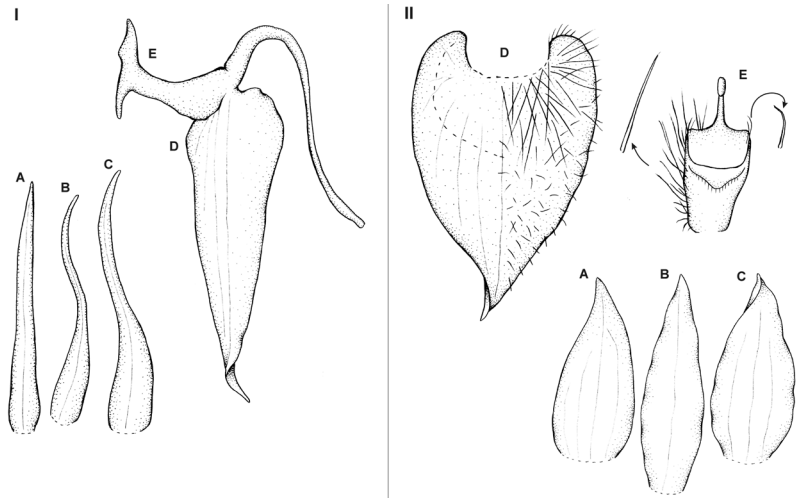

Fig. 2. Perianth segments. — **I**: *Hofmeisterella eumicroscopia* (from *Ortiz & Restrepo 329*, COL). **II**: *Telipogon falcatus* (from *Ospina H. 1478*, COL). — **A**: Dorsal sepal. — **B**: Petal. — **C**: Lateral sepal. — **D**: Lip. — **E**: Gynostemium. Drawn by A. Król.

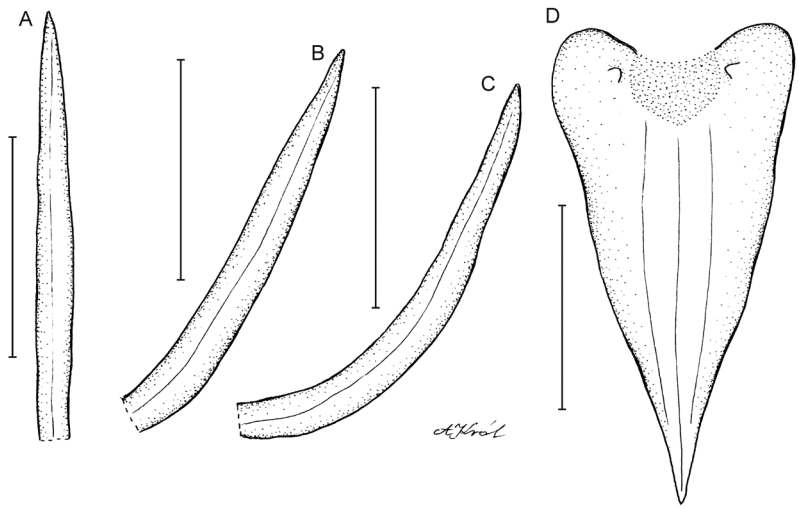

Fig. 3. Dissected perianth of *Hofmeisterella biglobulosa* (from the holotype). — **A**: Dorsal sepal. — **B**: Petal. — **C**: Lateral sepal. — **D**: Lip. Scale bars = 5 mm. Drawn by A. Król.

Our studies conducted in southern Colombia revealed the existence of a distinctive and undescribed *Hofmeisterella* species easily distinguished from *H. eumicroscopica*.

Hofmeisterella biglobulosa Kolan., Szlach. & R. Medina Trejo, *sp. nova* (Figs. 3 and 4)

Type: Colombia. Dept. Putumayo, Sibundoy Valley, parte baja de la Vereda La Cumbre, alt. 2200 m a.s.l., 24 April 2013 *R. Medina 914* (holotype HPUJ!; flowering in cultivation 13 Aug. 2013).

Etymology: In reference to the presence of two globular projections on the lip disc, a distinctive character of the species.

Plant about 8 cm tall. Leaves 6, 1.5–2 cm long, up to 0.5 cm wide, basal, conduplicate, distichous, slightly falcate, linear-oblong, obtuse. Inflorescence an erect, flattened, few-flowered raceme. Floral bracts up to 9 mm long, ovate-lanceolate-obtuse. Ovary 3 mm long; pedicel 14 mm long. Flowers greenish-yellow with lip base suffused with violet. Tepals fleshy, glabous. Dorsal sepal 10 mm long, about 1 mm wide, linear-lanceolate, subobtuse, 1-veined. Lateral sepals 11 mm long, about 1.2 mm wide, linear-lanceolate, subobtuse, 1-veined. Petals 10 mm long, about 1 mm wide, linear-lanceolate, subobtuse, 1-veined. Lip 11–12 mm long, 5–6 mm wide, cordate at the base, concave, triangular-

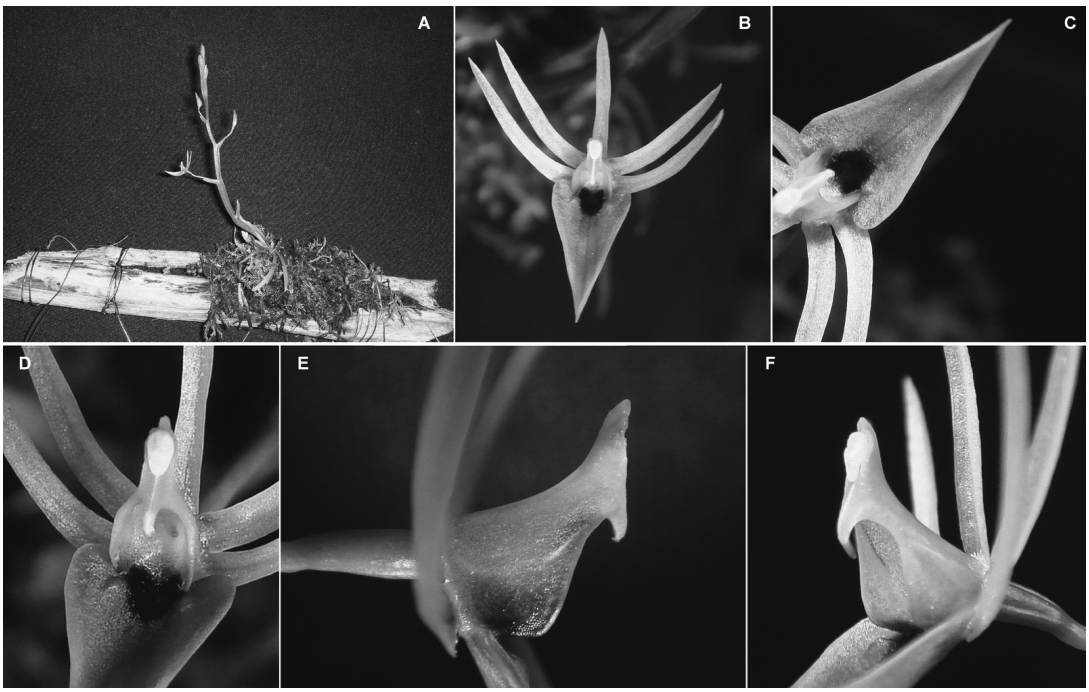

Fig. 4. *Hofmeisterella biglobulosa*. — **A**: Habit. — **B**: Flower close-up. — **C**: Lip. — **D**: Gynostemium and lip base. — **E** and **F**: Gynostemium. Photos by R. Medina Trejo.

ovate, subacute; disc 3-veined, with an almost flat, puberulent, subquadrate-ovate pad at lip base and a globular projection on each side of pad. Gynostemium 4.5 mm long, glabrous, elongate, erect, maleolate in upper part, delicate. Column part nearly as long as anther, widened and winged in basal half, attenuate towards apex. Anther ventral, incumbent, operculate, ellipsoid-obovoid at base, slightly elongate above, obscurely 2-chambered. Pollinia 4 in two pairs, dissimilar, slightly concave or flat on inner surface, convex on outer surface, ellipsoid, hard. Apical clinandrium narrow. Stigma large, triangular-ovate, concave. Rostellum elongate, conical-digitate, gently bent down, apex obtuse. Viscidium single, small. Tegula single, linear.

This species is known so far only from its type location, where it was found growing in a fragmented montane forest. It is easily distinguished from *H. eumicroscopica* by the presence of a globular projection on each side of an almost flat, puberulent pad on the lip disc. We found in our study of ca. 20 herbarium and liquid-preserved specimens as well as living collections *in situ* of *H. eumicroscopica* from northern Peru, Ecuador and Colombia, that its lip is glabrous, devoid of any globular projections.

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References

Dressler R.L. 1993: *Phylogeny and classification of the orchid family*. — Dioscorides Press, Portland.

Nauray Huari W. & Galán de Mera A. 2009: Una nueva combinacion en *Hofmeisterella* para la flora de Colombia. — *Novon* 19: 388–390.

Neubig K.M., Whitten W.M., Williams N.H., Blanco M., Endara L., Burleigh J.G., Silvera K., Cushman J.C. & Chase M.W. 2012: Generic recircumscriptions of Oncidiinae (Orchidaceae: Cymbidieae) based on maximum likelihood analysis of combined DNA datasets. — *Botanical Journal of the Linnean Society* 168: 117–146.

Pfitzer E.H.H. 1887: *Entwurf einer natürlichen Anordnung der Orchideen*. — C. Winter, Heidelberg.

Reichenbach H.G. 1852: *Hofmeisterella* Rchb.fil. — *Annales*

Botanicae Systematicae 3: 563.

Sandoval-Zapotitla E., García-Cruz J., Terrazas, T. & Villaseñor J. L. 2010: Relaciones filogenéticas de la subtribu Oncidiinae (Orchidaceae) inferidas a partir de caracteres estructurales y secuencias de ADN (ITS y matK): un enfoque combinado. — *Revista Mexicana de Biodiversidad* 81: 263–279.

Schlechter R. 1915: *Die Orchideen: ihre Beschreibung, Kultur und Züchtung. Handbuch für Orchideenliebhaber, Züchter und Botaniker*. — P. Parey, Berlin.

Szlachetko D.L. & Mytnik-Ejsmont J. 2009: Gynostemia Orchidalium IV. — *Acta Botanica Fennica* 180: 1–313.

Williams N.H., Whitten W.M. & Dressler R.L. 2005. Molecular systematics of *Telipogon* (Orchidaceae: Oncidiinae) and its allies: nuclear and plastid DNA sequence data. — *Lankesteriana* 5: 163–184