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Notulae Goodyerinae (IV)

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ABSTRACT: Continuing herbarium and literature studies of orchids belonging to Subtribe Goodyerinae has revealed new distributional records and new taxa. The four new species proposed are *Aspidogyne carauchana, A. chocoensis, Microchilus dryanderae* and *M. perijanus. Microchilus procerus* is lectotypified.

KEY WORDS: Orchidaceae, Goodyerinae, *Aspidogyne, Microchilus*.

INTRODUCTION

The third part of this paper (Ormerod, 2006) dealt with seven species of the genus *Goodyera* whilst this fourth instalment deals with four genera and eight species. All the new taxa come from Colombia, which is so far the most biodiverse country in the neotropics for Goodyerinae with about 61 (50 endemic) recorded taxa in five genera. In the paleotropics, nations such as China (ca. 70 species, 21 endemic, 13 genera) and India (ca. 76 species, 17 endemic, 12 genera) currently have more species and genera but much lower rates of endemism.

It is highly likely Colombia will prove to have the greatest number of Goodyerinae species since the initial studies of these plants have been limited to specimens found in North American and European herbaria. Specimens held in Colombian herbaria still require to be critically examined and no doubt several new entities will be discovered in the process. Whereas it can be assumed that the studies of Goodyerinae in China and India are at a mature stage because material in both foreign and national herbaria have been rather more fully studied.

TAXONOMIC TREATMENTS

***Aspidogyne* Garay**

A genus of about 48 species (including new taxa) distributed from Mexico to Argentina. It has three centres of speciation, one in Central America (9 taxa), one in Ecuador/Colombia (13 taxa) and one in Brazil (17 taxa). Some species have attractively marked leaves, these can be veined or sometimes banded with silver, or variously checkered with shades of green.

Aspidogyne carauchana Ormerod, *sp. nov.* Fig. 1

Type: Colombia – Cundinamarca, Cordillera Oriental, Caraucha Range, E of Ibama, 13 km E of Yacopi, near the border with Boyaca, 2290 m, 8 May 1944, *M.L. Grant 9157* (Holotype: US!).

Affinis A. colombiana (Garay) Ormerod *sed lamina petalis floribus ad medio lobatis (non dolabriformis) et calcar labello fusiformis (non subcylindraceis) differt.*

Erect terrestrial herb. Rhizome creeping, terete, rooting at nodes, ca. 58 mm long, 1-1.2 mm thick; internodes 3-6 mm long. Stem decumbent basally for 12 mm, rest erect, rooting from lower internodes, terete, 10-leaved, 40 mm long, 2 mm thick; internodes 4-8 mm long. Leaves obliquely ovate-elliptic, acute to subacuminate, 24-38 mm long, 9-20 mm wide; petiole and sheath 16-17 mm long. Inflorescence pubescent, 255 mm long; peduncle 182 mm long; sheathing bracts 3, lax, lowest one subfoliose, 5-22 mm long; rachis laxly 15-flowered, 73 mm long; floral bracts ovate-lanceolate, subacuminate, ca. 7 mm long, 2.5 mm wide. Pedicellate ovary subcylindric, laxly pubescent, gently arcuate, 7 mm long. Flowers sparsely pubescent externally, colour not known. Dorsal sepal ovate-lanceolate from a broadly clawed base, subacute, 5.15 mm long, 1.85 mm wide. Lateral sepals obliquely ligulate-oblanceolate, subacute, reflexed, 6 mm long, 1.4 mm wide. Petals gradually widening from a ligulate base, subrhombic in apical third, lower margin with an obtuse lobule that has a low callose thickening behind it, ca. 5.1 mm long, 1.3 mm wide. Labellum spurred, trilobed, 9.7 mm long, joined (and perhaps partly adhered) to column for 2.5 mm; spur fusiform, obtuse, 3.5-3.7 mm long; hypochile broadly obovate-suborbicular, 7-veined, ca. 2.6 mm long, ca. 2.7 mm wide; epichile anchoriform, subacute, 1.4 mm long (including the ca. 0.7 mm long, 0.75 mm wide claw), 2.8 mm wide, lobules oblong-ligulate, obtuse, 2.4-2.5 mm long from tip to epichile apex, 0.7 mm wide. Column minus viscidium 3.9 mm long, lacking wings.

Distribution: Colombia. Habitat: Temperate forest.

Notes: The habit of this species is quite similar to that of *A. colombiana* (Garay) Ormerod but the flowers differ in having petals with a distinct obtuse lobule near the apex and the labellum has a fusiform spur 3.5-3.7 mm long. In *A. colombiana* the petals are expanded near the apex into a dolabriform lamina and the labellum has a subcylindric spur 4.5-5.0 mm long.

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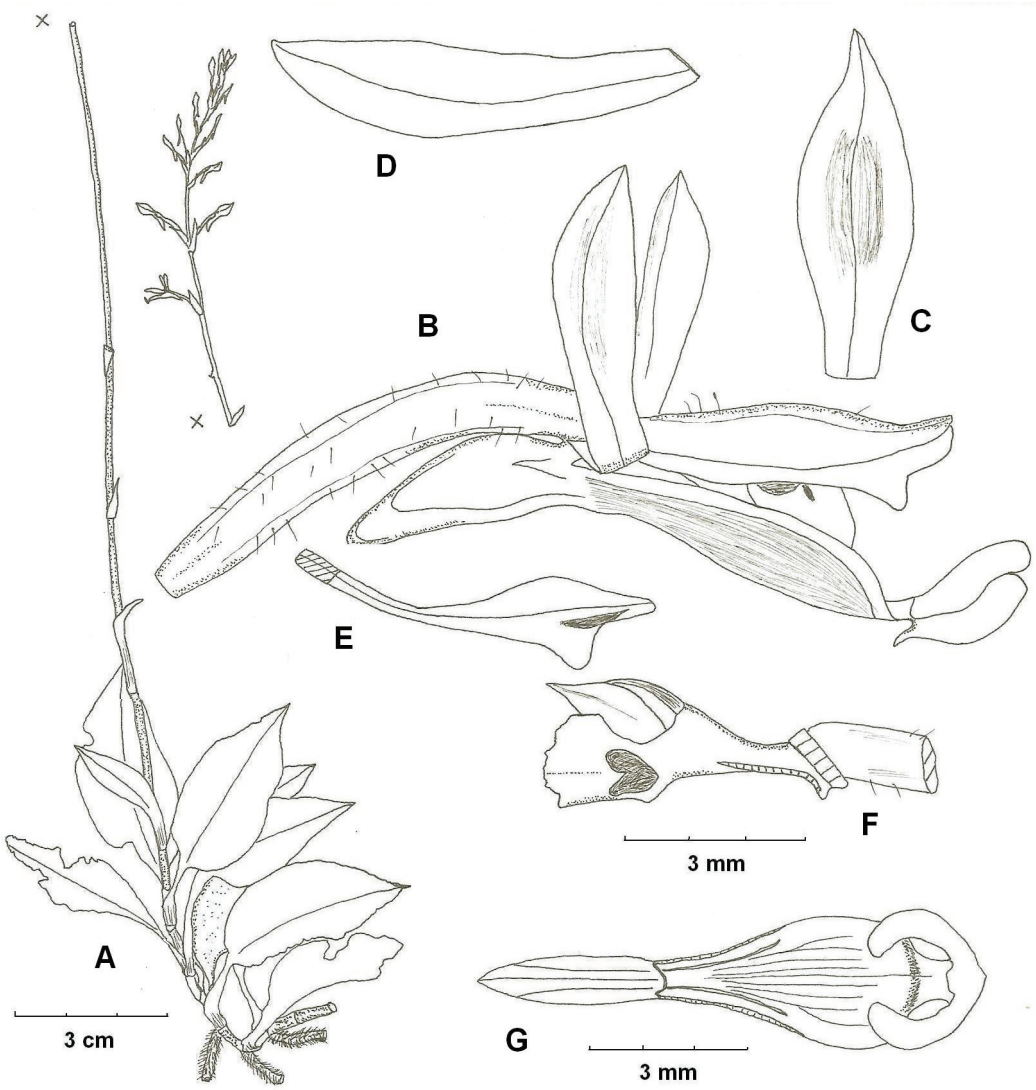


Fig. 1. ***Aspidogyne carauchana.*** **A: Plant. B: Flower. C: Dorsal sepal. D: Lateral sepal. E: Petal. F: Column, twisted from pressing. G: Labellum and spur. A, B-F and G to respective scales. Drawn from holotype.**

Aspidogyne carauchana is also quite similar to *A. chocoensis* (described below), which also has petals with a prominent obtuse lobule. However *A. carauchana* differs from *A. chocoensis* in having 10-leaved (not 4-5-leaved) stems, flowers with narrower (1.4 vs. 2 mm) lateral sepals, petals with a less distinct callosity and labellum with a more narrowly fusiform spur.

Aspidogyne chocoensis Ormerod, *sp. nov.* Fig. 2

Type: Colombia – Choco, Alto de Guadas, near Carmen, 2000 m, 1 March 1944, *E.L. Core 341* (Holotype: US!).

Affinis A. popayanensis Ormerod *sed caulibus brevioribus (2.5 vs. 12-15 cm), foliis approximatis (non laxe dispositis) et petalis floribus subapicibus sublobatis (non oblique rhombicis), latioribus (1.4 vs. 1 mm) differt.*

Erect terrestrial herb. Rhizome creeping, terete, rooting from nodes, 53-75 mm long, 1-2.5 mm thick; internodes 3-6.5 mm long. Stem terete, 4-5-leaved, 25 mm long, 1.5 mm thick; internodes 4 mm long. Leaves obliquely lanceolate to ovate-lanceolate, acute, margins undulate, above with a paler indistinct narrow stripe on the midvein, 25-46 mm long, 8-16 mm wide; petiole and sheath 9-11 mm long. Inflorescence 247-250 mm long; peduncle 156-165 mm long; sheathing bracts 3-4, scattered, 10-19 mm long, when subfoliose then 28 mm long; rachis laxly 10-14-flowered, 85-91 mm long; floral bracts lanceolate, acute, to ca. 6 mm long, 1.8 mm wide. Pedicellate ovary subcylindric-fusiform, gently arcuate, sparsely pubescent, 7 mm long. Flowers sparsely pubescent externally, greenish white. Dorsal sepal ovate-elliptic, subacute, 4.95 mm long, 1.95 mm wide.

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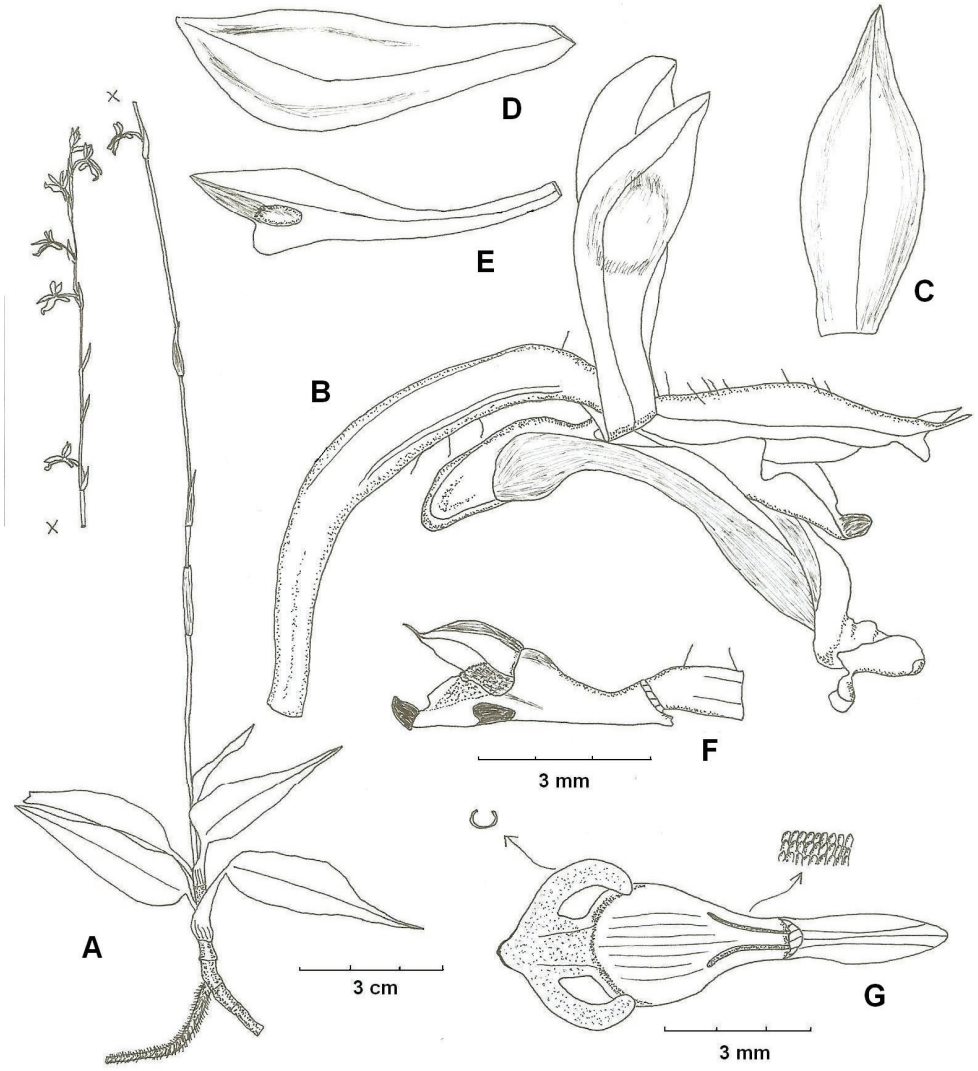


Fig. 2. ***Aspidogyne chocoensis.*** **A: Plant. B: Flower. C: Dorsal sepal. D: Lateral sepal. E: Petal. F: Column. G: Labellum and spur (cross-section of epichile lobule and detail of keel papillae arrowed). A, B-F and G to respective scales. Drawn from holotype.**

Lateral sepals obliquely obovate-oblanceolate, subacute, reflexed, concave, 6 mm long, 2 mm wide. Petals widening gradually from a ligulate base, subrhombic in apical third, lower margin with an obtuse lobule that hasa callose thickening behind it that extends and declines toward the apex, 4.5 mm long, 1.4 mm wide. Labellum spurred, trilobed, 8.9 mm long, joined to column for ca. 0.5 mm; spur fusiform, obtuse, 2.9 mm long; hypochile broadly obovate-suborbicular from a narrower base, in basal half with 2 papillose parallel ridges that diverge apically, ca. 3.8-4 mm long, 2.5 mm wide; epichile semilunate-anchoriform, trilobulate, obtuse, papillose-pubescent, 2 mm long (including the 0.5 mm long, 1.1 mm wide claw), 2.8-3 mm wide, lobules oblong-ligulate, obtuse, 2.9-3 mm long from tip to epichile apex. Column 4 mm long, lacking wings.

Distribution: Colombia. Habitat: on floor of dense forest.

Notes: This species appears to be most closely related to its Colombian congener *A. popayanensis* Ormerod but it differs in having shorter (2.5 vs. 12-15 cm) stems, with fewer (4-5 vs. 7-11), approximate (not laxly arranged) leaves and flowers with broader (1.4 vs. 1 mm) petals that have a distinct obtuse lobule (not a triangular angle) projecting from the lower margin of the apical third.

Cheirostylis Blume

A genus of 47 to 50 species distributed from West Africa to Madagascar, through India and Southeast Asia to New Caledonia and Eastern Australia. The genus can often be recognised by its fleshy, moniliform rhizome, short stem and abbreviated racemes of flowers which usually have connate sepals.

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Cheirostylis malleifera Par. & Rchb.f., Trans. Linn. Soc., Bot. 30: 141, 1874.

Type: Myanmar – Tenasserim, Zwakabin, *C.S. Parish 248* (Holotype: K!).

Distribution: Myanmar; NE India.

Specimen examined: INDIA – Mizoram, S Lushai, 1065 m, August 1931, *Reverend W.J.L. Wenger 322* (K).

Notes: This species has for a long time only been known from the type specimen. It was therefore somewhat of a surprise to find a second collection and a new record for India. The flowers have elongated papillae on the outside of the mesochile apex near the junction with the epichile. These papillae have been overlooked by Seidenfaden (1978) in his drawing made from the type.

Goodyera R.Br.

A pantropical and circumboreal genus of about 88 species with approximately 62 taxa in Southeast Asia (India to Samoa), 2 in Europe (including Madeira), 16 in North and Central America and 8 in East Africa (Mozambique), Madagascar, Reunion and the Seychelles.

Goodyera fimbrilabia Ormerod, Taiwania 51: 153, 2006.

Type: Mexico – Chiapas, Municipio de Ocosingo, near Octol Grande, 950 m, September 1954, *R.L. Dressler 1697* (Holotype: AMES!).

Distribution: Mexico; Costa Rica.

Specimens examined: COSTA RICA – Puntarenas, Cordillera de Talamanca, between headwaters of Rio Bella Vista and Sitio Coton, 1800 m, 25 August 1983, *G. Davidse et al. 24051* (SEL); Canton de Buenos Aires Escalera, road to Olan, between Distritos of Buenos Aires and Potrero Grande, 1800 m, 22 September 1989, *G. Herrera 3518* (SEL).

Notes: The type specimen of this species had a rather young raceme but the specimens here newly recorded from Costa Rica have more mature inflorescences. An expanded description of *G. fimbrilabia* will be published in the author's contribution to the Flora Mesoamericana.

Goodyera rubicunda (Blume) Lindl., Bot. Reg. 25: 61, misc. 92, 1839.

Basionym: *Neottia rubicunda* Blume, Bijdr.: 408, 1825.

Types: Indonesia – Java, Mt. Salak and Mt. Gede, *C.L. Blume s. n.* (Syntypes: L; Isosyntypes: P).

Distribution: NE India; SW China; Vietnam; Taiwan; Japan; Philippines; Malaysia; Indonesia; Papua New Guinea; NE Australia; Solomon Islands; Vanuatu; New Caledonia; Fiji; Samoa and Tonga.

Specimen examined: VIETNAM – Ninh Binh Prov., Cuc Phuong National Park, near park headquarters, 180-220 m, 18 July 1995, *T.B. Croat & Nguyen Van Dzu 78009* (GH).

Notes: The specimen cited above represents a new record for the flora of Vietnam. I suspect some of the collections listed by Averyanov & Averyanova (2000) as *G. fumata* Thwaites from Cuc Phuong National Park also belong here.

Microchilus Presl

Recently (Ormerod, 2008) I added 28 species to this genus and it now contains 123 species and thus it is easily the largest of all Goodyerinae genera (ahead of *Zeuxine* Lindl. with 92 species). The addition of another two taxa brings the number of known species up to 125.

Microchilus dryanderae Ormerod, *sp. nov.* Fig. 3

Type: Colombia – Valle, Alto Mercedes, 2000 m, May 1930, *Mrs. E. Dryander 286* (Holotype: US!).

Affinis M. pseudominor Ormerod *sed lobulis epichilo ovato-lanceolatis (non subquadratis) differt.*

Rhizome and roots not seen. Stem erect, terete, remnant 4-leaved, ca. 23 cm long, 0.5-0.6 cm thick; internodes 4.7-6.25 cm long. Leaves obliquely ovate-lanceolate, subacuminate, 7.5-11 cm long, 2.75-3.6 cm wide; petiole and sheath 3.4 cm long. Inflorescence pubescent, 51.5 cm long; peduncle stout, 24.5 cm long, 0.3 cm thick; sheathing bracts 7, 0.9-4.3 cm long; rachis sublaxly many-flowered, 27 cm long; floral bracts lanceolate, acute, to 10 mm long, 2 mm wide. Pedicellate ovary clavate, pubescent, 5.5 mm long. Flowers externally pubescent, colour not known. Dorsal sepal oblong, subacute, 3.8 mm long, 1.5 mm wide. Lateral sepals obliquely oblong, obtuse, 4.2 mm long, 1.1-1.2 mm wide. Petals obliquely ligulate-oblanceolate, subacute, 3.6 mm long, 0.95 mm wide. Labellum spurred, trilobed, joined to column for 1.2 mm; spur oblongoid-conical, subacute, 2.2 mm long; hypochile ovate-cuneate, very fleshy, 1.8-2 mm long, 1.5 mm wide basally, 1.2 mm wide apically; epichile papillose-pubescent, 0.5 mm long medially, lobules obliquely ovate -lanceolate, subacute, ca. 1 mm long, 0.5 mm wide. Column 2.5 mm long.

Distribution: Colombia.

Notes: This species is most similar to its Colombian congener *M. pseudominor* Ormerod but it differs from the latter in having flowers with obliquely ovate-lanceolate (not subquadrate) epichile lobules.

Microchilus perijanus Ormerod, *sp. nov.* Fig. 4

Type: Colombia – Cesar, Sierra de Perija, 8 km ENE of Manaure, 44 km E of Valledupar, 5 km from Venezuelan border, 2375 m, 2 February 1945, *M.L. Grant 10766* (Holotype: US!).

Affinis M. platysepalus Ormerod *sed calcar floribus brevioribus (1.75 vs. 2.5 mm), lobulis epichilo oblongis (non oblique obovato-obcuneatis) et columna brevioribus (1.8 vs. 2.5 mm) differt.*

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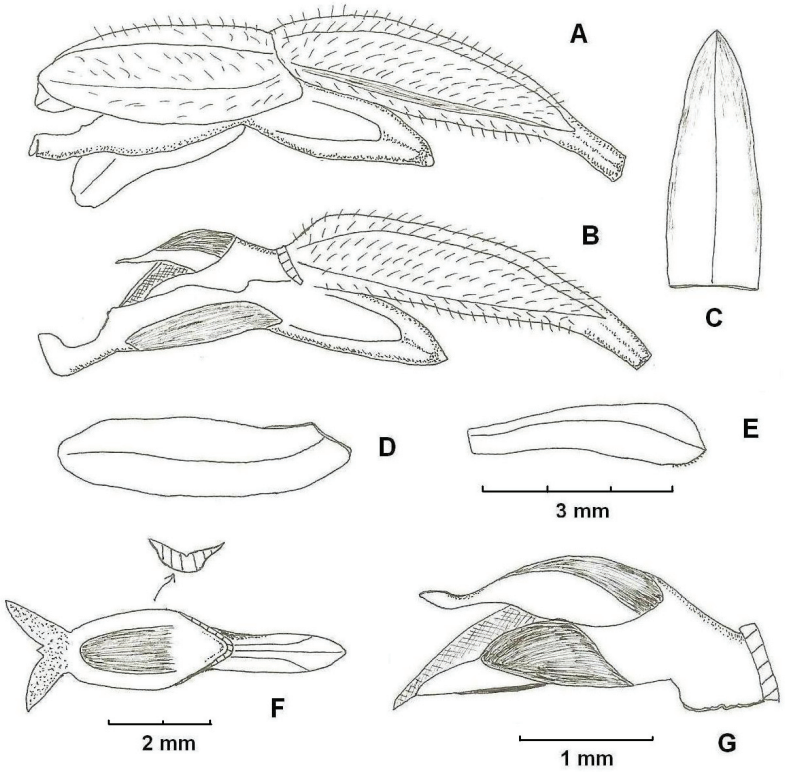


Fig. 3. ***Microchilus dryanderae.*** **A: Flower. B: Flower minus tepal. C: Dorsal sepal. D: Lateral sepal. E: Petal. F: Labellum and spur (cross-section of hypochile arrowed). G: Column. A-E, F and G to respective scales. Drawn from holotype.**

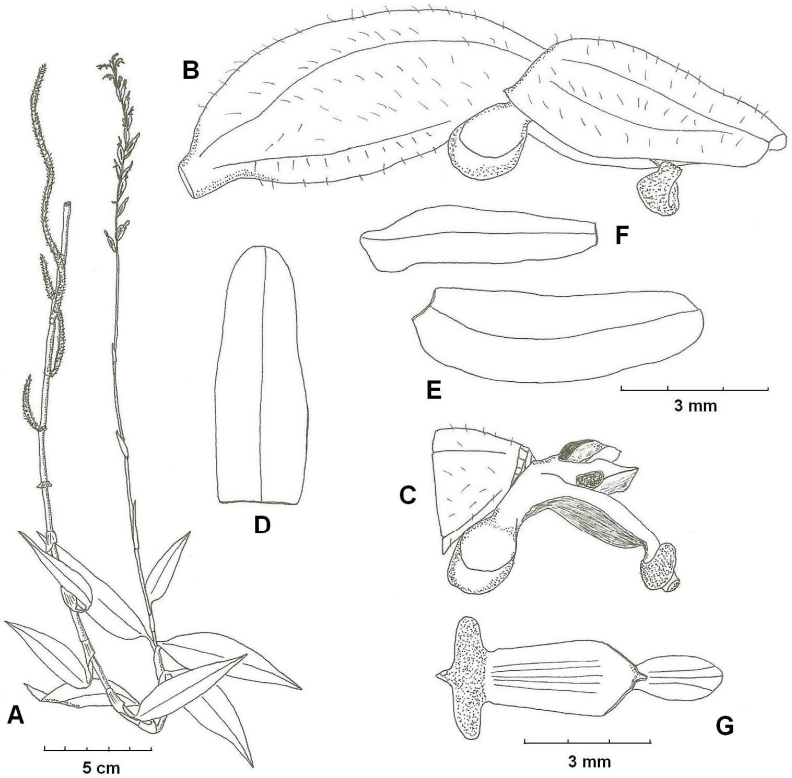


Fig. 4. ***Microchilus perijanus*****. A: Plant. B: Flower. C: Flower minus tepal. D: Dorsal sepal. E: Lateral sepal. F: Petal. G: Labellum and spur. A, B-F and G to respective scales. Drawn from holotype.**

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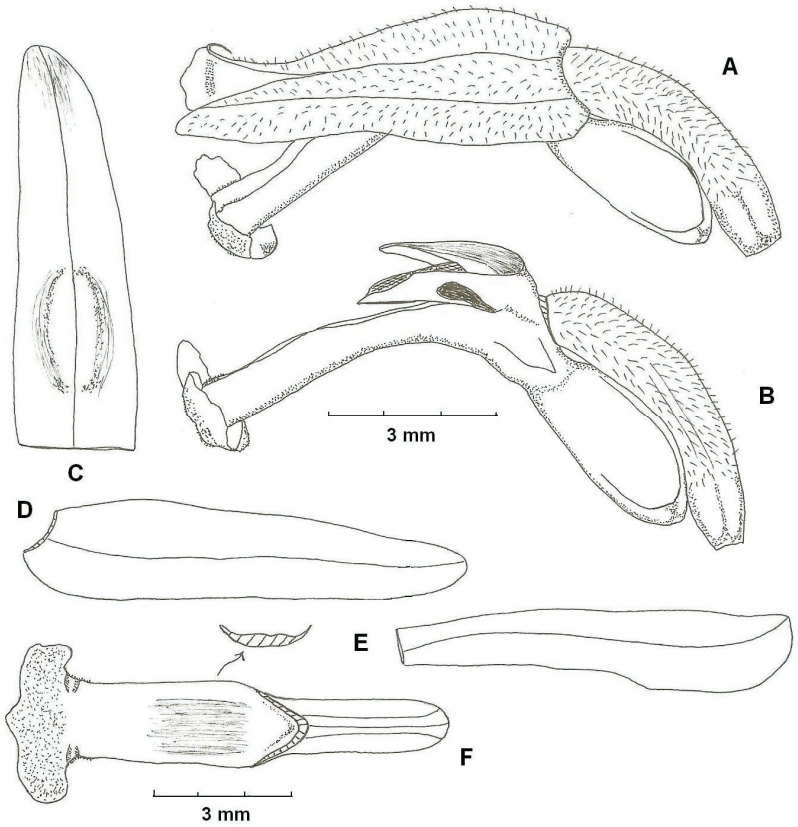


Fig. 5. ***Microchilus procerus*** **(Schltr.) Ormerod. A: Flower. B: Flower minus tepal. C: Dorsal sepal. D: Lateral sepal. E: Petal. F: Labellum and spur (cross-section of hypochile arrowed). A-E and F to respective scales. Drawn from** ***Gines 2053*** **(US).**

Erect terrestrial herb. Rhizome creeping, terete, rooting at nodes, 11.1 cm long, 0.2-0.35 cm thick; internodes 2.6-2.9 cm long. Stem terete, laxly 8-9-leaved, 19.6 cm long, 0.25-0.35 cm thick; internodes 2.4-2.6 cm long. Leaves lanceolate, acute, 4-7 cm long, 1-1.9 cm wide; petiole and sheath 1.5-2 cm long. Inflorescence pubescent, 29.5 cm long; peduncle 20.1 cm long; sheathing bracts 3, lax, 1-2.5 cm long; rachis sublaxly 22-flowered, 9.4 cm long; floral bracts ovate-lanceolate, acute, to 8 mm long, 4 mm wide. Pedicellate ovary oblongoid-fusiform in fertilized state, pubescent, 5-6 mm long. Flowers externally pubescent, white. Dorsal sepal oblong, obtuse, 4.75 mm long, 1.95 mm wide. Lateral sepals obliquely oblong, obtuse, 5-5.2 mm long, 1.75 mm wide. Petals oblong-ligulate, lower margin sublobulate near apex, obtuse, 4.4 mm long, 0.95 mm wide. Labellum spurred, trilobed, joined to column for ca. 1 mm; spur obovoid, obtuse, ca. 1.75 mm long; hypochile cuneate, 2.9-3 mm long, 1.85 mm wide basally, 1.5 mm wide medially, 1.3 mm wide subapically; epichile transversely ligulate-oblong, densely papillose-pubescent, 1 mm long, 2.9 mm wide, lobules oblong, obtuse, 1 mm long, 0.6 mm wide. Column 1.8 mm long.

Distribution: Colombia. Habitat: Temperate forest.

Notes: This species appears to be most closely related to its Colombian congener *M. platysepalus* Ormerod. It differs from the latter in having flowers with a shorter (1.65 vs. 2.5 mm) spur, oblong (not obliquely obovate-obcuneate) epichile lobules and a shorter (1.8 vs. 2.5 mm) column.

Microchilus procerus (Schltr.) Ormerod, Oasis, Suppl. 3: 12, 2004. Fig. 5

Basionym: *Physurus procerus* Schltr., Repert. Sp. Nov. Regni Veg., Beih. 7: 73, 1920.

Erythrodes procera (Schltr.) Ames, Proc. Biol. Soc. Wash. 35: 150, 1921.

Type: Colombia – Magdalena, Sierra Nevada de Santa Marta, near Las Nubis, 1220 m, 3 December 1898, *H.H. Smith 2278* (Holotype: B, destroyed; Lectotype here designated: NY 00688361, left hand plant; Isolectotypes: AMES!, CM (photo NY!), F!, MO!, US!).

Distribution: Colombia; Venezuela.

Specimens examined: COLOMBIA – Magdalena, Sierra Nevada de Santa Marta, Onaca Estate, 1065 m, 10 December 1898, *H.H. Smith 2278* (NY 00688362); forest along quebrada in S portion of Finca Reflejo, 1450 m, 7 September 1972, *J.H. Kirkbride Jr. 2150* (NY); Vista Nieve, 18 December 1922, *H.L. Viereck s.n.* (AMES, US). VENEZUELA – Zulia, Perija, 1175 m, 2 January 1951, *H. Gines 2053* (US).

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Notes: The collection *H. H. Smith 2278* was distributed by the New York Botanical Gardens, often without sufficient label data. Schlechter had on hand one such duplicate in Berlin when he described *Physurus procerus*. In NY two different sheets bear the number *Smith 2278*. One of these represents a mostly fruiting plant collected at Onaca Estate on the 10th of December 1898, it appears to be a unicate. The second specimen collected at Las Nubis on the 3rd of December 1898 has two plants, the left hand one with good flowers (and thus chosen as lectotype above), the right hand one in fruit. The second specimen agrees in aspect with the various duplicates and it may have been collected from the same population.

Though *Microchilus procerus* was first recorded from Venezuela by Knuth (1927), this and later records refer to different taxa (e.g. *M. campanulatus* Ormerod and *M. fendleri* Ormerod). Thus the specimen cited above from Venezuela represents a new record for that country.

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I wish to thank Emily Wood (HUH) and Gustavo Romero (HUH) for assistance with loans. I am also grateful for the hospitality and helpfulness of herbarium and library staff at HUH during my visits. The following herbaria kindly made material available for study: F, HUH (A, AMES, GH), K, MO, NY and US.

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摘要：接續先前的標本館與文獻研究屬於斑葉蘭族之植物發現了新的紀錄種與新種。四新種分別為 *Aspidogyne carauchana, A. chocoensis, Microchilus dryanderae* 與 *M. perijanus*.。

關鍵詞：蘭科、斑葉蘭族、*Aspidogyne*、*Microchilus*。

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