

Notes on the genera *Schiedeella* and *Funkiella* (Orchidaceae, Spiranthinae)

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ABSTRACT: New classification of the genera *Schiedeella* Schlecht. and *Funkiella* Schlecht. is proposed. *Schiedeella* Schlecht. subg. *Schiedeelopsis* Szlach., *Schiedeella* sect. *Gemmorchis* Szlach., *S. fragrans* Szlach., *S. llaveana* (Lindl.) Schlecht. var. *guerrerensis* Szlach. and var. *alinae* Szlach., *S. trilineata* (Lindl.) Balogh var. *undulata* Szlach. and *Funkiella* Schlecht. sect. *Lueretta* Szlach. are newly described taxa. In addition several new combination is made including *Schiedeella llaveana* var. *parasitica* (A. Rich. & Gal.) Szlach., *S. trilineata* (Lindl.) Balogh var. *thelymitra* (Reichenb. f.) Szlach. and var. *crenulata* (L. O. Williams) Szlach., *Funkiella* Schlecht. sect. *Svenkoeltzia* (Burns-Balogh) Szlach. as well as *F. durangensis* (Ames & Schweinf.) Szlach. subsp. *confusa* (Garay) Szlach. and subsp. *tenella* (L. O. Williams) Szlach.

KEY WORDS: angiosperms, Orchidaceae, Spiranthinae, *Schiedeella*, *Funkiella*, taxonomy, Mesoamerica

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INTRODUCTION

In his revision of the subtribe Spiranthinae Schlechter (1920) proposed several new orchid genera, including *Schiedeella* and *Funkiella*. He placed eight species in *Schiedeella*: *S. cobanensis*, *S. eriophora*, *S. llaveana*, *S. parasitica*, *S. pyramidalis*, *S. saltensis*, *S. velata* and *S. transversalis* and chose the latter species as the generitype.

In 1982 Garay and Burns-Balogh published two revisions of *Spiranthinae*, in which they proposed new concepts of many taxa, including *Schiedeella* and *Funkiella*. Burns-Balogh (1982) incorporated into *Schiedeella* several species described after the death of Schlechter. As a result, the genus in her concept embraced 23 species: *S. albovaginata*, *S. chartacea*, *S. congestiflora*, *S. dendroneura*, *S. densiflora*, *S. diaphana*, *S. durangensis*, *S. eriophora*, *S. falcata*, *S. hyemalis*, *S. llaveana*, *S. michoacana*, *S. nagelii*, *S. obtecta*, *S. parasitica*, *S. pseudopyramidalis*, *S. pubicaulis*, *S. rubrocalosa*, *S. sparsiflora*, *S. stolonifera*, *S. tenella*, *S. trilineata* and *S. velata*. Finally, very recently Burns-Balogh (1989) added one more species from Dominican Republic – *Schiedeella dodii*.

Garay (1982) adopted a much narrower formulation of genera, including only *S. ame-*

siana, *S. llaveana*, *S. nagelii*, *S. parasitica*, *S. violacea* and *S. wercklei* under *Schiedeella*. He created a new genus, *Gularia* Garay, for *Spiranthes trilineata* and *S. trilineata* var. *crenulata*, whereas he coupled *S. sparsiflora* with *S. gonzalesii* into the new genus *Physogyne* Garay. The majority of species included by Burns-Balogh in *Schiedeella*, were recognized by this author as representatives of the genus *Deiregyne* Schlecht. These divergencies result to a certain extent, from the different lectotypification of *Deiregyne*. Burns-Balogh (1986, 1988) chose *Spiranthes hemichrea* as the type species and Garay (1982) – *S. chloraeformis*. In my opinion Burns-Balogh's choice conforms with the protologue (Szlachetko 1991).

Schlechter (1920) described the monotypic genus *Funkiella* based on *S. hyemalis*. Garay (1982) also included *S. congestiflora* and *S. stolonifera*, which species were unknown to Schlechter. Burns-Balogh considered *S. hyemalis* to have all features typical for *Schiedeella* and reduced *Funkiella* to the synonymy of *Schiedeella*. In 1989 Burns-Balogh described the new genus *Svenkoeltzia*, the only representative of which is *S. congestiflora*.

When conducting taxonomic studies on the Spiranthinae, I noted the need to come to some conclusion as regards the existing concepts of the two genera. Monographs of *Schiedeella* and *Funkiella* will be published soon and I would like to propose herein a new intrageneric classification of the two and describe several new taxa of various rank.

A SYNOPSIS OF THE GENERA

Schiedeella Schlecht., Beih. Bot. Centralb. 37(2): 379. 1920. Type: *Schiedeella transversalis* (A. Rich. & Gal.) Schlecht. (*Spiranthes transversalis* A. Rich. & Gal.).

Plants delicate, usually small. Flowers minute. Cauline and floral bracts herbaceous, sometimes with hyaline margins. Lip on distinct claw. The basal part of hypochile flat, with two more or less fleshy auricles. Gynostemium delicate, slightly arcuate, rostellum with narrow base, viscidium nearly sheath-like. Clinandrium narrow.

Subgenus *SCHIEDEELLA*

Rostellum linear, long, viscidium apical. Anther more or less half as long as the column.

Schiedeella llaveana (Lindl.) Schlecht., Beih. Bot. Centralbl. 37(2): 380. 1920.

var. *llaveana*

var. *parasitica* (A. Rich. & Gal.) Szlach., *stat. et comb. nov.* Basionym: *Spiranthes parasitica* A. Rich. & Gal., Ann. Sci. Nat., ser. 3, 3: 32. 1845. Type: *Linden 1221* (Holotype: P!; isotypes: W-R!, G?).

var. *guerrerensis* Szlach., *var. nov.*

Hypochilium latum, rhomboideum, multo latius epichilio triangularis rotundis lobis lateralibus. Isthmus acutus.

TYPE: MEXICO. GUERRERO. Mountains above Taxco towards Tenerias, 9 Mar 1934, Juan Gonzales 3689 (Holotype: US).

Etymology – the name of the variety is coined from the name of the state whence it was found.

var. *alinae* Szlach., var. nov.

(Fig. 1)

Planta *S. llaveanae* simili, sed *inflorescentia* multiflorenti (floribus 13–30), *sepalis* basin versus *connatis* et *tubus* *sepalis* duplo brevior *faciens* et *epichilium* maximo *magnitudine* *hypochilium* *distincte* *ampliore* *differt*.

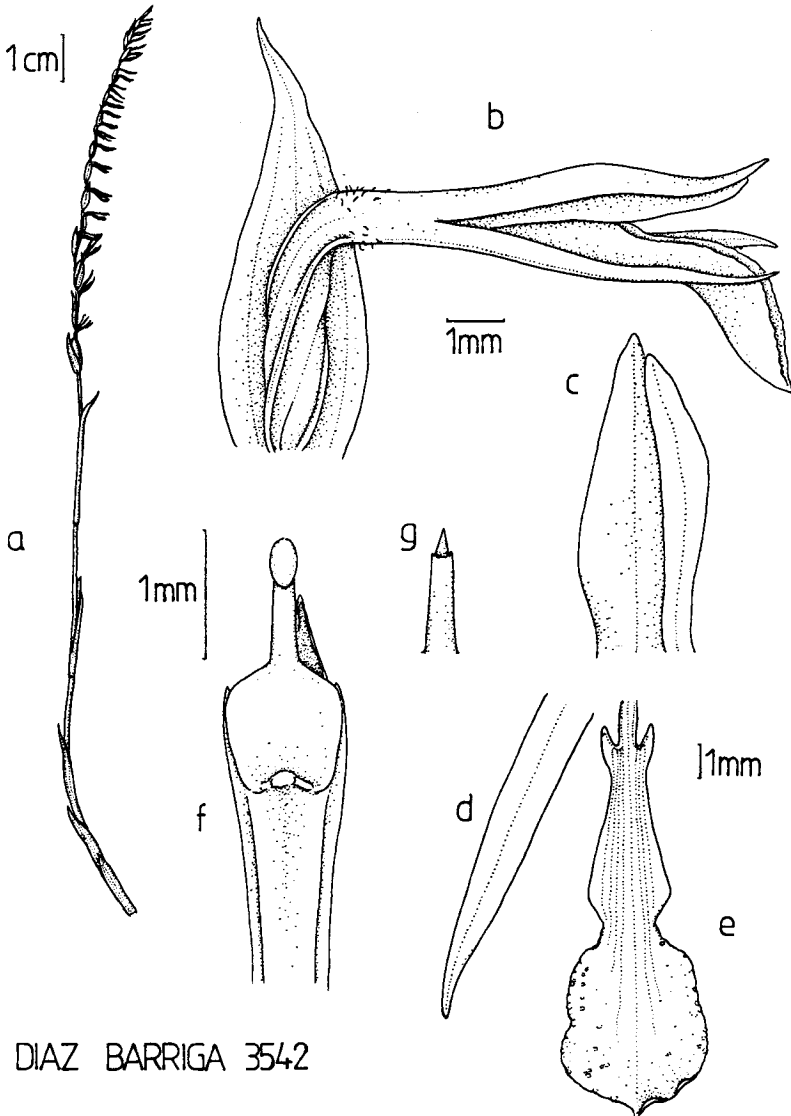


Fig. 1. *Schiedeella llaveana* (Lindl.) Schlecht. var. *alinae* Szlach. a – habit; b – flower; c – galea; d – lateral sepal; e – lip; f – gynostemium; g – rostellum remnant (drawn from type).

TYPE: MEXICO. MICHOACAN. Cerca de Tocuaro, Mpio. Erongaricuaro, 12 Nov 1987, *Diaz Barriga 3542* (Holotype: IEB).

Etymology – I would like to dedicate the variety to my wife, Alina, for her help in preparing the monograph of *Schiedeella*.

Schiedeella valerioi (Ames & Schweinf.) Szlach. & Sheviak, *Rhodora* 92(869): 16. 1990.

Schiedeella wercklei (Schlecht.) Garay, *Bot. Mus. Leafl. Harv. Univ.* 28(4): 358. 1982.

Schiedeella amesiana Garay, *Bot. Mus. Leafl. Harv. Univ.* 28(4): 357. 1982.

Schiedeella nagelii (L. O. Williams) Garay, *Bot. Mus. Leafl. Harv. Univ.* 28(4): 357. 1982.

Schiedeella trilineata (Lindl.) Balogh, *Orquidea (Mex.)* 8(1): 40. 1981.

var. *trilineata*

var. *undulata* Szlach., var. *nov.*

(Fig. 2)

Labellum sine constrictione oblancoelatum obtusum, apicem 2/3 versus latissimum, apice undulato.

TYPE: GUATEMALA. DEPT. GUATEMALA. "La Aurora", "Vara de San Jose", Fecha Enero de 1927, *Morelos, Deter & Standley 620* (Holotype: US).

Etymology – *undulatus* (Lat.) – undulate; referring to the distinctly undulated apex of the lip.

var. *thelymitra* (Reichenb. f.) Szlach., *comb. nov.* Basionym: *Spiranthes thelymitra* Reichenb. f., *Beitr. Orch. Zentr.-Am.* 66. 1866. Type: *Wendland 379* (Holotype: W-R-photo seen).

var. *crenulata* (L. O. Williams) Szlach., *comb. nov.* Basionym: *Spiranthes trilineata* var. *crenulata* L. O. Williams, *Bot. Mus. Leafl. Harv. Univ.* 12: 236. 1946. Type: *Froderstrom 2592* (Holotype: AMES!).

Subgenus *SCHIEDELLOPSIS* Szlach., *subg. nov.*

Rostellum breve. Viscidium parvum ad basin rostellii. Vestigium rostellii 3-dentatum (dente medio longitudinae dentes laterales superanti) vel lineare, acutum. Anthera permagna longitudine columnam subaequans.

Rostellum short, viscidium basal, oval or ovoid, small. Rostellum remnat shortly 3-dentate (middle tooth a little bit longer than laterals) or subulate. Anther nearly as long as the gynostemium.

Type: *Schiedeella dendroneura* (Sheviak & Bye) Balogh (*Spiranthes dendroneura* Sheviak & Bye).

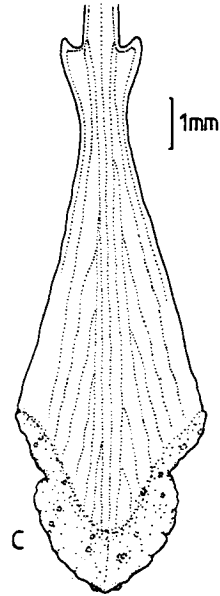
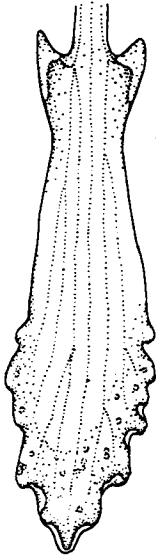
Etymology – *-opsis* (Gr.) – suffix indicating similarity.

This subgenus includes four species in two sections.

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& al. 620

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RODRIGUEZ
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a

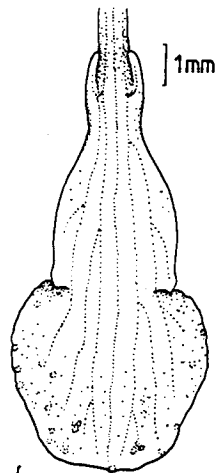
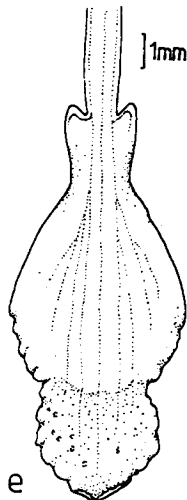
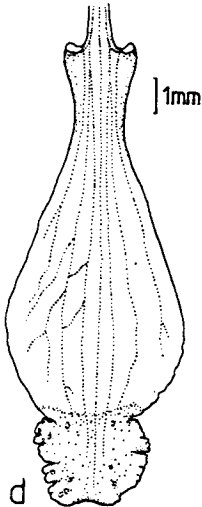
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Fig. 2. Shape of the lips of *Schiedeella trilineata* (Lindl.) Balogh: a – type specimen of var. *undulata*; b–d – var. *thelymitra* (Reichenb. f.) Szlach.; e – var. *trilineata*; f – var. *crenulata* (L. O. Williams) Szlach..

Section SCHIEDEELLOPSIS

Lip thin. Rostellum remnant shortly 3-dentate.

Schiedeella dendroneura (Sheviak & Bye) Balogh, *Orquidea* (Mex.) **10**(1): 92–93. 1986.

Schiedeella schlechteriana Szlach. & Sheviak, *Rhodora* **92**(869): 11–14. 1990.

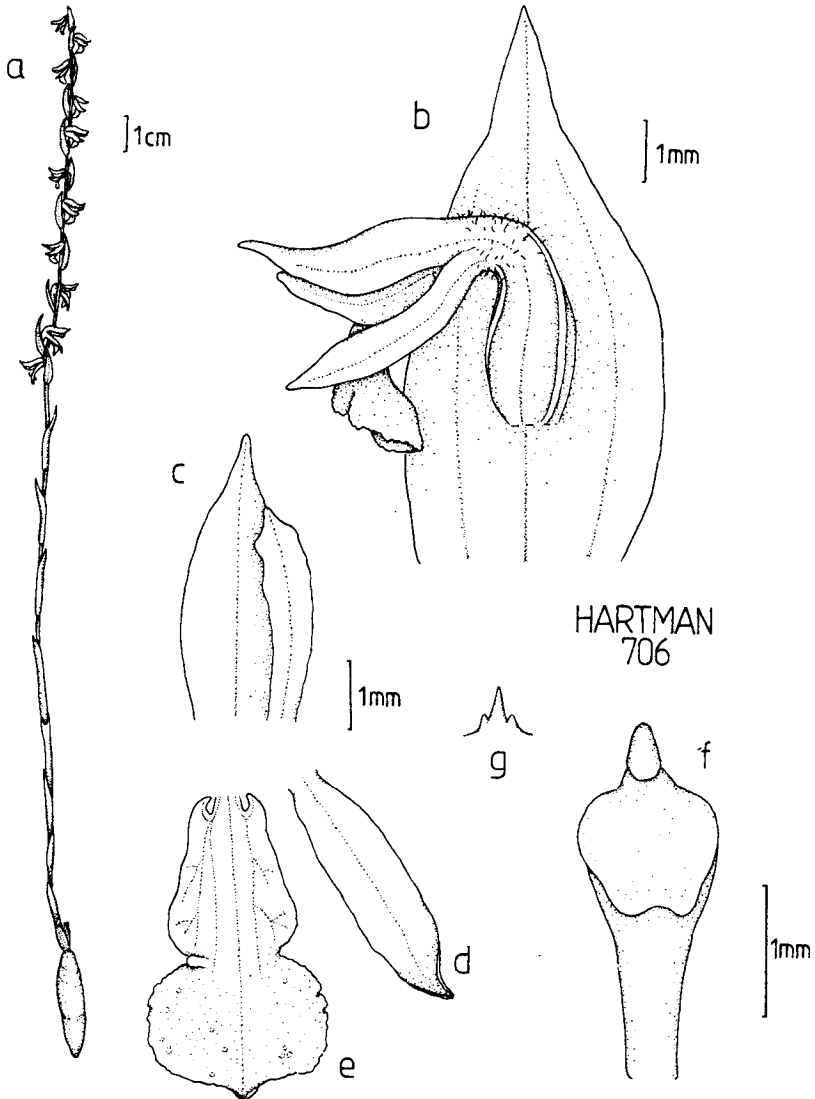


Fig. 3. *Schiedeella fragrans* Szlach. a – habit; b – flower; c – galea; d – lateral sepal; e – lip; f – gynostemium; g – rostellum remnant (drawn from type).

Schiedeella fragrans Szlach., *sp. nov.*

(Fig. 3)

Inflorescentia laxa, multiflora, rhachidi glandularis. Flores campanulati, sparsim glandulari. Forma labelli Schiedeella llaveanae similis, sed epichilium hypochilium latitudine superans. Rostellum breve, vestigium 3-dentatum, dente medio longitudine dentes laterales superanti. Viscidium ovatum basale.

TYPE: MEXICO. CHIHUAHUA. Part of Messa near Millsplace, 18 Jun 1891, *Hartman 706* (Holotype: US; isotype: AMES).

Etymology – *fragro* (Lat.) – to smell; referring to the strong-smelling flowers (Hartman's note on herbarium sheet).

Section GEMMORCHIS Szlach., *sect. nov.*

Labellum in hypochilio callum rubrum habens. Vestigium rostellii lineare, acutum.

Hypochile with red thickening. Rostellum remnant linear, acute.

Type: *Schiedeella fauci-sanguinea* (Dod) Burns-Balogh (*Spiranthes fauci-sanguinea* Dod).

Etymology – *gemma* (Lat.) – a goblet set with precious stones, an analogy to the red colouring of the lip, visible on the outside of the flowers.

The only one species belongs here.

Schiedeella fauci-sanguinea (Dod) Burns-Balogh, *Die Orchideen* 40(5): 173. 1989. Type: *Dod 618* (Holotype: SDM-not seen; isotypes: AMES!, NY!, SEL!, US!).

Funkiella Schlecht., *Beih. Bot. Centralbl.* 37(2): 430. 1920. Type: *Funkiella hyemalis* (A. Rich. & Gal.) Schlecht. (*Spiranthes hyemalis* A. Rich. & Gal.).

Plants medium. Flowers relatively large. Cauline and floral bracts herbaceous. Lip sessile. The basal part of hypochile concave with thickened margins. Auricles absent or very reduced and adnate to the base of hypochile. Gynostemium massive, erect or slightly arcuate. Rostellum with rather broad base, viscidium half sheath-like.

Section FUNKIELLA

Inflorescence 1-2-flowered. Flowers horizontal. Lip with red thickening in the center. Gynostemium erect.

This section includes two species.

Funkiella hyemalis (A. Rich. & Gal.) Schlecht., *Beih. Bot. Centralbl.* 37(2): 430. 1920.

Funkiella stolonifera (Ames & Correll) Garay, *Bot. Mus. Leafl. Harv. Univ.* 28(4): 320. 1982.

Section LUERETTA Szlach., *sect. nov.*

Inflorescentia laxa. Flores cernui campanulati. Labellum sessile, sine callo rubro. Gynostemium arcuatum.

Inflorescence 4–13-flowered, lax. Flowers campanulate, open. Lip sessile, no red thickening in the center. Gynostemium arcuate.

Type: *Funkiella durangensis* (Ames & Schweinf.) Szlach. (*Spiranthes durangensis* Ames & Schweinf.).

Etymology – dedicated to Dr. C. A. Luer, the author of many publications on American orchids.

Monotypic section.

Funkiella durangensis (Ames & Schweinf.) Szlach., *comb. nov.* Basionym: *Spiranthes durangensis* Ames & Schweinf., Bot. Mus. Leafl. Harv. Univ. 3: 128. 1935.

subsp. *durangensis*

subsp. *confusa* (Garay) Szlach., *stat. et comb. nov.* Basionym: *Deiregyne confusa* Garay, Bot. Mus. Leafl. Harv. Univ. 28(4): 283 1982. Type: *Juan Gonzales 2194* (Holotype: AMES!; isotype: US!).

subsp. *tenella* (L. O. Williams) Szlach., *stat. et comb. nov.* Basionym: *Spiranthes tenella* L. O. Wms., Bot. Mus. Leafl. Harv. Univ. 12: 235. 1946. Type: *Juan Gonzales 5027* (Holotype: AMES!).

Section SVENKOELTZIA (Burns-Balogh) Szlach., *stat. et comb. nov.* Basionym: *Svenkoeltzia* Burns-Balogh, Die Orchideen 40(1): 12. 1989. Type: *Funkiella congestiflora* (L. O. Williams) Garay H (*Spiranthes congestiflora* L. O. Williams).

Inflorescence few-flowered, subcapitate. Flowers erect. Lip sessile. Perianth parts narrow, oblong, nearly symmetric. Gynostemium erect.

Monotypic section.

Funkiella congestiflora (L. O. Williams) Garay, Bot. Mus. Leafl. Harv. Univ. 28(4): 320. 1982. Type: *Arsene 9026* (Holotype: US!).

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STRESZCZENIE

W wyniku rewizji rodzaju *Schiedeella* Schlecht. *sensu latissimo* zaproponowano jego nową klasyfikację wewnątrzrodzajową. Obok podrodzaju typowego, wyróżniony został nowy podrodzaj *Schiedellopsis* Szlach. obejmujący dwie sekcje: typową i nową sekcję *Gemmorchis* Szlach. Jako nowe taksony tego rodzaju opisane zostały *Schiedeella fragrans* Szlach., *sp. nov.*, *S. llaveana* (Lindl.) Schlecht. var. *alinae* Szlach., *var. nov.*, *S. trilineata* (Lindl.) Balogh var. *undulata* Szlach., *var. nov.* Prócz tego zrobione zostały trzy nowe kombinacje: *Schiedeella llaveana* (Lindl.) Schlecht. var. *parasitica* (A. Rich. & Gal.) Szlach., *S. trilineata* (Lindl.) Balogh var. *thelymitra* (Reichenb. f.) Szlach. i *S. trilineata* var. *crenulata* (L. O. Williams) Szlach.

Uznano za całkowicie uzasadnione traktowanie *Funkiella* Schlecht. jako osobny rodzaj. Obejmuje on trzy sekcje: typową, *Lueretta* Szlach. i *Svenkoeltzia* (Burns-Balogh) Szlach., przy czym dwie ostatnie wyróżnione zostały jako nowe taksony. Zrobiono trzy nowe kombinacje nomenklatoryczne w tym rodzaju: *Funkiella durangensis* (Ames & Schweinf.) Szlach., *F. durangensis* var. *confusa* (Garay) Szlach. i *F. durangensis* var. *tenella* (L. O. Williams) Szlach.