

ICONES ORCHIDACEARUM

Fascicle 16(1)
THE GENUS EPIDENDRUM
Part 12
“Species New & Old in Epidendrum”

Eric Hágsater

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ICONES ORCHIDACEARUM

Fascicle 16(1), plates 1601 to 1667

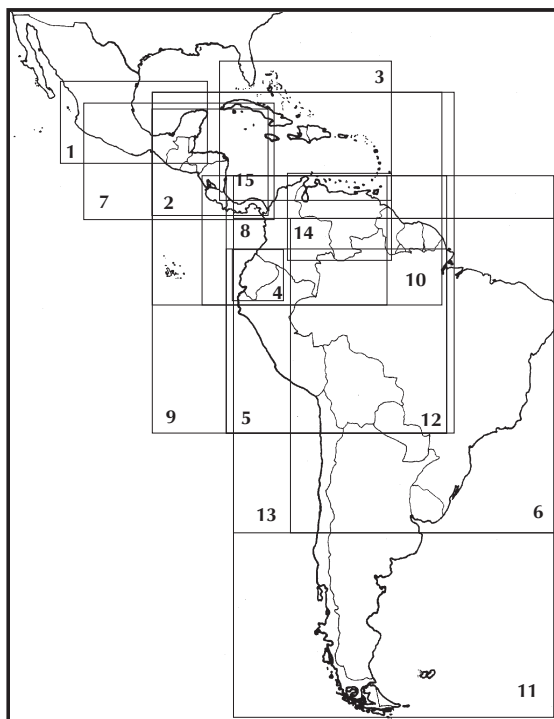
THE GENUS EPIDENDRUM Part 12

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Reference Map

TROPICAL AMERICA

(numbers refer to the portions of the map used in individual plates)



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THE GENUS *EPIDENDRUM*

Part 12

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Foreword

Last year Luis Martín Sánchez Saldaña (August 5th, 1966-January 29th, 2017) passed away in Mexico City, after 29 years as an associate at the Herbario AMO, and co-editor of *Icones Orchidacearum* since 1999. He was also the curator of the herbarium, and specialized in the taxonomy of several groups on *Epidendrum*. A short biography describes his work and character in the following pages.

It has been little over a year and a half since we published volume 15(2) of the *Icones*. In this issue work has centered on Andean species, as well as several from the Guiana Shield, one which I have known since 1980, and is endemic to the top of Roraima Tepuí and which had been illustrated in the *AOS Bulletin* by Stalky Dunsterville in 1979. After a failed attempted visit to the tepuí with Gustavo Romero three years ago, I could reach the Brazilian part of the tepuí by helicopter from Santa Elena de Uairén, in Venezuela, together with Leonardo P. Felix, and Joel Maciel P. Cordeiro of the University of Paraíba in February of this year, thus having on hand live flowering material of the new *Epidendrum holstii*. In this issue, we present 38 species new to science.

Elizabeth Santiago Ayala has also dedicated the better part of two years to understand and clarify the *Epidendrum aquaticum* Group which has often been lumped together under *Epidendrum dendrobioides* Thunb., this in preparation for the revision of the Orchids of the Guianas where we are collaborating with Dariusz Szlachetko and his team. It is interesting to note that species belonging to this group are appearing atop the Andean Tepuis in southern Ecuador and northern Peru, one such species here described as *Epidendrum tundaymense*.

In reference to Ecuador, we are now collaborating with various local botanists on a broader project to understand the evolutionary dynamics that led to the megadiversity displayed by four genera of different families, *Epidendrum* (Orchidaceae), *Salvia* subgenus *Calosphace* (Lamiaceae), *Tillandsia* (Bromeliaceae), as Research Associates of the Herbario Nacional del Ecuador (QCNE), Instituto Nacional de Biodiversidad, Quito. Other participants are Susana Magallón, Carolina Granados, Gerardo Salazar and their doctoral students at Universidad Nacional Autónoma de México and Marcia Peñafiel and Efraín Freire at QCNE. We have visited the country three times in the last year, working in the field and in various herbaria. It is amazing to continue finding numerous new orchid species in such a well-botanized country as Ecuador, where I have had the opportunity to collect for nearly 30 years with Calaway H. Dodson. Now there is a large group of Ecuadorean botanists doing important field work, and the country is well connected by a new network of excellent highways.

In Colombia, we have been in contact with many botanists and amateurs, we took part of the Andean Orchid Conference held in Cali, Valle del Cauca in November 2015, and have worked for over two years with Carlos Uribe Vélez on the chapter on *Epidendrum* for his book, *Orchids, a Colombian Treasure*, volume 2, published last September by Da Vinci Publicidad y Medios, S.A.S, in Bogotá, and authored by Pedro Ortiz Valdivieso† & Carlos Uribe Vélez. Several of his images resulted in new species, which are herewith proposed as new to science. Colombia, where thanks to the peace process, it is now possible to travel to many areas which were off-limits for many years, and where many young botanists and amateurs are doing important field work, will produce, no doubt, many interesting new species.

Finally, Peru could not stay behind, and there are several young botanists doing field work in the north, in the Department of Amazonas, but also in what should be a well-known, collected area, Cusco.

Eric Hágsater

Mexico City

January 2018

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Biól. Luis Martín Sánchez Saldaña (1966-2017).

Elizabeth Santiago Ayala, Rolando Jiménez & Eric Hágsater

Born in Mexico City on August 5th, 1966, Luis studied at the Universidad Nacional Autónoma de México, between 1986 and 1990, where he received his Bachelor in Science in Biology. He joined the staff of the Herbario AMO in 1988, first as a student, and was then a part of the staff as a research associate in the same year. His thesis consisted in a revision of the *Epidendrum difforme* Jacq. (Orchidaceae) complex. In 1995, he became the curator of the AMO herbarium, a position he held until 2017. At the 15th World Orchid Conference in Rio de Janeiro in 1996, he presented a first synopsis entitled Taxonomic Study of *Epidendrum difforme* group (Orchidaceae), including 55 species, thanks to his work it has now increased to over 125 species. It had been considered a variable species, with only a half dozen recognized species when he took it over.

He focused on the taxonomy of various groups within *Epidendrum*, namely *E. difforme*, *E. nocturnum* Jacq. and *E. mancum* Lindl., but he also participated in several other groups and genera, having published 87 new taxonomic entities or changes.

He collaborated in various floristic projects, including the Orchid Flora of the Greater Antilles, Flora of Veracruz, Flora del Bajío (Maxillareae & Epidendreae), Manual Ilustrado de las Orquídeas del Estado de Morelos, Flora of Costa Rica, Flora of Mesoamerica, and the Orchidaceae of the Valle del Cauca (Colombia).

From 1999 to 2017 he was the co-editor of *Icones Orchidacearum*, the main publication of the Herbario AMO, editing volumes 3 through 15. He was also in charge of AMO-DATA, the digital data base that holds all the records of the AMO herbarium, as well as digital images of Orchidaceae on New World orchids of numerous herbaria in Europe and the New World, some 100,000, particularly rich in specimens of the genus *Epidendrum*, as well as the many digital images of live orchids, around 30,000, and over 4300 original illustrations prepared at AMO, and those prepared by Roberto González Tamayo from western Mexico, over 1000. This has proven to be a most valued asset for research. The digital images of all these collections now holds over 140,000 images.

Luis was in contact with numerous orchid amateurs and specialists throughout Tropical America, helping identify photographs and in particular helping in putting together descriptions, Lankester composite digital plates and illustrations for their publication in the *Icones* series. He published with renown contemporary orchidologists including Franco Pupulin, Diego Bogarín, Adam Karremans, Germán Carnevali, Oscar Alejandro Pérez Escobar y Edicson Parra, as well as with the team at AMO: Eric Hágsater, Elizabeth Santiago and Rolando Jiménez.

Two species have been dedicated to Luis: *Epidendrum luis-sanchezii* Hágsater, E.Parra & E.Pérez, from Colombia, published in *Icon. Orchid.* 14: t. 1452. 2013, and *Epidendrum sanchezii* E.M.Pessoa & L.P.Felix from Brazil, described in *Brittonia* 66(4): 348. 2014 in a paper by Edlley M. Pessoa, Leonardo P. Felix y Marccus Alves.

He passed away on January 29th, 2017, having lived with Hepatitis C since childhood, but in his last few days he swiftly deteriorated as organ failure occurred suddenly.

He was a great companion and collaborator, always ready to help, working as part of a team. An excellent father, family person, with great charisma, humbleness and amability.

LIST OF TAXONOMIC NOVELTIES DESCRIBED BY L. SÁNCHEZ & COAUTHORS

Compiled from The International Plant Names Index (IPNI), 3 December 2017, in alphabetical order.

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Epidendrum platystomum Hágsater & L.Sánchez, Icon. Orchid. 8: t. 873. 2006 [1 Jun 2006]
Epidendrum prancei Hágsater & L.Sánchez, Icon. Orchid. 15(2): t. 1594. 2016 [19 Jul 2016]
Epidendrum pseudokillipii Hágsater & L.Sánchez, Icon. Orchid. 7: t. 781. 2005 [13 Jan 2005]
Epidendrum pseudomancum Hágsater & L.Sánchez, Icon. Orchid. 7: t. 782. 2005 [13 Jan 2005]
Epidendrum putumayoense Hágsater & L.Sánchez, Icon. Orchid. 3(2): t. 377. 1999 [25 Mar 1999]
Epidendrum ramiro-medinae Hágsater & L.Sánchez, Icon. Orchid. 15(1): t. 1553. 2015 [26 May 2015]
Epidendrum rhombimancum Hágsater & L.Sánchez, Icon. Orchid. 11: t. 1173. 2008 [3 Dec 2008]
Epidendrum romero-castannedae Hágsater & L.Sánchez, Icon. Orchid. 8: t. 882. 2006 [1 Jun 2006]
Epidendrum rusbyi Hágsater & L.Sánchez, Icon. Orchid. 12: t. 1286. 2009 [16 Dec 2009]
Epidendrum sandiorum (Hágsater, Karremans, & L.Sánchez) Hágsater, Karremans, & L.Sánchez. Icon. Orchid. 14: t. 1483. 2013 [31 May 2013]
Epidendrum x *sandiorum* Hágsater, Karremans, & L.Sánchez, Lankesteriana 12(1): 32. 2012 [26 Apr 2012] = *Epidendrum sandiorum* (Hágsater, Karremans, & L.Sánchez) Hágsater, Karremans, & L.Sánchez
Epidendrum schistostemum Hágsater, laube & L.Sánchez, Icon. Orchid. 11: t. 1177. 2008 [3 Dec 2008]
Epidendrum solomonii Hágsater & L.Sánchez, Icon. Orchid. 7: t. 788. 2005 [13 Jan 2005]
Epidendrum sympetalostele Hágsater & L.Sánchez, Icon. Orchid. 2: t. 191. 1993 [11 Oct 1993]
Epidendrum taguatingense (Brieger & Bicalho) Hágsater, Meneguzzo & L.Sánchez, Icon. Orchid. 15(1): t. 1564. 2015 [26 May 2015]
Epidendrum thiagoi Hágsater & L.Sánchez, Icon. Orchid. 13: t. 1393. 2010 [10 Dec 2010]
Epidendrum tuxtense Hágsater, García-Cruz & L.Sánchez, Icon. Orchid. 3(2): t. 390. 1999 [25 Mar 1999]
Epidendrum vasquezii Hágsater & L.Sánchez, Icon. Orchid. 8: t. 896. 2006 [1 Jun 2006]
Epidendrum vulgoamparoanum Hágsater & L.Sánchez, Icon. Orchid. 8: t. 898. 2006 [1 Jun 2006]
Epidendrum yojoaense Hágsater & L.Sánchez, Icon. Orchid. 7: t. 800. 2005 [13 Jan 2005]
Habenaria gonzaleztamayoi García Cruz, R.Jiménez & L.Sánchez- Acta Bot. Mex. 50: 35. 2000
Habenaria uncata R.Jiménez, L.Sánchez & García-Cruz- Acta Bot. Mex. 61: 33. 2002
Malaxis alvai García Cruz, R.Jiménez & L.Sánchez- Sida 18(2): 414. 1998

Reference: Pereira, Carlos Eduardo de Britto, (ed.), 1998, Proceedings of the 15th World Orchid Conference, Rio de Janeiro 1996, pp. 235-244. Naturalia Publications, Turriers, France.

APPENDIX 1: Corrections issues of Icones Orchidacearum, volume 15 and earlier:

EPIDENDRUM AURA-USECHEAE Hágsater, Rinc.-Useche & O.Pérez, Icon. Orchid. 14(10): t. 1410. 2013. The author abbreviation has been corrected from Hágsater, C.Rincón-Useche & O.Pérez

EPIDENDRUM CHARTACIFOLIUM Hágsater et L.Sánchez, Icon. Orchid. 15(2): t. 1576. 2016. In Distribution, the Guaviare River is an affluent of the Orinoco, not the Amazon Basin.

A new name has been published:

EPIDENDRUM NEOFUCHSII J.M.H.Shaw, Orchid Rev. 125(1319): 57. 2017.

Basionym: **EPIDENDRUM FUCHSII** Hágsater & L.Sánchez, Icon. Orchid. 15(2): pl. 1583. 2016. is an illegitimate name, as there is a previous synonym, *Epidendrum fuchsii* Regel, Schweiz. Zeitschr. Gartenb. 9: 202. 1981. (= *Barkeria skinneri* (Batem. ex Lindl.) A.Rich. & Galeotti).

EPIDENDRUM HOLTONII Hágsater & L.Sánchez, Icon. Orchid. 12: pl. 1254. 2009.

Add to the type specimen: Isotype: **I.F.Holton 15**, K! The following image was published in Orquídeas, Tesoro de Colombia, 2: 253, fig 542, 2017, as *Epidendrum* sp. (a reduced version).



Photo: C. Uribe V.

EPIDENDRUM HUAMANTUPANORUM Hágsater et E.Santiago, Icon. Orchid. 14: t. 1440. 2013. The name should be changed to *Epidendrum huamantuparum*, instead of ending in *-norum*.

EPIDENDRUM LIBIAE Hágsater, García Lopera & Est.Domínguez, Icon. Orchid. 15(1): t. 1533. 2015. The abbreviation of the authors has been corrected, originally indicated as Hágsater, D.García-Lopera & E.Domínguez.

EPIDENDRUM LIZETHAE Hágsater, Rinc.-Useche & L.Sánchez, Icon. Orchid. 15(1) t. 1535. 2015. The author abbreviation has been corrected from Hágsater, Rincón-Useche & L.Sánchez

EPIDENDRUM MINUTIFLORUM C.Schweinf., Icon. Orchid. 15(2): t. 1588. 2016.

The photographer Luis F. García should be corrected to Roger Barboza Castro, and he should be added in the front to the Photographers.

EPIDENDRUM SCABRUM Ruiz & Pavón, Icon. Orchid, 8: t. 886. 2006.

Leaves: sheaths 7-16 x 0.25-0-42 cm should read 0.7-1.6 x 0.25-0.42 cm.

Publication dates:

Volume 1 was published on 26 February 1990
Volume 2 was published on 11 October 1993
Volume 3 was published on 25 March 1999
Volume 4 was published on 8 August 2001
Volume 5-6 was published on 9 June 2003
Volume 7 was published on 13 January 2005
Volume 8 was published on 1 June 2006
Volume 9 was published on 18 May 2007

Volume 10 was published on 11 June 2008
Volume 11 was published on 3 December 2008
Volume 12 was published on 16 December 2009
Volume 13 was published on 10 December 2010
Volume 14 was published on 31 May 2013
Volume 15(1) part 11 was published on 26 May 2015
Volume 15(2) part 11 was published on 19 July 2016
Volume 16(1) part 12 is published on 24 January 2018

EPIDENDRUM ALBAZOËNSE Hágsater et Salas Guerr., *sp. nov.*

Type: PERU: Amazonas: Leymebamba; Albazo-Cordillera de Yasgolga, 3000 m, octubre 2015, **Marcos Salas 126**. (LCDP and photo voucher). Holotype: USM!

Similar to *Epidendrum fujimorianum* D.E.Benn. & Christenson, but the flowers are green turning yellowish, tinged purple, especially at the apex of the column, and over the veins of the lip, marked by purple dots (vs. black-brown on a somewhat greenish background, lip darker with a purple spot on the disc), sepals are 15-16 mm long (vs 9 mm long), petals 13.5-14.2 x 4.0-5.4 mm, narrowly elliptic, the base narrowly cuneate, acute (vs. 8.6 x 2.1 mm, narrowly oblanceolate), lip 8.5 x 16 mm (vs. 10.4 x 13.2 mm.)

Epiphytic, sympodial, erect **herb**, to 30 cm tall, where each new stem originates from a sub-apical internode of the previous stem. **Roots** 2-4 mm thick, from the base of the basal stems, fleshy. **Stems** 10-15 x 0.2-0.3 cm, simple, the new stem originates from a sub-apical internode of the previous stem, cane-like, terete, thin, straight. **Leaves** 2-3, aggregate towards the apex of the stem, alternate; sheaths 5-23 x 0.2-0.3 mm tubular, minutely striated; blades 4.5-5.6 x 0.8-2.2 cm, narrowly elliptic, acute, smooth, margin entire, spreading. **Spathe** lacking. **Inflorescence** 5-8 cm long, apical, flowering only once, racemose, laxly few-flowered; peduncle short, laterally compressed, straight, provided with a single bract near the base of the rachis, narrowly triangular, conduplicate, acuminate, 6 mm long. **Flowers** 8-15, simultaneous, resupinate, green turning yellowish, tinged purple, especially at the apex of the column, and over the veins of the lip, marked by purple dots; fragrance disagreeable, nocturnal, of rotting fungus. **Floral bracts** 4-6 mm long, shorter than the ovary, linear to triangular, acuminate. **Ovary** 19-20 mm long, terete, thin, not inflated, unornamented. **Sepals** partly spreading, free, elliptic, sub-acute, 3-veined, with a pair of secondary veins near the margins, margins somewhat revolute; dorsal sepal 15-16 x 4.5-5.2 mm; lateral sepals 14.7-20 x 5.0-6.0 mm, somewhat falcate and aristate. **Petals** 13.5-14.2 x 4.0-5.4 mm, partly spreading, free, narrowly elliptic, the base narrowly cuneate, acute, 3-veined, margin entire, somewhat revolute. **Lip** 8.5 x 16 mm, united to the column, 3-lobed, reniform in general outline, base cordate, margin entire; bicallose, the calli prominent, fleshy, sub-globose, disc with 3 low, rounded, smooth ribs, the mid-rib disappearing before reaching the apical sinus, lateral veins shorter, in front of the calli, the veins marked in live flowers by the purple dotting; lateral lobes 10.0 x 8.8 mm, sub-reniform, at an oblique angle, the wider part of the lip between the apices of the lateral lobes; mid-lobe 2.9 x 6.5 mm, sub-rectangular, apex deeply retrorse, corners rounded. **Column** 9-11 mm long, thin at the base, widened towards the truncate apex. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, minutely papillose, with a low rounded rib in front, 4-celled. **Pollinia** 4, obovoid, yellow; caudicles soft and granulose, yellow, slightly longer than the pollinia; viscidium semi-liquid. **Rostellum** apical, slit. **Nectary** penetrating only as far as the perianth, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION: Presently known only from Peru, Department of Amazonas, District of Leymebamba, east of Leymebamba, near El Albazo, on the road to Valle de los Chilchos, Cordillera Yasgolga, a branch of the Cordillera Oriental of the Andes, epiphytic in wet montane forest, above 2500 m altitude. Flowering in October.

RECOGNITION: *Epidendrum albazoënsense* belongs to the Arbuscula Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, roots generally only from the base of the primordial stem, and the Incomptum Subgroup which has a short apical inflorescence with fleshy yellowish to green to violet-green to black flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by the green flowers turning yellowish, tinged purple, especially at the apex of the column, and over the veins of the lip, marked by purple dots, sepals are 14.7-20 mm long, petals narrowly elliptic, base narrowly cuneate, acute, 3-veined, the lip 3-lobed, 8.5 x 16 mm, the lateral lobes sub-reniform, at an oblique angle, the wider part of the lip between the apices of the lateral lobes; mid-lobe 2.9 x 6.5 mm, sub-rectangular, apex deeply retrorse, corners rounded. It is similar to *Epidendrum fujimorianum** from central Peru, from the basin of the Ucayali River, but the flowers of that species are smaller and black-brown on a somewhat greenish background, lip darker with a purple spot on the disc, sepals are 9 mm long, petals narrowly oblanceolate, lip similar in shape 10.4 x 13.2 mm long. *Epidendrum morae* P.Ortiz, Hágsater & L.E.Álvarez has pale yellow flowers slightly tinged with pink-violaceous, sepals and petals dorsally pink-violaceous, petals 12.5 x 5.5 mm, spatulate, sub-obtuse, and the lip 3-lobed, lateral lobes ca. 7 x 8.5 mm, obliquely sub-quadrate; mid-lobe 2 x 5 mm, trapezoid, deeply emarginate.

*NOTE: The illustration published with the original description of *Epidendrum fujimorianum* (Bennett & Christenson, 1998) does not correspond to the type. For comparison with that species see the illustration published by Hágsater (2006), and the accompanying discussion.

ETYMOLOGY: In reference to the town of El Albazo, in the Cordillera Yasgolga, a part of the Cordillera Oriental of the Andes, source of the Río Utcubamba, which runs into the Río Marañón, where the species has been collected.

CONSERVATION STATUS: DD. Data deficient. Locally rare.

REFERENCES: Bennett, Jr., D. E., & E. A. Christenson, 1998, *Epidendrum fujimorianum*, in D. E. Bennett, Jr. & E. A. Christenson (eds.), **Icon. Orchid. Peruvianum** t: 460. Hágsater, E., 2006, *Epidendrum fujimorianum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 834. Ortiz, P., E. Hágsater & L. E. Álvarez, 2013, *Epidendrum morae* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1460.



Authors: E. Hágsater & M. Salas G.

LCDP: M. Salas G.

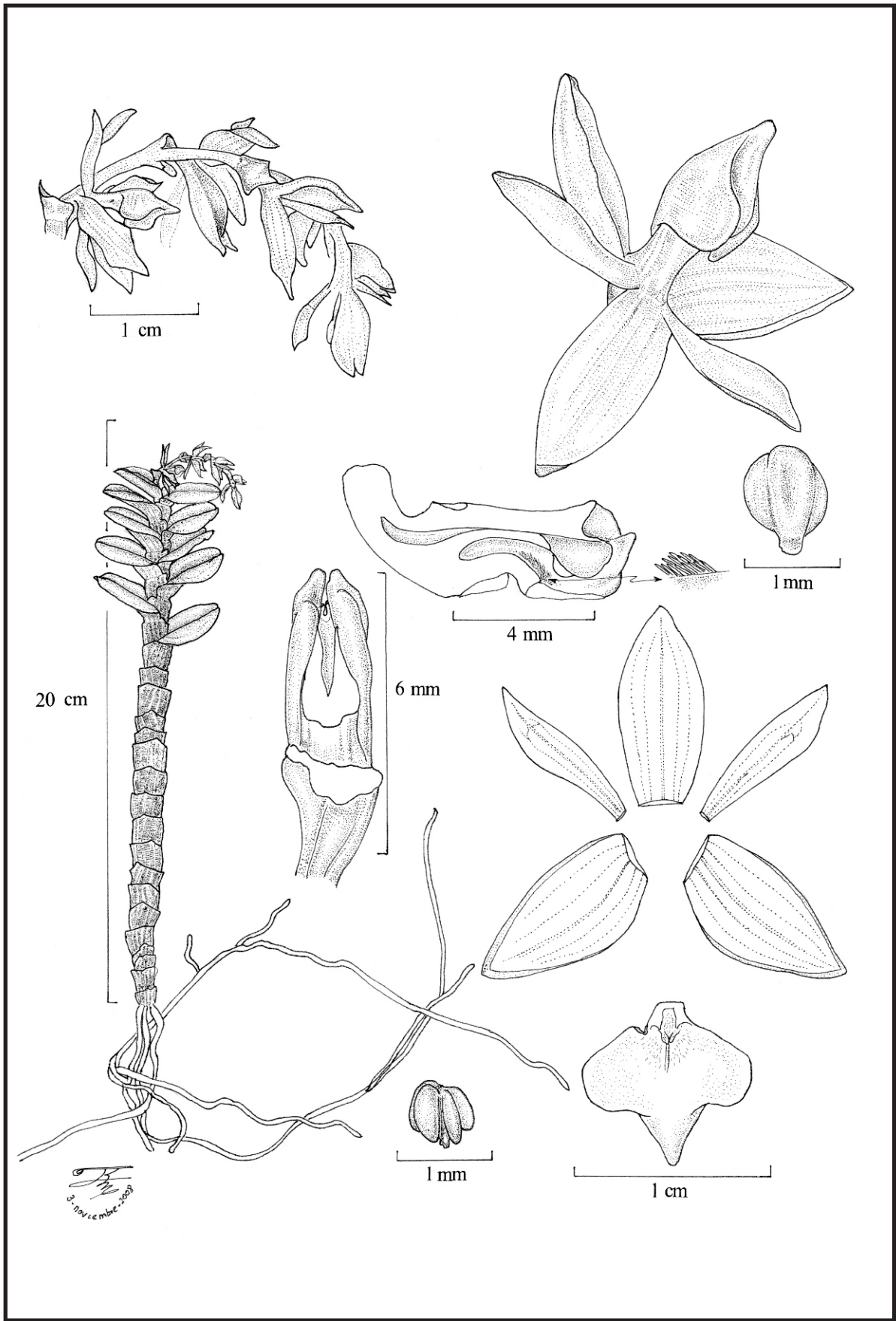
Photo: M. Salas G.

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1601



EPIDENDRUM ALSUM Ridl.

EPIDENDRUM ALSUM Ridl., *Timehri* 5: 202, 1886.

Type: VENEZUELA: Bolívar: ["GUYANA"] Top of Mount Roraima, 5000 ft, 18 December 1884, *Everard Ferdinand im Thurn 296 set A**. Holotype: K 000583714! (sketch drawn by Reichenbach, W 21184!). Isotype: *ibid*. *Everard Ferdinand im Thurn 296 set B*, BM! Isonym: *Epidendrum alsum* Ridl., *Trans. Linn. Soc. London, Bot.* 2(3): 281, 1887.

Saxicolous or terrestrial, erect, branching herb, ca 15-50 cm tall. **Roots** 2-3 mm in diameter, basal, from the primary stem, fleshy, white. **Stems** cane-like, branching above, terete, erect, straight, thick, the primary stem ca. 15-50 x 0.6-1.1 cm, the branches ca. 3.2-10 x 0.5 cm. **Leaves** 17 or more on the primary stem, 3-10 on the branches, distributed throughout the stems, articulate, distichous, coriaceous, very rigid, fleshy, sub-spreading, at a 60° angle to the stem, similar in size and shape, lustrous and pale green above, opaque and glaucous on the underside, except for the yellowish green margin and middle; sheaths 7-12 x 5-11 mm, tubular, rugose; blade 2.5-4.3 x 1.4-1.8 cm, ovate, apex obtuse, slightly bilobed, margin entire, revolute. **Spathes** lacking. **Inflorescence** 3-6.5 cm long, apical, flowering only once, paniculate, deflexed, nutant, distichous, sub-dense; the branches 2.5-6.2 cm long; peduncle 7 mm long, sub-terete; rachis straight to slightly sinuous. **Floral bracts** 5.0-6.0 x 4.0-5.0 mm, prominent, longer than the ovary, ovate, cucullate, sub-obtuse, embracing, fleshy, rigid, spreading at a right angle to the rachis. **Flowers** ca. 8 (per raceme), fleshy, small, resupinate, the underside of the lip always facing towards the rachis, simultaneous, yellow to light green the lip pale green, ovary and column green; fragrance none. **Ovary** 2.0-2.5 mm long, short, thin. **Sepals** partly spreading, free, fleshy, concave, elliptic, acute, carinate, 5veined, margin entire, spreading; dorsal sepal 8.0 x 3.5-4.5 mm; lateral sepals 9.0 x 4.3-5.0 mm, cucullate, slightly oblique. **Petals** 7.0-9.0 x 1.9-2.1 mm, spreading, fleshy, narrowly oblanceolate, acute, 3-veined, oblique, margin entire, spreading. **Lip** 7.0 x 8.7 mm, united to the column, 3-lobed, base cuneate, fleshy, cymbiform in natural position, embracing the column and covering the apex totally, margin entire; bicallose, the calli laminar, narrow, converging towards the apex, disc pubescent, with a narrow, low, short rib; lateral lobes 4.2 x 4.2 mm, hemi-elliptic, obtuse, oblique; mid-lobe 2 x 3 mm, triangular, fleshy. **Column** 5 mm long, short, straight, thick, the apex bidentate. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, with a short, wide rostrum truncate at the apex. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** 1/3 of length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity, the pubescence reclining inwards. **Capsule** small, globose, strongly ribbed, the ribs thick, pedicel very short, thus the body sessile, occupying basal 2/3, apical neck, thick, occupying the remaining 1/3 of the length, about as thick as it is long; perianth segments persistent.

OTHER SPECIMENS: BRAZIL: Roraima: Monte Roraima, Acampamento quati, 2681 m, 21 II 2017, *Cordeiro, Felix & Hágsater 1101*, EAN! Roraima, 2850 m, X 1927, *Luetzelburg 21604*, M! Roraima, 2500 m, XII 1909, *Ule 8573*, G! K! L! MG! SP! GUYANA*: Mount Roraima, XI-XII 1931, *Abbenets 27*, K! Mt. Roraima, 8700 ft, 7 I 1939, *Forest Department 2874*, K! U! (illustration, AMO) Roraima, Summit, La Proa Camp, East of Guyana-Venezuela Border. Near Lake Gladys, 2800 m, 13 IV 1988, *Liesner 23249*, MO! Mount Roraima, 7 XI 1894, *Quelch & McConnell 90*, BM! K 000583715! Mount Roraima, 8600 ft, VIII 1898, *Quelch 699*, K! VENEZUELA: Bolívar: Cerro Roraima, 2810 m, 27 III 1984, *Aymard 2499*, MO! VEN! Roraima, 2700-3000 m, 22 VIII 1982, *Castillo 1818*, MO! VEN! Roraima, 2700 m, 1 1977, *Delascio 4838*, VEN! Ilú-Tepuí, 1977, *Delascio 4966*, VEN! Roraima, Lago Gladys, 2700 m, 3 IV 1989, *Delascio 13923*, VEN x2! Kukenan-Tepuí, 2600 m, 8 IV 1989, *Delascio 14019*, VEN! Murisipán-Tepuí summit, second of 4 tepuis in Aparamán-Tepuí range from W to E of Auyán-Tepuí, 2350 m, 26 V 1986, *Holst 2913*, MO! VEN! Murisipán-Tepuí summit, 2350 m, 26 V 1986, *Holst 2914*, MO! VEN! Macizo del Chimantá, sector SE. Sección centro-suroccidental del Churi-Tepuí, planicies levemente inclinadas hacia el SE, 2250 m, 28 III 1984, *Huber 9283*, VEN! Yuruani-Tepuí, 2200 m, 29 II 1984, *Huber 9105*, VEN! Yuruani-Tepuí, 2300 m, 27 IV 1984, *Huber 9433*, VEN! Kukenán-Tepuí, 2500 m, 28 IV 1984, *Huber 9440*, NY! (illustration voucher) VEN! Aprada-Tepuí, 2500 m, 30 VI 1984, *Huber 9548*, VEN! Tramen-Tepuí, 2650 m, 23 I 1985, *Huber 10071*, VEN! Carauríni-Tepuí, al sur del Ilú-Tepuí, 2450 m, 21 II 1987, *Huber 12014*, VEN! Mt Roraima, 9000 ft, 24 IV 1955, *Irwin 411*, US! summit of Tereké-Yurén, 2135 m, 26 V 1986, *Liesner 21131*, VEN! Kukenan-Tepuí, 2550 m, 12 IV 1988, *Liesner 23199*, MO! VEN x2! Roraima-Tepuí, 2650 m, 10 X 1992, *Michelangeli 020*, VEN! Roraima-Tepuí, 2500 m, 4 V 1986, *Picon 1121*, VEN x2! Mount Roraima, 8700 ft, 7 I 1939, *Pinkus 103*, AMES! F! NY! US! Cerro Roraima, 2620-2740 m, 27 IX 1944, *Steyermark 58812*, AMES! F! VEN! Chimantá, East central portion of summit of Apáicara-Tepuí, 2450-2500 m, 21 VI 1953, *Steyermark 75941*, AMES! Cerro Roraima, 2750-2800 m, 26 VIII 1976, *Steyermark 112434*, F! K! VEN! Cerro Roraima, Río Arabapó in the Valley, 2750-2800 m, 26 VIII 1976, *Steyermark 112622*, VEN! Cumbre del Macizo de Chimantá, 2500 m, 24 II 1978, *Steyermark 115786*, MO! VEN! Cumbre del Aprada-Tepuí, 2460-2500 m, *Steyermark 115914*, VEN! Roraima, 2650 m, 15 VIII 1989, *Zuloaga 4458*, MO! VEN! NW cumbres, Churi-Tepuí (Muru-Tepuí), 2250-2300 m, 26 I 1953, *Wurdack 34228*, AMES!

OTHER RECORDS: Roraima-Tepuí, Christian Hummert, photo, Creative Commons002C Attribution 2.0 Germany, www.creativecommons.org, downloaded 16 March 2015. BRAZIL: Roraima: Uiramutã: cima del Roraima-Tepuí, nacimiento del Río Cotingo, 2673 m, 21 II 2017, *Hágsater, Felix & Cordeiro 15041*, spirit and digital images, AMO! (photo voucher). VENEZUELA: Bolívar: summit plateau of Mt. Roraima, *Dinets 20*, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Endemic restricted to the top of the Tepuis of the Guiana Shield from Mount Roraima west to the Aprada-Tepuí, in the state of Bolívar in Venezuela, and bordering Guyana and Brazil on Mt. Roraima; terrestrial or saxicolous at [1500] 2500-3000 m altitude. Flowering throughout the year.

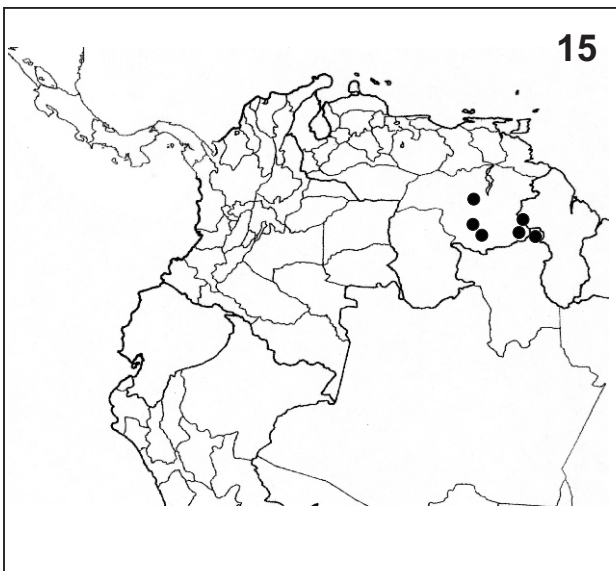
RECOGNITION: *Epidendrum alsum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the short, ovate, very fleshy leaves, with the apex slightly bilobed, the margin revolute, inflorescence paniculate, deflexed, sub-dense, flower yellow or whitish-green, lip pale green, ovary and column green, the lip clearly 3-lobed, the mid-lobe triangular, petals narrowly oblanceolate. *Epidendrum inthurnii* Ridl. has linear-lanceolate leaves, apex obtuse, never bilobed, margin spreading, inflorescence arching-nutant, flower ochre-yellow to greenish yellow, lip entire, ovate, and the petals linear. *Epidendrum montigena* Ridl. has oblong leaves, arching-nutant inflorescence with pink flowers, lip widely rhombic, the apex triangular, and the petals oblong-elliptic, with the margin erose towards the apex (vs entire). *Epidendrum reclinatum* Carnevali & I. Ramírez has lanceolate leaves, sub-acuminate, a racemose inflorescence erect to somewhat reclining, flowers white or yellowish white, the lip transversely rhombic when spread, and petals narrowly spatulate. *Epidendrum ulei* Schltr. Has oblong leaves, the apex obtuse, inflorescence 13 cm long (vs 3.0-6.5 cm long), flowers greenish yellow, lip dolabriform-reniform and petals linear. *Epidendrum durum* Lindl. has ovate-lanceolate leaves with an acute apex, inflorescence racemose to paniculate, erect, few-flowered, sepals oblong apex acute, flowers apparently yellow. *Epidendrum dendrobioides* Thunb. has linear-lanceolate, acute leaves, inflorescence simple to rarely paniculate, erect, and yellow flowers.

*NOTES: Though the early expeditions to Mt. Roraima state the country of origin as Guyana, they all climbed the Tepuí by the only route on foot, on the SW side which corresponds to Venezuela. Atop the Tepuí, rarely did they venture beyond the immediate vicinity of the point of access. Only those recent collectors who have spent over a week on the summit or arrived by helicopter, can reach the Brazilian and Guyanese sectors. See note by Julian A. Steyermark, 1981. Though im Thurn was sent by Joseph D. Hooker of the British Museum to British Guiana, (and a set remains at BM), scientists at Kew Gardens, identified 53 new species, using the set sent to Kew. (plants.jstor.org>stable>al.ap.person.bm, 2017).

CONSERVATION STATUS: DD. Endemic to the top of Tepuis which are protected and only accessible to controlled visitors.

ETYMOLOGY: From the Latin *alsus*, fresh, luxuriant.

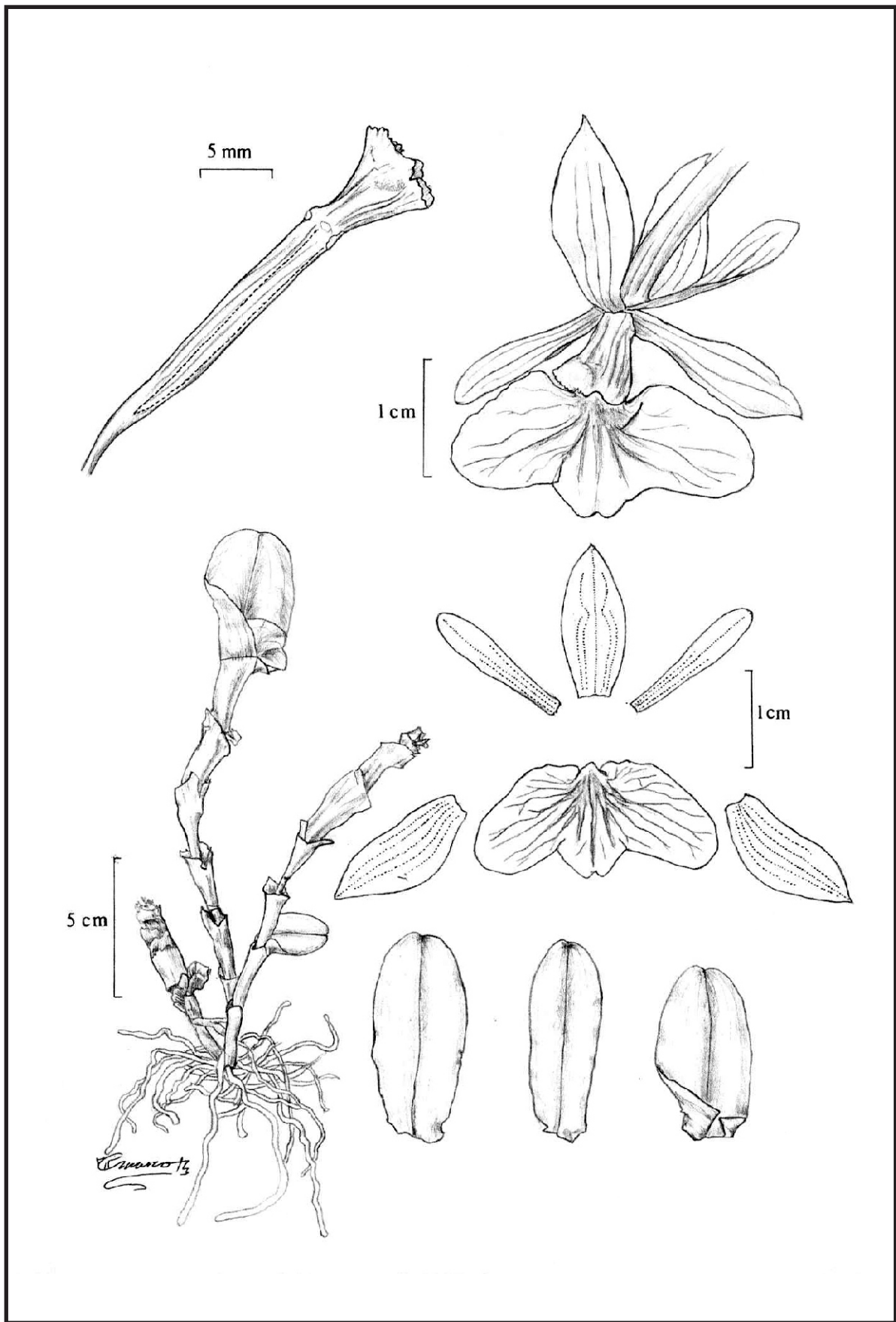
REFERENCES: Baumbach, N., 2005. *Epidendrum*-Arten im Guayana-Hochland von Venezuela, *Die Orchidee* 56(4): 441-446. Carnevali, G., & I. Ramírez, *Epidendrum*, in P.E. Berry, K. Yatskievych & B. K. Holst (eds.) *Flora of the Venezuelan Guyana* 7: 325-352. Luz, F.J. De Freitas, & Franco de Oliveira, J. M., 2012. *Orquídeas de Roraima*, Embrapa, Brasília, DF, Brazil, 181 pp. Santiago, E., & E. Hágsater, 2018, *Epidendrum inthurnii*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1628. Santiago, E., & E. Hágsater, 2018, *Epidendrum montigena*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1644. Santiago, E., & E. Hágsater, 2018, *Epidendrum reclinatum*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1652. Steyermark, J. A., 1981, *Erroneous Citations of Venezuelan Localities*, *Taxon* 30(4): 816-817.



Authors: E. Santiago & E. Hágsater Illustrator: R. Jiménez M.
Herbario AMO Ciudad de México, MÉXICO



Photo: E. Hágsater Editors: E. Hágsater & E. Santiago
ICONES ORCHIDACEARUM 16(1). 2018. Plate 1602



EPIDENDRUM APAGANUM Mansf.

Plate 1603

EPIDENDRUM APAGANUM Mansf., Notizbl. Bot. Gart. Berlin-Dahlem 10: 240. 1928.

Type: PERU: [Loreto: Dist.: Manseriche;] Stromgebiet des Marañon von Iquitos aufwärts bis zur Santiago-Mündung am Pongo* de Manseriche, ca. 77°30' W, Apaya [Apaga] Mündung, 29 Dezember 1924, **Günther Tessmann 5006**. Holotype: B, destroyed; photograph at AMES 37606! digital image available HUH 70094! Flower in glycerin, AMES: HUH 82082. Isotype: G! (illustration voucher).

Epiphytic, caespitose **herb** 16-26 cm tall including the inflorescence. **Roots** 1.0-1.8 mm in diameter, basal, fleshy, thin. **Stems** 13-26 x 0.25-0.5 cm, simple, cane-like, ancipitose. **Leaves** 4-6, distributed throughout the stems; sheaths 2.4-5.0 x 0.5-1.5 cm long, wide, infundibuliform, ancipitose, smooth; blade 2.5-8.0 x 2.5-4.5 cm, elliptic, apex obtuse, unequally bilobed, coriaceous, smooth, somewhat lustrous, dorsally carinate, margin entire, spreading. **Spathe** lacking. **Inflorescence** apical, sessile, sub-corymbose, flowering only once. **Floral bract** 3.5 x 2.0 mm, much shorter than the ovary, ovate, acute. **Ovary** 30-35 x 1.2-1.5 mm, terete, somewhat inflated toward the perianth, unornamented. **Flowers** 1-3, resupinate, simultaneous, green. **Sepals** 14-16 x 4.8-6.0 mm, glabrous, free, sub-coriaceous, spreading, ovate-elliptic, acute, 5-veined, margin entire; lateral sepals oblique. **Petals** 14-15 x 2.5-3.0 mm, membranaceous, linear-oblongate, rounded, 3-veined, margin entire, spreading. **Lip** 10-12 x 23-25 mm, united to the column, 3-lobed, sub-obreniform, with a short, wide, triangular mid-lobe in the sinus, apically the lateral and mid lobes reach an imaginary straight line, horizontally revolute in natural position; bicallose, the calli small, disc with prominent, radiating, thickened veins; lateral lobes 8.0-9.0 x 2.0-2.5 mm, ovate, oblique at a 45° angle, margin entire; mid-lobe smaller than the lateral lobes, widely triangular, forming a right angle, apex emarginate. **Column** 6.5-8.0 x 2.0-2.5 mm, straight, thick. **Clinandrium-hood** 1.5-2.0 mm long, prominent, conical, entire, margin lacerate-dentate. **Anther** not seen. **Pollinia** not seen. **Lateral lobes of the stigma** not seen. **Nectary** penetrating two-thirds of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: PERU: Loreto: Vicinity of Iquitos [collection data lost], ca. 120 m, 1997, *Revilla 3692A*, MO!

OTHER RECORDS: None seen. All images on the internet under this name correspond to other species of the Difforme group.

DISTRIBUTION AND ECOLOGY: Known only from northern Peru, from the upper reaches of the Río Marañón, below the Pongo de Manseriche. Epiphyte, humid forest, ca. 120 m altitude. Flowering in December.

RECOGNITION: *Epidendrum apaganum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one to many-flowered and then corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species is recognized by its laterally compressed stems, sheaths wide, infundibuliform, ancipitose, elliptic leaves to 8.0 cm long, 1-3 flowers, petals 14-15 mm long, linear-oblongate, 3-lobed lip, the disc with numerous prominent, thickened, radiating veins; the lateral lobes ovate, entire, oblique, at a 45° angle, mid-lobe smaller than the lateral lobes, triangular, emarginate, forming a right angle. It is very similar to *Epidendrum apaganoides* D.E.Benn. & Christenson, from Peru, but that species has larger flowers, sepals and petals 2.2-2.8 cm long, spatulate petals, the veins of the disc are not thickened, with a prominent central keel, 2 prominent, divergent, calli, the lateral lobes of the lip sub-orbicular, and the truncate mid-lobe surpassing the lateral lobes. *Epidendrum pseudapaganum* D.E.Benn. & Christenson, from Peru, has longer leaves (12 cm long), numerous, pale-green flowers, acute petals, a convex, reniform lip, apparently without any prominent central keel. *Epidendrum microcephalum* Hágsater & L.Sánchez, from Venezuela, has larger plants, 24-35 cm tall, smaller flowers, petals 9-11 mm long, and the lip with semi-orbicular lateral lobes and a very small mid-lobe, formed by a pair of semi-circular lobes.

CONSERVATION STATUS: DD. Data deficient. Inadequate information to make a direct, or indirect, assessment of its risk of extinction. Data based on abundance and/or distribution are lacking.

***NOTE:** A "Pongo" is derived from the Quechua language "Punku", a door, and refers to a narrow, deep canyon, by which Andean rivers cross mountain ranges in their descent towards the Amazon lowlands.

ETYMOLOGY: In reference to the Apaga River, an affluent of the Río Marañón, in the District of Manseriche, Department of Loreto, Peru, where the type plant was collected.

REFERENCES: Bennett Jr, D. E., & E. A. Christenson, 1998, *Epidendrum apaganoides*, **Icon. Orchid. Peruvianum** t. 450. Bennett Jr, D. E., & E. A. Christenson, 1998, *Epidendrum pseudapaganum* **Icon. Orchid. Peruvianum** t. 468. Hágsater, E., & L. Sánchez S., 1999, *Epidendrum microcephalum*. in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.) *The Genus Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 356.



Authors: L. Sánchez S.† & E. Hágsater

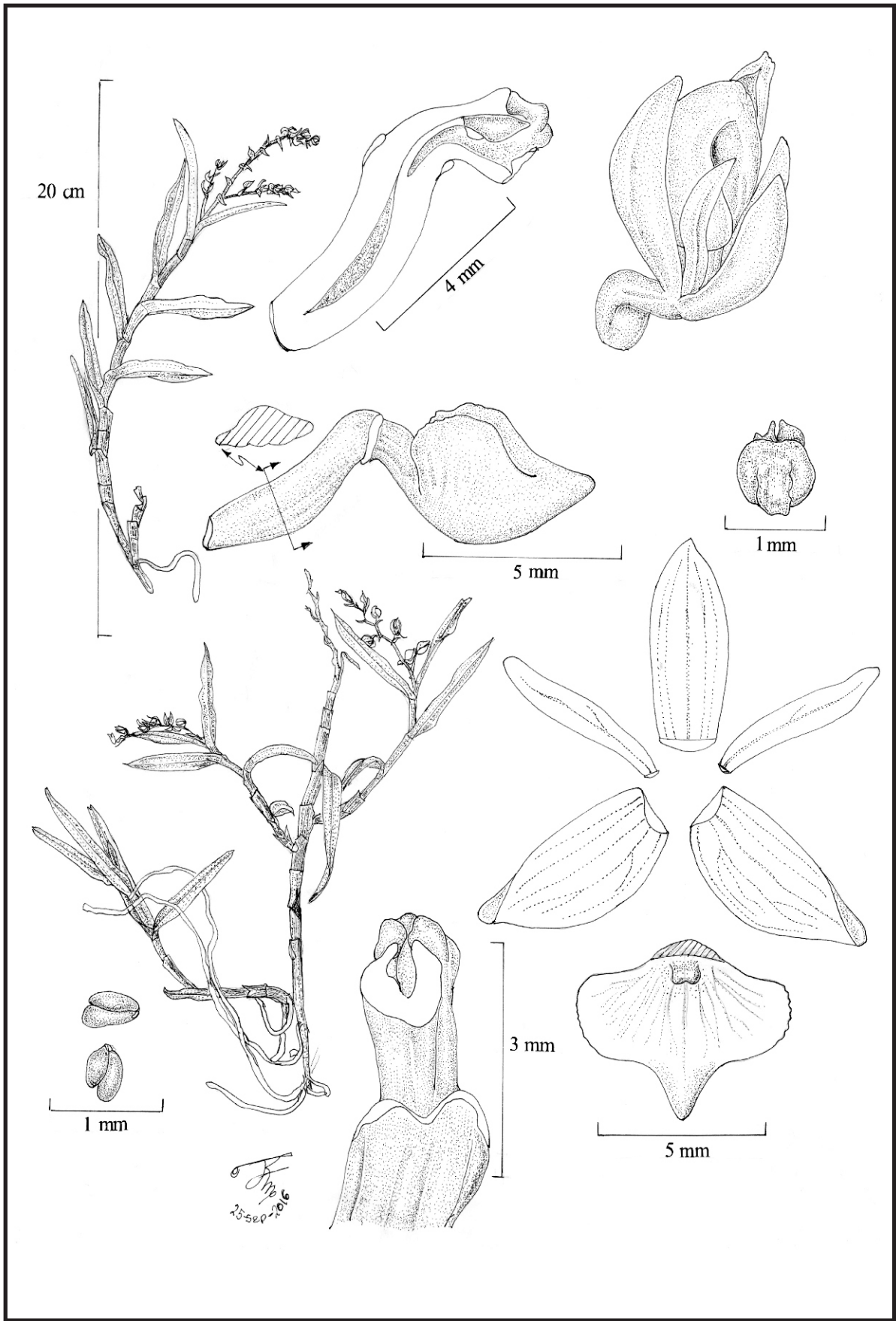
Illustrator: M. López R.

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1603



EPIDENDRUM AQUATICUM Lindl.

EPIDENDRUM AQUATICUM Lindl., Ann. Mag. Nat. Hist. 12:398.1843.

Type: BRAZIL: [Goiás:] Goyaz; on the margin of a small mountain stream on the Serra Geral, near Nossa Senhora d'Abadia, May 1840, **George Gardner 4364***. Holotype: K 000583716! Isotypes: BM! K! OXF! W 49959! Sketch of type W 5875!

Terrestrial, monopodial, erect, branching **herb**, more than 20 cm tall. **Roots** 1.0-2.0 mm in diameter, basal, thin, fleshy. **Stems** cane-like, ancapitose, thin, slightly arching; branches 10-12.5 cm long, spreading at the insertion on the main stem, but then arching to an erect position, the base covered by non-foliar sheaths 1.5-2.5 cm long, tubular, minutely striated and becoming fibrous through time. **Leaves** 7, distributed along the apical half of the stems, alternate, articulate, coriaceous, dark green above, glaucous underneath; sheaths 0.5-1.3 x 0.3 x 0.4 cm, tubular, minutely striate; blade 1.3-5.1 x 0.4-0.6 cm, lanceolate, apex acute, margin entire, spreading. **Spathes** lacking. **Inflorescence** 3.5-5 cm long, apical, erect, flowering only once, simple to paniculate, distichous; peduncle ca. 2 mm long, terete, thin, without bracts; rachis terete, thin, straight. **Floral bracts** 3 mm long, shorter than the ovary, triangular, acuminate, margin entire, embracing. **Flowers** 8-11, non-resupinate, the lip always facing the rachis, simultaneous, green; fragrance not registered. **Ovary** 3-5 mm long, terete, thin. **Sepals** 5-6 x 2.3-2.7 mm, free, fleshy, 5-veined, margin entire, spreading; dorsal sepals spreading, oblong-elliptic, sub-acute; lateral sepals partly spreading, ovate, oblique, subacute. **Petals** 5-5.5 x 0.5-0.8 mm, free, partly spreading, linear, slightly sigmoid, rounded, 1-veined, margin entire, spreading. **Lip** 4.7 x 5 mm, united to the column, embracing and fully covering the apex of the column, cucullate, fleshy, 3-lobed, base truncate; single callus, rectangular, truncate to slightly bilobed at the apex; surface scarcely pubescent; lateral lobes 2.2 x 2.5 mm, sub-quadrate, apex rounded, margin minutely erose; mid-lobe 1.4 x 2.2 mm, widely triangular, apex sub-acute. **Column** 3 mm long, slightly arched upwards towards the apex, base thin, gradually widened towards the apex. **Clinandrium-hood** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovate. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** short, without penetrating the ovary. **Capsule** not seen.

OTHER SPECIMENS: BRAZIL: Distrito Federal: Horto do Guarã, 2 VIII 1961, *Heringer 8520-714*, HB! NY! **Minas Gerais:** Serra do Caraçá, *Gardner 5206*, K! Serra do Cipó, 3 III 1958, *Heringer 22228*, R! Belo Horizonte, Serra do Cipó, nos barrancos da Usina da preão Chapéu do Sul, 28 II 1976, *Menezes 594*, M! Caldas, Uberaba, XI 1848, *Regnell 1147*, BM! Px2! SP! US! W! Sx4! Caldas, Serra, 18 X 1855, *Regnell 1148*, RB! S x3! (illustration voucher). Planalto of Serra do Cipó, Vicinity of road from Lagoã Santa to Conceição do Mato Dentro, at km 124 from Bello Horizonte, 1080 m, 22 XI 1965, *Tryon 6796*, AMES! Campos de Striolumy, *Ule 1990*, BR!

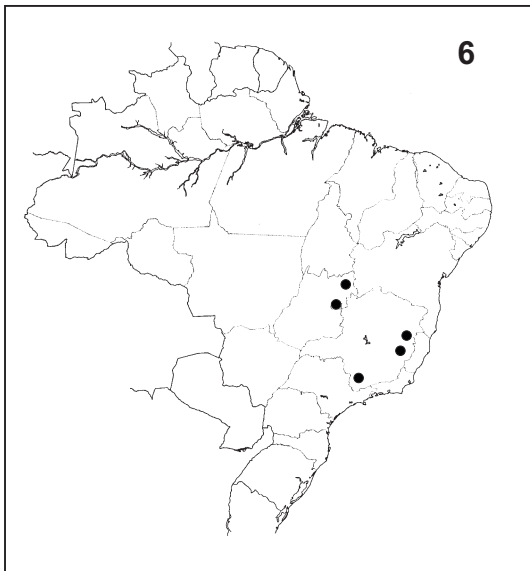
OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Found in the Planalto of Brazil in the states of Goiás and Minas Gerais, in shallow wetlands. Flowering October to March, August.

RECOGNITION: *Epidendrum aquaticum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized but the branching stems, branches 10-12.5 cm long, arching, leaves 1.3-5.1 x 0.4-0.6 cm, lanceolate, glaucous below, inflorescence erect, distichous, simple to paniculate, flowers green, sepals 5.0-6.0 mm long, petals linear, 5.0-5.5 x 0.5-0.8 mm, lip 3-lobed, base truncate, and callus rectangular with the apex truncate and slightly bilobed. *Epidendrum dendrobioides* Thunb. is also branching with branches 4.5-16 cm long, straight, sub-erect, leaves 3.5-6.0 x 0.5-0.8 cm, linear-lanceolate, inflorescence distichous, generally simple, flowers ochre-yellow, sepals 6.0-7.5 mm long, petals linear-oblong, 5.5-6.0 x 1.0-1.2 mm. *Epidendrum carnosum* Lindl. also has branching stems, these about 16 cm long, sub-erect, straight, leaves 4.0-8.6 x 0.6-1.3 cm, lanceolate, coriaceous and rigid, inflorescence generally paniculate, the branches sub-erect, flowers pale yellow to greenish yellow, sepals 9.0-10 mm long, petals lanceolate-rhombic, 8.0-9.0 x 1.5-2.5 mm, and lip with a bidentate callus. *Epidendrum pseudavicula* Kraenzl. also has arching branches, but the leaves are 1.0-3.5 [8.0] x 0.6-1.0 [1.8] cm, narrowly ovate to oblong-lanceolate, inflorescence simple to paniculate, flowers greenish yellow, sepals 5-6 mm long, and the base of the lip cuneate and bicallose, with a thin, short mid-rib in between.

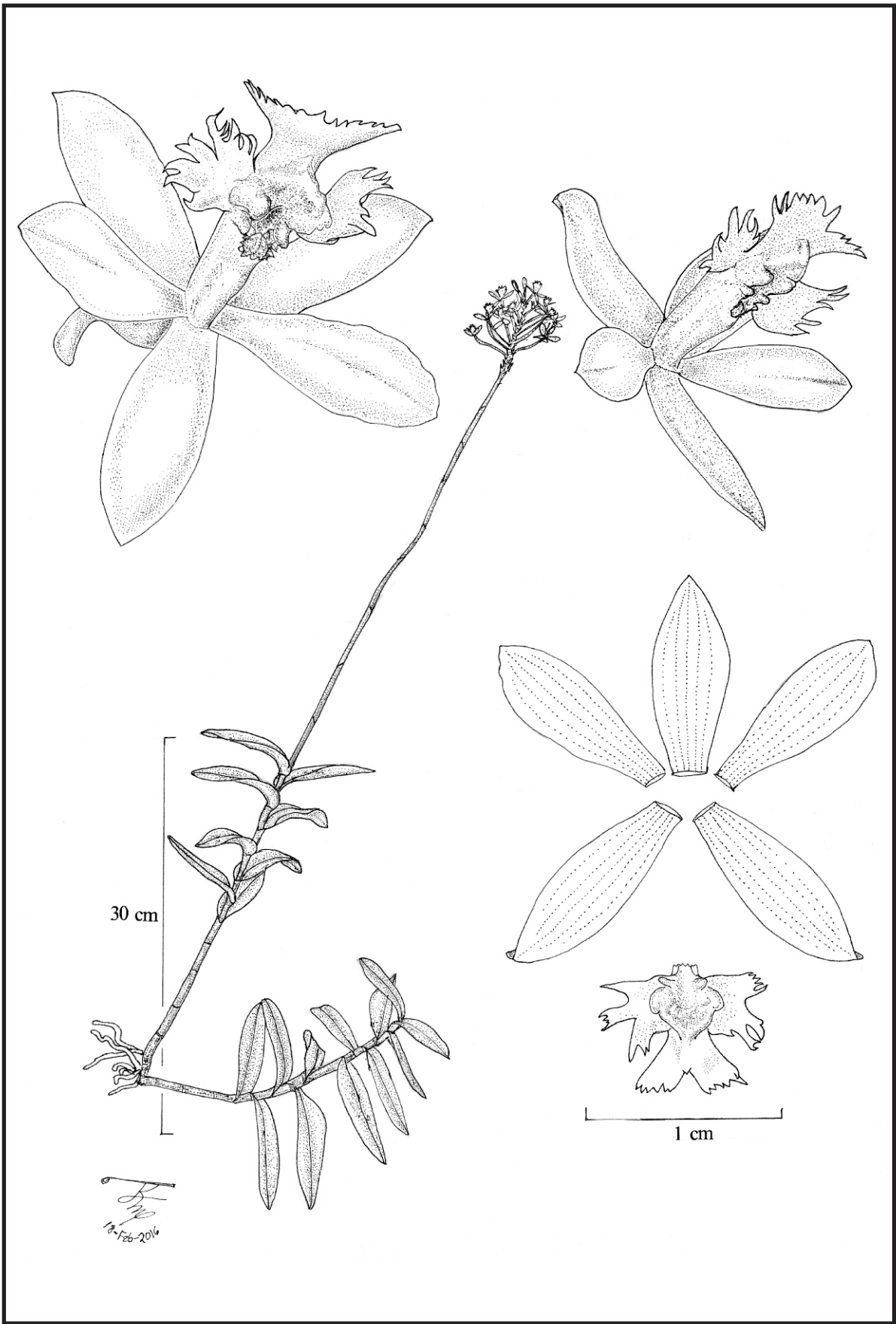
***NOTE:** The collection number of George Gardner on the holotype at K can be interpreted as 4364 or 4344, as the third digit could either be a 6, with a long ending as you close the 6, or a four, if you interpret it as the pen staying on the paper while quickly writing the foot of the four. All other specimens at BM (June 1840), K (1841), OXF, and W clearly indicate 4364, as does the sketch marked Brazil, Goyaz, 4364, (Lindley) 284, *E. aquaticum* of what is supposed to be the type at W, but the sketch does not correspond to any of the specimens by the number and position of leaves and stems. The locality is variously described, the full text is on the specimen at the BM, and is the one we have indicated above. The Serra Geral is found in the municipalities of São Domingos and Guarani in the upper NE corner of the state of Goiás.

CONSERVATION STATUS: DD. Data deficient, the species appears to be widespread in the Planalto of Brazil, but not common in herbaria. Neither have we been able to find any image on the internet that corresponds to this species.



ETYMOLOGY: From the Latin *aquaticus*, living in water, as many of the species of this group, they are often found in shallow soggy to aquatic conditions.

REFERENCES: Santiago, E., & E. Hágsater, 2018, *Epidendrum carnosum*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1608. Santiago, E., & E. Hágsater, 2018, *Epidendrum dendrobioides*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1614. Santiago, E., & E. Hágsater, 2018, *Epidendrum pseudavicula*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1650.



EPIDENDRUM AROMOENSE Cornejo & Hågsater

Plate 1605

EPIDENDRUM AROMOENSE Cornejo & Hágsater, Harvard Pap. Bot. 19(2): 185, figs. 1-3. 2014.

Type: ECUADOR. Manabí: El Aromo, a disturbed very dry coastal forest, ca. 200 m, 7 March 2014, **Xavier Cornejo, M. Gallardo & V. Solórzano 8601**. Holotype: GUAY! digital photographs of pretype at AMO! (Illustration voucher) GUAY!

Epiphytic, caespitose, sympodial, erect herb, ca. 60 cm tall. **Roots** 1-1.5 mm in diameter, fleshy. **Stems** ca. 25 x 0.5 cm, simple, cane-like, terete, thin, straight. **Leaves** 7-12, distributed throughout the stem, alternate, sub-erect; sheaths 1.5-2.1 x 0.4-0.5 cm, tubular, minutely striated when dry; blade 5.5-8.5 x 1.4-2 cm, coriaceous, smooth, the lower leaves lanceolate-oblong, the upper leaves oblong, about 3 to 5 times longer than wide, apex broadly obtuse at upper leaves, slightly bilobed, margin entire. **Spathes** lacking. **Inflorescence** ca. 36 cm long, apical, racemose; peduncle 28.5 cm long, elongate, terete, thin, straight, nearly totally covered by ca. 8 acute, tubular sheaths, 3.3-4.3 x 0.3 cm; rachis ca. 7.5 cm long, terete, thin. **Flowers** 30-40, successive, ca. 18 open at one time, non-resupinate, red (lacquer red), the callus orange (yellow in photos). **Floral bracts** 1.5-4.5 mm long, much shorter than the ovary, triangular-lanceolate, acuminate, gradually shorter towards the apex of the rachis. **Ovary** 13-17 mm long, terete, thin, arching towards the apex, smooth. **Sepals** ca. 9 x 3 mm, spreading, free, elliptic, sometimes oblique, minutely apiculate, 5-veined, margin entire, spreading. **Petals** 7-8 x 2 mm, spreading, free, oblanceolate, papillose, cuneate towards the base, obtuse towards the apex, 4- to 5-veined. **Lip** 8-10 x 3-4 mm, united to the column, 3-lobed, base deeply cordate, distal margins lacinate; callus concave within, 5-tuberculate, 2 globose processes, 2 outer, smaller flat growths, and an apical-V shaped protuberance like the bow of a ship, the apex acute; lateral lobes ca. 2 x 2 mm, dolabriform; mid-lobe 3-4 x 4 mm, rather acutely dentate to somewhat flabellate, forming two divaricate lobes, apex emarginate. **Column** 5 mm long, straight, thin, without wings, papillose mainly towards the apex. **Clinandrium hood** reduced, margin minutely dentate. **Anther** obovoid, acute, 3-celled, densely papillose. **Pollinia** 3, ca. 0.8 x 0.2 mm, oblanceolate, elongate, laterally compressed, slightly unequal, papillose. **Rostellum** apical, slit. **Lateral lobes of the stigma** small. **Nectary** penetrating nearly 1/2 the ovary. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Manabí: Slopes of Montecristi, 180 m, I 1979, Besse 134, QCA! SEL! Slopes of Montecristi, 300 m, 26 II 1977, Luer 1472, SEL! (Specimens seen but not studied in detail).

DISTRIBUTION AND ECOLOGY: Known from the seasonally foggy very dry coastal forests of El Aromo and Montecristi, located ca. 20 km apart from each other in the Province of Manabí in western Ecuador, at ca. 200 m. The disturbed habitat in which *Epidendrum aromoense* occurs is characterized by an annual average temperature of 25^o C, annual average relative humidity of 78 %, average precipitation of 250 mm per year, and high exposure to sun's UV rays (Weatherbase, 2014). In these harsh weather conditions, the moisture provided by seasonally and nocturnal fog undoubtedly plays a critical role on those xerophytic areas allowing the establishment of populations of this as well as other epiphytic endemics as the recently described and sympatric *Anthurium aromoense* Croat (Araceae), also collected by the first author in the same area (Croat et al., 2013). The species has been observed with flowers during February and March. It is unknown if flowers are also produced during some of the remaining months of the year.

USES: *Epidendrum aromoense* as well as another recently described species from the same habitat, *Anthurium aromoense*, become adapted in cultivation with little care within few weeks. These species have been successfully planted as ornamentals by the first author in hot and humid cities such as Manta and Guayaquil.

NOTE: The type specimen had only three pollinia, which is unusual for this group of species, the normal number being four. The authors were not able to study this character in the other specimens cited.

RECOGNITION: *Epidendrum aromoense* belongs to the Secundum group, Elongatum subgroup which is recognized by the caespitose habit, simple stems, leaves oblong-lanceolate, coriaceous, bilobed and elongate peduncle of the erect, pluriracemose inflorescence, the flowers non-resupinate, the callus complicated, plurituberculate. The species is recognized by the successive, lacquer-red flowers, the orange callus, sepals about 9 mm long, the petals somewhat smaller than the sepals, oblanceolate, the lip square in outline, deeply 3-lobed, the lateral lobes dolabriform, terminating in a pair of divaricate, narrow, triangular, acute, bifurcate teeth, the lateral lobes clearly separate and never overlapping with the mid-lobe when spread, and the mid-lobe rather acutely dentate to somewhat flabellate, bilobed and distinctively divaricate; callus concave within, 5-tuberculate, 2 globose processes, 2 outer, smaller flat growths, and an apical-V shaped protuberance like the bow of a ship, the apex acute. The distinctive pattern of distribution, that is, restricted to the lowlands of central-western Ecuador (versus Andean) makes an easy differentiation for *E. aromoense* in comparison to the remaining red-flowered species in the subgroup. Similar red-flowered species are: *Epidendrum tulcanense* Hágsater & Dodson has also red flowers but it is distinguished by the large white massive callus, formed by nine unequal tubercles: four basal ones and the main structure formed by five sub-equal tubercles. *Epidendrum laureense* Hágsater & Dodson, that differ from *E. aromoense* by the carmine-red flowers on a much more open raceme, with a massive white callus formed by a semicircular sulcate, marginally plurilobulate fleshy plate, found between Tulcán and Maldonado, on the border between Ecuador and Colombia, on roadsides and rocks in wet forest between at around 2000 to 2500 m above sea level. *Epidendrum coricoense* Schltr. is another species similar to *E. aromoense* by the lacquer-red flowers; however, the former species is known from southern Peru and western Bolivia, along the upper Amazon slope of the Cordillera Oriental of the Andes, and differ from *E. aromoense* by the narrow leaves about 6-7 times longer than wide, the petals wider than the sepals, elliptic-sub-orbicular, the lip bearing lateral lobes overlapping with the mid-lobe when spread; and callus 5-tuberculate with two basal and three apical tubercles, and without keels. *Epidendrum portokalium* Hágsater & Dodson is another species with red flowers that resembles *E. aromoense*, but it is found on the Amazon slopes of the Andes in central Ecuador, and differs from *E. aromoense* by the callus unequally 7-tubercled (with four basal tubercles and three apical ones).

CONSERVATION STATUS: The localities where *Epidendrum aromoense* does occur are threatened by fragmentation and massive deforestation mainly due to the advance of agricultural frontier and land use or forest conversion to cattle farms. Therefore, the status of endangered, EN B1ab(iii) (IUCN, 2001) is assigned to this species.

ETYMOLOGY: The specific epithet refers to El Aromo, the locality where the new species was found.

REFERENCES: Hágsater, E., 1985, Towards an understanding of the genus *Epidendrum*, pp 195-199 in K.W. Tan (ed.), *Proceedings of the 11th World Orchid Congress. American Orchid Society, Miami*. Dodson, C.H. & E. Hágsater, 1999, *Epidendrum*, in Dodson, C.H., *Orchidaceae, In: Jørgensen, P. M. & S. León-Yáñez (eds.). Catalogue of the Vascular Plants of Ecuador. Monographs in Systematic Botany from the Missouri Botanical Garden 75: 1-1181*. Hágsater, E., 2013, *Epidendrum tulcanense*, in Hágsater, E., & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid. 14: t. 1491*. IUCN, 2001, *IUCN Red List Categories and Criteria Version 3.1*. IUCN Species Survival Commission, Gland, Switzerland, and Cambridge, United Kingdom. León-Yáñez, S., R. Valencia, N. Pitman, L. Endara, C. Ulloa & H. Navarrete (eds.), 2011, *Libro Rojo de las Plantas Endémicas del Ecuador*, ed. 2, Publicaciones del Herbario QCA, Pontificia Universidad Católica del Ecuador, Quito. Croat, T., A. Grace & C. Kostelac, 2013, New species of *Anthurium* (Araceae) from Andean Western South America. *Aroideana 36: 56-72*. Weatherbase 2014. <http://www.weatherbase.com/weather/weather.php3?s=11048&cityname=Manta-Manabi-Ecuador&units=metric> [consulted October 1, 2014].



Authors: X. Cornejo & E. Hágsater

Illustrator: R. Jiménez M.

Photo: X. Cornejo

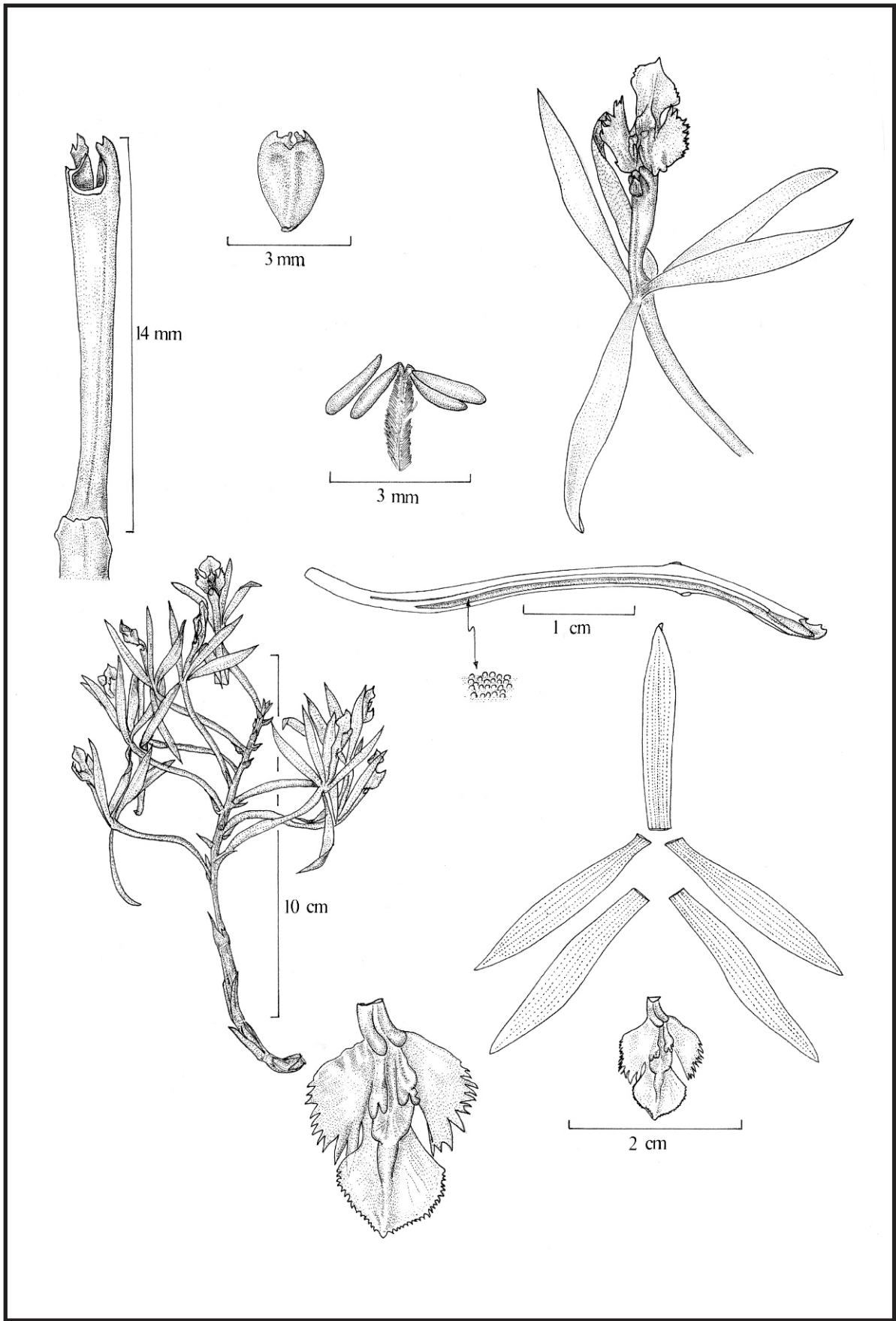
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1605



EPIDENDRUM BLEPHAROCLINIUM Rchb.f.

EPIDENDRUM BLEPHAROCLINIUM Rchb.f., Linnaea 41: 37. 1876.

Type: ECUADOR: "Ecuador, Peru" **Richard Pearce s.n.** Holotype (here designated): W-Rchb.f. 47287! South America, presented by Messrs. Veitch, 1884, **Richard Pearce 37**. Isotype: W-Rchb.f. 1436! (illustration voucher).

Terrestrial and epiphytic, sympodial, caespitose, erect **herb**, ca. 150 cm tall including the elongate inflorescence. **Roots** basal, fleshy, thin. **Stems** simple, cane-like, terete, erect, straight. **Leaves** numerous, distichous, distributed throughout the stem, alternate, articulate; sheaths tubular, minutely striated; blade narrowly elliptic-lanceolate to lanceolate-oblong, apex sub-obtuse, coriaceous. **Spathaceous bract** lacking. **Inflorescence** 30-50 cm long, apical, racemose, producing new racemes with time and thus pluri-racemose, each raceme compact, densely many-flowered; peduncle long, elongate, terete, covered by several bracts, tubular, acute, partly imbricated, brown. **Flowers** numerous, successive, 7-10 can be open at one time, non-resupinate, pink flowers, (rarely white, Fiske, 1976), the complicated callus white, column pink-purple, anther green; without fragrance. **Floral bracts** 3-6 mm long, much shorter than the ovary, triangular, acute, embracing. **Ovary** 33 mm long, terete, thin, not inflated, unornamented. **Sepals** 21-26 x 4 mm, spreading, free, linear-elliptic, acuminate, 5-7-veined, margin entire, spreading. **Petals** 21-26 x 4 mm, spreading, free, linear-elliptic, acuminate, 5-veined, margin entire, spreading. **Lip** 12 x 10 mm when spread, united to the column, deeply 3-lobed, base rounded; callus massive, formed by a lanceolate thickened mass, with a pair of digitate, short, upturned calli at the base, continued by two thickened, elongate processes terminating in a bilobed apex, and underneath these a thickened "Y" shaped rib, the base somewhat sulcate, and ending in a progressively thinner mid-rib that reaches the apex of the mid-lobe of the lip; lateral lobes 6.0 x 2.7 mm semi elliptic-lunate, the outer margin entire at the base, progressively dentate to deeply fimbriate at the apex, inner margin entire, mid-lobe 6.7 x 5.3 mm, sub-rhombic, apex obtuse, the basal margins somewhat concave, margin entire, the apical sides convex, dentate. **Column** 14 mm long, straight, thin, with a pair of prominent wings at the apex, these claw-like, clasping the anther, sub-quadrate, slightly upturned, the apical margin bidentate. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** obovoid, the apex acute, 4-celled. **Pollinia** 4, linear-obovoid, elongate, the inner pair slightly shorter; caudicles longer than the pollinia, formed by tetrads which look like a pile of roof tiles; viscidium semi-liquid. **Nectary** penetrating $\frac{3}{4}$ of the ovary, narrow, papillate. **Lateral lobes of the stigma** long, about half as long as the elongate stigmatic cavity. **Capsule** not seen.

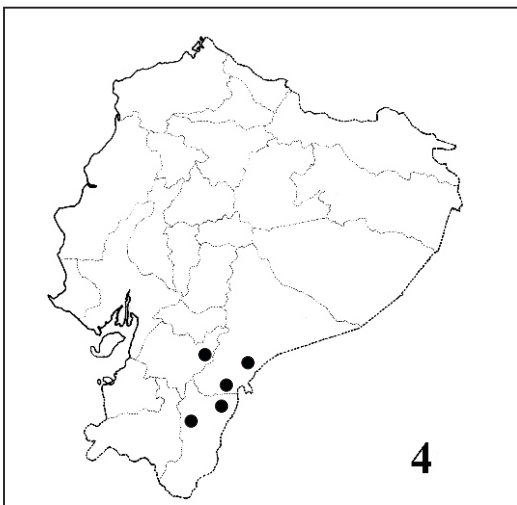
OTHER SPECIMENS: ECUADOR: Azuay: Cola de San Pablo, 1500 m, 9 III 1985, *Dodson 15781*, MO! Cola de San Pablo, 1700 m, 20 VII 1985, *Dodson 15928*, MO! **Morona Santiago:** Cordillera del Cóndor, Mirador, 1800 m, 15 XII 2000, *Caranqui 197*, AMO! QCNE! SEL! Gualaquiza; Misión Bomboiza, Misión Salesiana 700-800 m, 27 IX 1967, *Sparre 19030*, S! **Zamora-Chincipe:** Cordillera del Cóndor, 1972, *Fiske s.n.*, AMES! Loja-Zamora, above Tambo, 1800 m, 18 IV 1974, *Harling 13665*, GB! Road from Chuchumbeza to Tundayme, Cordillera del Cóndor, 1450-1650 m, 21 V 1988, *Hirtz 3818*, MO! S of Zamora, 1500 m, 31 I 1989, *Höjjer 1223*, SEL! road Loja-Zamora km 39, 1600-1650 m, 21 IV 1973, *Holm-Nielsen 4043*, AAU! road Loja-Zamora, km 33, 1800-1850 m, 21 IV 1973, *Holm-Nielsen 4149*, AAU! AMES! SEL!

OTHER RECORDS: ECUADOR: Probably Los Encuentros, Cordillera del Cóndor, hort. Los Angeles, California, *M. Fiske* sub *G. C. Kennedy 3864*, color slide & digital image, received IX 1978, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: Known only from southern Ecuador; from both the eastern slope of the Cordillera Oriental and the Cordillera del Cóndor, at 800-1800 m altitude. Flowering from January to May.

RECOGNITION: belongs to the Amphylottis group, Glossaspis subgroup which is recognized by the caespitose habit, simple stems, leaves oblong-lanceolate, coriaceous, bilobed and elongate peduncle of the erect, racemose inflorescence, the flowers non-resupinate, the callus simple, elongate, fleshy, sulcate towards the base. The species is recognized by the relatively large flowers, pink-purple flowers (rarely white, as per photograph published by Fiske), with a large complicated white callus; sepals and petals 21-26 mm long, both equally wide, 4 mm; the mid-lobe rhombic, about as wide as it is long. *Epidendrum glossaspis* Rchb.f. also has pink purple flowers, with the large, simple, white callus, flowers large, sepals 26-33 mm long, straight, the petals straight, linear-triangular 1 mm wide at the base, and the lip formed by 3, sub-parallel lobes, the lateral lobes about half as long as the entire lip, sub-rhombic, acuminate. It very much resembles *Epidendrum mainuanum*, which is superficially similar, with flowers entirely white, sepals 22 mm long, and has shorter sub-quadrate lateral lobes that are only about $\frac{1}{4}$ the length of the entire lip. *Epidendrum vinosum* Schltr. has pale wine-colored flowers, sepals and petals 17 mm long, oblong, apex obtuse to sub-truncate, the lip reminiscent of a three-corner hat, the lateral lobes retrorse, and with a large white callus, covering most of the mid-lobe. *Epidendrum hookerianum* Rchb.f. is similar but the sepals and petals are very narrow, the lateral lobes are semi-ovate, deeply fimbriate towards the apex of the outer margin, and the mid-lobe is linear-lanceolate, the margin sub-dentate and has a mid-rib running down the middle.

REFERENCES: Fiske, M. D., 1976, Expedition to Condor II, *Amer. Orch. Soc. Bull.* 43(3): 218-222. Hágsater, E., & H. Medina, 2018, *Epidendrum mainuanum* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12; *Icon. Orchid.* 16(1): t. 1639. Hágsater, E., & H. Medina, 2018, *Epidendrum glossaspis* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12; *Icon. Orchid.* 16(1): t.1620.

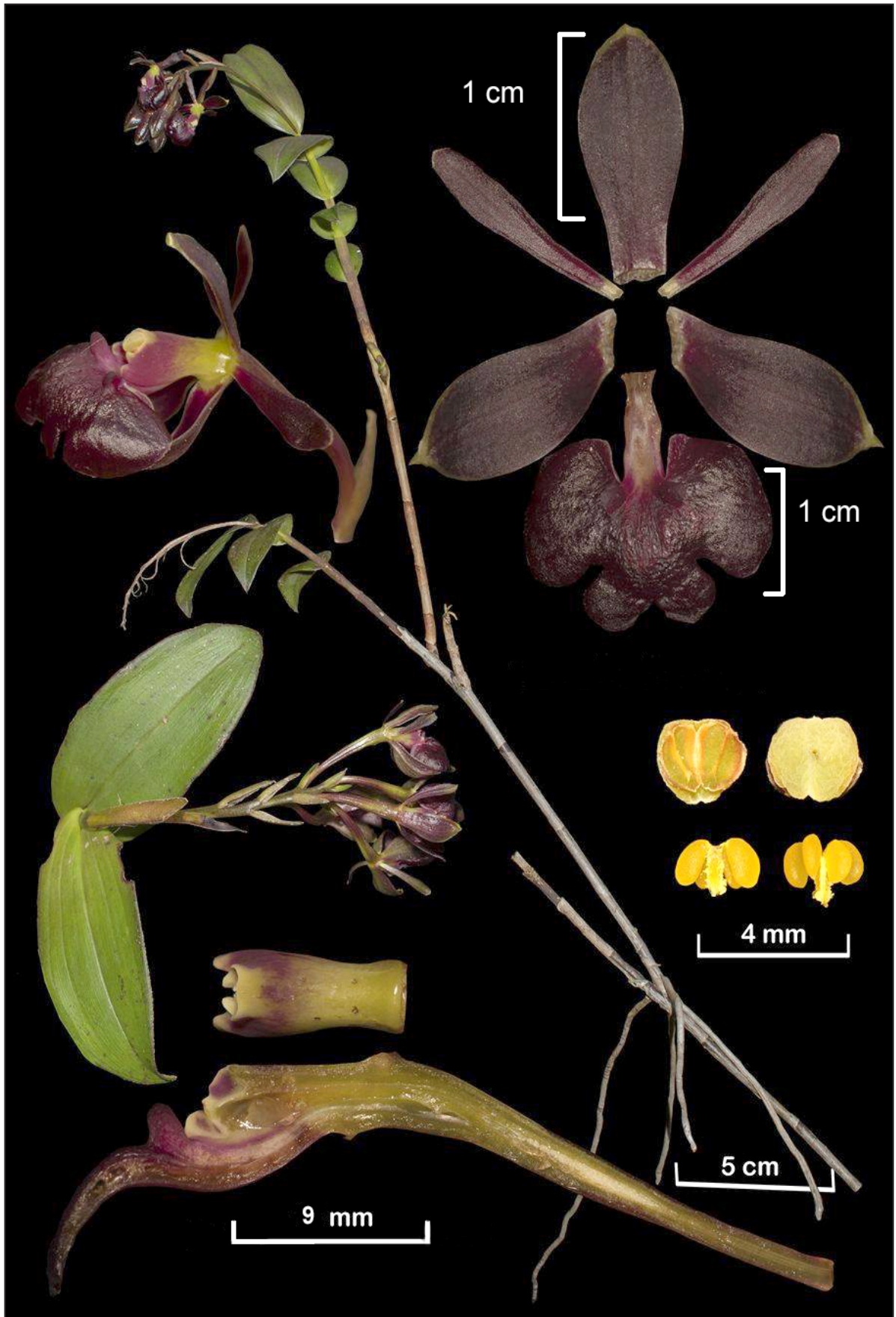


Authors: E. Hágsater & E. Santiago Illustrator: R. Jiménez M. Photo: G. C. Kennedy† Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1606



EPIDENDRUM BRICENORUM Damián & Hágsater

Plate 1607

EPIDENDRUM BRICENORUM Damián et Hágsater, sp. nov.

Type: PERU: Amazonas: Luya, Anexo Vista Hermosa, Área de Conservación ENDA, 2100 m, 18 marzo 2016, **Alexander Damián Parizaca y Julio Briceño 6020**. Holotype: MOL! (illustration and digital images of fresh material, AMO!).

Similar to *Epidendrum odontospathum* Rchb.f. but the leaves widely elliptic, apex acute (vs. widely elliptic, apex rounded and short-bilobed), the dark wine-red flowers, the base of the column green, the clinandrium hood white, resupinate (vs. green, orange-yellow to brown, non-resupinate), lip 4-lobed, the lobes sub-orbicular, the lateral lobes about 3 times larger than the apical lobes (vs. 3-lobed, base cordate, margin erose, spreading.)

Terrestrial and epiphytic, scandent, sympodial, erect herb, 45-85 cm tall. **Roots** 2 mm in diameter, basal, thin. **Stems** 70 x 0.6 cm, simple, cane-like, produced from the middle of the previous stem, terete at base, laterally compressed above, erect; base covered by sheaths 2-3 cm long, tubular, non-foliar, scarious. **Leaves** 3-7, aggregate towards the apex of the stem, sub-erect with respect to the stem, alternate, articulate, thin; sheaths 2 x 0.6 cm long, tubular; blade 3.7-7.5 x 2.0-2.8 cm, elliptic, apex acute, margin crenulate. **Spathe** 4 x 0.5 cm, conduplicate, ovate-lanceolate, basal half tubular, the apical half open, acuminate, margin denticulate. **Inflorescence** 8-12 cm long, apical, racemose, sub-erect, arching; peduncle 4.0-4.2 cm long, laterally compressed; rachis 4.5-7.6 cm long, terete. **Floral bracts** 0.7-1.5 cm long, much shorter than the ovary, triangular-lanceolate, acuminate, embracing. **Flowers** up to 10, opening in succession, 3 open at one time, resupinate, fleshy, dark wine-purple, the base of the column green, the clinandrium hood white; fragrance not registered. **Ovary** 2.0-3.5 cm long, arcuate, terete, progressively thickened, striated. **Sepals** dorsal sepal 13-15 x 5-6 mm, free, spreading, sub-obovate, sub-acute, 5-veined, margin entire, spreading; lateral sepals 17 x 7 mm, partly spreading, sub-hemi-orbicular, sub-apiculate, obliquely united to the base of the column, oblique. **Petals** 13-15 x 3-4 mm, free, spreading, oblanceolate, obtuse, 3-veined, margin entire, spreading. **Lip** 13-14 x 18-20 mm, united to the column, 3-lobed, base deeply cordate, margins entire; bicallose, the calli prominent, somewhat laterally compressed, digitiform, slightly oblique, divergent, corners somewhat rounded, the disc with three distinct fleshy, verrucose ridges in front; lateral lobes 8 x 9.5 mm, transversely ovate to elliptic, with small ridges along the veins; mid-lobe 5 x 9 mm, deeply emarginate, forming two divergent lobes, each hemi-orbicular. **Column** 9 mm long, straight. **Clinandrium-hood** short, margin entire. **Anther** sub-reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, similar in size and shape, caudicles granulose, somewhat longer than the pollinia. **Rostellum** near the apex of the column, slit. **Lateral lobes of the stigma** prominent, ca. 1/2 the length of the stigmatic cavity. **Nectary** penetrating 1/4 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: PERU: Lambayeque: a 3.5 km de Kañaris, 2835 m, XI 2017, *Díaz 91*, PGR, digital images before pressing, AMO! LCDP and photo voucher.

OTHER RECORDS: PERU: Amazonas: Luya, Área de Conservación ENDA, *P1170561*, Digital image, conservamospornaturaleza.org Cajamarca: Prov. Cutervo, 2695 m, XII 2017, *Díaz s.n.*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known from two collections, in northern Peru, on both the Cordillera Occidental and the Cordillera Oriental of the Andes, on both sides of the Marañón river basin; in montane forest, terrestrial at 2100-2850 m altitude. Flowering March.

RECOGNITION: *Epidendrum bricenorum* is reminiscent of the Fruticetorum Group which is characterized by the sympodial, caespitose habit, few-leaved stems, flattened above, the erect to arching racemose to pluri-racemose inflorescence, producing new racemes from the same peduncle, in successive years, flowers generally non-resupinate, lip 3-lobed, the distal margins of the lateral lobes dentate to short fimbriate. The species is recognized by the elliptic, acute leaves, resupinate, dark wine-red flowers, the base of the column dark green, clinandrium-hood white, lip 3-lobed, base deeply cordate, margin entire throughout, mid-lobe bilobed, lateral lobes transversely ovate-elliptic, about 3 times larger than the apical hemi-orbicular lobes bicallose, the calli prominent, laterally compressed, sub-quadrangle, laminar, slightly oblique, corners somewhat rounded, leaning towards each other in natural position, the disc with three distinct fleshy, verrucose ridges in front. *Epidendrum fruticetorum* Schltr. has narrow, obliquely lanceolate petals, sepals 15 mm long, and the lateral lobes of the lip 7.5 x 3.2 mm, ovate triangular; mid-lobe 6 x 3.7 mm, oblong, the apex acuminate. *Epidendrum freireanum* Hágsater & E. Santiago has purple leaves and stems, flowers small, sepals 10 mm long, sepals, petals and basal half of column wine-red to purple-brown, apical half of column and lip ivory white, immaculate. *Epidendrum odontospathum* Rchb.f. (syn. *Epidendrum refractoides* C. Schweinf.) has widely elliptic leaves, the apex rounded, non-resupinate flowers green, orange-yellow to brown, base of lip slightly cordate, margin erose, lateral lobes obliquely reniform, same size as the mid-lobe; bicallose the calli small, sub-globose, disc with 3 fleshy low keels that reach the apex of the mid-lobe.

CONSERVATION STATUS: DD. Data Deficient.

ETYMOLOGY: In honor of Julio Augusto Briceño Vidaurre and his family, of Chachapoyas, Peru, in recognition for their efforts to preserve ENDA, where the type of this species was found. The property was given to Alonso Briceño in 1760 by the Spanish Crown for services rendered. The name Enda is a Celtic word for bird.

ACKNOWLEDGEMENTS: We would like to thank FONDECYT (CONCYTEC) and UCSUR for granting and support the Project "Genetic and Morphological characterization of species of Vanilla (Orchidaceae) in Peru" PIAP-2-P-152-14 under which type specimen was collected.

REFERENCES: ENDA Conservemos por Naturaleza, www.conservamospornaturaleza.org/area/enda, (downloaded 1 November 2016). Hágsater, E., & E. Santiago, 2018, *Epidendrum freireanum*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1619. Santiago, E., & E. Hágsater, 2018, *Epidendrum odontospathum*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1648.



Authors: A. Damián & E. Hágsater

LCDP: A. Díaz

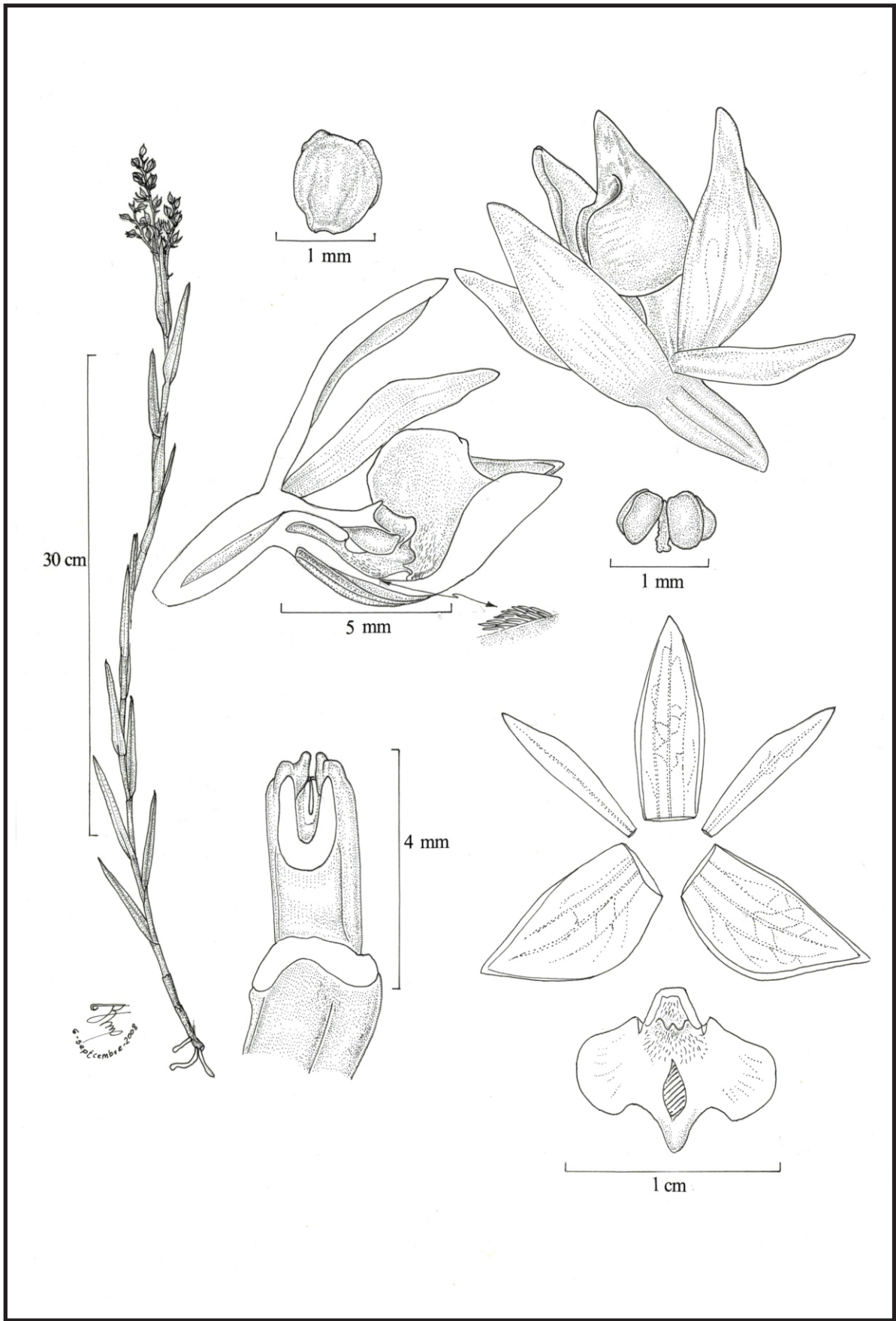
Photo: A. Díaz

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1607



EPIDENDRUM CARNOSUM Lindl.

EPIDENDRUM CARNOSUM Lindl., J. Bot. (Hooker) 3: 87, 1841.

Type: BRAZIL: Minas Gerais: Mun. Diamantina; Diamond Plains near Tejuco, ("campis admantinis ad Tejuco, Min. Geraes, Maio") [today Diamantina, formerly Arraial do Tijuco] **Carl Friedrich Philipp von Martius s.n. [1315*]**. Lectotype (here designated): M! Isolectotype W-R 49721! (only annotated as *Martius*, without number; mounted together with *Sellow 1344*).

Terrestrial, monopodial, erect, **herb**, 27-125 cm tall, branching above. **Roots** 2 mm in diameter, basal, fleshy, white. **Stems** cane-like, branching sub-apically, terete, straight; the primary stem 18-57 x 0.3-0.9 cm; branches 16 x 0.5 cm. **Leaves** 10-16, distributed throughout the stems, articulate, coriaceous, rigid, sub-parallel to the stem, similar in size and shape; sheaths 1.5-4.0 x 0.3-0.9 cm, tubular rugose; blade 4.0-8.6 x 0.6-1.3 cm, lanceolate, apex acute, margin entire. **Spathes** lacking. **Inflorescence** 9-13 cm long, apical, flowering only once, racemose to paniculate, erect, branches erect, parallel to the main axis of the inflorescence, distichous, many-flowered; peduncle 1 cm long, terete, rachis 8-12 cm, straight. **Floral bracts** 4-5 mm long, as long as the ovary, ovate, cucullate, acute, embracing. **Flowers** 9-17 [35], fleshy, opening in succession, but eventually all open at one time, non-resupinate, distichous, the lip always oriented towards the rachis, small, simultaneous, pale yellow or yellow green, drying black in pressed material; fragrance not registered. **Ovary** 3-5 mm long, short, thin. **Sepals** 9-10 x 4-5 mm, free, fleshy, elliptic, acute, 5-veined, margin entire; dorsal sepal spreading, apex rounded; lateral sepals partly spreading, oblique, apex acute. **Petals** 8-9 x 1.5-2.5 mm, reflexed, free, lanceolate-rhombic, apex acute, 1-veined, the veins branching above, margin entire. **Lip** 6-8 x 11-12 mm, united to the column, 3-lobed, fleshy, base truncate, embracing the column in natural position and covering it totally, disc pubescent, margin entire; with a single callus forming a fleshy platform, the apex bidentate; lateral lobes 5 x 5 mm, rounded, apex obtuse; mid-lobe 3 x 2 mm, conical, fleshy, solid, apex rounded-acute. **Column** 4-5 mm long, straight, forming a 100° angle with the ovary, and apex turned upwards. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid; 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** ½ the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity, the pubescence reclining backwards. **Capsule** not seen.

OTHER SPECIMENS: BRASIL: Without locality, *Glaziou 17264*, C! Ibid. *Glaziou 17293*, P! Ibid. *Schuch s.n.*, W! Brasilia, *Pittier s.n.* K! Brasilia, *Pohl 3922*, W! Goiás: Alto Paraíso de Goiás, C. Oeste, Chapada dos Veadeiros ca. 3 km SW do Acampamento (ca. 6 km E de Alto Paraíso), 1400-1500 m, 16 II 1979, *Matiko 6*, NY! (illustration voucher). Chapada dos Veadeiros, ca. 65 km due North of Brasilia, 21 XII 1968, *Raymond 11421*, K! **Mato Grosso:** Caminho, Porto Velho, Arinas, *Kuhlmann 123*, R! **Minas Gerais:** Without locality, *Auguste de Saint-Hilaire 233*, P! Caraca, *Clausen 386*, BR! Chemin du Pico d'Habira, 21 XII 1888, *Glaziou 17797*, P x2! Serra do Cipó. (Mun. Jaboticatubas), 17 I 1972, *Hatschbach 28747*, C! S! Bandeirinha, 3 km N (Mun. Diamantina), 13 III 1982, *Hatschbach 44671*, SP! Ibid. *Hatschbach 44675*, CAS! SP! hort. Miguel Burnier, 27 I 1921, *Hoehne 5143*, SP! Serra da Caraca, 1750-1950 m, 25 I 1971, *Irwin 29071*, MO! Serra do Gras Mogol, Brejo, 1000 m, 12 XI 1938, *Markgraf 3432*, RB! Diamantina, Rio das Pedras, *Pereira 1632*, HB! RB! Serra do Espinhaço. ca. 20 km SW of Diamantina, 1300 m, 23 I 1969, *Irwin 22508*, AMES! K! MO! NY! (illustration, AMO!) US! Diamantina, 2 IV 1957, *Pereira 2780*, HB! Jaboticatubas, Serra do Cipó, 6 km ao Norte do Palacio, 1200 m, 29 IV 1952, *Smith 6877*, R! US! Serra do Ibitipoca, Pico do Piao, 1580-1600 m, 12 V 1970, *Sucre 6714*, HB! RB! Serra do Cipó, 1500 m, *Vidal 5005*, R 107944! Serra do Cipó, *Vidal 60578*, R 107935! US! Serra das Tres Barras, 12 km north of Serra, 30 IV 1945, *Williams 6884*, AMES! **Rio de Janeiro:** Without locality, *Damasio s.n.*, RB 37111! Nova Friburgo, "Morro da Cruz", VIII 1935, *Amarante 10*, RB! Nova Friburgo, Morro da Bruma, *Amarante 27763*, VIII 1935, RB! **São Paulo:** Santos and São Paulo, 2800 ft, 2 II 1936, *Carson s.n.*, K! Mun. Santo André, pr. Campo Grande, I 1972, m. *Chillány s.n.*, M 57880! Alto da Serra, S. Paulo, 23 XII 1920, *Hoehne 4715*, NY! Santo Amaro, Fazenda Curucutú, 2 II 1950, *Kuhlmann 2294*, SP! Estação Biológica, Alto da Serra, 800-900 m, 13 II 1929, *Smith 1886*, US!

OTHER RECORDS: BRAZIL: Minas Gerais: Diamantina, 1000-1300 m, *Euler Menezes Menezes s.n.*, digital image, AMO! Diamantina, 1330 m, 9 XII 2017, *E. Menezes 42*, digital images, AMO! (specimen to be deposited at DIAM)

DISTRIBUTION AND ECOLOGY: Endemic to the Planalto and Mata Atlântica of Brazil in the states of Minas Gerais, Goiás and Rio de Janeiro to Mato Grosso and south to São Paulo; terrestrial at [800]1000-1950 m altitude. Flowering mainly from November to April.

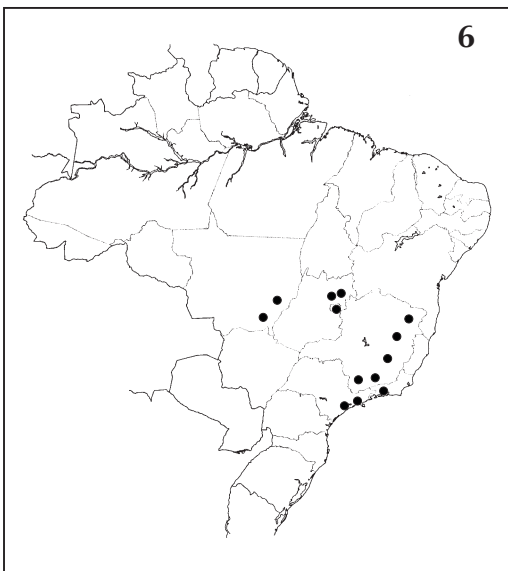
RECOGNITION: *Epidendrum carnosum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the large plants, to 125 cm tall, lanceolate leaves, acute, the margin spreading, 4.0-8.6 x 0.6-1.3 cm, the inflorescence is usually paniculate, branches sub-erect, nearly parallel to the main axis, sepals 9-10 mm long, petals 8-9 x 1.5-2.5 mm, lanceolate-rhombic, and the lip 6-8 x 11-12 mm has a single callus with the apex bidentate. *Epidendrum ulei* Schltr. has similar large-sized plants, 45-80 [160] cm, but the leaves are oblong with the apex rounded and the margin somewhat revolute, 3-7 x 0.9-2.5 cm, inflorescence paniculate with the racemes spreading from the axis, sepals similar in size, 9-10 x 3.4-5.0 mm, and the petals linear, lip bicallose, the calli thin, converging at the apex. *Epidendrum pseudavicula* Kraenzl. has very short plants, 7-18 cm tall, leaves 1.0-3.5 x 0.6-1.0 cm, narrowly ovate to oblong-lanceolate, sepals 5.6 mm long, petals 5.3 x 0.8 mm, linear, and the lip is bicallose, the calli thin, parallel and short. *Epidendrum durum* Lindl. has intermediate sized plants, to 56 cm tall, the leaves lanceolate, 2.0-2.5 x 0.5-1.4 cm, inflorescence racemose to paniculate, when paniculate the racemes spreading at a 90° angle with the axis, flowers small, greenish white, sepals 6.5-7 x 3-4 mm, and petals linear-elliptic. *Epidendrum dendrobioides* Thunb. has linear-lanceolate leaves 3.5-6.0 x 0.5-0.8 cm, inflorescence 6-12.5 cm long, simple, distichous, rarely with a secondary branch, sepals 6.0-7.5 mm long, petals linear, 5.5-6.0 x 1.0-1.2 mm, and the lip 4.5-5.0 x 6.8-7.5 mm.

*NOTES: Martius apparently used the same number, *Orchidea 1315* for various specimens of what he thought was the same species, a common practice at the time, as can be seen at M, where the holotype is located, and a second collection from "Sanossis ad mont Itambe", collected one month later, in June. This second specimen was cited by Lindley as "And in rocky places near Itambé in Brazil; Pohl also found it in the same country (herb. Martii and Zuccarinii)."

CONSERVATION STATUS: NT. Species is widespread and common in Brazil.

ETYMOLOGY: From the Latin *carnosus*, flesh-colored, fleshy, in reference to the floral segments which are fleshy and rigid, as in all species of this group.

REFERENCES: Santiago, E., & E. Hágsater, 2018, *Epidendrum dendrobioides*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1614. Santiago, E., & E. Hágsater, 2018, *Epidendrum pseudavicula*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1650. Santiago, E., & E. Hágsater, 2018, *Epidendrum ulei*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1663.



Authors: E. Santiago & E. Hágsater

Illustrator: R. Jiménez M.

Photo: E. Menezes

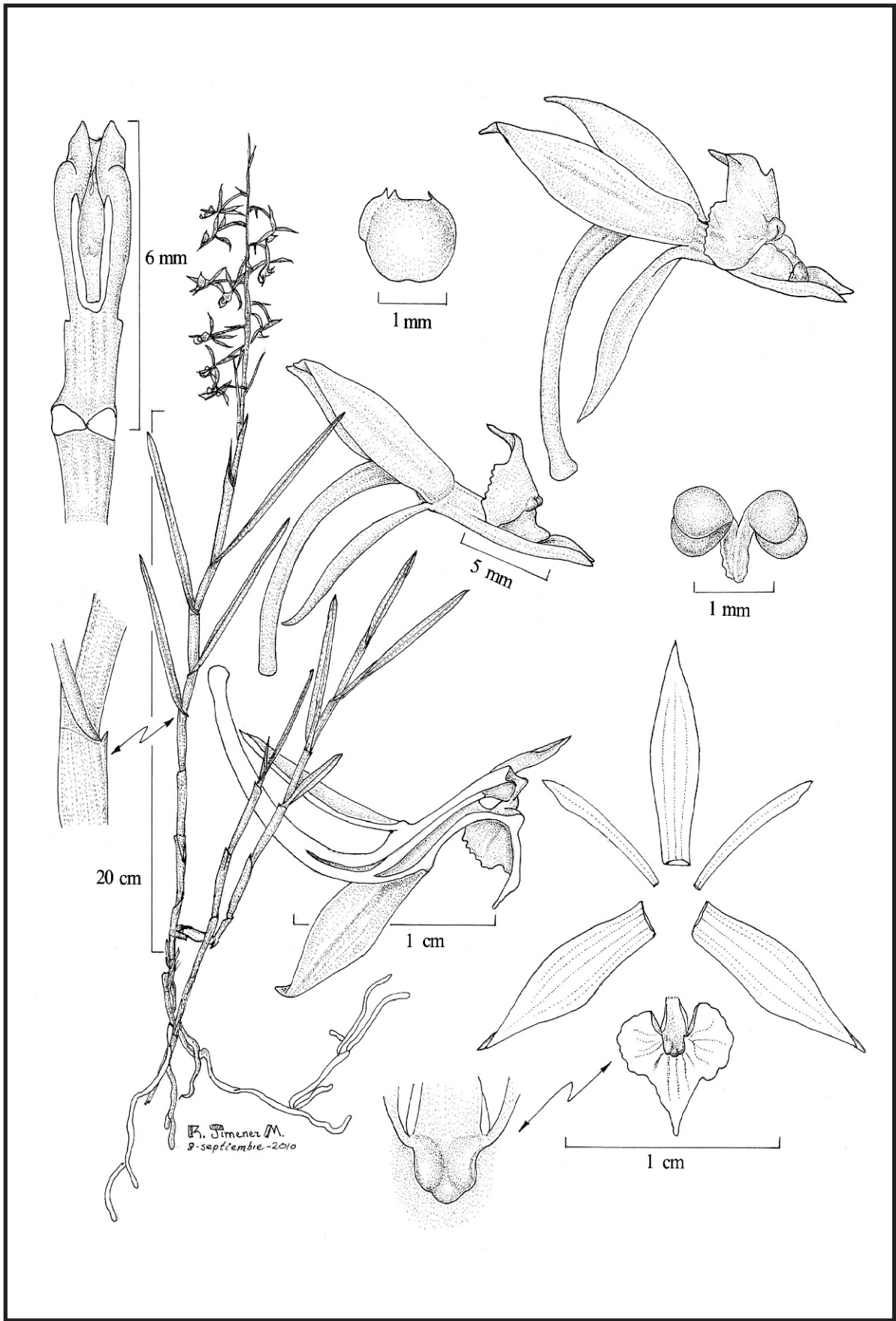
Editors: E. Hágsater & E. Santiago

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ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1608



EPIDENDRUM CLAVATA Hágsater & Collantes

EPIDENDRUM CLAVADISTA Hágsater et Collantes, *sp. nov.*

Type: PERU: Pasco: Distrito de Oxapampa, zona de amortiguamiento del Parque Nacional Yanachaga-Chemillén, 2000 m, 10°16'S 75°15'W, 22 Agosto 2005, *Abel Monteagudo Mendoza y Antonio Peña 9587*. Holotype: HUT 58502! Isotypes: MO 6125998! (illustration voucher). USM.

Similar to *Epidendrum herrenhusanum* Hágsater, but the leaves narrower, flowers half the size, ovary arching 90° so the flowers are non-resupinate and facing downwards, ochre-yellow, petals white at base, column white, apex purple, lip triangular, white.

Epiphytic, caespitose, sympodial, erect **herb**, ca. 33-47 cm tall including the inflorescence. **Roots** 0.5-2.0 mm in diameter, basal, from the somewhat scandent rhizome, thick, fleshy. **Stems** 16-17 x 0.13-0.35 cm, simple, cane-like, laterally compressed, slightly zig-zag towards the apex; the basal 2/3 covered by tubular, non-foliar, ancipitose sheaths 2.2-2.6 x 0.15-0.25 cm. **Leaves** 4-7, distributed along the apical 1/3 of the stem; sheaths 1.5-3.6 x 0.22-0.6 cm, tubular, laterally compressed, ancipitose, smooth; blade 3.0-13.5 x 0.3-0.8 cm, sub-erect, articulate, linear-lanceolate, acute, sulcate, margins minutely crenulate towards the apex, slightly revolute, smooth, bright green. **Spathes** 1-2, 4.0-4.8 x 0.3-0.4 cm, imbricated, tubular along the lower half, laterally compressed, ancipitose, the apical part conduplicate, acuminate. **Inflorescence** 17-23.5 cm long, apical, from the mature growth, flowering only once, racemose, erect; rachis 11.5-13.0 cm long, laterally compressed. **Floral bracts** 4-17 mm long, about half as long as the ovary, triangular-linear, acuminate. **Flowers** 12-28, simultaneous, non-resupinate, sepals ochre-yellow, petals ochre-yellow at the apex, white at the basal 2/3, column white, with a purple mark at the apex, lip white; fragrance strong, in the evening, delicious, reminiscent of a quality soap. **Ovary** 12-15 mm long, arching, about 90° so the flower is non-resupinate and facing downward. **Sepals** 9.0-11.8 x 2.5-3.0 mm, narrowly elliptic to sub-lanceolate, acuminate to shortly rostrate, reflexed, especially the lateral sepals, membranaceous, margin entire, spreading, dorsal sepal 3- sometimes 5-veined, lateral sepals 5-veined. **Petals** 8.0-9.9 x 0.8-1.0 mm, usually parallel to the column and adnate to its base, sometimes spreading, (*Ocupa Horna s.n.*) linear-oblancoate, acute, falcate, membranaceous, 1-veined, margin entire, spreading. **Lip** 4.6-6.5 x 4.7-6.8 mm, united to the column, 3-lobed, base cordate; bicallose, the calli united to form a single, apically 3-lobulate, short, laminar, hemi-circular to sub-trapezoid, and apically emarginate; lateral lobes 2.0-2.9 x 1.5-3.3 mm, hemi-orbicular, spreading, margin erose; mid-lobe 2.4-3.7 x 1.5-2.6 mm, triangular. **Column** 6 mm long, thin, arching. **Clinandrium-hood** reduced, margin entire. **Anther** spherical, unornamented, 4-celled. **Pollinia** 4, the inner pair slightly smaller, obovoid, laterally compressed; caudicles granulose, about as long as the pollinia; viscidium semi-liquid. **Rostellum** subapical, slit. **Lateral lobes of the stigma** prominent, about half as long as the stigmatic cavity. **Nectary** penetrating less than 1/4 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: PERU: **Cusco:** Santuario Histórico de Machu Picchu, Jardín de Orquídeas Inca Pachacutec, Centro de Conservación in situ, 8 IV 2013, *Dani Gutierrez s.n.*, USM! **Junín:** Satipo, San José, selva central, VII 2015, *B. Monterrey sub E. Morón s.n.*, USM! (photo voucher, sketch of flower by B. Collantes, AMO!) **Pasco:** Oxapampa, *Becerra s.n.*, Herb not indicated, digital image, received 27 VI 2007, sketch of flower, AMO!

OTHER RECORDS: PERU: VIII Exposición internacional estándar de flores, Lima, Perú, 28 X 2009, *Harding s.n.*, digital images, AMO! **Amazonas:** Bongará; Dpto. Yamborasbamba, Centro Poblado "El Progreso", 2124 m, 25 VIII 2014, *Ocupa Horna s.n.*, (petals spreading), digital images, AMO! **Junín:** Satipo, San José, 13 VII 2015, *Morón s.n.*, digital images, AMO! (sketch of flower, by B. Collantes, AMO!) **San Martín:** Rioja: Bosque de Protección Altomayo (BPAM), zona de amortiguamiento con Amazonas, 1650 m, *Ocupa Horna s.n.*, note, AMO!

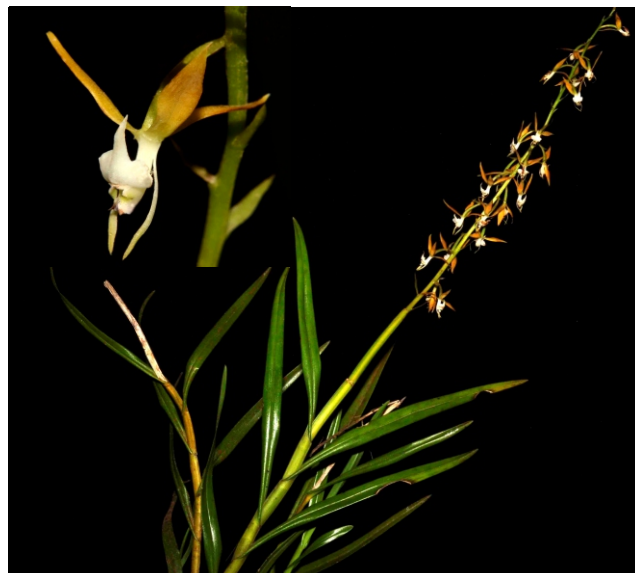
DISTRIBUTION AND ECOLOGY: Widespread along the Amazon slope of the Andes in Peru, at 1650-2124 m altitude, in disturbed forest, epiphytic at 2000 m altitude. Flowering from July to September.

RECOGNITION: *Epidendrum clavadista* belongs to the *Herrenhusanum* Group, recognized by the caespitose, sympodial habit, the erect racemose inflorescence subtended by a narrow, long spathe, and non-resupinate flowers. The species is recognized by the linear-lanceolate leaves 0.3-0.5 cm wide, small flowers, sepals 9-10 mm long, ochre-yellow, the base of the petals white, apex ochre-yellow, the column and lip white, the apex of the column marked in purple, the mid-lobe of the lip triangular. *Epidendrum herrenhusanum* from Colombia has wider leaves, 1.5-2.0 cm wide, larger flowers, sepals 20 mm long, flowers entirely bronzy-yellow, except for the green column, and mid-lobe of the lip is ovate-acuminate; petals are spreading, not parallel to the column. *Epidendrum yamborasbambense* Hágsater, from Amazonas, Peru, also has very narrow leaves, 0.3-0.5 cm, but greenish white flowers, similar in size, sepals 9-10 mm long, the lip equally 3-lobed, but the mid-lobe square, apex slightly emarginate; petals free, spreading. *Epidendrum veroreveloi* Hágsater & Dodson from Ecuador has wider leaves, 1.6 cm wide, larger copper-green flowers, apical half of the column apple-green, sepals 15-16 mm long, and lip entire, ovate, base cuneate, apex obtuse, petals free, spreading.

ETYMOLOGY: From the Spanish "clavadista", a person who performs a dive into water from a high platform, such as an Olympic diver, in reference to the non-resupinate flower with the petals parallel to the column, reminiscent of a diver performing a backward dive from a platform. Only the Spanish term is specific to the Olympic diver whereas in other languages the term diver has various meanings.

CONSERVATION STATUS: DD. Data deficient. The species appears to be widespread and found in protected areas. However, specimens appear to be scarce.

REFERENCES: Hágsater, E., 1999, *Epidendrum herrenhusanum*, in E. Hágsater, L. Sánchez & J. García-Cruz (eds.), *The Genus Epidendrum, Part 2, Icon. Orchid.* 3: t. 333. Hágsater, E., 2001, *Epidendrum yamborasbambense*, in E. Hágsater & L. Sánchez (eds.), *The Genus Epidendrum, Part 3, Icon. Orchid.* 4: t. 500. Hágsater, E., & C. H. Dodson, 2001, *Epidendrum veroreveloi*, in E. Hágsater & L. Sánchez (eds.), *The Genus Epidendrum, Part 3, Icon. Orchid.* 4: t. 497.



Authors: E. Hágsater & B. Collantes

Illustrator: R. Jiménez M.

Photo: E. Morón

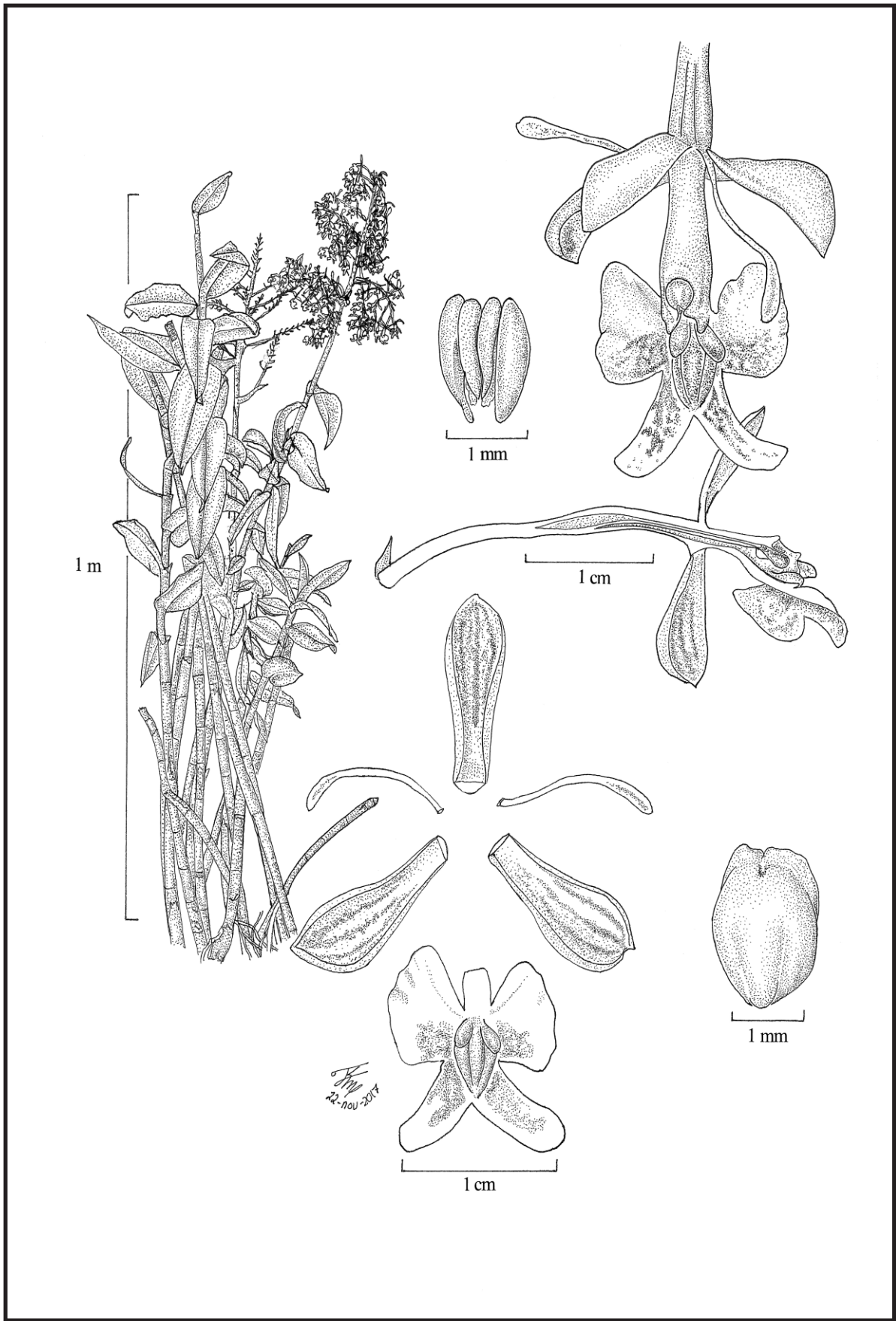
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1609



EPIDENDRUM COCONUCOËNSE Hágsater, E.Santiago & Uribe Vélez

Plate 1610

EPIDENDRUM COCONUCOËNSE Hágsater, E.Santiago et Uribe Vélez, *sp. nov.*

Type: COLOMBIA: Cauca: Puracé; Coconuco, 2800 m, 25 November 2017, **Carlos Uribe Vélez 2208**, Holotype: HPUJ! Digital images of pretype, AMO! (illustration & photo voucher).

Similar to *Epidendrum falsiloquum* Rchb.f., but the flowers pink with the sepals and lip unevenly blotched purple on the inner face, the disc especially heavily blotched.

Epiphytic or terrestrial, sympodial, caespitose, erect **herb**, 100-130 cm tall including the inflorescence. **Roots** basal. **Stems** 100 x 0.5-1.0 cm, simple, cane-like, terete. **Leaves** 11-13, distributed along the upper half of the stem, alternate, articulate, erect-spreading; sheaths 2-5 x 0.5-1.0 cm, tubular, minutely striated; blade to 15 x 4 cm, oblong-lanceolate to oblong-elliptic, sub-acute, sub-coriaceous, margin entire, deep green, concolor or ventrally tinged purple. **Spathaceous bract** lacking. **Inflorescence** ca. 30 cm long, apical, paniculate, erect, densely many-flowered; peduncle 11 cm long, straight, covered by several tubular imbricating bracts. **Floral bracts** 3 mm long, much shorter than the ovary, triangular, acuminate, embracing. **Ovary** 26 mm long, terete, thin, not inflated, unornamented, long. **Flowers** ca. 120, simultaneous, resupinate, pink, the sepals and lip unevenly blotched with purple, the disc and calli purple, anther cream-colored; fragrance, apparently none. **Sepals** 11-12 x 3.0-4.8 mm, spreading, free, fleshy, unornamented, obovate-oblancheolate, obtuse, 3-5-veined, margin entire; the lateral sepals oblique, minutely apiculate. **Petals** 10-11 x 0.8 mm, spreading, free, linear-oblancheolate, the apex rounded, 1-veined, margin entire, arching forward in natural position. **Lip** 10.0-12.5 x 10-11 mm, united to the column, 3-lobed, equally wide between the lateral lobes and the bifid mid-lobe, base deeply cordate, saddle-form in natural position, the lateral lobes somewhat reflexed; bicallose, the calli prominent, divergent, elongate nearly to the sinus between the lateral lobes and the mid-lobe, fleshy, thin; the disc with 3 parallel keels, the mid-keel reaching the apical sinus; lateral lobes 4.0-5.0 x 5.5-7.0 mm, dolabriform to trapezoid, oblique, apex truncate, margin entire; mid-lobe 5.0 x 11 mm, from a narrow isthmus, then deeply bifid, the lobes falcate, oblong, divergent, apex rounded, the outer corner forming a 90° angle, margin entire. **Column** 9 mm long, thin, straight, the apex bidentate. **Clinandrium** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, bird-wing like, caudicles laminar, viscidium semi-liquid, transparent. **Rostellum** sub-apical, slit. **Nectary** shallow, penetrating 1/3 of the ovary, unornamented. **Capsule** not seen.

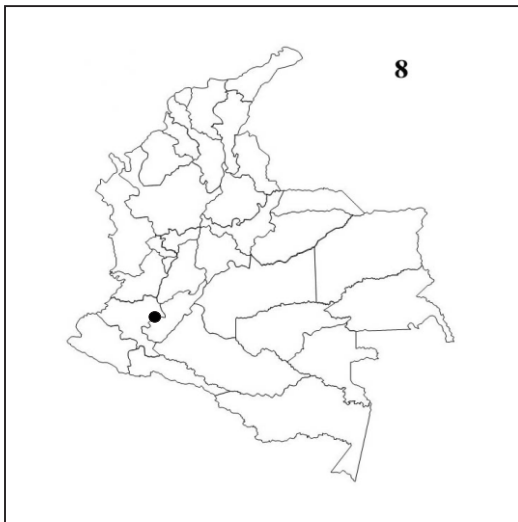
OTHER SPECIMENS: COLOMBIA: Cauca; Mun. Puracé; Calaguala, 2500-2800 m, 14 VI 1922, *Pennell 7127*, AMES x2! NY! US! Volcán Puracé, 20 VII 2007, *Pfahl s.n.*, flower in spirit, AMO!

DISTRIBUTION AND ECOLOGY: Known presently only from a couple of collections in the Department of Cauca, Municipality of Puracé, at 2500-2800 m altitude. Flowering in July and November.

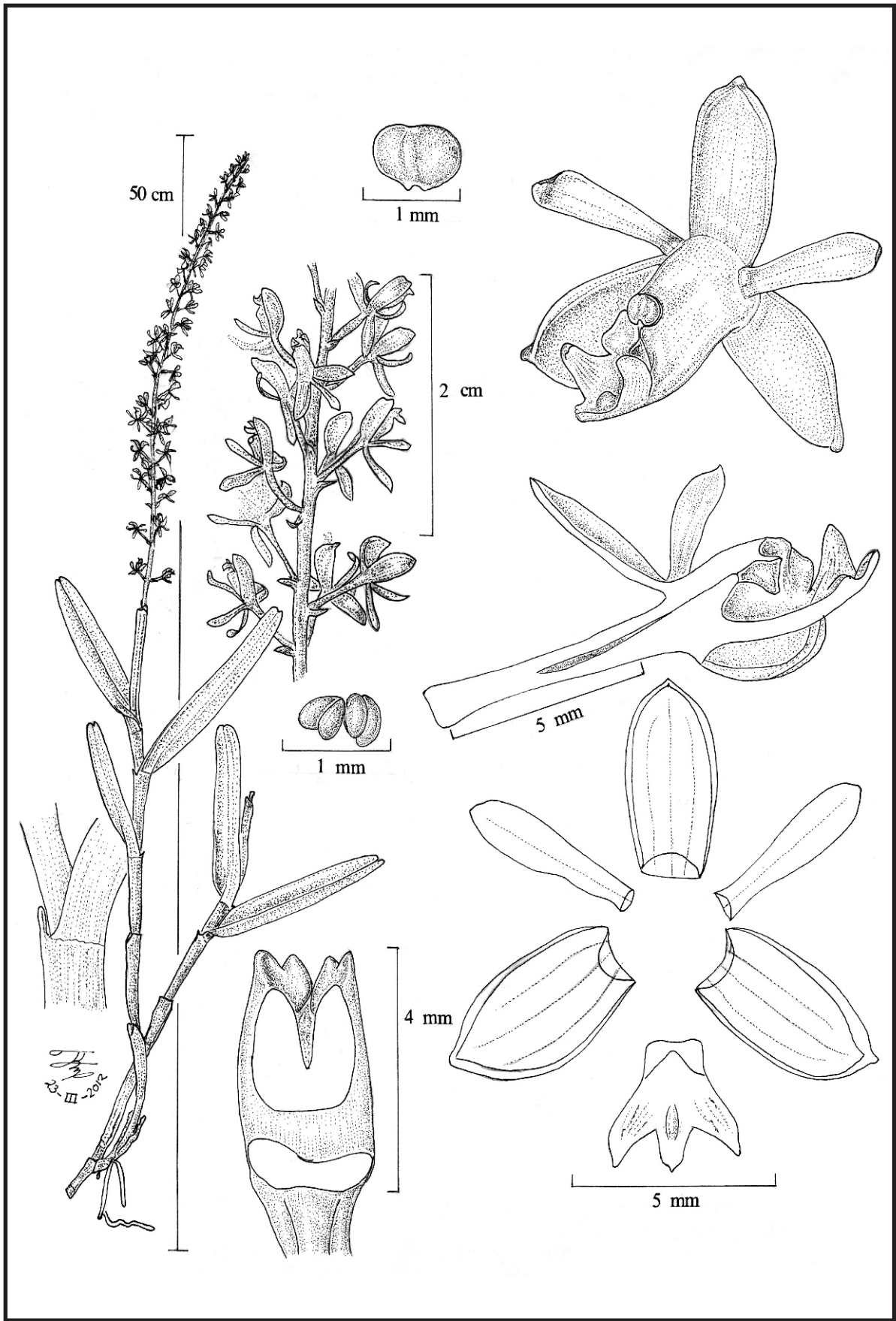
RECOGNITION: *Epidendrum coconucoense* belongs to the Pseudepidendrum Group which is characterized by the caespitose habit, un-branched stems, apical, branched inflorescence, no true spathaceous bract, and the flowers with a long, thin column, a 3-lobed lip with the mid-lobe generally bifid and divaricate, and filiform petals, and Porphyreum Subgroup which has variously colored flowers, not green with the apex of the column and lip white. The species is recognized by the small, fleshy, pink flowers the sepals and lip unevenly blotched purple, especially the disc of the lip, sepals 11-12 mm long. *Epidendrum falsiloquum* has smaller, ochre-yellow flowers, the lip white, with 3-5 purple lines over the ribs of the disc, sepals 7-8 mm long. *Epidendrum arnoldii* Schltr. has even colored purple-pink flowers, the disc and calli pink to white, sepals 8-10 mm long, the lip convex in natural position. *Epidendrum laeve* Lindl. is very similar, but the basal lobes of the lip dolabriform-falcate, and the apical-lobe slightly arching upwards, not convex in natural position. *Epidendrum peraltum* Schltr. has somewhat larger flowers (sepals 14-16 mm long) colored greenish yellow to a dirty pink, the lip spreading in natural position, with the lateral lobes strongly retrorse, and the mid-lobe forming a pair of divaricate, linear lobes. *Epidendrum porphyreum* Lindl. has purple flowers with the disc white, sepals 13-15 mm long, the lateral lobes of the lip ovate-dolabriform, not retrorse, and the mid-lobe is formed by a pair of triangular lobes.

CONSERVATION STATUS: DD. Data deficient. The species, though presently known from a single Municipality, is expected to range along the Cordillera Central of the Andes.

REFERENCES: Ortiz Valdivieso, P., & C. Uribe-Vélez, 2017, *Orquídeas, Tesoro de Colombia* 2: 120, fig. 150 (color photograph). Da Vinci Publicidad y Medios, S.A.S., Bogotá, Colombia. Santiago, E., & E. Hágsater, 2010, *Epidendrum arnoldii*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1304. Santiago, E., & E. Hágsater, 2010, *Epidendrum falsiloquum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1330. Santiago, E., & E. Hágsater, 2010, *Epidendrum laeve*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1345. Santiago, E., & E. Hágsater, 2010, *Epidendrum peraltum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1369. Santiago, E., & E. Hágsater, 2010, *Epidendrum porphyreum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1377.



Authors: E. Hágsater, E. Santiago & C. Uribe Vélez Illustrator: R. Jiménez M. Photo: C. Uribe V. Editors: E. Hágsater & E. Santiago



EPIDENDRUM COILOTRIENUM Hágsater & L.Sánchez

EPIDENDRUM COILOTRIENUM Hágsater et L.Sánchez, *sp. nov.*

Type: PERU: Pasco: Parque Nacional Yanachaga-Chemillen, Oxapampa, Parque Nacional Yanachaga-Chemillén, sector Abra Esperanza, 10°31'54"S 75°20'59"W, 2750 m. Bosque primario, esclerófilo en humedales. Epífita, 22 febrero 2007, **Rodolfo Vásquez, Abel Monteagudo, V. Flores & Mateo José 31900**. Holotype: AMO 25938! (illustration voucher) Isotypes: HOXA, HUT, MO, USM, (fide Tropicos).

Similar to *Epidendrum rhombimancum* Hágsater & L.Sánchez, but the leaves shorter and narrower, inflorescence narrowly pyramidal, many-flowered, petals oblong-oblancoate, lip deeply 3-lobed, the apices of the lobes even; lip ecallose, with a central short, fleshy rib at the base of the mid-lobe.

Epiphytic, sympodial, creeping **herb**, 45-50 cm tall including the inflorescence. **Roots** 0.8-1.2 mm in diameter, basal, thin, fleshy. **Stem** 13-22 x 0.2-0.5 cm, cane-like, the new stem produced from the lower nodes of the previous stem, erect, straight, laterally compressed towards the apex; base covered by 1-2 non-foliar sheaths, scarious, equal to the foliar sheaths. **Leaves** 2-4 per stem, distributed along the apical half of the stem; sheaths 25-36 mm long, tubular, striated and minutely rugose; blade 6.0-9.2 x 0.8-1.3 cm, articulate, oblong-lanceolate, apex obtuse, aristate, coriaceous, margin entire. **Spathes** 1.41 x 5.5 mm, oblong, long and parallel sided, ancipitose, acute. **Inflorescence** 28.8 cm long, apical, elongate, narrowly pyramidal, racemose, erect, elongate, densely many-flowered; peduncle 6.3 cm long, nearly totally covered by the spathe; rachis straight. **Flowers** ca. 45, simultaneous, non-resupinate, sepals greenish red, petals and column yellowish, lip white with purple dots; fragrance not registered. **Floral bracts** 1.0-1.4 mm long, much shorter than the ovary, triangular, acute, embracing. **Ovary** 6.5 mm long, unornamented. **Sepals** 4.0-5.0 x 1.7-2.6 mm, spreading, free, elliptic, acute, 3-veined, margin entire, spreading, **Petals** 4.0-4.5 x 0.5-1.1 mm, spreading, oblong-oblancoate, apex rounded, 1-veined, margin entire, spreading. **Lip** 2.2-2.5 x 3.0-3.3 mm, united to the column, 3-lobed, base truncate, ecallose, with a small central short rib at the base of the mid-lobe, elongate, fleshy; margins entire; lateral lobes 1.7 x 1.0 mm, deflexed, so that the apices of the three lobes are even, triangular, acute, entire, somewhat involute in natural position so as to make the lip concave; mid-lobe 1.0-1.7 mm, sub-rectangular, apiculate, entire. **Column** 3.4 mm long, slightly arching. **Clinandrium-hood** reduced, entire. **Anther** 4-lobed, transversely ovoid. **Pollinia** 4, obovoid, laterally compressed. **Nectary** short, without penetrating the pedicellate ovary, wide, unornamented. **Lateral lobes of the stigma** occupying 1/2 of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from the eastern slope of the Cordillera Oriental of the Andes in central Peru, Pasco, Oxapampa, Parque Nacional Yanachaga-Chemillen. Epiphytic in sclerophyllous primary forest in wetland, at 2750 m altitude. Flowering in February.

RECOGNITION: *Epidendrum coilotrienum* belongs to the Mancun group which is characterized by the sympodial habit, few-leaved stems, racemose inflorescence with 1-2 ancipitose, long, spatheaceous bracts with parallel sides, and Mancun Subgroup which has non-resupinate, flowers, and a generally reduced, fleshy lip. The species is recognized by the laterally compressed stems, shorter narrower leaves 6.0-9.2 x 0.8-1.3 cm, elongate, narrowly pyramidal inflorescence, the 3-lobed, ecallose lip with a short, fleshy rib at the base of the mid-lobe, lateral lobes triangular, acute, the apices even with the apex of the sub-rectangular, apiculate mid-lobe. It is very similar to *Epidendrum rhombimancum* from southern Ecuador and northern Peru (Amazonas), which has longer, wider leaves 9-12 x 2.4-3.0 cm, conical, densely flowered inflorescence, petals obovate with the margin undulate towards the apex, lip entire, transversely elliptic. *Epidendrum mancum* Lindl. from southern Ecuador has shorter plants, 15-25 cm tall, smaller leaves 2-6 x 1.3-2.7 cm, conical inflorescence, sepals and petals wider 3-5 mm wide, and the lip entire. *Epidendrum pseudosarcoglottis* Hágsater & Dodson has a conical inflorescence, spatulate petals, entire lip claw-like, rectangular with a wide, fleshy callus. *Epidendrum sarcoglottis* Schltr. from Colombia and Ecuador has a conical inflorescence, larger flowers, sepals and petals 8-9 mm long, entire, claw-like lip, triangular, the callus forming a wide, fleshy cushion.

CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: From the Greek *κοιλος*, hollow, concave, and *τριαίνα*, a trident, the 3-pronged spear of Poseidon, in reference the peculiar position of the 3-lobed lip where the lateral lobes are somewhat involute giving the lip a concave appearance.

REFERENCES: Sánchez S., L., 2004, *Epidendrum pseudosarcoglottis* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 783. Sánchez S., L. & E. Hágsater, 2008, *Epidendrum rhombimancum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1173. Sánchez S., L. & E. Hágsater, 2009, *Epidendrum mancum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1262. Sánchez S., L. & E. Hágsater, 2009, *Epidendrum sarcoglottis* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1288.



Authors: E. Hágsater & L. Sánchez S.†

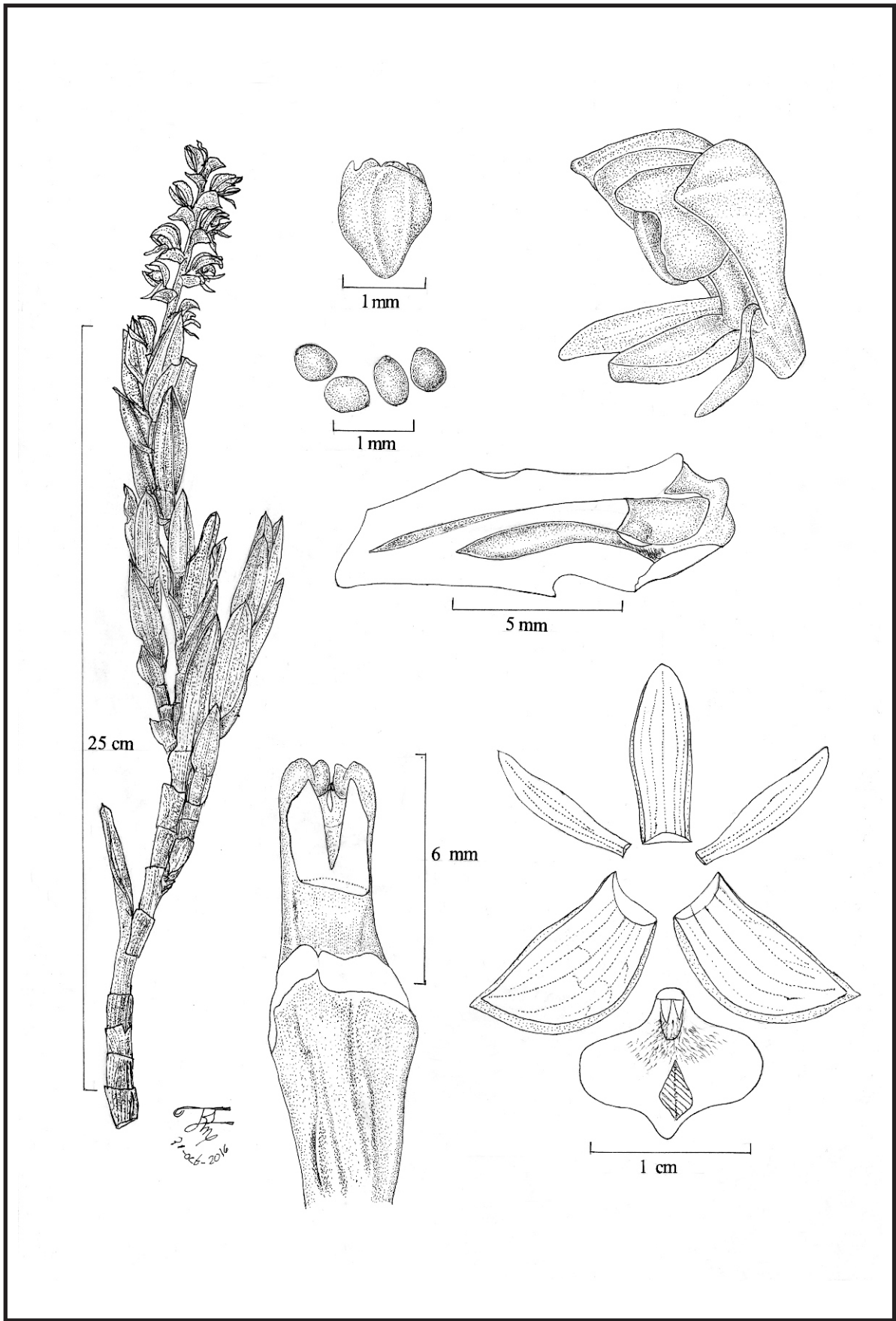
Illustration: R. Jiménez M.

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1611



EPIDENDRUM COMMELINISPATHUM Carnevali & I.Ramírez

EPIDENDRUM COMMELINISPATHUM Carnevali & I. Ramírez, in G. A. Romero & G. Carnevali, *Orchids Venezuela*, ed. 2, 3: 1132. 2000.

Type: VENEZUELA: Amazonas: Dpto. Río Negro. Cerro de la Neblina, Vicinity of Camp VI, on a ridge on Venezuelan-Brazilian border, 3.5 km W of Pico Zuloaga, 2000 m, 13-15 April 1984, **Wayt W. Thomas & Timothy Plowman 3044**. Holotype: VEN, lost*; Lectotype (here designated): MO 4628473! Isolectotype: NY 2693700!

Terrestrial, monopodial, branching, erect herb, ca. 100 cm tall. **Roots** 2-3 mm in diameter, basal, fleshy, white. **Stems** cane-like, branching, terete, erect, the primary stem ca. 100 x 0.5-0.7 cm; branches 9-16 x 0.4-0.5 cm. **Leaves** numerous on the primary stem, 6-12 on the branches, distributed throughout the stems, articulate, alternate, coriaceous, very rigid, sub-parallel to the stem, similar in size and shape, dark green above, silver-green underneath, black in dried specimens; sheaths 6-11 x 4-7 mm, tubular, minutely striated and rugose; blade 2.0-4.5 x 0.9-1.1 cm; narrowly ovate-lanceolate, apex acute, minutely apiculate, margin slightly revolute. **Spathe** lacking. **Inflorescence** 4.5-6.0 cm long, apical flowering only once, racemose to paniculate, the racemes sub-erect, straight, distichous, few-flowered; peduncle short, rachis sinuous. **Floral bracts** 5-7 x 6-8 mm, prominent, longer than the ovary, conduplicate, widely ovate when spread, acute, embracing, fleshy, spreading at a right angle with respect to the rachis, and somewhat recurved. **Flowers** 11, fleshy, non-resupinate, simultaneous, yellowish tinged with brown and green; fragrance not registered. **Ovary** 4 mm long, short, thick. **Sepals** 10-12.5 x 4-6.5 mm, partly spreading, free, fleshy, concave, elliptic, acute, 5-veined, margin entire; lateral sepals oblique. **Petals** 9.0-10.5 x 2.0-2.3 mm, partly spreading, slightly falcate, linear-oblong, acute, 3-veined, margin entire. **Lip** 8 x 11 mm, united to the column, conduplicate in natural position, shallowly 3-lobed, very fleshy (tears when spread), base shortly narrowly cuneate, disc pubescent, with a single "U" shaped callus; lateral lobes 5.2 x 4.0 mm, hemi-elliptic; mid-lobe very small, widely triangular, apex rounded. **Column** 6 mm long, thick, straight, the apex turned upwards. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, caudicles not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, ½ as long as the stigmatic cavity. **Nectary** shallow, barely penetrating the ovary, pubescent in front of the stigmatic cavity, pubescence reclining backwards towards the base of the nectary. **Capsule** not seen.

OTHER SPECIMENS: VENEZUELA: Amazonas: Cerro de la Neblina, 5.1 m NE Pico Phelps, 2250 m, 11 II 1985, *Beitel 85178*, VEN x2! Cerro Neblina, Valle de Titiricó, N of Pico Phelps, 2200 m, 10 XII 1984, *Croat 59527*, F! MO! (illustration and photo voucher) VEN! Cerro de la Neblina, 2.5-3.5 km NE del Pico Phelps (= Pico de Neblina), 2085-2100 m, 17-22 II 1984, *Funk 6260*, VEN! Valle de Titiricó, N of Pico Phelps, 2300 m, 1 XII 1984, *Kral 71930*, VEN! Open rocky plateau of Cerro de Marahuaca above Salto Los Monos, 2555 m, 27 II 1985, *Liesner 18039*, MO! VEN! Cerro Marahuaca, 2700 m, 13 IX 1988, *Liesner 24751*, MO! VEN! Cerro de la Neblina camp 2, Neblina massif, 2.8 km NE of Pico Phelps (= Pico de Neblina), 2100 m, 15 IV 1984, *Stein 1564*, MO! VEN!

OTHER RECORDS: VENEZUELA: Amazonas: Cerro de la Neblina, X 1970, *Dunsterville 1163B*, published in Romero & Carnevali (2000).

DISTRIBUTION AND ECOLOGY: Endemic to the tepuis of Pico de la Neblina and Marahuaca in southern Venezuela, on the border with Brazil. Terrestrial, growing at 2000-2700 m altitude in boggy meadows. Flowering from November to April.

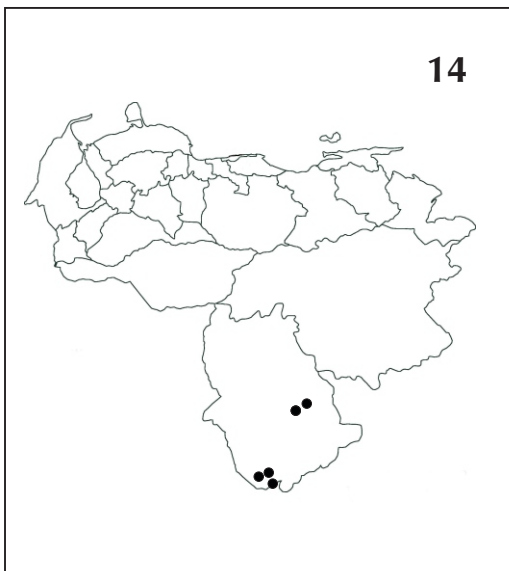
RECOGNITION: *Epidendrum commelinispathum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the ovate-lanceolate, acute leaves 2.0-4.5 x 0.9-1.1 cm, erect, nearly parallel to the stem, the erect inflorescence, floral bracts 5-7 x 6-8 mm, widely ovate when spread, sepals 10-12.5 mm long, linear-oblong petals and the lip shallowly 3-lobed, the base shortly narrowly cuneate. *Epidendrum urbanianum* Cogn., endemic to the Lesser Antilles, has oblong-lanceolate, obtuse leaves 2.5-9.5 x [0.7] 1-2 cm, spreading in relation to the stem, and arching inflorescence, sinuous rachis, floral bracts 5-12 x 7-10 mm, ovate-triangular and slightly retrorse. *Epidendrum durum* Lindl. has lanceolate to ovate-lanceolate leaves 2.0-5.5 x 0.5-1.4 cm, an erect, clearly paniculate inflorescence, the racemes spreading in relation to the main axis of the inflorescence, floral bracts small, 4-5 x 3-4 mm, sepals 6.5-7.0 mm long. *Epidendrum ulei* Schltr. has oblong, apically rounded leaves, sub-spreading, margin revolute, inflorescence erect, paniculate, with the racemes spreading in relation to the main axis of the inflorescence, floral bracts 5-7 x 4-6 mm, widely triangular. *Epidendrum luteyui* Hágsater & E. Santiago is vegetatively very similar, but the leaves are ovate, 3.0-3.2 x 0.8-1.8 cm, floral bracts 3-6 x 4-5 mm, petals narrowly rhombic and the lip clearly 3-lobed, with the base truncate.

*NOTE: One of us (EH), spent time at VEN in 2013 examining the *Epidendrum* collection. The holotype of *E. commelinispathum* could not be located. A sheet bearing the type label and a specimen of another *Epidendrum* species was found in the general collection. In addition, we contacted the collector Wayt W. Thomas, at NY, and he confirmed that for the type collection only two specimens were prepared. After consulting with the staff of VEN and the authors of the species, it is best to declare the holotype lost, attribute the specimen found to mislabeling, and to lectotypify the name with the specimen at MO, which was seen by the authors.

CONSERVATION STATUS: DD. Data deficient. Known presently only National Park near the summit of the Cerro Pico de la Neblina, as well as the Cerro de Marahuaca.

ETYMOLOGY: Derived from the rigidly erect inflorescence with broad floral bracts, resembling the spathes of some Commelinaceae.

REFERENCES: Romero, G. A., & G. Carnevali, 2000, *Orchids of Venezuela*, ed. 2: 224. Hágsater, E., & E. Santiago, 2018, *Epidendrum luteyui* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12, *Icones Orchid.* 16(1): t.1638. Santiago, E., & E. Hágsater, 2018, *Epidendrum ulei* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12, *Icones Orchid.* 16(1): t.1663. Santiago, E., & E. Hágsater, 2018, *Epidendrum urbanianum* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12, *Icones Orchid.* 16(1): t.1664.



Authors: E. Santiago & E. Hágsater Illustrator: R. Jiménez M.

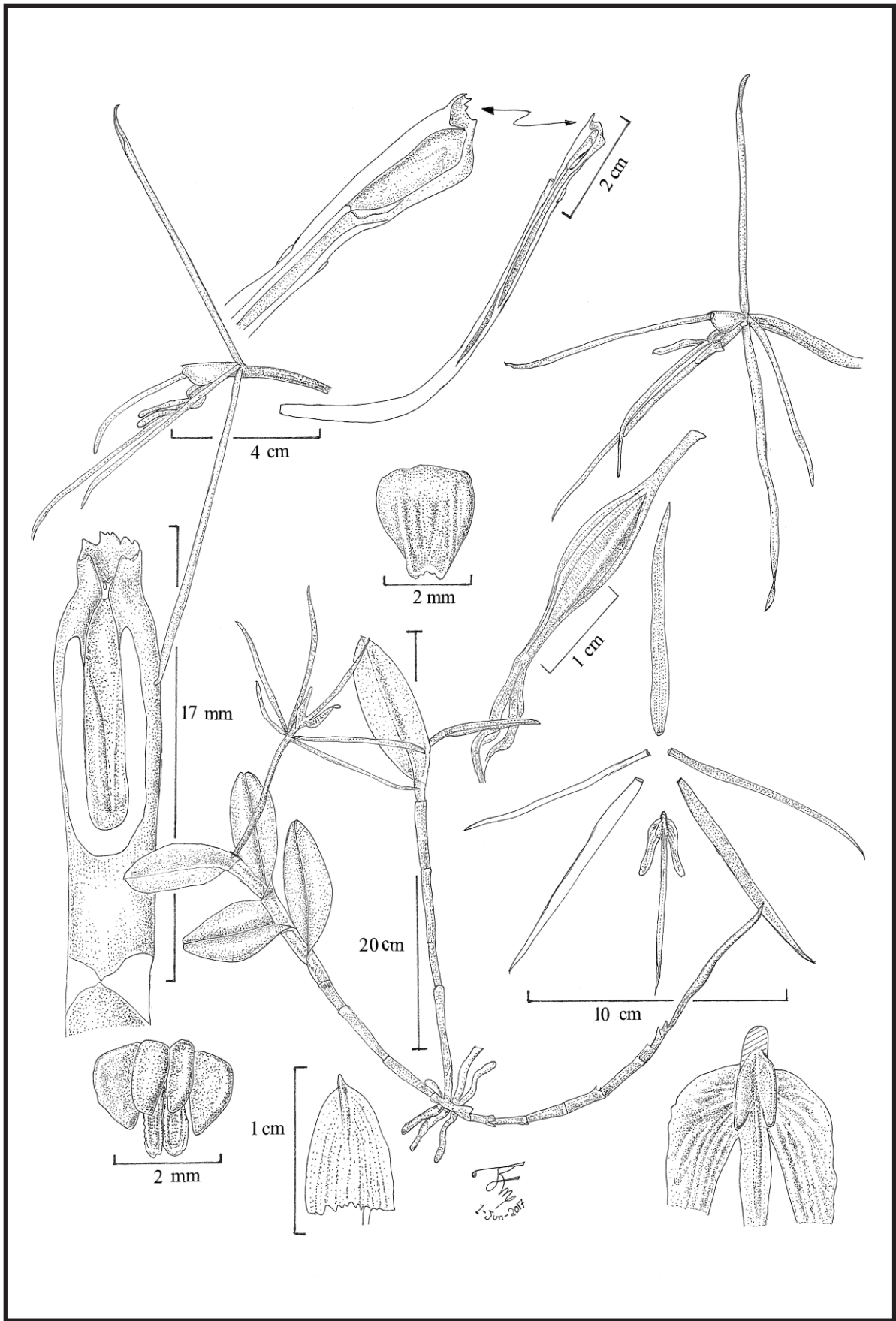
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Photo: T. B. Croat

Editors: E. Hágsater & E. Santiago

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1612



EPIDENDRUM CONDORNOCTURNUM Hågsäter & Tobar

Plate 1613

EPIDENDRUM CONDORNOCTURNUM Hágsater et Tobar, sp. nov.

Type: ECUADOR: Zamora-Chinchipec; Cantón Paquisha, Sector Jardín de Cóndor, Cordillera del Cóndor, camino Los Encuentros-Paquisha Alto, ca. 3 km después de Jardín de Cóndor, 1448 m, 3°50'25.1"S 78°35'25.3"W, 10 abril 2017, **Eric Hágsater, Itzi Fragozo Martínez, Adriana Benítez Villaseñor y Efraín Freire 15206** (photo voucher). Holotype: QCNE! Isotypes: AMO! MEXU!

Similar to *Epidendrum tridens* Poepp. & Endl. but the plants epiphytic (vs. lithophytic), smaller, pale green in color, the underside of the leaves pale green, (vs. dark green leaves, with the underside purple), flowers larger, sepals longer 70-87 mm long (vs. 42-75 mm long), ovary similar 70-90 mm long, not clearly thickened towards the middle (vs. 60-100 mm long, but clearly thickened towards the middle).

Epiphytic, caespitose, sympodial **herb** 15-34 cm tall including the flower. **Roots** 2-4 mm in diameter, long, thick, white. **Stems** 9-27 x 0.3-1.2 cm, erect, straight, laterally compressed, strongly ancipitose. **Leaves** 3-5, alternate; sheath 1.3-5.0 x 0.3-1.2 cm, tubular, laterally compressed, ancipitose, progressively wider towards the apex of the stem, minutely striated, green; blade 3-10 x 1.6-3.3 cm, 2-4:1, elliptic, apex unequally bilobed, light green concolor. **Spathes** lacking. **Inflorescence** apical, sessile, racemose, very short, nearly totally hidden within the base of the apical leaf, producing flowers in succession, one at a time. **Floral bract** 8-10 mm long, triangular, embracing, much shorter than the ovary. **Ovary** 60-90 x 4 mm, slightly thickened along the apical $\frac{3}{4}$. **Flowers** produced singly in succession, large, sepals and petals light green inside, dorsally tinged purple-brown, column and lip white, calli white; fragrant at night, sweet. **Sepals** 70-87 x 6-7 mm, spreading, linear-lanceolate, acuminate, margins entire, strongly revolute, so the sepals are tubular in natural position. **Petals** 67-87 x 3-4 mm, spreading, linear-lanceolate, acuminate, margins entire, revolute so that the petals are tubular towards the base. **Lip** 56-77 x 14-24 mm, deeply 3-lobed; calli somewhat divergent, laminar, hemi-elliptic, somewhat truncate at the apex; mid-lobe 47-67 x 1-2 mm ensiform, acuminate, straight, somewhat canaliculated on the underside, and rounded above; lateral lobes 23-29 x 4.0-5.5 mm, narrowly hemi-obovate, acuminate, somewhat divergent, with thickened veins on the whole surface. **Column** 17-18 mm long, slightly curved downwards, apex obliquely truncate. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** very small. **Clinandrium-hood** slightly surpassing the apex of the column, narrow, dentate. **Anther** 4-celled, ovate, apex truncate. **Pollinia** 4, hemi-obovate, laterally compressed, equal in size, caudicles in two pairs, granulose, trap-like, slightly longer than the pollinia. **Nectary** penetrating $\frac{3}{4}$ of the pedicellate ovary. **Capsule** 60 x 10 mm, ellipsoid, centered, the body occupying the center with long, thin pedicel and apical neck; pedicel 16 x 1.6 mm, body 31 x 10 mm, apical neck 13 x 1.7 mm.

OTHER SPECIMENS: ECUADOR: Zamora-Chinchipec: Cordillera del Cóndor, entering from Los Encuentros to Machinaza, 1500 m, 18 V 1988, *Hirtz 3737*, MO! Road from Chuchumbleta to Tundayme, Cordillera del Cóndor, 1450-1650 m, 21 V 1988, *Hirtz 3841*, MO! Cantón Yantzatzta, carretera Los Encuentros, destacamento El Cóndor, 1632 m, 29 III 2002, *Manzanares 7569*, QCNE! Cantón El Pangui, Parroquia Tundayme, laderas del Tepuí andino vía Canales, 19 IV 2017, *Salazar sub Hágsater 15210*, AMO! QCNE!

OTHER RECORDS: ECUADOR: Zamora-Chinchipec: Cordillera del Cóndor, Mun. Yantzatzta, ca. km 19 camino Los Encuentros-Paquisha alto, Sector Jardín Cóndor, 1488 m, 10 IV 2017, *Hágsater 15191*, spirit, AMO (illustration voucher). Cantón El Pangui, Parroquia Tundayme, Cordillera del Cóndor, laderas del tepuí andino vía Canales, 10 IV 2017, *Salazar sub Hágsater 15210*, digital image, AMO! Cordillera del Cóndor, vía Cóndor-Mirador, 1520 m, rec. 19 X 2016, *Tobar 2117*, digital images QCNE, AMO! Cordillera del Cóndor, vía a la escombrera noreste, base del Tepuí andino, 811 m, 18 X 2016, *Tobar 2095*, QCNE! Parque Nacional Podocarpus, cerca del río Bombuscaro, 820 m, 28 III 2015, *Zapata 344*, QCA!

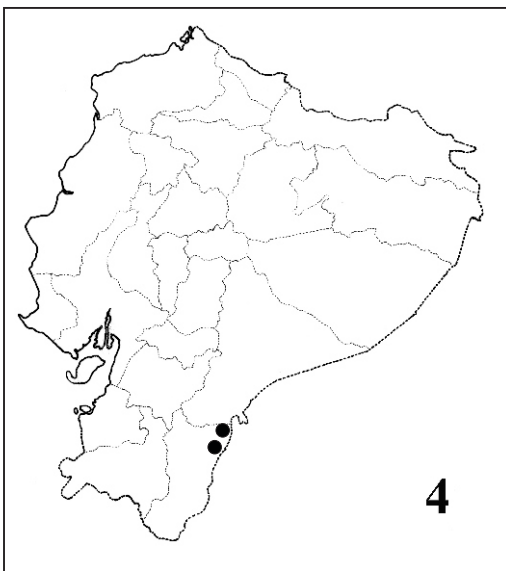
DISTRIBUTION AND ECOLOGY: Known presently only from the Cordillera del Cóndor, a string of Andean Tepuis along the border between Ecuador and Peru, in wet tropical forest, epiphytic on trees, including *Ficus* sp., at 1400-1630 m altitude. Flowering in March-June.

RECOGNITION: *Epidendrum condornocturnum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like stems, short, racemose or pluri-racemose inflorescence, without spathaceous bracts, usually large, star-shaped, successive flowers, with similar sepals and petals. The species is recognized by the epiphytic habit, stems laterally compressed, ancipitose towards the apex, the light green leaves, and the very long, narrow sepals (70-87 x 6-7 mm) and petals (67-87 x 3-4 mm), ovary 70-90 mm long. *Epidendrum tridens* is lithophytic, has dark green leaves, with the underside purple, ovary is 60-100 mm long, sepals 42-75 x 5-8 mm; petals 2.5-3.0 mm wide, linear-lanceolate. *Epidendrum nocturnum* Jacq. is widely distributed from Florida to Bolivia, has terete stems, ovary 50-70 mm long, about as long as the sepals which are 35-75 mm long, petals free from the column and narrower, 40-60 x 2-3 mm, column 15-20 mm long, body of capsule occupying nearly the full length, centered. *Epidendrum ramiro-medinae* Hágsater & L. Sánchez has deep green leaves, the underside tinged purple, slightly larger flowers, sepals 90-100 x 8-9 mm, petals 95 x 3 mm, ovary 75-78 mm long, and a shorter column, 13 mm long.

ETYMOLOGY: In reference to the Cordillera del Cóndor, where the species occurs, and *nocturnum*, as the species belong to this group of very similar flowers and plant habit, widespread throughout the Neotropics.

CONSERVATION STATUS: NT. The species appears to be widespread and common along the Cordillera del Cóndor, which is sparsely inhabited especially on the Tepuis, and the slopes leading up to the top.

REFERENCES: Cervantes, L., E. Hágsater & M. Soto, 2002, *Epidendrum nocturnum* in E. Hágsater & M. Soto (eds.) Orchids of Mexico, Part 2-3, *Icon. Orchid.* 5-6: t. 578. Hágsater, E., & L. Sánchez S., 2015, *Epidendrum ramiro-medinae* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1553. Sánchez S., L., & E. Hágsater, 2015, *Epidendrum tridens* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1565.



Authors: E. Hágsater & F. Tobar

Illustrator: R. Jiménez M.

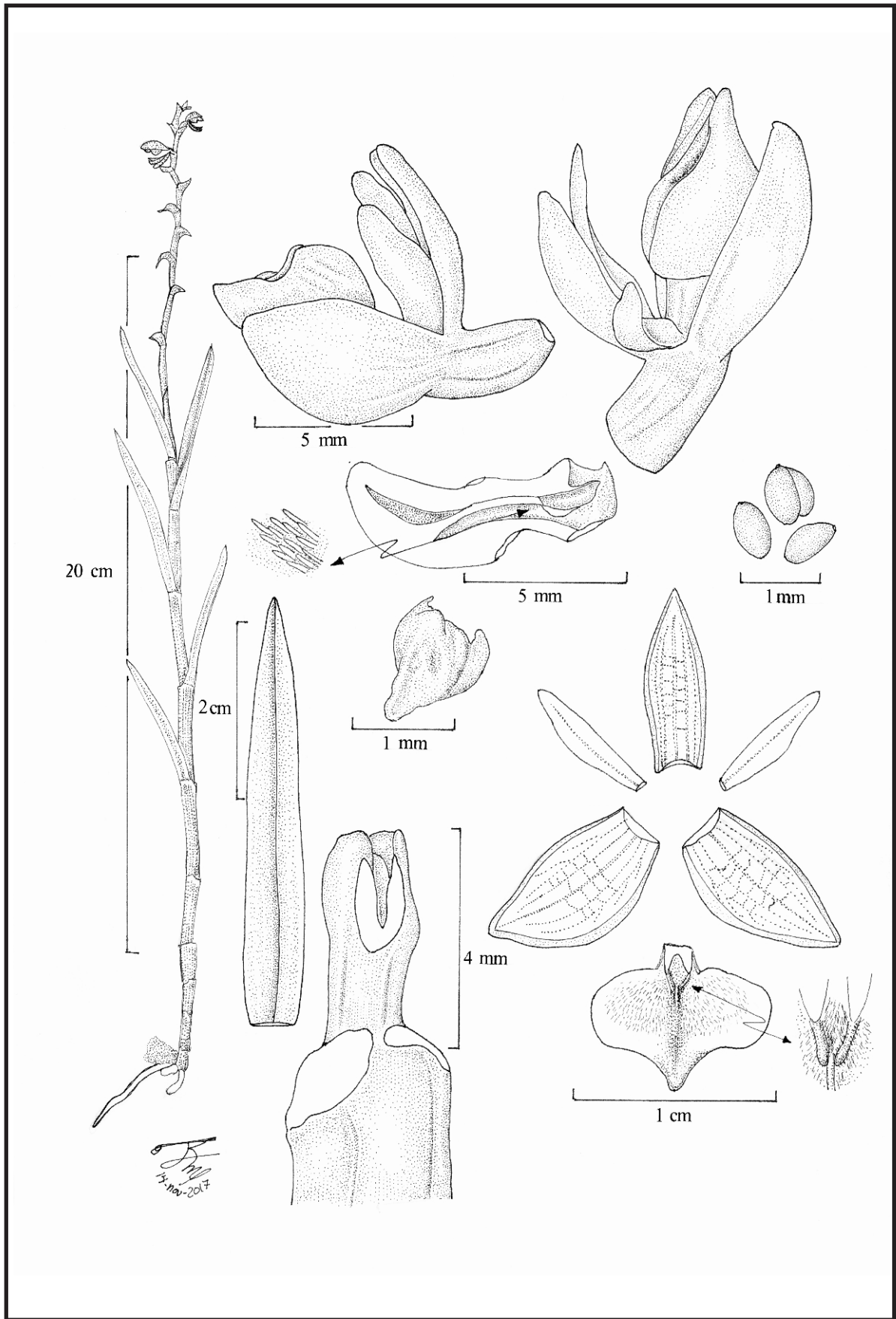
Photo: E. Hágsater

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1613



EPIDENDRUM DENDROBIOIDES Thunb.

EPIDENDRUM DENDROBIOIDES Thunb., Pl. Bras. Dec. 2: 17, 1818.

Type: BRASIL: [Minas Gerais:] in montibus circa Villam Ricam [Ouro Preto] Brasiliae, August 1814, **Georg Wilhelm Freyress s.n.** in Mus. Westin. Holotype: UPS: BOT: V-135080 [UPS-THUNB 21532; IDC 903/18]; Isotype: LD 1213874! [Meckler microfiche, 1963 (HUH 70267!)] shows a single flower, which is no longer visible in the current image from Lund).

Terrestrial, monopodial, branching, erect **herb**, 35.5-70 cm tall including the inflorescence. **Roots** 1.0-1.5 mm in diameter, basal, fleshy, white. **Stems** cane-like, branching, terete at base, somewhat laterally compressed towards the apex, straight; primary stem ca. 23-60 x 0.3-0.5 cm; branches 4.5-16 x 0.2-0.4 cm. **Leaves** 13-20 on the primary stem, 6-8 on the branches; distributed throughout the stems, articulate, distichous, coriaceous, rigid, sub-erect with respect to the stems; sheaths 0.5-2.5 x 0.2-0.5 cm, tubular, striated; blade 3.5-6 x 0.5-0.8 cm, linear-lanceolate, dorsally carinate, acute, margin entire, somewhat revolute when dry. **Spathes** lacking. **Inflorescence** 6-12.5 cm long, apical, flowering only once, erect, distichous, simple to rarely producing a single branch, laxly few-flowered; peduncle 3 mm long, sub-terete; rachis 5.7-12.2 mm long, slightly sinuous. **Floral bracts** 4-7 mm long, triangular to triangular-ovate, acuminate, embracing. **Flowers** 6-20, fleshy, small, erect, non-resupinate, the lip always towards the rachis, simultaneous, ochre-yellow; fragrance not registered. **Ovary** 5 mm long, thin, not inflated. **Sepals** 6-7.5 x 2.7-3.8 mm; somewhat spreading, free, somewhat fleshy, concave, ovate-lanceolate, acute to sub-acute, dorsally carinate, 5-veined, margin entire, spreading; dorsal sepal oblong; lateral sepals ovate-elliptic, slightly oblique. **Petals** 5.5-6.0 x 1.0-1.2 mm; partly spreading, free, linear-oblong, sub-acute, 1-veined, margin entire. **Lip** 4.5-5.0 x 6.8-7.5 mm; united to the column, fleshy, slightly 3-lobed, base cuneate, margin entire; disc pubescent, bicallose, the calli thin convergent towards the apex, forming a "Y" with a narrow mid-rib in between the calli; lateral lobes 3.3 x 3.0 mm, sub-quadrate, rounded, embracing the column in natural position and totally covering the apex of the column, when spread tearing at the base of the mid-lobe; mid-lobe 1.0 x 1.2 mm, widely triangular, apex rounded. **Column** 4 mm long, slightly arched upwards towards the apex. **Clinandrium-hood** short, margin entire. **Anther** ovoid, 4-celled. **Pollinia**, 4, obovoid, laterally compressed; caudicles soft and granulose, twice as long as the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, ¼ the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity, the pubescence reclining backwards towards the base of the flower. **Capsule** not seen.

OTHER SPECIMENS: BRAZIL: Brasília, 15 XI 1958, *Pereira 4742*, HB! RB! Brasília, *Sellow ex Klotzsch 7204*, BM! **Bahía:** Mun. Abaíra, Garimpo do Bicota, 1400-1750 m, 24 III 1992, *Stannard 52834*, MO! **Distrito Federal: Brasília:** Parque Nacional, córrego do Acampamento, prox. Regimento de Cavalaria, *Maury 464*, HEPH! **Goiás:** 27 km by road N of Alto Paraíso, ca. 1750 m, 9 III 1973, *Anderson 6732*, AAU! HB! MO! Chapada dos Veadeiros, ca. 20 km W of Veadeiros, 1000 m, 10 II 1966, *Irwin 12534*, K! NY! (illustration AMO) MO! S! US! Mun. Alto Paraíso, GO-12, Chapada dos Veadeiros, 1300-1500 m, 20 II 1975, *Hatschbach 36323*, AAU! C! CTES! HB! NY! MO x2! UC! US! Z! **Mato Grosso:** Caminho de Porto Velho, Cuiabá, XI 1914, *Kuhlmann s.n.*, R 35860! **Mato Grosso do Sul:** Terenos, Cachoeirão, 18 V 1970, *Hatschbach 24348*, C! CTES! HB! K! S! UC! US! Z! Proc. Cab. do rio Taquara-ussú, Chapada, Com. Rondon, III 1911, *Hoehne 4120*, R! **Minas Gerais:** Without data, *Auguste de Saint-Hilaire 253*, P! *Ibid. Auguste de Saint-Hilaire 455*, P! *Ibid. Auguste de Saint-Hilaire 1207*, P! Rio Preto, Serra Negra, Região do "burro do Ouro", 13 XII 2008, *Abreu 298*, CESJ! Serra do Espinhaço, Serra do Cipó, 1200 m, 20 II 1972, *Anderson 36348*, AAU! NY! MO! Serra do Cipó, km 137, estrada da Conceição, Santa Luzia, 4 II 1938, *Barreto 8982*, R! Arranca Rabo, Diamantina, 3 XI 1937, *Barreto 9358*, R! Cama Matta, Cama Preta, *Brade 3802*, RB! Serra do Ibitipoca (braso da Mantiqueira), caminho para prainha, ca. 1450 m, 1 X 1970, *Braga 1935*, HB! Serra do Cipó, *Castellanos 22332*, R! Serra do Caraua, *Claussen 1789*, P! Without locality, *Glaziou 19900*, C! K! P! Larupilum da Lena do Stacolumy, *Gomez 3053*, BR! Serra do Espinhaço, ca 10 km W of Barao de Cocais, base of Serra da Caraça, ca. 1500 m, *Irwin 29084*, C! COL! HB! K! NY! (illustration AMO) MO! US! Serra do Cipó, 5 IX 1952, *Macedo 3768*, US! (Illustration voucher) Margens do rio Caraça, 21 III 1957, *Pereira 2572*, HB! RB! Serra do Caraça, atrás da "Verruguinha", 2 III 1976, *Windisch 490*, HB! **São Paulo:** S. Paulo, without collector, W 17129! Parque Estadual da Serra do Mar, Nucleo Curucutú, trilha a direita do Marco da divisa São Paulo-Itanhaem, 16 III 2000, *Alves 1919*, NY! Alto da Serra, 7 II 1976, *Chillány s.n.*, HB 63484!

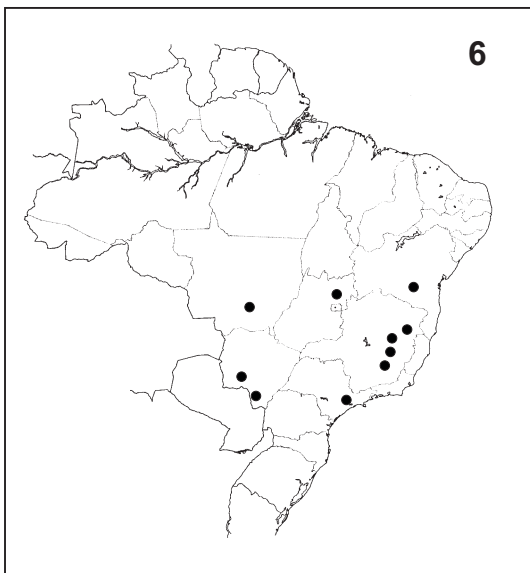
OTHER RECORDS: BRAZIL: Minas Gerais; Serra do São Jose, Cidade de Tiradentes, 1300 m, *Daniel de Freitas s.n.*, digital image, AMO! (photo voucher). **DISTRIBUTION AND ECOLOGY:** Widespread in the Planalto Brasileiro and the Mata Atlântica, terrestrial at 1000-1750 m altitude. Flowering between October and March.

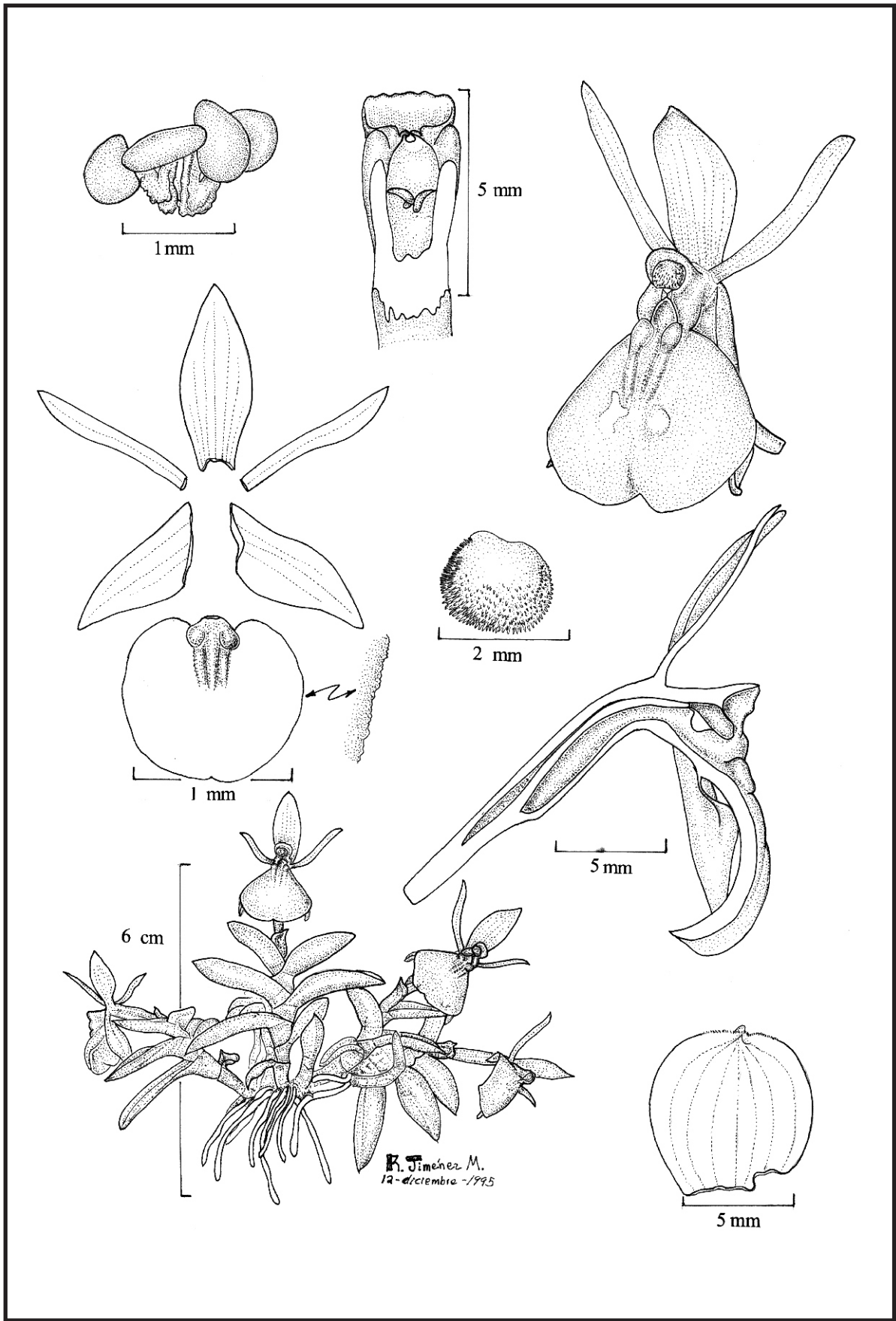
RECOGNITION: *Epidendrum dendrobioides* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the linear-lanceolate, acute leaves 3.5-6 x 0.5-0.8 cm; inflorescence generally distichous, simple, laxly few-flowered, flowers yellow, sepals 6.0-7.5 x 2.7-3.8 mm, petals linear-oblong, 5.5-6.0 x 1.0-1.2 mm, the lip shallowly 3-lobed, base cuneate, with a small triangular mid-lobe, disc with an entire callus, apically bilobed. *Epidendrum carnosum* Lindl. has lanceolate leaves 4.0-8.6 x 0.6-1.3 cm, inflorescence generally paniculate and many-flowered, the branches all sub-erect, flowers pale yellow to greenish yellow, sepals 9-10 x 4-5 mm, petals lanceolate-rhombic, 8-9 x 1.5-2.5 mm; lip clearly 3-lobed, base truncate, disc with a bidentate callus. *Epidendrum pseudavicula* Kraenzl. has smaller plants, 7-20 cm tall, leaves ovate to oblong-lanceolate, apex rounded, 1.0-3.5 [8.0] x 0.6-1.0 [1.8] cm, flowers greenish yellow, sepals 5-6 x 1.6-2.5 mm, petals 5.0-5.3 x 0.75-0.8 mm, the lip clearly 3-lobed, bicallose with a mid-rib in between the calli. *Epidendrum aquaticum* Lindl. has similar sized plants, but the leaves are lanceolate, 1.3-5.1 x 0.4-0.6 cm, flower green, sepals ca. 5 mm long, and the lip with the base truncate. *Epidendrum durum* Lindl. has lanceolate to ovate-lanceolate leaves 2.0-5.5 x 0.5-1.4 cm, a generally paniculate inflorescence, the branches spreading perpendicular to the main, erect rachis, flowers greenish white, petals linear-elliptic, and the disc of the lip with a "V" shaped callus.

CONSERVATION STATUS: DD. Data deficient. The species appears to be widespread and common and found in numerous protected areas in the Planalto Brasileiro.

ETYMOLOGY: From the Greek *δενδρον*, tree, and *-οιδης*, resembling, thus resembling a tree, in reference to the similarity with a species of the genus *Dendrobium*.

REFERENCES: Santiago, E., & E. Hágsater, 2018, *Epidendrum aquaticum*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1604. Santiago, E., & E. Hágsater, 2018, *Epidendrum carnosum*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1608. Santiago, E., & E. Hágsater, 2018, *Epidendrum pseudavicula*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1650.





EPIDENDRUM DOLICHOPORPAX Hágsater

EPIDENDRUM DOLICHOPORPAX Hágsater, sp. nov.

Type: ECUADOR: Imbabura: km 14, road from Lita-Ibarra to [La Merced de] Buenos Aires, 1400 m, hort. RPSC, hort. Mexico City, received 15 July 1990, pressed 12 XII 1995, *Calaway H. Dodson, Alex Hirtz, David Benzing, Carlyle and Jane Luer sub Eric Hágsater 10683*, (illustration voucher). Holotype; AMO! Clonotypes: 4 December 1994, *Hágsater 10852*, (photo voucher, cultivated division of *Hágsater 10683*, division made 19 July 1990) AMO! QCNE! COL!

Similar to *Epidendrum mathewsii* Rchb.f., but the leaves ovate, acute, flat, (vs. linear-elliptic to linear-lanceolate, semi-terete, acute) the three ribs on the disk of the lip long, reaching the middle of the blade (vs. central rib, short, surpassing the calli, with a pair of very short ribs in front of the calli).

Epiphytic, caespitose, sympodial, dwarf, compact, **herb**, 5.3 cm tall (including the flower). **Roots** 0.08-1.1 mm in diameter, from the basal form an elongate sub-terete rhizome, scarce, thin, white. **Stems** 1.5-2.3 x 0.23-0.35 cm, cane-like, simple, laterally compressed, somewhat reclining. **Leaves** 4-7, distichous, spreading, fleshy-coriaceous, articulate, pale green to reddish; sheath 1.1-7.0 mm long, tubular; blade 0.5-1.8 x 0.23-0.58 cm, narrowly lanceolate, semi-terete, acute, margin entire, slightly involute. **Spathes** 7.5 x 7.5 mm when spread, sub-orbicular, apex minutely apiculate, conduplicate in natural position. **Inflorescence** apical, very short, sessile, single-flowered. **Floral bract** 2.3-7 mm long, triangular. **Flower** single, resupinate, fleshy, sepals, petals and column pale yellowish green; lip green, the disc green or largely wine-red, lustrous, except for the green margin and base around the calli which are white; without fragrance. **Ovary** 8.2-17 mm long, smooth and slightly thickened along the apical half. **Sepals** 0.9-1.1 x 0.4-0.5 mm, dorsal sepals free, spreading, elliptic, acute, fleshy, 5-veined, margin entire, spreading; lateral sepals oblique ovate-triangular, 3-veined. **Petals** 10 x 0.12 mm, free, erect-spreading, linear, apex acute, margins minutely erose-dentate, spreading, 1-veined. **Lip** 1.0 x 1.1 mm, united to the column, entire, orbicular, base sub-cordate, apex slightly emarginate, margin minutely erose-dentate; bicallose, the calli globose, elongate; central rib, long, reaching middle of the lip, surpassing the calli, with a pair of similar ribs in front of each callus, low, rounded but slightly shorter. **Column** 5.8 x 2.4 mm, short, dilated towards the apex, triangular when seen from the side. **Rostellum** apical, slit. **Clinandrium-hood** conspicuous, projecting beyond the anther, margin crenate. **Anther** reniform, minutely papillose, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles granulose, as long as the pollinia; viscidium semi-liquid. **Lateral lobes of the stigma** about 1/3 the length of the stigmatic cavity. **Nectary** penetrating half of the ovary, slightly inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Imbabura: Road from Gullupe to Buenos Aires, off road Ibarra to Lita, at km 32, 2000 m, 16 I 1987, *Dodson 16727*, MO! Road from Guallupe to Buenos Aires, off road Ibarra to Lita, at km 32, 2000 m, 14 I 1987, *Dodson 16777*, MO!

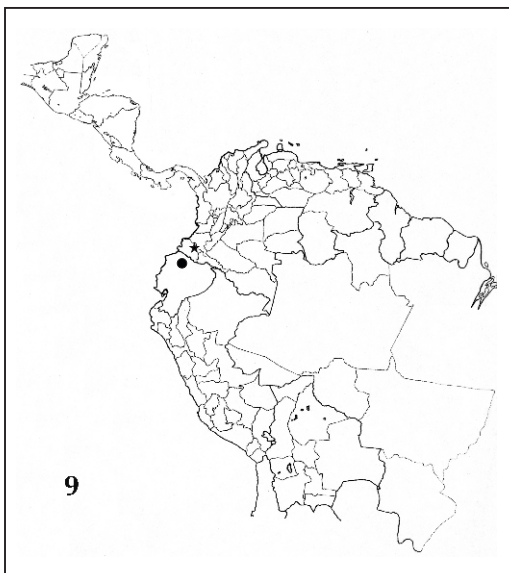
OTHER RECORDS: COLOMBIA: sine loc., *Luz Mila Quiñones s.n.*, received 23 X 2013, digital image, AMO! Sine loc., *P. Ortiz V. 3*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known from the western slope of the Andes in northern Ecuador (and Colombia, without locality) between 1400-2000 m altitude. Flowering in December and January.

RECOGNITION: *Epidendrum dolichorpax* belongs to the Porpax Group, which is characterized by the sympodial, somewhat repent habit, usually forming large mats, short, cane-like stems with very fleshy, succulent, articulate, distichous leaves, single-flowered inflorescence, sessile flowers, and the lip generally reddish purple. The species is recognized by the short stems with ovate, acute leaves, flat, the petals linear, acute, with the margin minutely erose, lip orbicular, cordate and the three ribs of the lip long, reaching the middle of the blade, about equal in length. *Epidendrum mathewsii* has small, compact plants with erect stems, an orbicular-sub-quadrate lip with the apex obtuse, and linear, acute petals. *Epidendrum porpax* has somewhat larger plants with somewhat reclining stems, the green flowers with a lustrous, convex, reddish purple lip proportionately wider than long, the apex rounded, sepals 8.5-14 x 4-5 mm, elliptic-lanceolate. It has been often confused with *Epidendrum peperomia* Rchb.f. which is vegetatively similar but the lip of that species is orbicular, cordate, spreading, as wide as it is long, with the apex obtuse; and known from Venezuela and bordering Colombia. *Epidendrum lambeauanum* De Wild. has larger, prostrate, descending plants, the stems with 4-6 lanceolate leaves 17-38 mm long, the flowers are cream colored with the lip reddish purple, and the petals linear-oblancheolate. The flowers of all these species are very similar, and best recognized by the vegetative habit. *Epidendrum microporpax* Hágsater has smaller leaves (1.0-1.6 x 0.35-0.50 cm) on a relatively elongate erect stem, the flowers yellowish green with the center of the lip pale wine-red, sepals small 6.3 x 3.6 mm, ovate, and the lip flat, with the mid-rib very short, barely surpassing the calli. *Epidendrum althianorum* Hágsater & Collantes, from southern Peru (Cusco) and neighboring Bolivia, is distinguished by the linear-triangular, acuminate petals, and the heart-shaped wine red blotch on the lip.

ETYMOLOGY: From the Greek *δολιχος*, long, and *πορπαξ*, a Greek shield, (in particular the arm band inside the shield), in reference to the similarity of this species to *Epidendrum porpax*, but with the 3 ribs on the disc elongate, reaching the middle of the lip, instead of being very short.

REFERENCES: Hágsater, E., 2018, *Epidendrum mathewsii*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1640. Hágsater, E., 2018, *Epidendrum microporpax*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1643. Hágsater, E., & B. Collantes, 2013, *Epidendrum althianorum*, in Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1403. Hágsater, E., 2018, *Epidendrum lambeauanum*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1633. Santiago, E., & E. Hágsater, 2010, *Epidendrum porpax* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1375.



Author: E. Hágsater

Illustrator: R. Jiménez M.

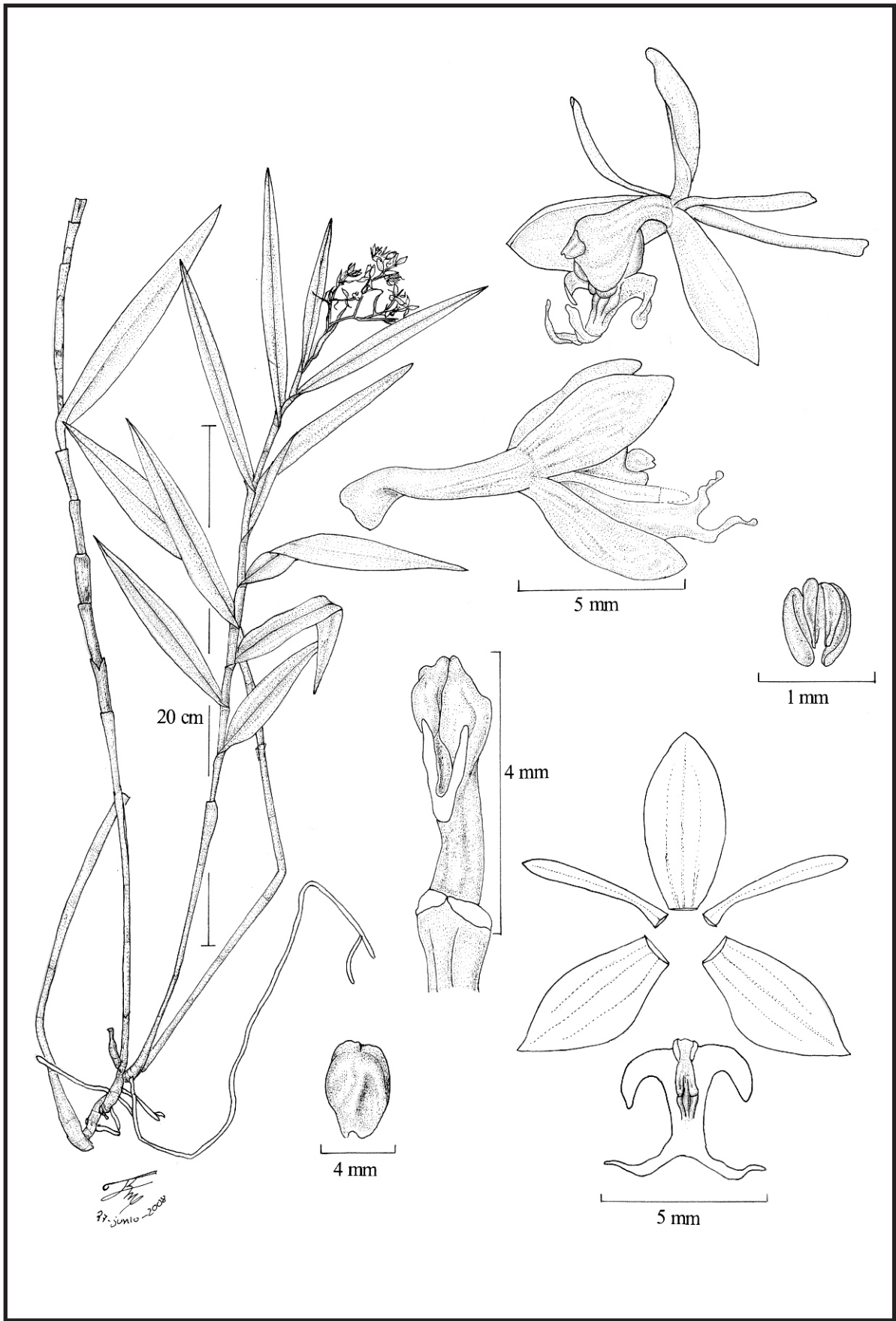
Photo: R. Jiménez M.

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1615



EPIDENDRUM ENANTILOBUM Hágsater

Plate 1616

EPIDENDRUM ENANTIOBUM Hágsater, sp. nov.

Type: PERU: San Martín: Rioja-Pomacochas road, below Venceremos, ca. 20 km NW of Rioja, near Restaurant El Amigo, 1600 m, 8 February 1984, *Alwyn H. Gentry & David N. Smith 45148*. Holotype: NY! (illustration voucher). Isotype: MO 3303451!

Similar to *Epidendrum brachyblastum* Hágsater & Dodson but flowers small, sepals 4.0-5.0 mm long (vs. sepals, 6.0-6.8 mm long); lip widest between the apical lobes (vs. lip widest between the lateral lobes); lateral lobes of the lip strongly falcate, oblong, subacute (vs. hemi-ovate, sub-acute); apical lobes linear-triangular, cirrate, sinuous and strongly divergent becoming opposite (vs. apical lobes linear-triangular, cirrate, not opposite).

Epiphytic, sympodial, caespitose **herb**, 33-34 cm tall. **Roots** 2-3 mm in diameter, basal, fleshy, thick. **Stems** 29-33 x 0.2-0.4 cm, cane-like, terete, thin, especially towards the base. **Leaves** 13, distributed throughout along the apical half of the stem, sub-erect, fleshy; sheath 10-21 x 4 mm tubular, somewhat striated when dry, green; blade 6.0-10.5 x 0.5-1.6 cm narrowly-elliptic, acuminate, smooth, margin entire. **Inflorescence** apical, paniculate, arching, dense, many-flowered; peduncle 20 x 0.2 mm, terete, thin, short, nearly totally hidden by 2 bracts, ca. 15 mm long, linear-lanceolate, acuminate, embracing; rachis 0.2 mm in diameter, terete, thin, short; racemes 3, densely 5-7 flowered, subtended by a prominent bract 13-14 mm long, embracing. **Floral bracts** progressively shorter, 3-8 mm long, somewhat longer than the ovary, linear-triangular, acuminate, gradually shorter. **Flowers** up to ca. 20, simultaneous, resupinate, green to cream colored, lip and column white; fragrance not registered. **Ovary** 9-14 mm long, terete, thin, smooth. **Sepals** 4.0-5.0 x 2.5-2.3 mm, spreading, free, fleshy, glabrous, concave, 3-veined, margin entire, the dorsal elliptic, acute, lateral sepals, somewhat constricted towards the base, apiculate. **Petals** 4.5 x 0.6 mm, spreading, free, oblanceolate, constricted at the basal 1/5, obtuse, slightly falcate, 1-veined, margin entire. **Lip** 3.8 x 5.0 mm, widest between the opposite apical lobes, united to the column, 3-lobed, base truncate, margins entire, spreading; bicallose, calli thin, long reaching the middle of the isthmus of the mid-lobe, disc with three, low, parallel keels, the central one thickened slightly beyond the calli; lateral lobes 1.8 x 1.3 mm, strongly falcate, oblong, subacute; mid-lobe 2.9 x 5.0 mm, basal half sub-rectangular, slightly slimmer at the middle, the apex bilobed, lobes linear triangular, cirrate, sinuous and strongly divergent becoming opposite. **Column** 4 mm long, base thin and thickened vertically, apex truncate. **Clinandrium-hood** much reduced, entire. **Rostellum** apical, slit. **Anther** obovoid, 4-celled. **Pollinia** not seen. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER RECORDS: ECUADOR: **Morona-Santiago:** Cordillera de Cutucú, Comunidad Shuar El Jordán/transcutucú, 14 IV 2002, 1106 m, *Suñin 1645*, MO! QCNE! PERU: **Amazonas:** Bongará; Laguna Pomacocha, 2360 m, 26 I 1964, *Hutchison 3809*, UC! USM! carretera Rioja-Pedro Ruiz, 1450 m, 24 III 1998, *van der Werff 15568*, MO!

OTHER RECORDS: Peru: **Amazonas:** alrededores de Chachapoyas, 2400 m, received 8 V 2010, *Erica Morón, s.n.*, digital images, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: In southern Ecuador and northern Peru, on the Andean Tepuis of the Sierra del Cutucú, (Ecuador) and Cordillera Oriental (Peru), along the border of the Departments of Amazonas and San Martín, epiphytic at 1106-2400 m altitude. Flowering between January and April.

RECOGNITION: *Epidendrum enantibum* belongs to the Bicirrhatum Group, a small group of species which has appeared recently and is characterized by the caespitose habit, simple, leafy, short stems, compact, nodding inflorescence, conspicuous bracts about as long as the ovary, numerous fleshy, green and/or white flowers, with the mid-lobe deeply bilobulate, the lobules sometimes cirrate; the pollinia are thin, and unequal, the inner pair smaller, without being of the bird-wing-type. The new species is recognized by the green to cream-colored flowers, lip and column white, sepals 4-5 mm long, lateral lobes falcate-oblong, mid-lobe forming two opposite narrow ciliate lobes. *Epidendrum xelidonourum* has very pale greenish white to ochre flowers, base of the sepals, petals and column green, column and lip white, lateral lobes of the lip 1/4 circle, mid-lobe basal half sub-rectangular, slightly slimmer at the middle, apical half bilobed, lobes linear triangular, acuminate, arching-divaricate, reminiscent of the tail of barn swallows. *Epidendrum brachyblastum* has sepals, 6.0-6.8 mm long, narrow hemi-ovate lateral lobes of the lip, and deep green flowers with lip and apical half of the column snow white. *Epidendrum hugomedinae* Hágsater has snow-white flowers with keels of the lip tinged violet and the obtusely mid-lobe formed by two, rounded, somewhat divergent, lobes. *Epidendrum bicirrhatum* D.E. Benn. & Christenson from northern Peru has pale cream-orange flowers with base of the sepals and petals green, tips of the keels of the lip lavender, flowers are similarly sized, sepals being 4.6-5.2 mm long, and lip has denticulate margins on sub-orbicular lateral lobes, and cirrate lobules on mid-lobe. The Bolivian *E. ophidion* Dodson & Vásquez is quite similar to the latter, but has successive, yellow flowers with three purple lines on disc, pustulate sepals 6-8 mm long, and dolabriform lateral lobes with a crenulate margin. *Epidendrum twinzaense* Hágsater & Dodson species has green flowers with a white lip and apical half of column, and sepals some 7 mm long, lip terminating in a pair of cirrate lobes.

CONSERVATION STATUS: DD. Data deficient. This attractive species will hopefully be propagated by Ecuagenera in Cuenca, Ecuador.

ETYMOLOGY: From the Greek εναντι, opposite, and λοβος, lobe, in reference to the apical lobes of the mid-lobe of the lip which are completely outstretched in opposing sides.

REFERENCES: Bennet, Jr., D. E., & E. A. Christenson, 1998, *Epidendrum bicirrhatum* D.E. Benn. & Christenson, in *Orchids of Peru*, **Icon. Orchid. Peruv.** pl. 453. Dodson, C. H., & R. Vásquez, 1989, *Epidendrum ophidion* in *Orchids of Bolivia*, **Icon. Pl. Trop.** ser 2, 4: pl. 331. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum brachyblastum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 713. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum twinzaense*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 795. Hágsater, E., & H. Medina, 2018, *Epidendrum xelidonourum*, in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1666.



Author: E. Hágsater

Illustrator: R. Jiménez M.

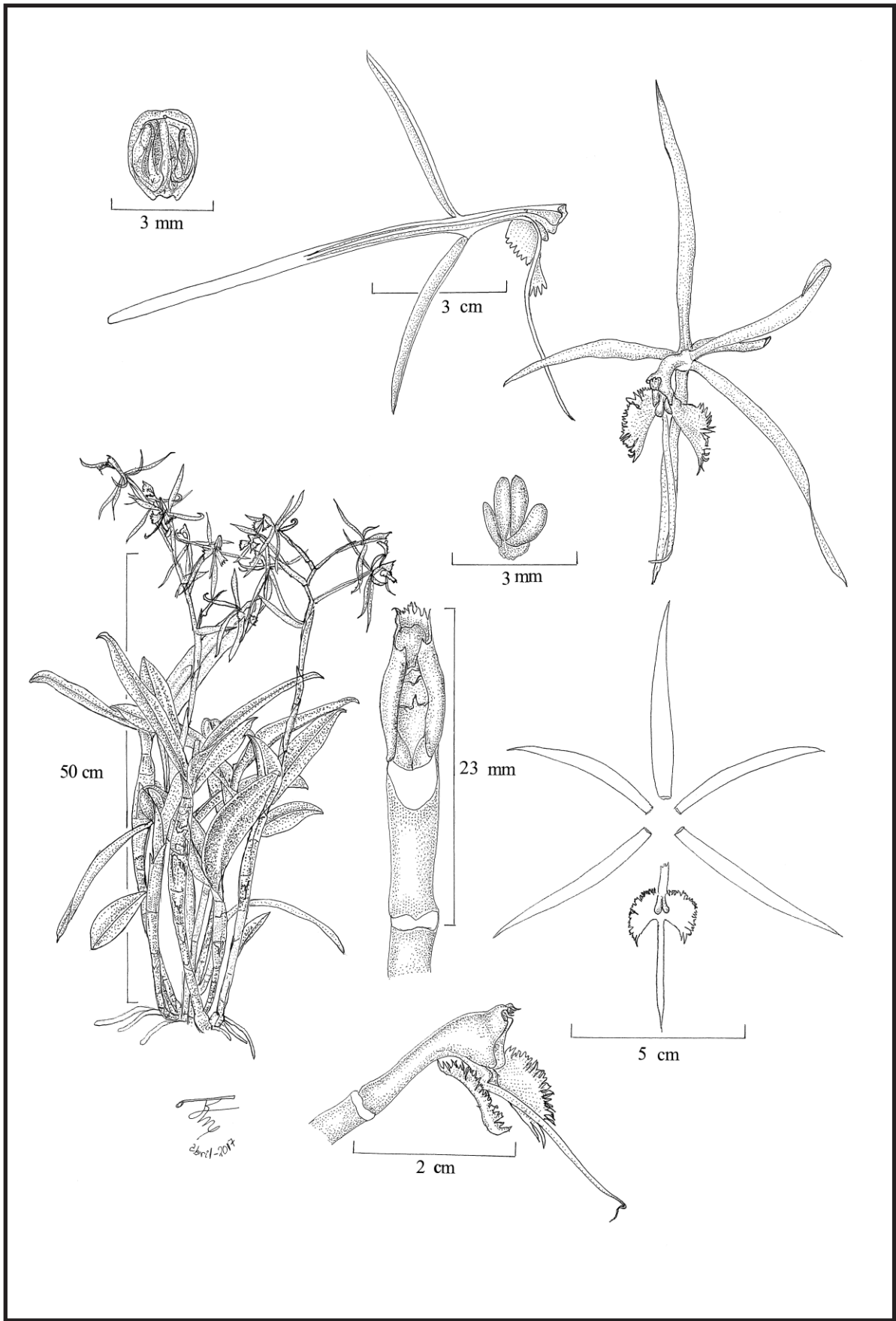
Photo: E. Morón

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1616



EPIDENDRUM ESPERANZA-MEJIAE Hagsater & Uribe Vélez

Plate 1617

EPIDENDRUM ESPERANZA-MEJIAE Hágsater et Uribe Vélez, *sp. nov.*

Type: COLOMBIA: Cauca: Macizo Colombiano, 1200 m, Hort. Armenia, *Esperanza Mejía s.n.* (illustration and photo vouchers).

Holotype: HPUJ!

Similar to *Epidendrum ciliare* but the stems more cane-like, only slightly thickened, with two apical leaves, flowering from the mature stem, inflorescence with an elongate peduncle, longer than the leaves, covered by tubular, appressed bracts, flowers entirely white including the calli, the petals arched, and the lateral lobes of the lip obliquely semi-ovate, the inner margin a convex arch.

Epiphytic or lithophytic, sympodial, caespitose **herb**, to 60 cm tall including the inflorescence. **Roots** basal, fleshy, thick, white. **Stems** 15-30 x 1.5-2.5 cm, simple, somewhat thickened and fusiform, heteroblastic pseudobulb; covered when young by 4-6 papiraceous sheaths. **Leaves** 2, at the apex of the pseudobulb, coriaceous, articulate; blade 14-21 x 4-5 cm, elliptic, acute, margin entire, spreading, green. **Spathe** lacking. **Inflorescence** 37 cm long including the flowers, apical, produced from the mature pseudobulb, racemose, distichous; peduncle 17-22 cm long, terete, covered by 4-5 tubular bracts, 3.3-3.7 cm long, imbricate, acute, closely appressed and embracing the peduncle; rachis terete, thin, straight, slightly arched. **Floral bracts** ca. 5.5 cm long, somewhat shorter than the ovary, conduplicate at the apex, acuminate. **Ovary** 6.3-7.1 x 0.3 cm, terete, unornamented, not inflated. **Flowers** 5-7, simultaneous, resupinate, entirely white including the calli; fragrance not recorded. **Sepals** 3.5-5.5 x 0.4-0.6 cm, spreading, free, linear-lanceolate, acuminate; margin entire, revolute. **Petals** 4.5 x 5 mm, spreading, free, arched, linear-elliptic, acuminate, 3-veined; margin entire, revolute. **Lip** 42 x 18 mm, united to the column, deeply 3-lobed, base slightly cordate; bicallose, the calli prominent, laminar, somewhat divergent; lateral lobes 17-19 x 7-10 mm, obliquely semi-ovate, acute, spreading in natural position, the inner margin entire, forming a concave arch, outer margin deeply lacinate, spreading; mid-lobe 3.4 x 0.2 cm, linear, acuminate, margin entire, revolute. **Column** 2.4 cm long, slightly arched, thin. **Clinandrium-hood** prominent, surpassing the apex of the column body, deeply dentate. **Anther** sub-spherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft, shorter than the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, occupying half the length of the stigmatic cavity. **Nectary** penetrating 1/2 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

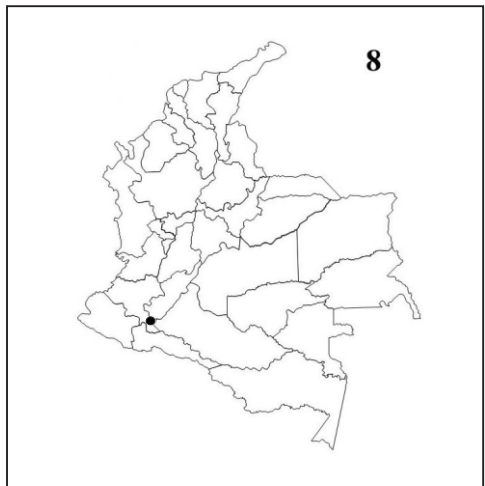
DISTRIBUTION AND ECOLOGY: Known only from a single cultivated plant from Colombia, Department of Cauca, in the Macizo Colombiano, 1200 m altitude. Flowering in April.

RECOGNITION: *Epidendrum esperanza-mejiae* belongs to the Coilostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform pseudobulb with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts (but not spathaceous bracts), and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the cane-like, barely thickened stems, 2 apical leaves, the inflorescence with an elongate peduncle somewhat longer than the leaves, flowers entirely white, including the calli, petals arched, and the lateral lobes of the lip obliquely semi-ovate, the inner margin a convex arch. *Epidendrum ciliare* L. is widely distributed from western Mexico (Nayarit) to Peru and Brazil and the Antilles, produces the inflorescence from the immature, more elongate pseudobulb, but the outer margins of the lateral lobes of the lip are deeply fimbriate, and the inner margin is straight, not strongly concave. *Epidendrum megalennum* Carnevali & G.A.Romero ranges from the lesser Antilles and northern South America, flowers from the mature stem and the base of the inflorescence is enveloped in 5-10 imbricating, conduplicate bracts, shares the same shape of the lip with *E. ciliare*, which is sympatric. *Epidendrum sandiorum* (Hágsater, Karremans & L.Sánchez) Hágsater, Karremans & L.Sánchez has sub-spherical to ovoid pseudobulbs with a single apical leaf, the inflorescence produced from the immature stem, 3-lobed lip with the outer margin of the lateral lobes fimbriate to lacinate, and the 45 mm long mid-lobe is trullate beyond the middle, the apex long-acuminate, the margin erose. *Epidendrum oerstedii* Rchb.f. ranges from Honduras to central Panama, produces the inflorescence from the immature, short pseudobulb, the margins of the lip are entire and the mid-lobe is shorter (25-33 mm long), widened beyond the middle.

CONSERVATION STATUS: DD. Data deficient. Presently known from a single cultivated plant, from the Macizo Colombiano in the department of Cauca, Colombia.

ETYMOLOGY: In honor of Mrs. Esperanza Mejía de Moreno, from Armenia, Quindío, Colombia; an enthusiastic orchid grower with 35 years' experience, author of the book *Orquídeas del Quindío*. She has held the position of President of the Asociación Risaraldense de Orquideología, and an ecological foot-path in the central Parque de la Vida in Armenia will bear her name.

REFERENCE: Hágsater, E., A. P. Karremans & L. Sánchez S., 2013, *Epidendrum sandiorum*, in Hágsater, E. & L. Sánchez S. (eds.), The Genus *Epidendrum* Part 10, **Icon. Orchid.** 14: pl. 1483. Mejía de Moreno, E., 2009, **Orquídeas del Quindío**, Vozetto, Quindío, Colombia, 216 pp. Sánchez, L. & E. Hágsater, 2008, *Epidendrum oerstedii* in Hágsater, E. & L. Sánchez S. (eds.) The Genus *Epidendrum* Part 8, **Icon. Orchid.** 11: pl. 1151. Sánchez, L. & E. Hágsater, 2010, *Epidendrum ciliare* in Hágsater, E. & L. Sánchez S. (eds.) The Genus *Epidendrum* Part 9, **Icon. Orchid.** 13: pl. 1317. Sánchez, L. & E. Hágsater, 2018, *Epidendrum megalennum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum* Part 12, **Icon. Orchid.** 16(1): pl. 1641.



Authors: E. Hágsater & C. Uribe Vélez

Illustrator: R. Jiménez M.

Photo: C. Uribe V.

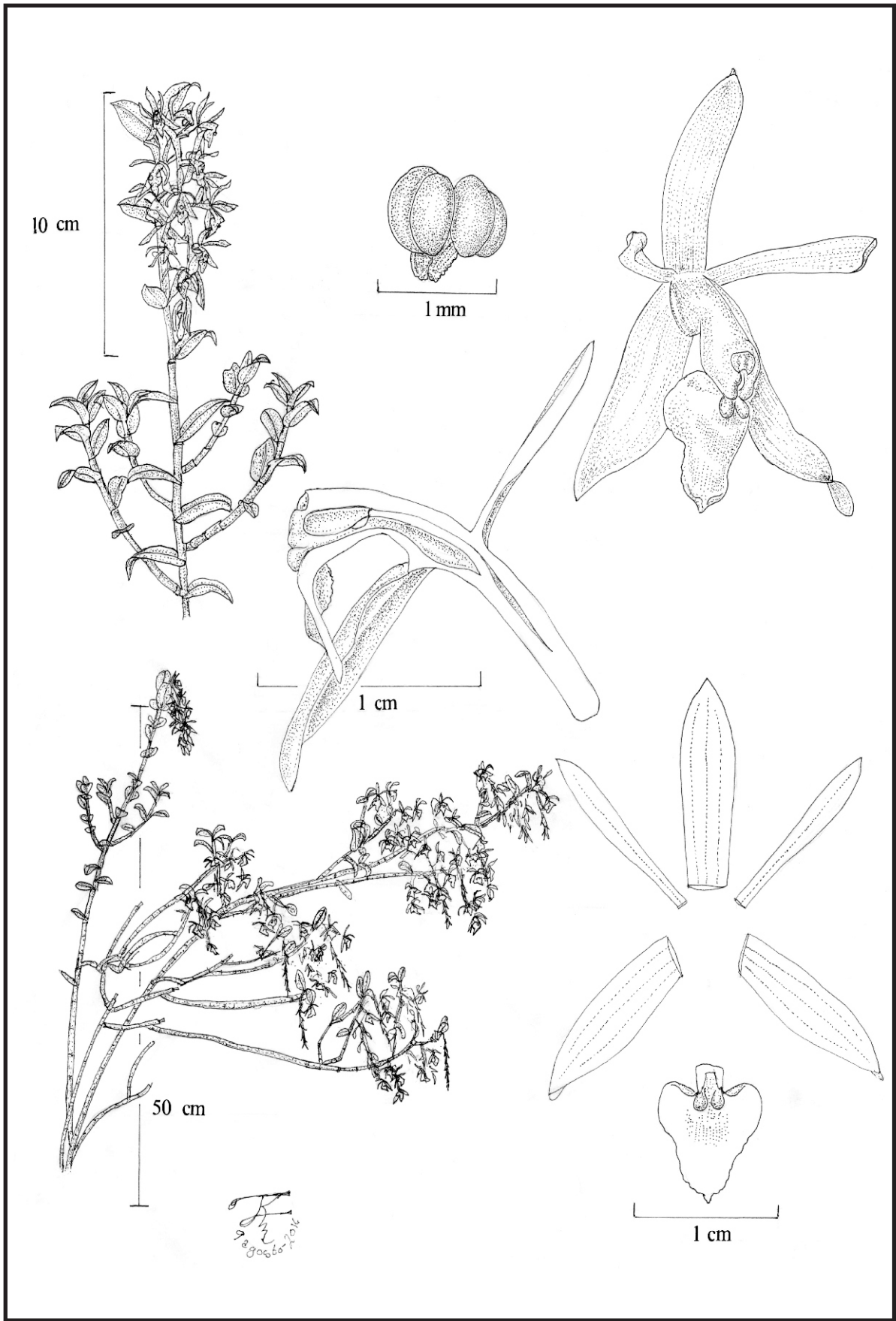
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1617



EPIDENDRUM FARFANII Hagsater, E.Santiago & Uribe Vélez

Plate 1618

EPIDENDRUM FARFANII Hágsater, E. Santiago et Uribe Vélez, sp. nov.

Type: COLOMBIA: Cundinamarca: Parque Nacional Chingaza, 4 diciembre 2015, **Carlos Uribe Vélez s.n.** Holotype: HPUJ! (illustration voucher). Digital images of pretype, AMO! (photo voucher).

Similar to *Epidendrum pittieri* Ames, but the flowers creamy white, dorsally tinged purple, lip convex with the lateral lobes hemi-elliptic, sepals with the apex acuminate.

Terrestrial or epiphytic, branching **herb**, 56-100 cm tall. **Roots** ca. 2-3 mm in diameter, basal, fleshy, thin, white. **Stems** 49-94 x 0.6-0.9 cm, cane-like, branching above, teretes, sub-erect, straight thin; the main stem to 100 cm tall, the branches much shorter, 8-9 x 0.3-0.4 cm. **Leaves** 25-30 on the main stem, 5-9 on the branches; distributed throughout the stems, alternate, articulate, those of the main stem larger than those of the branches, distichous, erect to sub-parallel to the stem, coriaceous, green with the margin purple; sheath 12-40 x 0.3-0.9 mm, tubular minutely striated, tinged with brown; blade 3.8 x 1.5 cm (for the main stem), ovate-oblong, acute to acuminate, margin entire, slightly revolute in herbarium material. **Spathe** lacking. **Inflorescence** 7-8 cm long, apical, racemose, flowering only once, arching-nutant, laxly flowered; peduncle 7 mm long, sub-terete, thin. **Floral bracts** 7-10 mm long, prominent, sometimes slightly longer than the ovary, linear-lanceolate, acuminate, embracing. **Flowers** 11-20, simultaneous, resupinate, creamy white with the sepals and petals dorsally tinged purple; fragrance not registered. **Ovary** 9 mm long, terete, thin, striated, not inflated, purple-green. **Sepals** 13-14 x 3-4 mm, spreading, slightly fleshy, short-acuminate, 3-veined, slightly convex, margin entire, spreading; dorsal sepal free, oblanceolate; lateral sepals partly spreading, obliquely united to the column, lanceolate, oblique. **Petals** 12 x 2 mm, partly spreading, free, linear-oblong, apex rounded, 1-veined, margin entire, spreading. **Lip** 9 x 7 mm, united to the column, 3-lobed, base cordate, bicallose, the calli small, sub-globose; disc provided with three low ribs that disappear before reaching the apex of the apical sinus; lateral lobes 2.5 x 4 mm, small, hemi-elliptic, margin erose; mid-lobe 4 x 3 mm, widely triangular, apex rounded, minutely apiculate, margin entire, slightly involute at the apex. **Column** 9 mm long, slightly arched, thin. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, ovoid, laterally compressed, caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the pedicelate ovary. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Boyacá: Mun. de Tunja: vereda Barón Germania, Reserva Forestal protectora El Malmo, Castro 243, digital image, COL! FMB, HUA, UPTC (digital image, AMO!) Mun. Chinavita, Laguna La Tarea, 3000-3100 m, 24 II 2002, *Farfán 54*, TUNJA! digital images of live plant and specimen AMO! Páramo de Guasca, 3200 m, 9 III 1955, *Renz 8340*, RENZ! **Meta:** Municipio de San Juanito, Parque Nacional Natural Chingaza, carretera de la laguna de Chingaza a San Juanito, 2920 m, *Betancur 20191*, COL! (digital image, AMO!)

OTHER RECORDS: COLOMBIA: Cundinamarca: Parque Nacional Chingaza, XII 2016, *Galindo s.n.*, digital image, AMO!

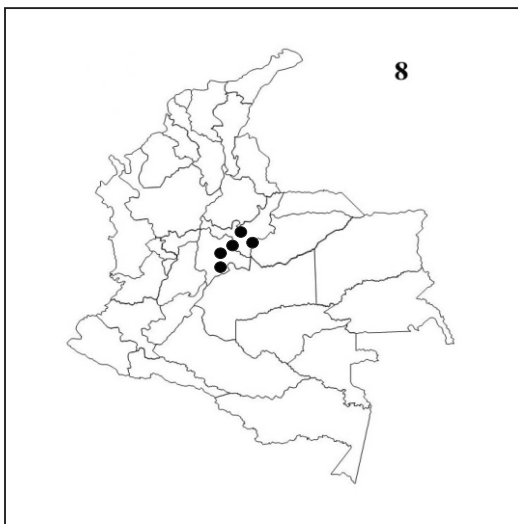
DISTRIBUTION AND ECOLOGY: Known presently from the summit of the Cordillera Oriental of the Andes in the departments of Boyacá and Cundinamarca, Colombia, terrestrial or epiphytic in wet cloud forest, Subalpine Páramo, pSA, according the Holdridge (1987), or páramo bajo or subpáramo according to Cuatrecasas (1958); at 3000-3200 m altitude. Precipitation ranges around 918-970 mm, mean temperatures 3-10°C. (<http://es.climate.data.org./location/49802/>). Flowering in apparently throughout the year.

RECOGNITION: *Epidendrum farfanii* belongs to the Andean Group, Fritizianum Subgroup characterized by the monopodial stems branched above, the ovate to ovate-elliptic, acute to short-acuminate leaves, lateral sepals obliquely united to the base of the column, and clearly 3-lobed lip. The species is recognized by the plants to 100 cm tall, with sub-apical branching, leaves ovate-oblong, 3.8 x 1.5 cm (on the main stem), inflorescence arching-nutant, flowers creamy-white dorsally tinged purple, lip convex, lateral lobes hemi-elliptic, sepals 13-14 mm long, apex acuminate. It has been confused with *Epidendrum pittieri* Ames as it is vegetatively very similar, but the flowers are greenish white, lip spreading with the lateral lobes dolabriform, sepals apically acute, with purple dots. *Epidendrum fritizianum* Hoehne has elliptic leaves 3.5-6.0 x 2.0-2.4 cm (on the main stem), green flowers with the apex of the column purple, sepals 9 mm long, apically acute; the lip clearly 3-lobed with the mid-lobe trapezoid, and a fleshy, short rib at the base of the disc. However, as the species has been generally confused with *Epidendrum pittieri*, and because of the difficulty in identifying *Epidendrum* species, plants are usually passed over by general collectors.

CONSERVATION STATUS: This species qualifies in the category VU and meets the criteria B1a. because the current area of presence of *E. farfanii* is 2100 km², and is known in less than 10 known localities. Although *E. farfanii* is present in areas of PNN, the expansion of crop farming especially of potato (*Solanum tuberosum*) and the livestock farming in the "páramos", so it would be VUB1a (IUCN 2001, version 3.1).

ETYMOLOGY: In honor of Julián Camilo Farfán Camargo, Master form the Universidad Nacional de Colombia, Bogotá, 2005. He has collected and studied many orchids in his native Department of Boyacá and shared digital images of his material with the authors. He specializes in Biodiversity and Conservation, and has published various papers on *Lepanthes*, *Dracula* and *Masdevallia*.

REFERENCE: Cuatrecasas, J., 1958. Aspectos de la vegetación natural de Colombia. *Revista Acad. Colomb. Ci. Exact.* 10(40): 221-268. Bogotá. Holdridge, L., 1987, *Ecología basada en zonas de vida*; IICA; San José, Costa Rica, 216 pp. Santiago, E., & E. Hágsater, 2009, *Epidendrum fritizianum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 8, *Icon. Orchid.* 12: t. 1245. Santiago, E., & E. Hágsater, 2009, *Epidendrum pittieri* in E. Hágsater & L. Sánchez S. (eds.) *The Genus Epidendrum*, Part 8, *Icon. Orchid.* 12: t. 1275.



Authors: E. Hágsater, E. Santiago & C. Uribe Vélez

Illustrator: R. Jiménez M.

Photo: C. Uribe V.

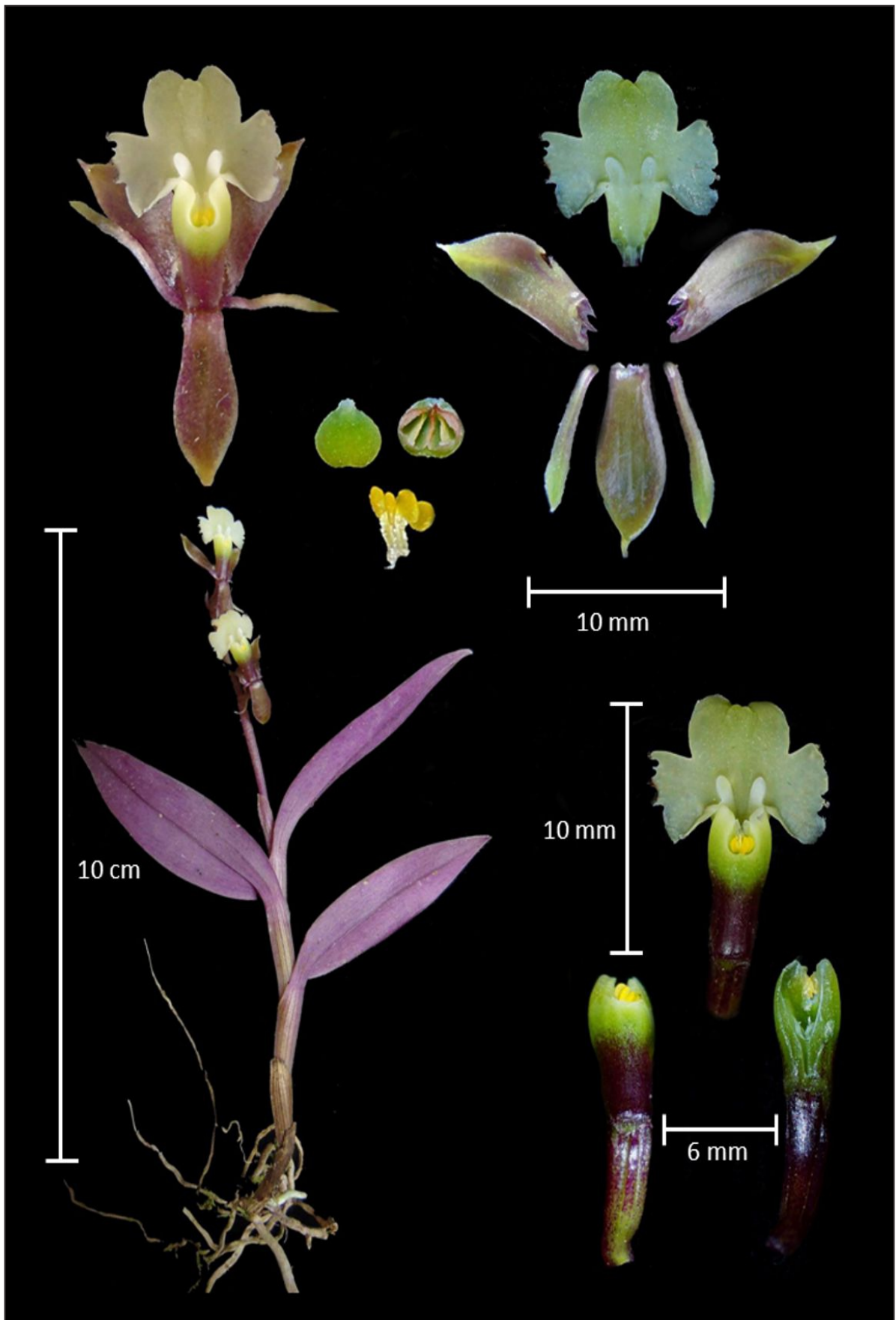
Editors: E. Hágsater & E. Santiago

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ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1618



EPIDENDRUM FREIREANUM Hágsater & E.Santiago

Plate 1619

EPIDENDRUM FREIREANUM Hágsater et E.Santiago, *sp. nov.*

Type: ECUADOR: Napo: Carretera Tena-Quito, arriba de Cosanga, desviación a Las Caucheras, bosque nublado Sierra Azul, 0°35'10.6"S 77°52'43.7"W, epífita, 2173 m, 14 abril 2017, **Eric Hágsater, Gerardo A. Salazar, Itzi Fragoso Martínez, Adriana Benítez Villaseñor, Efraín Freire 15277**. Holotype: QCNE! Flower in spirit AMO! Digital images AMO! (photo voucher).

Similar to *Epidendrum fruticetorum* Schltr. but the plants 35-40 cm tall (vs. 100 cm), leaves 3.7-7.0 cm long (vs. 7-12 cm long) and flowers smaller in every way, sepals 10 mm long (vs. 14 mm long), lip with a single, wide mid-rib (vs. 3 thin, parallel ribs), sepals and base of column purple-brown, apex of column and lip ivory white (vs. sepals brownish green, lip greenish white, column green).

Epiphytic and lithophytic, sympodial, caespitose, erect **herb**, 10-40 cm tall. **Roots** 1-2 mm in diameter, basal, terete, thin, white. **Stems** 6-31 x 0.6-0.9 cm, simple, cane-like, terete at base, laterally compressed at the apex, erect, straight; covered at base by sheaths 4-5 x 0.6-0.9 cm, non-foliar, scarious becoming fibrous though time. **Leaves** 3-4, distributed towards the apical half of stem, alternate, articulate, sub-spreading, purple in color; sheath 3.0-3.5 x 0.6-0.9 cm, tubular, laterally compressed, striated, reddish purple; blade 3.7-7.0 x 1.1-2.0 cm, elliptic, acute, margin entire, spreading. **Spathes** 1, 3-5 cm long, tubular along basal half, conduplicate above, somewhat ancipitose, sub-acute. **Inflorescence** 11-20 cm long, apical, racemose to pluri-racemose, producing new racemes in successive years from the same peduncle, erect, laxly few-flowered; peduncle 2-6 cm long, terete, thin, erect, purple-brown, concolor, nearly totally hidden by the spathe; rachis 9-14 cm long, terete, thin straight, same color as the peduncle. **Floral bracts** 5-8 mm long, shorter than the ovary, narrowly triangular, acuminate, embracing, purple-brown. **Flowers** [2]4-11 per raceme, opening in succession from base towards the apex (usually at least 5 open at one time), non-resupinate, purple-brown with the lip ivory colored, immaculate, the apex of the column bicolor, base purple-brown, apex greenish white; fragrance reminiscent of fish. **Ovary** 6 mm long, terete, thick, striated, not inflated, same color as the sepals and rachis. **Sepals** 10 x 4 mm, free, sub-acute, minutely apiculate, 5-veined, margin entire, spreading; dorsal sepal free, slightly reflexed, narrowly obovate; lateral sepals obliquely united to the column, partly spreading, oblique, with a low dorsal keel. **Petals** 9 x 1 mm, descending, free, linear-oblongate, apex rounded, 1-veined, margin spreading, entire. **Lip** 6 x 9 mm, united to the column, 3-lobed, base cordate, margin entire; bicallose, the calli obovoid, small; disc with a low, wide mid-rib, reaching the apical sinus; lateral lobes 3 x 3 mm, dolabriform, distal margin dentate; mid-lobe 2 x 5 mm, transversely rectangular, apex sub-truncate, formed by two wide, rounded lobes, slightly emarginate, with wide apiculae formed by the end of the thickened mid-rib, margin crenate. **Column** 6 mm long, straight, thick. **Clinandrium-hood** reduced, margin entire. **Rostellum** sub-apical, slit. **Nectary** short, penetrating about 1/5th of the ovary, narrow, unornamented. **Anther** 4-celled, reniform. **Pollinia** 4, obovoid, slightly compressed; caudicles slightly longer than the pollinia, soft. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Napo: km 92 Quito to Baeza, 1850 m, 30 VI 1985, *Dodson 15886*, MO! Cordillera de los Tuacamayos, 1995 m, 28 IV 2000, *Haro Carrión 1*, QCA! (illustration, AMO!) Cosanga, 1950 m, 9 VII 2000, *Sánchez 22*, QCA **Tungurahua:** Tungurahua, 2500 m, *Hirtz 1839*, RPSC! Volcán Tungurahua, 2500 m, *Hirtz 8839*, MO!

OTHER RECORDS: PERÚ: Amazonas: *Luis Ocupa Horna*, digital image, AMO! **Amazonas:** Leimebamba, *Salas Guerrero s.n.*, LCDP AMO! (plate voucher).

DISTRIBUTION AND ECOLOGY: Known presently from the upper eastern slope of the Cordillera Oriental de los Andes in Ecuador and northern Peru, in cloud forest, at 1850-3550 m altitude. Flowered April to June.

RECOGNITION: *Epidendrum freireanum* belongs to the Fruticetorum Group which is characterized by the sympodial, caespitose habit, few-leaved stems, flattened above, the erect to arching racemose to pluri-racemose inflorescence, producing new racemes from the same peduncle, in successive years, flowers generally non-resupinate, lip 3-lobed, the distal margins of the lateral lobes dentate to short fimbriate. The new species is recognized by the purple leaves and stems, flowers small, sepals 10 mm long, sepals, petals and basal half of column wine-red to purple-brown, apical half of column and lip ivory white, immaculate, the lip with a single wide mid-rib. *Epidendrum fruticetorum* Schltr. is similar but larger in habit and flowers, sepals 14 mm long, flowers are green, lip pale green and column green, the lip with 3 narrow parallel ribs. Bennett and Christenson (1995) misidentified their plate of *Epidendrum fruticetorum* as *E. odontospathum* Schltr.

CONSERVATION STATUS: DD. Data deficient. The species appears to be widespread, but locally rare. Generally only single plants have been seen.

ETYMOLOGY: In honor of Efraín Liborio Freire Mayorga, (1964-), curator of the National Herbarium in Ecuador, QCNE, tree specialist, and who has accompanied the first author on several field trips throughout Ecuador, and collected extensively in that country.

REFERENCES: Bennett, Jr., D. E., & E. A. Christenson, 1995, *Epidendrum odontospathum* in **Icon. Orchid. Peruvianum**, pl. 247. Hágsater, E. & E. Santiago, 2018, *Epidendrum odontospathum*, in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1648.



Authors: E. Hágsater & E. Santiago

LCDP: M. Salas

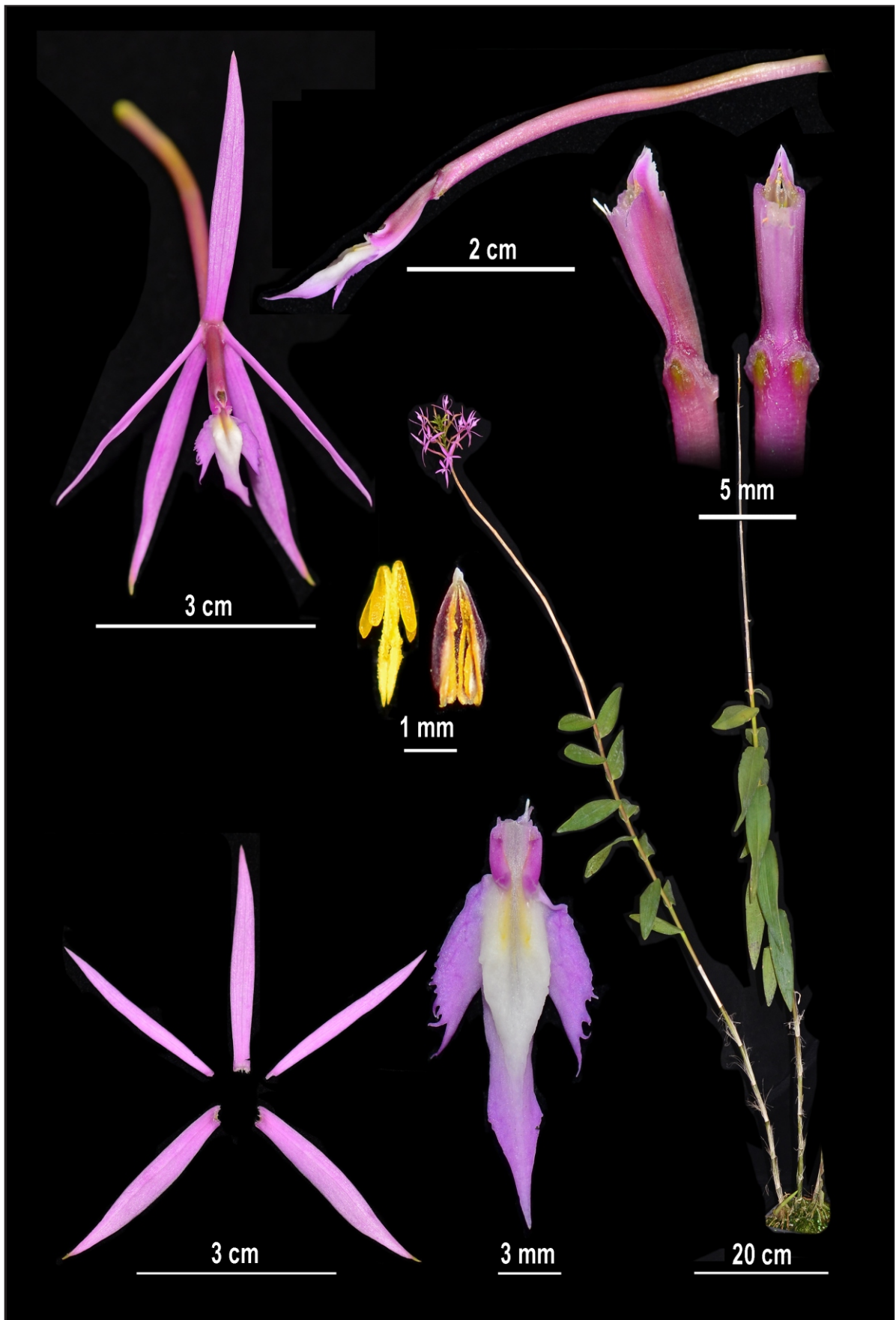
Photo: E. Hágsater

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1619



EPIDENDRUM GLOSSASPIS Rchb.f.

Plate 1620

EPIDENDRUM GLOSSASPIS Rchb. f., *Linnaea* 41: 37 1877.

Type: ECUADOR: **Richard Pearce** 7. Holotype: W-Rchb.f.-47288!

Terrestrial and epiphytic, sympodial, caespitose, erect **herb**, 50-150 cm tall including the inflorescence. **Roots** 1-2 mm in diameter, basal, fleshy, thin. **Stems** 40-60 x 0.8-1.0 cm, simple, cane-like, terete, erect, straight, green when young, tinged with purple with age. **Leaves** 18-25, distichous, distributed throughout the stem, alternate, articulate, green, unequal in size, the basal and apical leaves somewhat shorter; sheaths 16-25 x 8-10 mm, tubular, minutely striated; blade 4-12 x 1.5-2.5 cm, narrowly elliptic-lanceolate to lanceolate oblong, apex sub-obtuse, coriaceous, dark green. **Spathaceous bract** lacking. **Inflorescence** 30-45 cm long, apical, racemose, producing new racemes with time and thus pluri-racemose, each raceme compact, densely many-flowered; peduncle 40 cm long, elongate, terete, covered by 5-7 bracts 4.5 cm long, tubular, acute, partly imbricated, brown. **Flowers** numerous, successive, though around 10 can be open at one time, non-resupinate, pink-purple including the ovary, the callus white with the apical wings of the column turning yellow when pollen is removed; without fragrance. **Floral bracts** 3-6 mm long, much shorter than the ovary, linear-triangular, acuminate, embracing. **Ovary** 48 mm long, terete, thin, not inflated, unornamented. **Sepals** 26-33 x 4 mm, spreading, free, linear-elliptic, acuminate, 7-veined, margin entire. **Petals** 25-30 x 1 mm, spreading, free, linear-triangular, acuminate, 1-veined, margin entire, spreading. **Lip** 14.5 x 7.5 mm when spread, deeply 3-lobed, the lobes sub-parallel, united to the column, 3-lobed, base rounded; callus simple, massive, formed by a lanceolate thickened mass, sulcate along the middle, apex elongate, reaching the middle of the mid-lobe, the basal 2/3 sulcate; lateral lobes 7.8 x 2 mm, rhombic, elongate, apex acuminate, the outer apical margin fimbriate, the larger fimbria at the apex; mid-lobe 9.7 x 2.6 mm, sub-rhomboid, basal half oblong, apical half triangular, separated from the lateral lobes by narrow sinuses, apex acuminate. **Column** 10 mm long, straight, thin, with a pair of prominent wings at the apex, these wing-like, triangular, the inner margin dentate. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** obovoid, the apex acute, 4-celled, purple. **Pollinia** 4, narrowly obovoid, elongate, the inner pair slightly shorter; caudicles twice as long as the pollinia, formed by tetrads which look like a pile of roof tiles; viscidium semi-liquid. **Nectary** not seen. **Lateral lobes of the stigma** not seen. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Azuay: Cola de San Pablo, 1500 m, 9 III 1985, *Dodson 15781*, MO! Cola de San Pablo, 1700 m, 20 VII 1985, *Dodson 15928*, MO! **Morona-Santiago:** Cordillera Cutucú, ridge just SW of Río Itzintza, 5900 ft, 17 II 1944, *Camp E-1346*, AMES! NY! S! Cordillera del Cóndor, Mirador, 1800 m, 15 XII 2000, *Caranqui 197*, AMO! QCNE! North Gualaquiza, 1800 m, 20 I 1986, *Dalström 1113*, SEL! alrededores de Chiguinda, 1800 m, hort. Ecuagenera, 23 IX 2016, *Hágsater 14745*, QCNE! (LCDP voucher) Zamora-Macas, Indanza, Reserva Paraíso, 12 IV 2017, *Hágsater 15248*, QCNE! Cordillera de Huaracayo, E. of Tinkimints, 1800 m, 20 III 2001, *Jost 3036*, QCNE! Cordillera de Huaracayo, E. of Tinkimints, 2000 m, 21 III 2001, *Jost 3112*, QCNE! Cordillera del Cóndor, Centro Shuar Warints, Cerro Mako Naint, 1600 m, 7 X 2002, *Kajekai 18*, QCNE! Gualaquiza; Misión Bomboiza, Misión Salesiana 700-800 m, 27 IX 1967, *Sparre 19030*, S! Cordillera del Cóndor, road from Los Encuentros to El Zarza, 30 IV 1989, *Whitten 989*, QCNE! **Zamora-Chinchi:** Cordillera del Cóndor, 1972, *Fiske s.n.*, AMES! Tundayme-Cordillera del Cóndor, Mirador, 10 IV 2017, *Hágsater 15180*, QCNE! *Ibid.* *Hágsater 15181*, QCNE! *Ibid.* *Hágsater 15182*, QCNE! *Ibid.* *Hágsater 15183*, QCNE! Loja-Zamora, above Tambo, 1800 m, 18 IV 1974, *Harling 13665*, GB! Road from Chuchumbeza to Tundeymi, Cordillera del Cóndor, 1450-1650 m, 21 V 1988, *Hirtz 3818*, MO! S of Zamora, 1500 m, 31 I 1989, *Höijer 1223*, SEL! road Loja-Zamora km 39, 1600-1650 m, 21 IV 1973, *Holm-Nielsen 4043*, AAU! road Loja-Zamora, km 33, 1800-1850 m, 21 IV 1973, *Holm-Nielsen 4149*, AAU! AMES! SEL! Puente del Río San Francisco, near Sabanilla, 2100 m, 17 V 1967, *Sparre 16334*, S! Estación Científica San Francisco, 1900 m, 14 XI 2006, *Werner 1356*, AMO!

OTHER RECORDS: ECUADOR: Hort. Ecuagenera, 26 I 2004, *Hágsater 14242*, digital images, AMO! **Morona-Santiago:** Chuguinda, 1500-1800 m, hort. Vivero Alto, Cuenca, 9 III 2003, *Mario Portilla sub Hágsater 13897*, digital image, AMO! (photo voucher). Chiguinda, cult. Ecuagenera, 21 IV 2001, *Hirtz 7555*, digital image, AMO! Gualaquiza, Bomboiza, 8 XI 1866, *Wallis 66*, W-R 34779! (illustration). Río Negro waterfall between Gualaquiza and Gualaceo, *Yong 3186*, AMO! (digital image). **Zamora-Chinchi:** Cordillera del Cóndor, 1972, *Fiske s.n. sub Kennedy 3864*, AMO! (digital image). Estación Científica San Francisco, 2070 m, 25 VI 2009, *Werner 2932*, AMO! (digital image).

DISTRIBUTION AND ECOLOGY: Known only from the eastern slope of the Andes in southern Ecuador, and in the Cordillera del Cóndor, expected in neighboring Peru. Terrestrial or epiphytic amongst shrubs, and in very wet premontane forest, 700-1900 m altitude. Flowering from October to April.

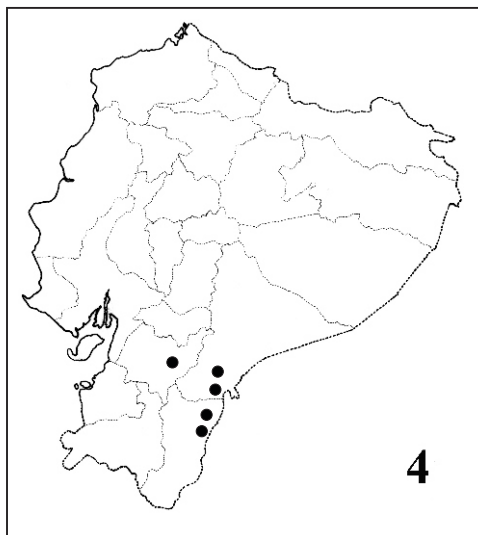
RECOGNITION: *Epidendrum glossaspis* belongs to the Amphylottis group, Glossaspis subgroup which is recognized by the caespitose habit, simple stems, leaves oblong-lanceolate, coriaceous, bilobed and elongate peduncle of the erect, racemose inflorescence, the flowers non-resupinate, the callus simple, elongate, fleshy, sulcate towards the base. The species is recognized by the pink purple flowers, with the large callus white, flowers large, sepals 26-33 mm long, straight, the petals straight, linear-triangular 1 mm wide at the base, and the lip formed by 3, sub-parallel lobes, the lateral lobes about half as long as the entire lip, sub-rhombic, acuminate. It very much resembles *Epidendrum mainauanum*, which is superficially similar, with flowers entirely white, sepals 22 mm long, and has shorter sub-quadrate lateral lobes that are only about 1/4 the length of the entire lip. The species has been confused with *E. blepharoclinium* Rchb.f. which is quite similar but the lip is wider in all its parts, the mid-lobe rhombic, about as wide as it is long, the petals as wide as the sepals which are only 23 mm long. *Epidendrum vinosum* Schltr. has pale wine-colored flowers, sepals and petals 17 mm long, oblong, apex obtuse to sub-truncate, the lip reminiscent of a three-corner hat, the lateral lobes retrorse, and with a large white callus, covering most of the mid-lobe. *Epidendrum hookerianum* Rchb.f. is similar but the sepals and petals are very narrow, the lateral lobes are semi-ovate, deeply fimbriate towards the apex of the outer margin, and the mid-lobe is linear-lanceolate, the margin sub-dentate and has a mid-rib running down the middle.

NOTE: the species is rather variable in the width of the callus, and the width of the mid-lobe of the lip, and appears to hybridize occasionally with other species of the secundum complex, at least in southern Ecuador. As in *Werner 1860*, from the Estación Científica San Francisco, in Zamora-Chinchi.

ETYMOLOGY: From the Greek *εφάρις* -eyelash, and *κλῆνη*, bed, the seat of the anther, in reference to the lateral wings at the apex of the column which are fringed and reminiscent of eyelashes.

CONSERVATION STATUS: LC. Least Concern, a species with many current localities, and which has extensive habitat in acceptable condition, including protected areas. The species is widespread along the eastern slope the Andes in southern Colombia and Ecuador.

REFERENCES: Hágsater, E., & H. Medina, 2018, *Epidendrum mainauanum* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12; **Icon. Orchid.** 16(1): t. 1639. Hágsater, E., & E. Santiago, 2018, *Epidendrum blepharoclinium* in E. Hágsater & E. Santiago (eds.) *The Genus Epidendrum*, Part 12; **Icon. Orchid.** 16(1): t. 1606.



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Authors: E. Hágsater & H. Medina

LCDP: H. Medina

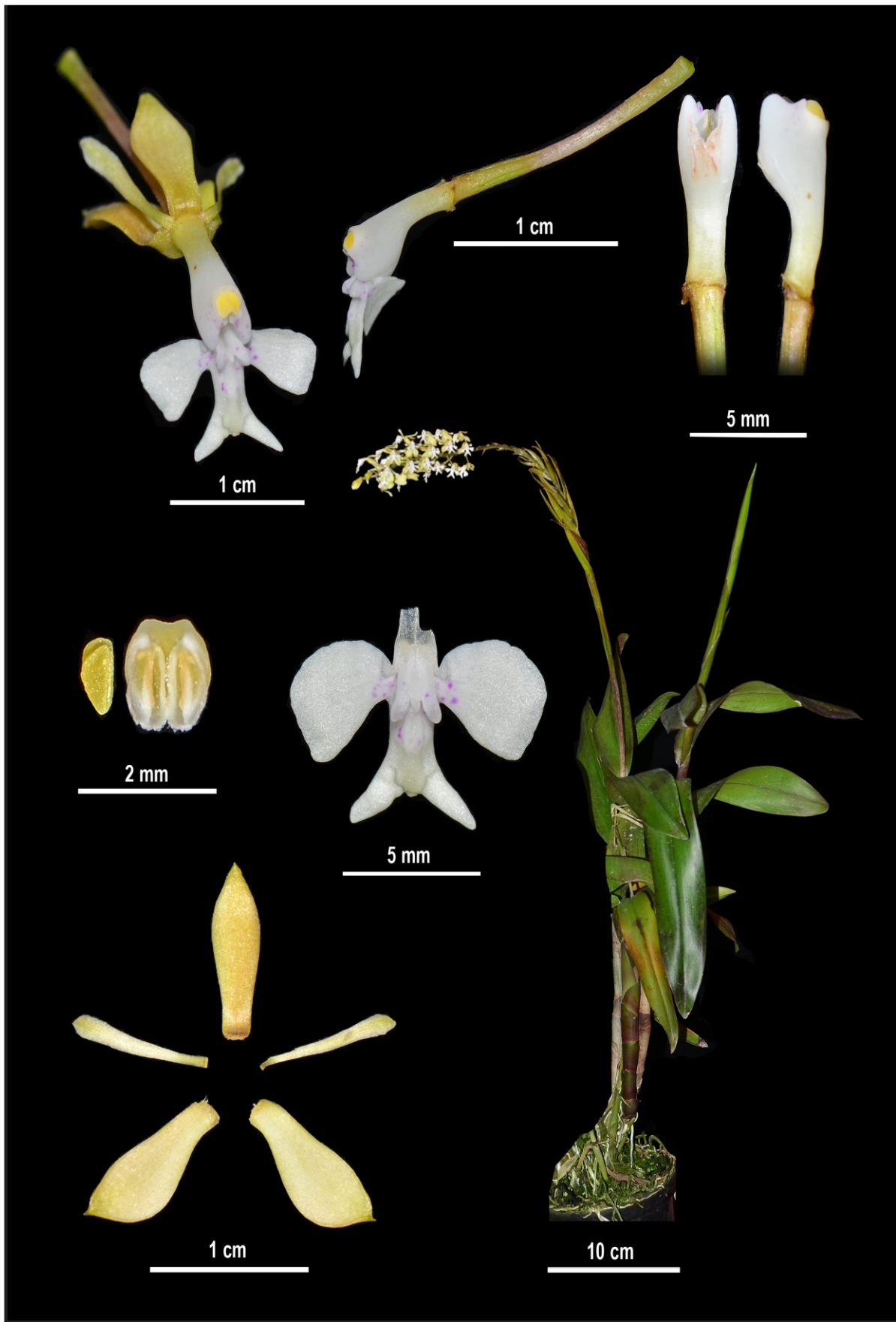
Photo: E. Hágsater

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1620



EPIDENDRUM HETEROBRACTEATUM Hágsater & H.Medina

Plate 1621

EPIDENDRUM HETEROBRACTEATUM Hágsater et H.Medina, *sp. nov.*

Type: ECUADOR: Loja: around Yangana, epiphytic and terrestrial, at about 2000 m altitude; flowered in cultivation in the collection of Ecuagenera at Gualaceo, December 2016, **Hugo Medina 187**. Holotype: HA! (LCDP voucher). Digital images of pretype, 23 September 2016, *Ecuagenera* sub *Hágsater 14814*, AMO! (photo voucher).

Similar to *Epidendrum cylindraceum* Lindl., but the lateral lobes of lip are semi-orbicular instead of falcate, the many bracts on the peduncle of the inflorescence, the lower ones large, tight, embracing the peduncle and imbricated and then progressively smaller and somewhat spreading are unlike any other species in *Epidendrum*.

Epiphytic, sympodial, caespitose **herb**, ca. 60 cm tall including the inflorescence. **Roots** 2-5 mm in diameter, basal, fleshy. **Stems** 25-33 x 1.3 cm, simple, cane-like, slightly laterally compressed, covered basally by two partially imbricating, acute, papiraceous, non-foliar sheaths. **Leaves** 3-4, distributed throughout the apical third of the stem, sheaths tubular, striated when dry, blade 11-19 x 3-4 cm, oblong-elliptic, apex obtuse, margin entire, coriaceous. **Spathe** lacking. **Inflorescence** 38-43 cm long, apical, racemose (probably producing new racemes from the middle of the peduncle which have vegetative buds beneath the bracts), peduncle 23 cm long, elongate, laterally compressed, the bottom half enveloped by 3-5 partly imbricating bracts 8 x 0.6 cm, acute, conduplicate, the upper half with progressively smaller partly spreading bracts 5-60 x 1-10 mm. **Floral bracts** 5-6 x 1 mm, much shorter than the ovary, triangular, acuminate. **Ovary** 16 mm long, terete, smooth. **Flowers** ca. 34, opening in succession, eventually nearly all open, resupinate, sepals and petals ochre-yellow, column and lip white, with pale purple dots near the base. **Sepals** reflexed, free, acute, 5-veined, margin entire; dorsal sepal 10 x 3 mm, oblanceolate, lateral sepals 10 x 4 mm, obliquely obovate-elliptic. **Petals** 8.5 x 1.3 mm, reflexed, linear-obcuneate, obtuse, margin entire. **Lip** 5.7 x 8.9 mm, united to the column, cordate, deeply 3-lobed; bicallose, the calli digitiform, with a thickened mid-rib running the entire lip to form an apical mucro; lateral lobes 4.0 x 3.25 mm, semi-orbicular, rounded, margin slightly undulate; mid-lobe 4.2 x 4.6 mm, base a narrowly cuneate isthmus, fleshy, apex bilobed, forming a pair of narrowly triangular, divaricate lobes 2.5 x 0.8 mm. **Column** 6.9-7.2 mm long, straight, thin at the base, strongly dilated towards the truncate apex. **Clinandrium** short, margin entire. **Rostellum** apical, slit. **Anther** sub-quadrate, 4-celled. **Pollinia** 4, semi-obovoid, laterally compressed. **Capsule** not seen.

OTHER SPECIMENS: None seen.

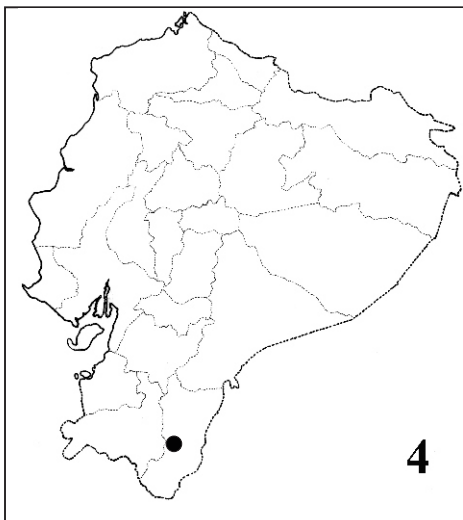
DISTRIBUTION AND ECOLOGY: Known presently only from the type, in the vicinity of Yangana, Loja, at 2000 m altitude. Flowering from September to December.

RECOGNITION: *Epidendrum heterobracteatum* is recognized by the sympodial, caespitose habit, stems relatively thick, with 3-4 large oblong-elliptic, obtuse leaves, apical inflorescence racemose (probably producing new racemes from the middle of the peduncle which have vegetative buds beneath the bracts), peduncle elongate, laterally compressed, the bottom half enveloped by 3-5 partly imbricating, acute, conduplicate bracts, the upper half with large bracts, these progressively smaller partly spreading, flowers resupinate, sepals and petals ochre-yellow, column and lip white, with pale purple dots near the base, lip cordate, deeply 3-lobed; bicallose, the calli digitiform; lateral lobes semi-orbicular, rounded; mid-lobe base a narrowly cuneate isthmus, apex bilobed, forming a pair of narrowly triangular, divaricate lobes. The raceme is somewhat reminiscent of *Epidendrum cylindraceum* Lindl., but the lateral lobes are semi-orbicular instead of falcate, the column is strongly arched in the middle, and the many bracts on the peduncle of the inflorescence, the lower ones large, tight, embracing the peduncle and imbricated and then progressively smaller and somewhat spreading are unlike any other species in *Epidendrum*.

CONSERVATIONS STATUS: DD. Data deficient. Known only from the type specimen.

ETYMOLOGY: From the Greek ετερος, different, of another kind, and the Latin *bracteatum*, with bracts, in reference to the different kinds of bracts of the peduncle of the inflorescence, which distinguishes this species.

REFERENCES: Sánchez S., L., & E. Hágsater, 2009, *Epidendrum cylindraceum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1234.



Authors: E. Hágsater & H. Medina

LCDP: H. Medina

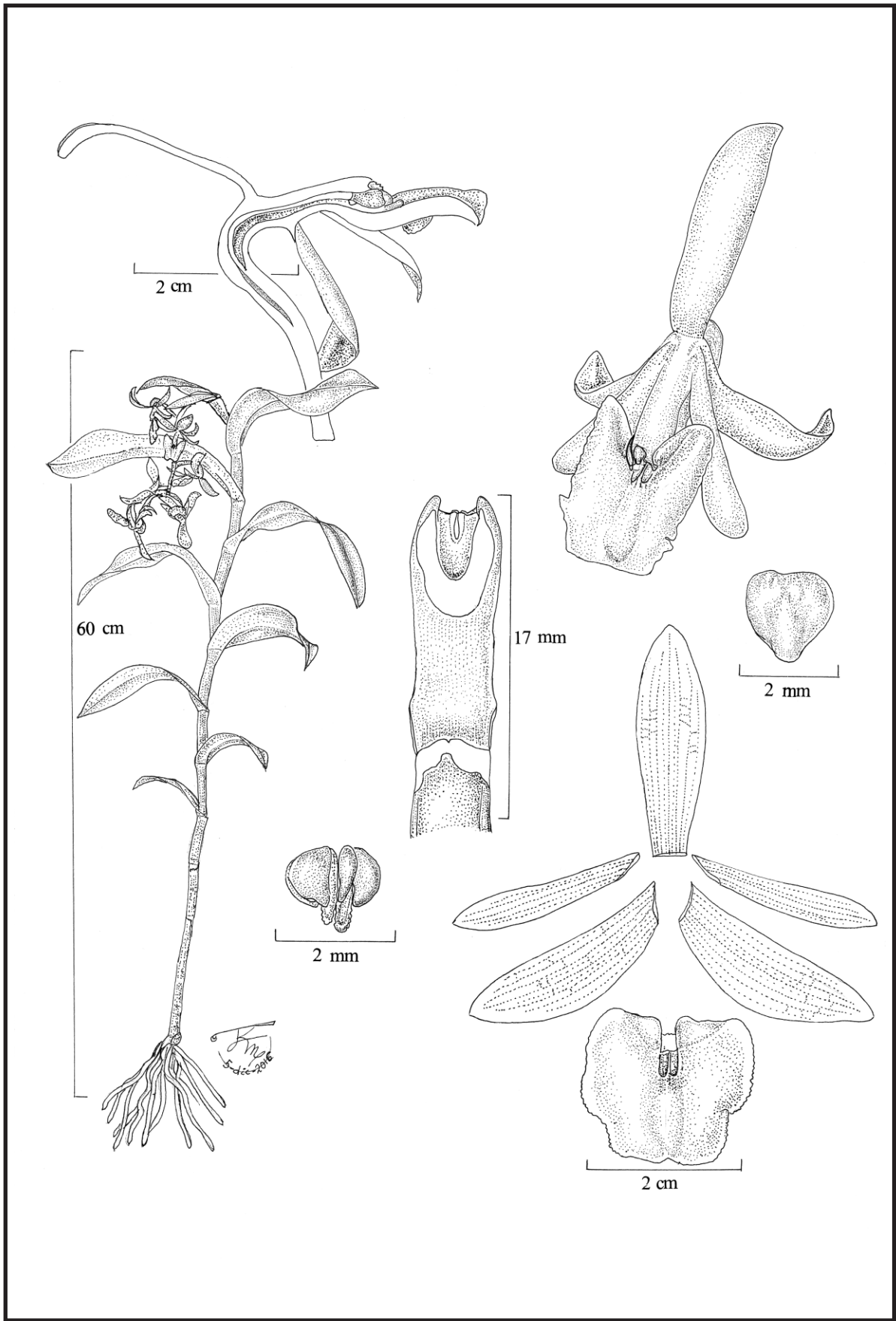
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Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1621



EPIDENDRUM HETERODOXUM Rchb.f.

EPIDENDRUM HETERODOXUM Rchb.f., *Bonplandia* 2: 20. 1854.

Type: Venezuela: [Distrito Capital:] Caracas, **Philipp Christian Wagener 74**, Holotype: W-R! fragment: AMES! [the original description indicates "Aus Venezuela von Herrn Handelsgärtner Geitner auf den Erdbränden bei Planitz eingeführt"].

Synonym: *Epidendrum caracasenum* Regel, *Gartenflora* 8: 324, t. 274, Fig. g-m, 1859. Type: Caracas, Hort. St. Petersburg Bot. Gart., *Lansberg s.n.*, Holotype: LE! photo at AMO! NY! Tracing of published illustration at AMES! *Epidendrum nutans* Lindl., *nom. nud.*, Mem. Amer. Acad. Arts N.S. 8, part 1: 220. 1861. [Not *Epidendrum nutans* Sw., neither *E. nutans* Sessé & Mocino, nor *E. nutans* (Lindl.) Rchb.f. = *E. hemiscleria* Rchb.f., nor *E. nutans* Ruiz & Pav. = *E. ruizianum* Steud.]

Epiphytic, caespitose, sympodial **herb**, 35-63 cm tall. **Roots** 1.5-2.5 mm in diameter, basal, thick, fleshy, white. **Stems** 15-54 x 0.4-1.2 cm, simple, cane-like, erect, terete near the base, laterally compressed and aciculate above, slightly sinuous. **Leaves** 5-8, distributed along the apical 2/3 of the stem, unequal, progressively larger; sheaths 3.5-5.0 x 0.6-1.2 cm, tubular, laterally compressed, aciculate, smooth, green; blade 8-21 x 1.5-4.5 cm, alternate, articulate, elliptic, acute, spreading, arched, sub-coriaceous. **Spathe** 1, to 13 x 1.8 cm (folded in natural position), conduplicate, tubular below, elliptic, acute; when inflorescence paniculate, the secondary branch produced within the spathe and subtended by a bract similar to the spathe but smaller, to 6.3 x 1.1 cm. **Inflorescence** 10-20 cm long, apical, racemose to paniculate, arching nutant or erect; the secondary branch when present short, developing after the main raceme is in flower; peduncle 5.0 x 0.5 mm, somewhat laterally compressed; rachis 10.0 x 0.13-0.30 cm, somewhat sinuous, and terete.

Floral bracts 3.0-7.5 mm long, much shorter than the ovary, triangular, acute, embracing. **Flowers** 3-6 on the main raceme, up to 4 on the branch, nutant, pendulous; (flowers may be either resupinate or non-resupinate), pale green, sepals sometimes slightly tinged purple, column green towards the base, lip ivory white; fragrance diurnal, herbaceous, weak, at night of lemon grass, strong. **Ovary** 25-45 mm long, spreading from the axis of the inflorescence, and turning down and back, like a fishing hook, so that the flower is always facing downwards, unornamented. **Sepals** 16-31 x 4.0-9.0 mm, spreading, the apices somewhat revolute, elliptic-oblancoolate, acute, 7-veined, margin entire, spreading; lateral sepals obliquely united to the column, oblique. **Petals** 14-25 x 3-5 mm, obliquely united to the column, descending, sub-parallel to the column, oblancoolate, acute, somewhat revolute towards the apex, 5-veined, margin entire, spreading. **Lip** 10-19 x 12-20 mm, sub-quadrate, shallowly 3-lobed, fleshy, very stiff, base deeply cordate, lateral lobes transversely ovate, 8 x 12 mm, margin erose, strongly revolute; mid-lobe transversely rectangular, somewhat retuse, margin finely erose; bicallose, the calli laterally compressed, parallel, with a low, thick mid-rib running the length of the lip. **Column** 12-18 x 3.5 mm long, thin. **Clinandrium-hood** reduced, margin entire. **Rostrum** apical, slit. **Anther** ovoid, 4-celled. **Pollinia** 4, semi-orbicular, laterally compressed, the side next to the caudicles straight; caudicles soft and granulose, slightly longer than the pollinia; viscidium semi-liquid. **Lateral lobes of the stigma** very small. **Capsule** not seen.

OTHER SPECIMENS: VENEZUELA: Without locality "Colombia", *Stange 1605*, W-R! (specimen with color sketch of inflorescence.) **Aragua:** Colonia Tovar, I 1857, *Fendler 1770*, AMES! K! W! VEN! Girardot: Rancho Grande bei Maracay Parque Nacional Henri Pittier, 1400, 22 V 1963, *J. Renz 10201*, RENZ! **Distrito Federal:** Caracas-El Junquito km 14, 1600 m, 12 X 1952, *Aristeguieta 863* VEN! Zwischen Caracas und El Junquito, 1600 m, 22 VIII 1959, O. *Renz 9572*, RENZ x2! ridge between el Junquito and Colonia Tovar, 2100 m, 12 VIII 1961, *Steyermark 89363*, VEN! **Falcón:** Democracia; Cerro Monte, 900-1100 m, 3 III 1972, *Agostini 1105*, VEN! Sierra de San Luis, carretera Zambrano-Curimagua, 1200-1500 m, 9 VIII 1993, *Carnevali 3274*, VEN! **Lara:** Jiménez: Parque Nacional Yacambú, between Alto del Viento and El Volcán, 1800-2100 m, 25 X 1982, *Davidse 21129*, MO! VEN! Parque Nacional Yacambú, 1500-2000 m, 25 VIII 1981, *Ferraro s.n.*, VEN! Zwischen Sanare und Caspa, 1400 m, 11 X 1959, O. *Renz 9697*, RENZ! Neue Strasse Sanare-El Volcán, 1700 m, 17 X 1958, O. *Renz 9184*, RENZ! *ibid.* O. *Renz 9186*, RENZ! Parque Nacional Yacambú, vecindades de El Blanquito, 1450 m, 6 VIII 1970, *Steyermark 103499*, AMES! VEN! **Miranda:** Hort. Quinta Colibrí, 1400 m, 13 I 1963, *Dunsterville ex Steyermark s.n.*, VEN! Parque Nacional Guatopo, hort, Mexico City, 4 XII 2016, *García Esquivel sub Hágsater 14489*, AMO! (illustration and photo voucher). **Yaracuy:** carretera Salom-Temerla, 1000-1100 m, 22 IV 1994, *Duno 360*, VEN! Serranía de Aroa, N de Urachiche, 1400-1600 m, 20 XI 1999, *Meier 5625*, VEN!

OTHER RECORDS: Without locality, *Jenny s.n.*, digital images, AMO! **VENEZUELA: Distrito Capital:** Caracas hort. St. Peterburg Bot. Gart., *Lansberg s.n.*, foto of illustration and specimen, AMES! **Miranda:** Parque Nacional Guatopo; Altagracia road, XI 1953, *Dunsterville 152*, illustration, AMES! (published by Dunsterville, 1959).

DISTRIBUTION AND ECOLOGY: Endemic to Venezuela, from the Cordillera de Mérida from the state of Lara east, along the Cordillera de la Costa and the Serranía de San Luis in the state of Falcón, Serranía de Aroa, in the state of Yaracuy, and the Parque Nacional Guatopo in the state of Miranda. Epiphytic at 900-1700 m altitude, (rarely growing up to 2100 m altitude) in cloud forest. Flowering from mainly from August to January.

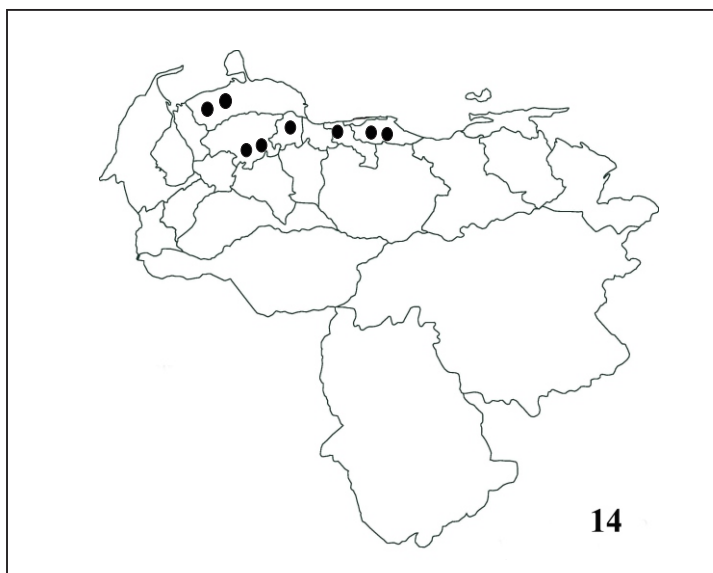
RECOGNITION: *Epidendrum heterodoxum* is recognized by the erect, aciculate stems with 5-8 progressively larger leaves, the prominent elliptic, acute spathe, erect or arching-nutant inflorescence, with the large pale green flowers facing downwards (when inflorescence is erect, they can be either resupinate or non-resupinate), the ovary in the shape of a fishing hook, turning down and backwards, floral bracts small, up to 7.5 mm long. It is somewhat reminiscent of *Epidendrum hymenodes* Lindl., which also has pendulous flowers, but the inflorescence in that species lacks any spathe, and the floral bracts are large and scarious, to 70 mm long. *Epidendrum moronense* has short, thickened stems 4 cm long, with 1-4, lanceolate elliptic leaves, non-resupinate flowers, greenish, to pinkish or buff, the lip white, sometimes tinged with pale pink, column green, strongly reflexed sepals and petals nearly as long as the ovary, and the lip is reniform to sub-orbicular, with the margin deeply lacinate. Though these species are not closely related, the shape and position of the flowers suggest a possible shared pollinator.

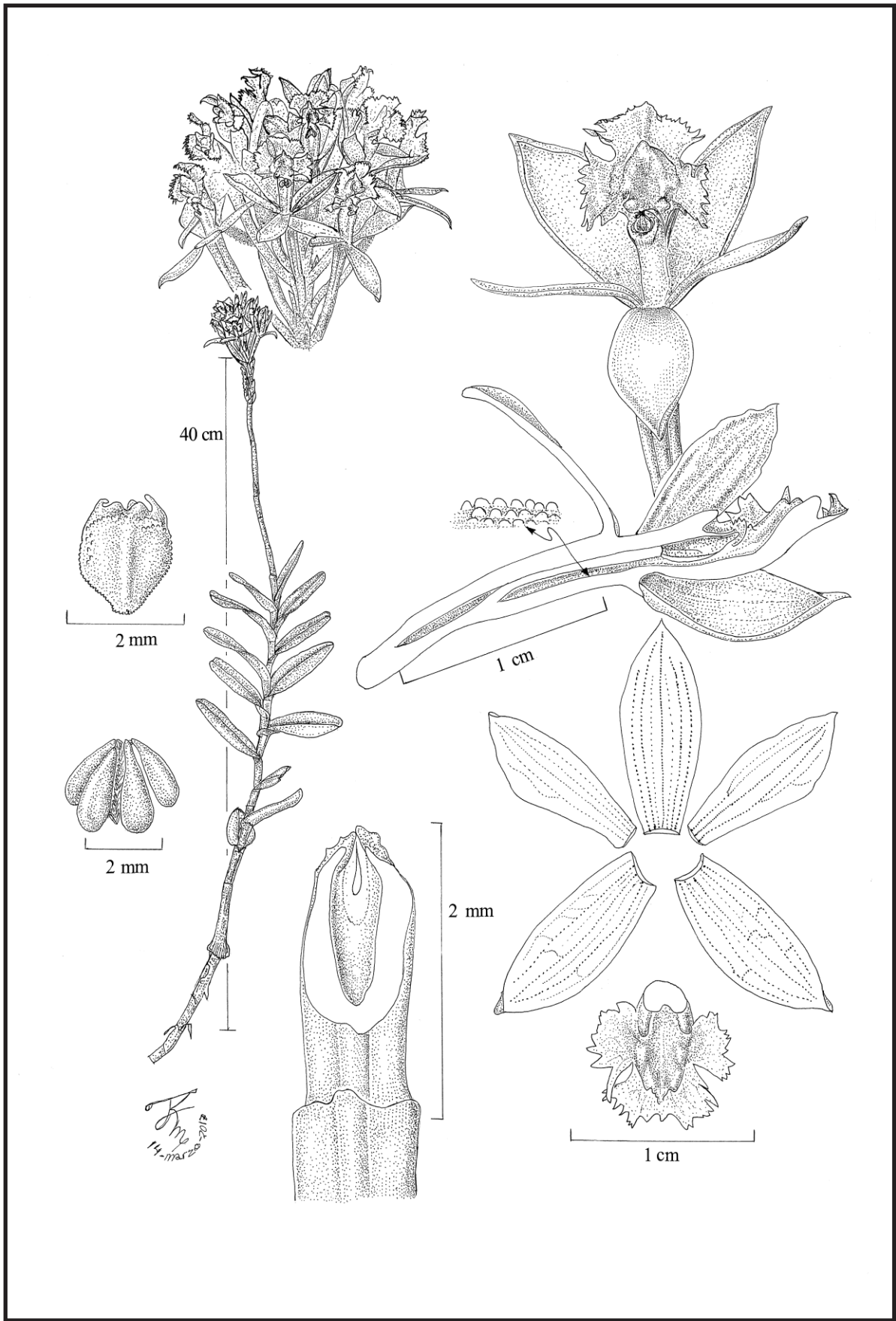
NOTES: The illustration published by Regel (1853) as *Epidendrum sinuosum* Lindl., has generally been taken as representing *Epidendrum heterodoxum*. However, there are two problems with this interpretation. First the illustration does not represent Lindley's species, as can be seen from the sketch of the Lindley type in the Reichenbach Herbarium in Vienna (W). Second, the illustration published by Regel shows a compact, sub-erect inflorescence, with the lip deeply 3-lobed, and a rounded mid-lobe. The flowers look somewhat like *Epidendrum heterodoxum*, as does the plant habit, but the deeply 3-lobed lip is distinct, mid-lobe clearly formed and sub-orbicular. Regel seems to indicate that the illustration is based on *Wagener 37*, from Colombia, of which we have found no record (the type is *Wagener 74* from Caracas.). *Wagener* collected in 1846; Venezuela separated from Gran Colombia in 1830.

CONSERVATION STATUS: Apparently not critically threatened, as it is widespread in northern Venezuela, and found in various National Parks and protected areas. *Carnevali (Carnevali 3274)* indicates that the species is locally common, but disperse.

ETYMOLOGY: From the Greek ετερος, of another kind, different, and δόξα, repute, glory; of another kind, probably in reference to the peculiar position of the flowers, quite unlike most *Epidendrum* species.

REFERENCES: Dunsterville, G. C. K., & L. A. Garay, 1959, *Epidendrum heterodoxum* in *Venez. Orchid. Ill.* 1: 112. Foldats, E., 1970, *Epidendrum heterodoxum* in *Orchidaceae* in Tobias Lasser (ed.) *Flora de Venezuela* 15(3): 271-273. Hágsater, E., 2015, *Epidendrum moronense* in E. Hágsater & L. Sánchez S. (eds.) *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1543. Regel, E. von, 1853, *Epidendrum sinuosum* in *Gartenfl.* 2: 324, t. 69. Reichenbach, G. H., 1855, *Epidendrum heterodoxum* in *Bonpl.* 3: 220.





EPIDENDRUM HOLSTII Hágsater & Carnevali

EPIDENDRUM HOLSTII Hágsater et Carnevali, sp. nov.

TYPE: BRAZIL: Roraima: parte brasileira do Monte Roraima, 2681 m, 21 II 2017, 5°13'51"N 60°43'46"W, **Leonardo Pessoa Felix, Joel Maciel Pereira Cordeiro & Eric Hágsater 16224**, Holotype: EAN! Isotypes: AMES! K!

Similar to *Epidendrum secundum* Jacq., but the sepals and petals crimson-red, the lip pink, callus massive, yellow, the edges white. (vs. flowers entirely pink with a massive callus, yellow in the center, edges white).

Terrestrial sympodial, caespitose, erect herb 50-79 cm tall including the inflorescence. **Roots** 1-2 mm in diameter, basal, fleshy, thin. **Stems** 30-43 x 0.6 cm, simple, cane-like, terete, erect, straight, green to reddish brown, especially towards the apex. **Leaves** 9-13, distichous, distributed along the apical half of the stem, alternate, articulate, green, unequal in size, the basal and apical leaves somewhat smaller; sheaths 0.8-2.0 x 0.3-0.9 mm, tubular, minutely striated; blade 3-9.5 x 1.0-2.4 cm, narrowly oblong-lanceolate to lanceolate, apex sub-obtuse, coriaceous, dark green. **Spathaceous bract** lacking. **Inflorescence** 9-39 cm long, apical, racemose, producing new racemes with time and thus pluri-racemose, each raceme compact, densely many-flowered; peduncle 6-28 cm long, elongate, terete, reddish green, covered with numerous bracts 1-3 cm long, tubular, acute, not imbricated, light brown, becoming fibrous with time. **Flowers** numerous, densely crowded, successive, though many can be open at one time, non-resupinate, sepals and petals crimson red, the lip pink, callus yellow, the edges white; without fragrance. **Floral bracts** 3-11 mm long, much shorter than the ovary, linear-triangular, acuminate, embracing. **Ovary** 12-21 mm long, terete, thin, not inflated, unornamented, reddish purple. **Sepals** 8-11 x 3.0-4.5 mm, spreading, free, flat, elliptic, apex acute, 7-veined, margin entire, spreading; lateral sepals slightly dorsally keeled. **Petals** 7-10 x 2.7-3.8 mm, spreading, free, somewhat obtrullate-elliptic, acute, 3-veined, the lateral veins branching towards the middle, the margin entire, spreading. **Lip** 6.4 x 8.0 mm when spread, united to the column, deeply 3-lobed, base slightly cordate, margin deeply dentate; callus complex, massive, represented two thick, long calli separated by a wide concave hollow, terminating in a triangular edge and a long, narrow rib, at the sides of the two calli a pair of retrorse ridges; lateral lobes 2.2 x 2.2-5.0 mm, somewhat ax-shaped, with the distal margin irregularly dentate; mid-lobe 3.1 x 6.1 mm, flabelliform in outline, separated from the lateral lobes by very narrow sinuses, somewhat 2-lobulate, with a wide, shallow sinus, apiculate in the middle, the distal margin deeply dentate, with. **Column** 3-5 mm long, straight, thin, with a pair of prominent wings at the apex, these yellow, slightly arched upwards, truncate, the margin rounded. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** obovoid, the apex acute, 4-celled, greenish brown, with a yellow terminal mid-rib. **Pollinia** 4, narrowly obovoid, similar in size; caudicles as long as the pollinia, formed by tetrads which look like a pile of roof tiles; viscidium semi-liquid. **Nectary** penetrating 1/2 of the ovary, not inflated, minutely papillose throughout. **Capsule** not seen.

OTHER SPECIMENS SEEN: BRAZIL: Roraima: Monte Roraima, Acampamento Quati, 2681 m, 21 II 2017, *Cordeiro, Felix & Hágsater 1103*, EAN! (digital images of live inflorescence, AMO!) **GUYANA:** Roraima tepuí, La Proa camp, near Lake Gladys, 2800 m, 13 IV 1988, *Liesner 23269*, VEN! **VENEZUELA: Bolívar:** Meseta del Jaua, Cerro Jaua, porción meridional, 2000 m, 27 II 1974, *Steyermark 109634*, VEN! Cumbre del Cerro Roraima, 2810 m, *Delascio 11880*, VEN! Cerro Roraima, cumbre parte NE de Venezuela, inmediata al hito que marca frontera con Guyana y Brasil. Valley area, headwaters of Rio Arabapó, 2750-2800 m, 26 VIII 1976, *Steyermark 112519*, K! VEN! Cima del Roraima, 2700 m, I 1977, *Delascio 4814*, VEN! Cima del Roraima-tepuí, alrededores del Campamento Hotel San Francisco, 2718 m, 26-III-2012, *Nozawa 1984*, CICY! SEL! VEN. Cima del Roraima-tepuí; 2680 m, 18-III-2012, *Nozawa 1914*, CICY! SEL! VEN! Kukenán-tepuí, summit, 2550 m, 10 IV 1988, *Liesner 23074*, MO! VEN! *Ibid.* 12 IIV 1988, *Liesner 23195*, MO! VEN! Plateau of Auyán-tepuí, 300 m E of EDELCA station, 1850 m 27 VII 1983, *Prance 28218*, INPA! MO! SEL! VEN! Auyán-tepuí, cumbre, 2050-2300 m, 15 V 1964, *Steyermark 93909*, AMES! P! Mt. Roraima, SW facing quebrada near Rondón camp, 2050 m, 25 IX 1944, *Steyermark 58686*, AMES! Mt. Roraima, NW portion NNW of Summit camp, 2620-2740 m, 27 IX 1944, *Steyermark 58855*, AMES! Cerro Roraima, summit, 2280-2600 m, 27 III 1984, *Lutyn 9770*, NY! Macizo del Chimantá, altiplanicie en la base meridional de los farallones del Apacará-tepuí, sector norte del macizo, 2200 m, 20 I 1983, *Steyermark 128273*, MO!

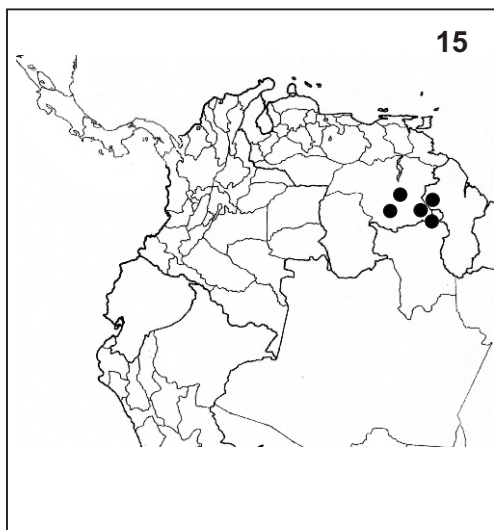
OTHER RECORDS: BRAZIL: Roraima: Uiramutá; Roraima-tepuí, alrededores del Hotel Coatí, 2705 m, 21 II 2017, *Hágsater, Felix & Cordeiro 15040*, digital images, flower in spirit, AMO! (illustration & photo voucher). **VENEZUELA: Bolívar:** Summit of Auyán-tepuí, 7500 ft, VI 1953, *Dunsterville 782*, (illustration and notes), AMES! Roraima-tepuí, *Haelterman s.n.*, digital image, AMO! Roraima, Roy McDermitt sub SELBY 77-1445 sub *Hágsater 6602* (digital images, AMO!). Without data, *Weidmann s.n.*, published image, Romero (1998).

DISTRIBUTION AND ECOLOGY: Endemic to the Pantepuí Region of the Guiana Shield, atop the Roraima, Kukenán, and Auyán tepuis, and westwards towards the tepuis of the Chimantá Massif, and to the Meseta del Jaua. Lithophytic, 1850-2800 m altitude. Growing on compact sandstone, "arenisca," in extreme ecological and edaphic conditions, full sunlight, very wet conditions without topsoil, and with often cold nights, and windy conditions.

RECOGNITION: *Epidendrum holstii* belongs to the Amphylottis group, Elongatum subgroup which is recognized by the caespitose habit, simple stems, leaves oblong-lanceolate, coriaceous, bilobed and elongate peduncle of the erect, pluriracemose inflorescence, the flowers non-resupinate, the callus complicated, plurituberculate. The species is recognized by the successive crimson-red sepals and petals, the lip pink, callus massive, yellow, the edges white; the flowers are relatively small, sepals 8-11 mm long. *Epidendrum secundum* has pink flowers with a massive yellow callus, the edges white, flowers somewhat larger, it is not found atop the tepuis, but at the foot or on the slopes around the middle slopes of the tepuis.

ETYMOLOGY: in honor of Bruce K. Holst, curator of the herbarium of the Marie Selby Botanical Gardens, who has collected extensively in Venezuela, including this species and provided essential information on its distribution. Bruce had already pointed out that there was a new, undescribed species atop Roraima-tepuí (Safont et al., 2014).

REFERENCES: Carnevali, G., I.M. Ramírez-Morillo, G.A. Romero-González, C.A. Vargas, & E. Foldats, 2003, Orchidaceae, in J.A. Steyermark, P.E. Berry, K. Tatkievich, & B.K. Holst (eds.) *Fl. Venez. Guyana*, 7: 200-619. Dunsterville, G.C.K., 1979, *Epidendrum elongatum*, *Am. Orchid Soc. Bull.* 48(5): 447-453. (Photo, from Roraima, Type A). Romero, G.A., 1998, Venezuela, Orchid Paradise, Armitano Editores, Caracas, p. 71. Safont, E., V. Rull, T. Vegas-Villarrúbia, B.K. Holst, O. Huber, S. Nozawa, Y. Vivas & A. Silva, 2014, Establishing a baseline of plant diversity and endemism on a neotropical mountain summit for future comparative studies assessing upward migration: an approach from biogeography and nature conservation, **Systematics and Biodiversity**, DOI: 10.1080/14772000.2014.918061



Authors: E. Hágsater & G. Carnevali

Illustrator: R. Jiménez M.

Photo: E. Hágsater

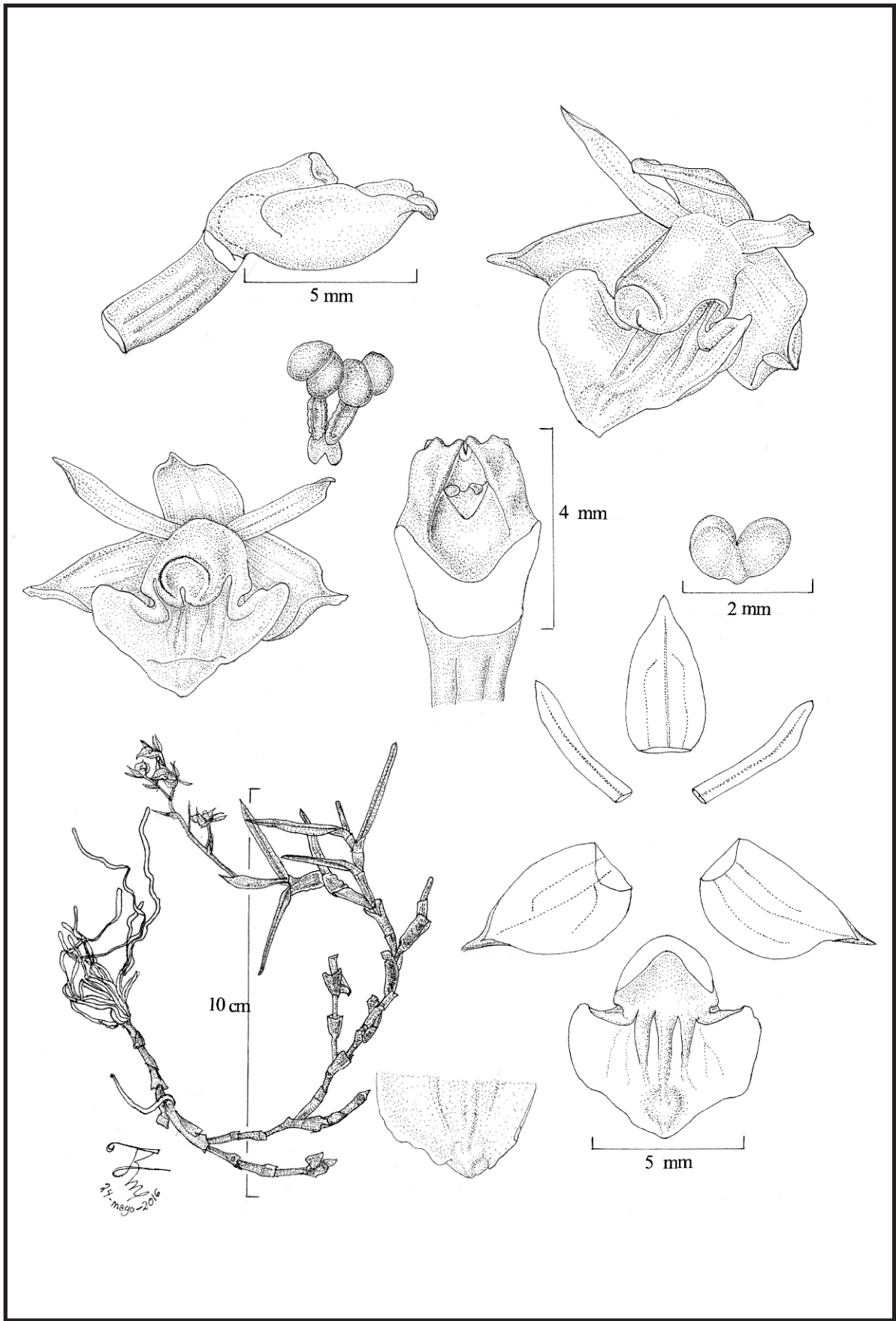
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1623



EPIDENDRUM HOMEIERI Hágsater & E.Santiago

Plate 1624

EPIDENDRUM HOMEIERI Hágsater et E.Santiago, *sp. nov.*

Type: ECUADOR: Loja: Parque Nacional Podocarpus, Cajanuma, 3060 m, 2 September 2005, **Jürgen Homeier & M. Müller 1589**.
Holotype: AMO! (illustration voucher).

The species is recognized by the cane-like stems, produced in succession from below the middle of the previous stem, inflorescence distichous, laxly few-flowered, with a laterally compressed, ancipitose, two-winged peduncle, subtended by a large spathe; flowers small, yellow-green to green tinged dirty purple; petals linear, lip entire, united the basal half of the column, widely separated above, ecallose, with 3 evident parallel ribs and an orbicular thickening near the apex.

Epiphytic, monopodial, pendant, **herb**, 22-32 cm tall. **Roots** 0.2-0.5 mm, produced from the base of the primary stem, and rarely from the base of some of the subsequent stems, thin, white. **Stems** 2.5-7.0 x 0.15-0.3 cm, thin, cane-like, terete, each new stem produced from a lower internode of the previous stem, base covered by a single leafless sheath 9.5 mm long, tubular, rugose. **Leaves** 2-3, distributed along the apical half of the stem, articulate, coriaceous, straight to somewhat falcate, lustrous above, glaucous on the underside; sheaths 4-12 mm long, tubular, infundibuliform when dry, rugose; blade 1.5-4.0 x 0.3-0.6 cm, linear-lanceolate, acute, minutely apiculate, margin crenulate. **Spathe** 1, 18 mm long, tubular, conduplicate, acute, at the end of a short and ancipitose peduncle. **Inflorescence** 4-6 cm long, apical, simple, distichous, arching, laxly few-flowered; peduncle 20-45 x 1 mm, thin, laterally compressed; rachis terete, thin, slightly sinuous. **Floral bracts** 5-10 mm long, nearly as long as the ovary, linear-lanceolate, acuminate, embracing. **Ovary** 7-10 mm long, terete, not inflated, striated reddish purple. **Flowers** 5, simultaneous, distichous, the lip always facing the rachis, green tinged dirty purple to pale yellow-green, and then the lip ochre-green, the apex of the column pale purple; fragrance none. **Sepals** 5.3-6.2 x 2.7-3.3 mm, spreading, free, ovate, acute, apiculate, 3-veined, margin entire, spreading; lateral sepals oblique. **Petals** 4.8 x 0.8 mm, free, spreading, linear, slightly falcate, sub-acute, 1-veined, margin entire, spreading. **Lip** 4.5 x 6.4 mm, united the basal half of the column, sub-entire, base truncate, apex sub-acute, margin entire, involute at the base; ecallose; disc with 3 parallel ribs which disappear at the middle of the lip, with an orbicular, sub-apical thickening. **Column** 4 mm long, thick, arched, but clearly separate from lip along the apical half. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** small. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, longer than the pollinia. **Nectary** wide, shallow, without penetrating the pedicel. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Loja: Parque Nacional Podocarpus, Cajanuma, 3050 m, 5 XI 2006, *Werner 2123, QCA!* Digital images, AMO!

OTHER RECORDS: ECUADOR: Loja: entre Saraguro y Yacuambi bajando a Zamora, 2500-2800 m, *Mario Portilla s.n.*, exhibited at the 22 World Orchid Conference in Guayaquil, XI 2017, digital image, AMO! Without locality, Hort. Ecuagenera, LCDP by Hugo Medina, XII 2017, digital copy, AMO! (photo voucher)

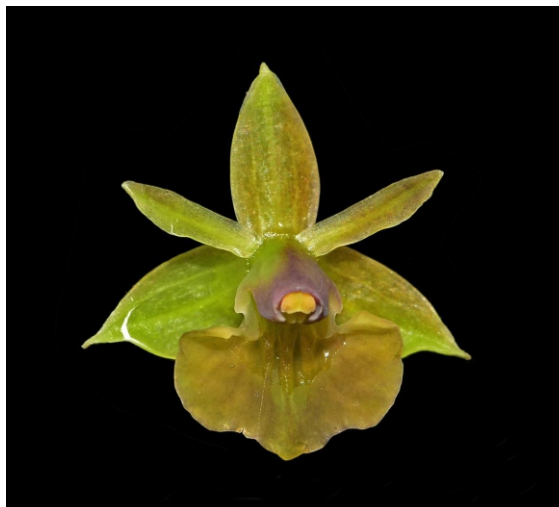
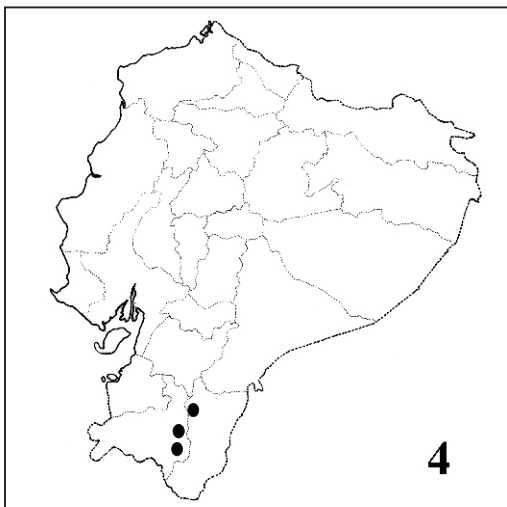
DISTRIBUTION AND ECOLOGY: Presently known from four collections from the Parque Nacional Podocarpus, and near Saraguro, on the Cordillera Oriental of the Andes in southern Ecuador. Epiphytic, at 2500-3060 m altitude. Flowering from September to November.

RECOGNITION: *Epidendrum homeieri* does not appear to belong to any of the known groups, and thus we establish a new Homeieri Group characterized by the cane-like stems, produced in succession from below the middle of the previous stem, inflorescence laxly few-flowered, distichous, with a laterally compressed, ancipitose, two-winged peduncle, subtended by a large spathe, tubular at base, acute; the flowers have the lip partially united to the column, somewhat less than half the length of the column, lip entire, ecallose, with 3 ribs on the disc. The species is recognized by the 18 mm long spathe, flowers pale yellowish green to green tinged dirty purple, sepals 5.3-6.2 mm long; lip entire, united the basal half of the column, widely separated above, ecallose, with 3 evident parallel ribs and an orbicular thickening near the apex. *Epidendrum subliberhombicum* Hágsater & E.Santiago is florally very similar, but the stems are slightly thickened along the apical half, the inflorescence has up to 100 densely distributed flowers, sepals 3.5-5.2 mm long, the lip is 3-lobed with the base slightly unguiculate, and without any ribs. *Epidendrum subliberum* C.Schweinf. has thickened stems along the apical half, a dense inflorescence of ca. 120 reddish brown flowers, sepals 3.2-3.8 mm long; lip 3-lobed, free from the column, without ribs and the margin erose, column thin and straight. The short, laterally compressed, two-winged peduncle below the large spathe is reminiscent of species of *Epidendrum aristatum* Ackerman & Montalvo, though in that species the peduncle is much longer, and the rachis very short, with the flowers produced singly in succession.

CONSERVATION STATUS: DD. Data deficient.

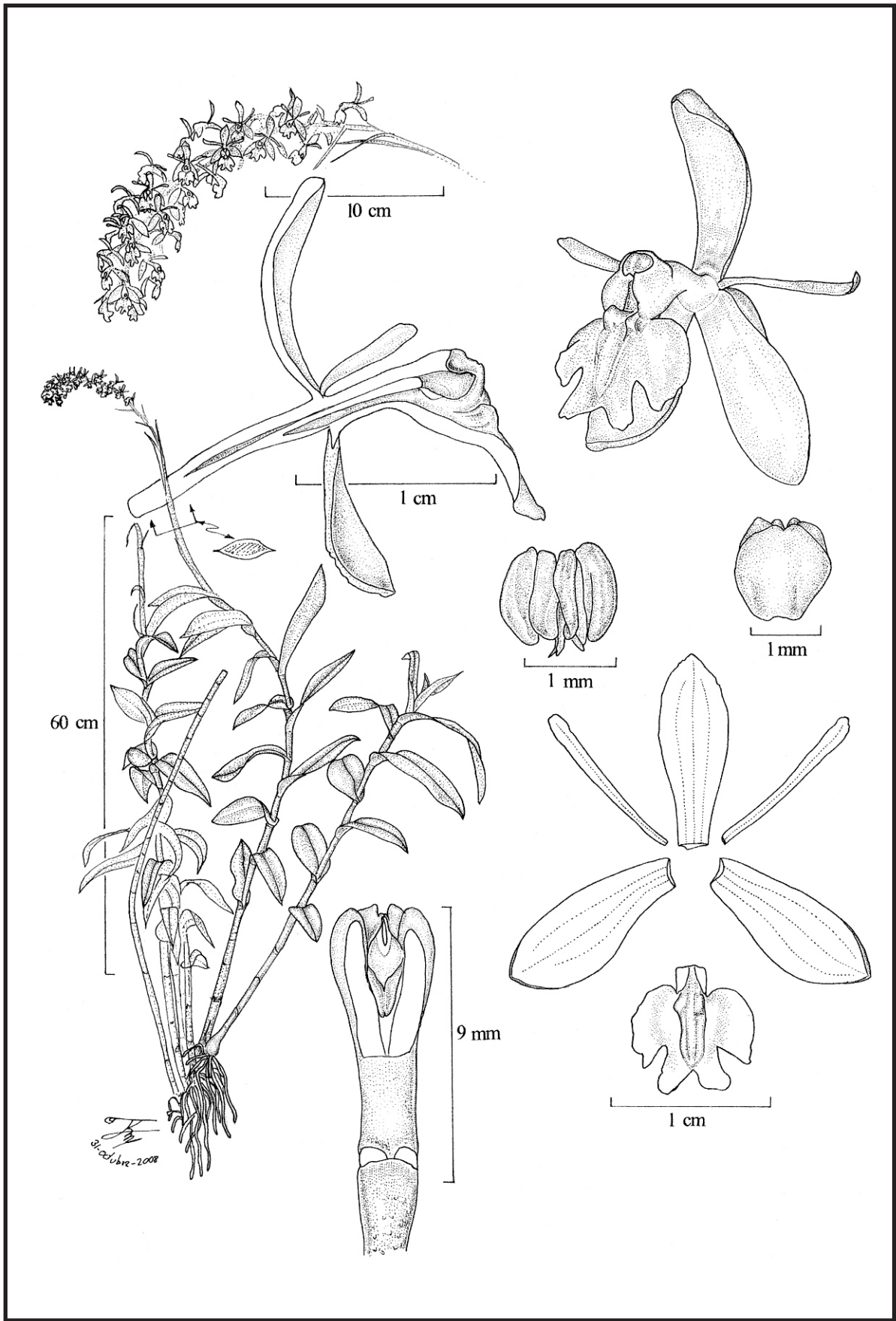
ETYMOLOGY: In honor of Dr. Jürgen Homeier, specialized in plant and tropical tree ecology, at the Georg August University Göttingen, Germany, who worked out of the Estación San Cristobal in the Parque Nacional Podocarpus, Zamora, Ecuador, and collected this species as well as many other interesting specimens.

REFERENCES: Santiago, E., & E. Hágsater, 2009, *Epidendrum aristatum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 8, *Icon. Orchid.* 12: t. 1207. Santiago, E., & E. Hágsater, 2010, *Epidendrum subliberhombicum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1391. Santiago, E., & E. Hágsater, 2010, *Epidendrum subliberum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1392.



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Photo: H. Medina Editors: E. Hágsater & E. Santiago
ICONES ORCHIDACEARUM 16(1). 2018. Plate 1624



EPIDENDRUM HONDURENSE Ames

Plate 1625

EPIDENDRUM HONDURENSE Ames, Bot. Mus. Leafl. 1(7): 1. 1933.

Type: HONDURAS: [Cortés: La Fragua, cited as], near the Ulúa River [near Tela, Depto. Atlántida], [20 III 1923, cited as] 20 III 1930, *Oakes Ames s.n.* Holotype: AMES 33710! Illustration, xerox K! illustration published: Bot. Mus. Leafl. 1(7): 3. 1933.

Synonym: "*Epidendrum tapiae*" Soto Arenas, *Orquídeas México*: Cat. Digital, image 0415, 2007. *nom. invalid.*

Epiphytic, sympodial, caespitose **herb**, 25-60 [130]* cm tall. **Roots** 2-3.5[5] mm in diameter, basal, fleshy, thick, white. **Stems** 70 x 0.7-0.9 cm, simple, cane-like, terete at the base, somewhat laterally compressed at the apex, thin, erect, straight; base covered by 3-5 sheaths 2-5 x 0.7-0.8 cm, tubular, non-foliar, scarious and becoming fibrous with time. **Leaves** 9-13, distributed nearly throughout the stem, spreading, articulate, alternate, unequal in size, the basal ones smaller, sub-coriaceous; sheaths 3.5-4 cm long, tubular, minutely striated; blade 7-19 x [1.5] 2.7-3.5 cm, narrowly elliptic, acute, margin entire, green, sometimes the underside tinged somewhat purple. **Spathes** lacking. **Inflorescence** 45-60 cm long, apical, racemose at first flowering, slightly arching; peduncle 27 cm long, laterally compressed, straight, totally covered by 6 tubular bracts 7-9 cm long, in addition to 4-5 apical bracts 45-65 mm long, narrowly triangular, acuminate, spreading. **Floral bracts** 3-40 mm long, unequal in size, those of the basal flowers much larger than the ovary, the apical ones shorter, ca. 1/4 length of the ovary, narrowly triangular, acuminate, amplexicaul. **Ovary** 10-13 mm long, terete, thin, not inflated, scarcely and minutely verrucose. **Flowers** 30-40 per raceme, simultaneous, resupinate, fleshy, sepals and petals ochre-green, lip ivory white; fragrance herbal, agreeable during the morning, and somewhat disagreeable at sunset. **Sepals** 12-14 x 4.5-5.0 mm, spreading, free, slightly concave, obovate-spatulate, obtuse, dorsally scarcely and minutely verrucose, 3-veined, with a pair of secondary veins on the side, margin entire, spreading. **Petals** 11-13 x 1.0-1.3 mm, spreading, free, linear-oblongate, apex rounded, slightly arching forward, 1-veined, margin entire. **Lip** 7-9 x 8-10 mm, united to the column, 3-lobed, base slightly cordate, somewhat convex, margin sub-entire, spreading; bicallose, the calli prominent, laterally compressed, parallel; disc with 3 fleshy ribs, parallel, elongate to the apical sinus; lateral lobes 3-4 x 5-6.5 mm, ovate-dolabriform: mid-lobe 3-4 x 4.5-5 mm, narrower than the lateral lobes, sub-quadrate, slightly spreading at the apex, deeply emarginate, forming a pair of divaricate narrow lobes, the apices rounded. **Column** 8-9 mm long, straight, basal half thin, gradually dilated at the apical half. **Clinandrium-hood** short, margin entire. **Anther** obovoid, 4-celled. **Pollinia** 4, ovoid, laterally compressed without being bird-wing type, inner pair slightly smaller in size; caudicles laminar, smooth, nearly as long as the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, half the length of the stigmatic cavity. **Nectary** shallow, penetrating 1/4th of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: HONDURAS: Comayagua: Lake Yojoa, 2000 ft, 13 VIII 1932, *Edwards 228*, AMES! (illustration, AMO!). **Yoro:** Río Pelo, near Progreso, 8 III 1923, *Ames s.n.*, AMES! **MEXICO: Chiapas:** Río Lacanjá, cerca de Lacanjá Tzeltal, col. III 2005, *Soto 10759*, pressed in cult. 31 X 2008, AMO! (illustration & photo voucher). *Ibid.* 6 X 2009, MEXU! 2 IX 2011, AMES!

OTHER RECORDS: BELIZE: Without data, photo #168 (neither fig 89, nor the description), published as *E. paniculatum* in *Native Orchids of Belize*, (McLeish *et al.*, 1995).

MEXICO: Chiapas: Mpio. Ocosingo, near Agua Dulce Tehuacán community, near Metzabok, 800 m, image received 31 VII 2017, *Malverde Méndez s.n.*, Digital image, AMO!

DISTRIBUTION AND ECOLOGY: Rare in Honduras, Belize and Chiapas in the Selva Lacandona, expected in Petén, Guatemala. In wet rainforest; it has been collected twice in flooded vegetation or in hill forest of *Manilkara* with tree ferns, at 200-400 m elevation. Flowering in March, in cultivation in Mexico City in September-October.

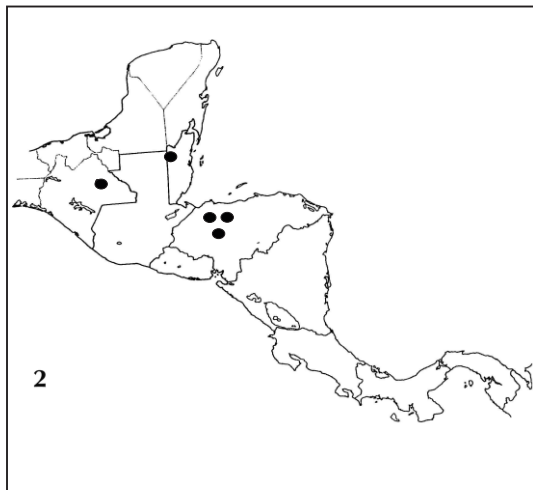
RECOGNITION: *Epidendrum hondurense* belongs to Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, without any spatheous bract, though it may have several bracts, the mostly filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, at least the inner pair, and Densiflorum Subgroup where the short-pedunculate inflorescence is usually paniculate, flowering only once, flowers are green, the apex of the column and disc of the lip creamy-white, the calli sometimes tinged purple, the petals are linear-oblong to linear-oblongate, never filiform, and the pollinia unequal in shape, only the inner pair "bird-wing" like. The new species, till now has only produced racemose inflorescences, 45-60 cm long, apical, slightly arching; peduncle 27 cm long, laterally compressed, straight, totally covered by 6 tubular bracts 7-9 cm long, in addition to 4-5 apical bracts 45-65 mm long, narrowly triangular, acuminate, sepals are 12-14 mm long, ochre-green with an ivory-white lip, lateral lobes ovate-dolabriform, sepals and ovary scarcely and minutely verrucose, and the disc of the lip with 3 ribs. *Epidendrum isthmii* Schltr. has a much shorter paniculate inflorescence with slightly larger flowers, sepals 13-15.5 mm long, the flowers greenish with the disc of the lip creamy white, often surrounded by a green margin. *Epidendrum isthmoides* Hágsater & E. Santiago has large plants, chartaceous, elliptic leaves with the veins clearly marked, (13-23 x 3-5 cm.); the creamy green flowers with the floral segments partly spreading, sepals 9-10 mm long, the lip immaculate, with a short isthmus between the lateral lobes and the mid-lobe. The flowers are reminiscent of *Epidendrum hassleri* Cogn. which has a paniculate inflorescences (the type is racemose), sepals and petals similar, but the lip wider between the lateral lobes than between the lobes of the mid-lobe directed upwards, and the ovary 15-25 mm long, and is endemic to the border areas of Argentina, Paraguay and Brazil.

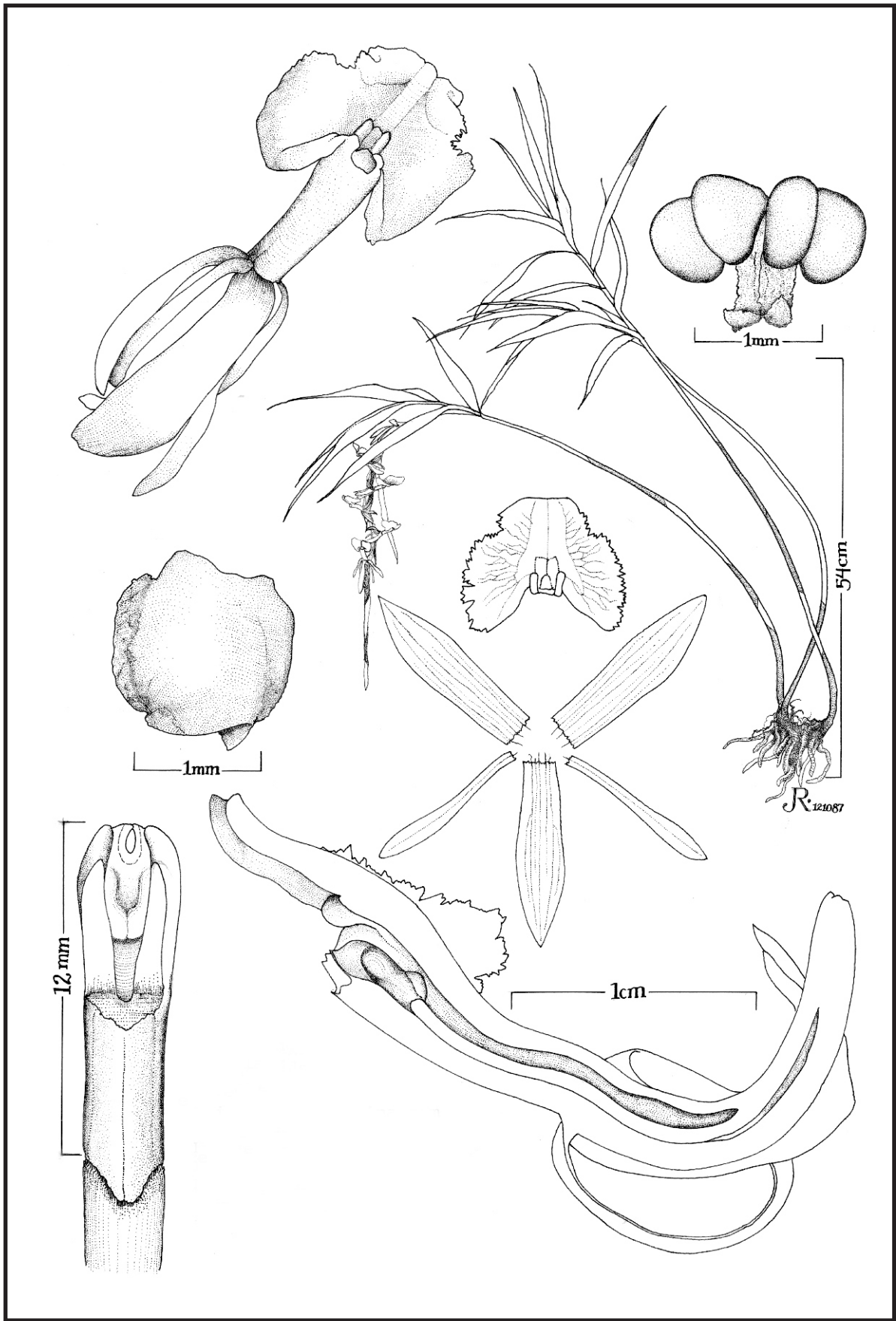
NOTES: This species appeared illustrated in *Native Orchids of Belize* (McLeish *et al.*, 1995: photo 168, Fig. 89) and identified as *E. paniculatum* Ruiz & Pav. The illustration does not correspond to the photograph, linear, filiform petals vs. narrowly oblanceolate petals widened towards the apex, and mid-lobes of the lip. Neither is the highly endemic Peruvian species, nor any of the species of the *E. paniculatum* complex recorded from Belize or Mexico (*E. atroscripum* Hágsater, *E. isthmii* Schltr., *E. roseoscriptum* Hágsater, *E. veroscriptum* Hágsater). The pale brown-olive green tepals and the immaculate cream-colored lip with well-defined apical lobes are distinct. It was found later in the Selva Lacandona, although it is very rare there. Three weak plants were found near Chajul in 2005, and later a stout plant was located near Lacanjá Chanzayab and was included in a digital catalogue under the provisional name "*Epidendrum tapiae*" (Soto-Arenas *et al.*, 2007). *The plant in cultivation has grown considerably, measurements in brackets [] correspond to it. In spite of the extensive collecting in the Selva Lacandona and northern Guatemala, we have not found any additional specimens of this taxon, and we wonder why it passed overlooked to meticulous collectors, like Elias Contreras and Cyrus Longworth Lundell in Guatemala. Another collection from the Chiapas lowland, has come to our attention this year, *Malverde Méndez s.n.*, of which we only have a digital image, but we are in contact with the collector.

CONSERVATION STATUS: DD. Data deficient. This species surely needs official protection, since it is so rare, its distribution limited, and with a specialized habitat.

ETYMOLOGY: in reference to Honduras, where the species was first collected.

REFERENCES: Hágsater, E. & M. A. Soto, 2005, *Epidendrum*, in Pridgeon, A. M., P. J. Cribb, M. W. Chase, and F. N. Rasmussen (eds.), *Genera Orchidacearum*, Volume 4. Epidendroideae (Part One): 236-251. Oxford University Press. McLeish, I., N. R. Pearce & B. R. Adams, 1995, *Native Orchids of Belize*, 278 pp. Balkema, Rotterdam. Soto-Arenas, Miguel A., E. Hágsater, R. Jiménez M., G. A. Salazar, R. Solano Gómez, R. Flores González, J. Ruiz González, 2007, image 0415, as "*Epidendrum tapiae*", *Las Orquídeas de México: Catálogo Digital/Orchids of Mexico: Digital catalogue*, CD, Herbario AMO, Instituto Chinoín, México. Hágsater, E., & E. Santiago, 2013, *Epidendrum isthmoides* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1133. Santiago, E., & E. Hágsater, 2013, *Epidendrum hondurense*, E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1131. Santiago, E., & E. Hágsater, 2013, *Epidendrum isthmii* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1132. Santiago, E., & E. Hágsater, 2013, *Epidendrum hassleri* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1436. Santiago, E., & E. Hágsater, 2013, *Epidendrum paniculatum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1467.





EPIDENDRUM HYMENODES Lindl.

EPIDENDRUM HYMENODES Lindl., *Fol. Orchid.* 3(*Epidendrum*): 58. 1853.

Type: COLOMBIA: [Magdalena:] New Grenada, Prov. Sta. Martha, 4000 ft, above Minca, July, [Nicolas Funck & Louis Joseph] Schlim 986. Holotype: K-Lindl. [Non *Epidendrum hymenodes* Rchb.f., *Flora* 48: 277. 1865. based on Wright 3321, Cuba = *Domingoa haematochila* (Rchb.f.) Carabial].

Synonyms: *Epidendrum arundinaceum* F. Lehm. & Kraenzl., *Bot. Jahrb. Syst.* 26: 471. 1899. Type: COLOMBIA: [Valle del Cauca:] Buenaventura, grows on trees in dense woods of Las Juntas del Dagua, 300-500 m, **Friedrich Carl Lehmann 6853**. Holotype: K-Lindl.! Isotypes: AMES! L! NY! W-Rchb.f.! *Epidendrum zingiberaceum* Schltr., *Repert. Spec. Nov. Regni Veg.*, *Beih.* 8: 88. 1921. Type: ECUADOR: Chimborazo, in silvis temperatis ad viam Quito-Guayaquil [old path from Quito to Guayaquil], **Luigi Aloysius Sodiro s.n.**, Holotype: B, destroyed; sketch of flower from the type, nr. 367, (Mansfeld, 1929).

Epiphytic, sympodial, caespitose, tall herb, 50-110 cm tall. **Roots** 3-5 mm in diameter, basal, fleshy, thick. **Stems** 50-110 x 0.3-0.6 cm, simple, cane-like, terete, straight, tall, the basal 2/3 covered by scarious tubular sheaths which become fibrous with time, leaving the stem nude. **Leaves** 4-7, distichous, distributed towards the apex of the stem; sheath to 5 x 0.6 cm, tubular, smooth; blade 13-23 x 1.2-3.2 cm, articulate, very narrowly lanceolate, acute, sub-coriaceous, smooth, margin entire, grayish green with the veins on the underside and margin slightly tinged purple. **Spathe** lacking. **Inflorescence** 22-50 cm long, apical, nutant, from the mature growth, flowering only once, paniculate, progressive, producing new racemes during flowering; peduncle 4-10 cm long, short, ancipitose; rachis terete, segments 2-4 cm long, very thin (1.0-1.5 mm in diameter) at the base and dilated apically (3 mm thick), where the ovary is inserted, unornamented; bracts of the peduncle to 70 mm long, imbricating, covering the peduncle, embracing, membranaceous, scarious, narrowly lanceolate, long. **Flowers** 12-32, successive during several weeks, non resupinate, concolor, ivory green, column and ovary pale apple green, very fragile, the damaged parts quickly turning black; fragrance apparently lacking. **Floral bract** 25-60 mm long, much longer than the ovary, hiding the floral bud until it opens, narrowly lanceolate, acute, membranaceous, scarious. **Ovary** 12-18 mm long, not inflated, terete, arching 90° at anthesis, smooth. **Sepals** 17-22 x 5-6 mm, reflexed, somewhat revolute, embracing the rachis, free, glabrous, succulent, narrowly oblong-lanceolate, acute, 7-veined, margin entire, spreading; lateral sepals with an inconspicuous dorsal keel. **Petals** 16-19 x 1.6-2.0 mm, reflexed, somewhat revolute, very narrowly oblanceolate, apex acute, margin entire, spreading. **Lip** 11-14 x 16-17 mm, united to the column, reniform, base deeply cordate, slightly 3-lobed; bicallose, with a central, rounded keel that reaches the apex of the lip, fleshy; disc concave, margins revolute; lateral lobes sub-obovate, retrorse, inner margin entire, outer margin lacerate; mid-lobe very short, transversely sub-rectangular, apical margin entire, lateral margins lacerate; the lip may be entire, base deeply cordate, and apex, triangular, acute, as seems at the southern distribution range (see sketch of type of *E. zingiberaceum* and photo by Alex Reynolds, as well as in photos by Harding & Moreno). **Column** 11-12 mm long, straight, thin, long. **Clinandrium-hood** much reduced, margin entire. **Rostellum** apical, slit. **Nectary** deep, penetrating 1/3 of the ovary, smooth. **Anthor** sub-spherical, with a low rounded keel in front, 4-celled. **Pollinia** 4, semi-obovoid, laterally compressed, sub-equal; caudicles soft and granular, longer than the pollinia; viscidium semi-liquid, transparent. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Boyacá: Las Minas-Villa del Carmen, 7 V 1937, *O. Renz* 3053, RENZ x2! **Cauca:** 1000 m, 15 X 1884, *Lehmann* 2030, G! LE! **Cundinamarca:** Vereda San Antonio Cabrera, 29 IV 1988, *Ospina* 1201, COL! Above El Colegio, La Mesa, 4000 m, IV 1917, *Taylor* 160, K-L! **Magdalena:** Santa Marta, Las Nubes, 4500 m, 6 II 1899, *Smith* 2839, NY! **Valle de Cauca:** Alto de las Brisas, 2160 m, 26 X 1944, *Cuatrecasas* 18210, AMES! F! Cafetal, 10 X 1982, *Folsom* 10444, AMO! Farallones de Cali, 1500 m, 1 XII 1975, *Hartman* 149, CUVCI! **ECUADOR:** without locality, X 1871, *Jameson* s.n., W-R! **Azuay:** Gualaceo, hort. Ecuagenera, 23 X 2016, *Hágsater* 14802, QCNE! **Carchi:** Railroad Ibarra to San Lorenzo, km 78, 1400 m, 15 XII, *Dodson* 1604, SEL! **Pichincha:** Tandapi, 1500 m, 26 IX 1981, *Besse* 722, SEL! above Tandapi, 1900 m, 2 III 1986, *Dodson* 16341, MO! Tandapi, 31 XII 1986, *Dodson* 16756, MO! Nanegalito, 1200-1400 m, 9 XI 1981, *Filskov* 37116, AAU! W of Tandapi, 1500-1600 m, 27 X 1974, *Gentry* 12135, MO! arriba de Mina Selva Alegre, 1940 m, 6 XII 1986, *Hágsater* 8978, AMO! Arriba de Selva Alegre, 1940 m, 6 XII 1986, *Hágsater* 8981, AMO! arriba de Tandapi, 2000 m, 9 XII 1986, *Hágsater* 9061 (illustration voucher) AMO! MO! ibid. pressed 15 XII 1987, AMO! AMES! COL! QCA! Ibid. pressed 26 I 1992, AMO! Ibid. pressed 7 II 1993, AMO! Selva Alegre, 1300 m, *Hirtz* 52, SEL! Above Tandapi, 2000 m, XII 1982, *Hirtz* 399, Q! SEL! Maquipucuna Biol. Station, 1500 m, 12 IX 1989, *Webster* 12710, QCA, UCDAV. **VENEZUELA:** Táchira: La Revancha, Río Quinimari, 1700 m, 12 V 1951, *J. Renz* 6934, RENZ x2!

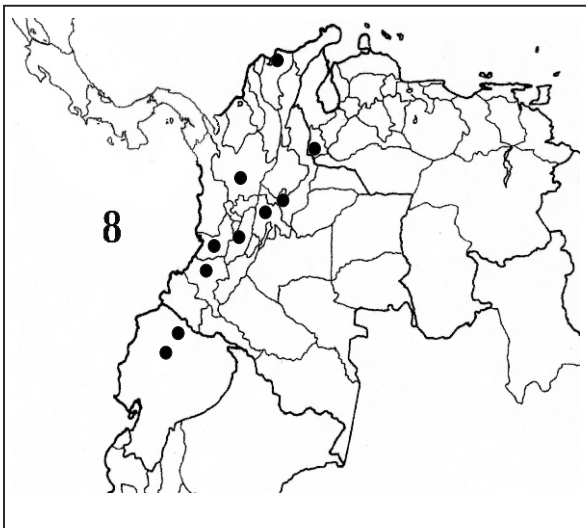
OTHER RECORDS: COLOMBIA: Mutis, A.C., 1985, *Flora de La Real Expedición Botánica del Nuevo Reyno de Granada, Microspermae: Orchidaceae* 9(3): pl. 3. **Antioquia:** "Palmitas", hort. Álvaro Mejía, *Escobar* 877, (cited by Garay, 1973), color slide of flowers, AMO! **Tolima:** Ibagué, 3300-3400 m, *Rincón* s.n., digital image, AMO! (Photo voucher). Valle del Cauca: La Leonera, *Moreno* s.n., digital image, AMO! **ECUADOR:** **Pichincha:** without locality, 1300-2000 m, *Dodson* 1634, cited in *Dodson* (2001). Reserva Maquipucuna, 1000-2000 m, *Alexander Reynolds* s.n., http://fieldguides.fieldmuseum.org/sites/default/files/rapid-color-guides-pdfs/166_Maquipucuna_orchids_1.pdf. **VENEZUELA:** Táchira: Mun. Rafael Urdaneta, 2045 m, based on Carnevali 298, CICY (Fernández, 2003).

DISTRIBUTION AND ECOLOGY: Colombia from the foothills of the Sierra Nevada de Santa Martha, along the Cordillera Oriental, and in the Cordillera Central from Tolima, Cordillera Occidental from Valle del Cauca to Ecuador as far as Cotopaxi; in Venezuela only known for Táchira (Foldats, 1970, cites Schlechter (1919), indicating the species might occur near Mérida, but no material has been seen); at 300-1700 m altitude; epiphytic in humid evergreen forests. Flowering throughout the year.

RECOGNITION: *Epidendrum hymenodes* is recognized by the caespitose, sympodial habit, tall stems with 4-7 narrowly lanceolate leaves, but especially by the nutant racemose to paniculate inflorescence with large scarious membranaceous bracts which completely hide the rachis, flowers produced in succession, from a recurved ovary so that the flowers are facing downwards at anthesis; the flowers are pale green, floral bracts very large, 25-60 mm long. *Epidendrum heterodoxum* Rchb.f. from Venezuela has somewhat similar flowers, also green and facing downwards, but the stem is laterally compressed above, the leaves are much larger, and the inflorescence is subtended by 1 large spathe, to 13 cm long, with a second bract subtending a small branch; the inflorescence also nodding, but the floral bracts are very small, to 7.5 mm long. *Epidendrum moronense* Dodson & Hágsater has short, thickened stems 4 cm long, with 1-4, lanceolate elliptic leaves, non-resupinate flowers, greenish, to pinkish or buff, the lip white, sometimes tinged with pale pink, column green, strongly reflexed sepals and petals nearly as long as the ovary, and the lip is reniform to sub-orbicular with the margin deeply lacinate. These species do not appear to be closely related, but suggest a similar pollinator might be involved.

NOTE: In various unpublished manuscripts for the Orchids of Ecuador, Dodson stated that a Sodiro collection at QPLS could be a type of *Epidendrum zingiberaceum* Schltr., but a later revision of the material at QPLS by Hágsater & Dodson (1999) proved that material belongs to a totally different group, probably *Epidendrum ornithoglossum* Schltr. In addition, though the type was lost in Berlin, the tracing of the illustration of the type has an acute lip, instead of truncate, but this could be frequent in the southern populations of the species as the photo by Reynolds suggests.

REFERENCES: Fernández, C., 2003, *Orquídeas Nativas del Táchira*, 239 pp. Garay, L. A., 1973. *Orquídeas Colombianas Nuevas o Críticas; Decena X. Orquídeología* 8(2): 95-102. Hágsater, E., 2015, *Epidendrum moronense* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1543. Dodson, C. H., 2001, *Epidendrum hymenodes*, photo 553 in *Native Ecuadorian Orchids* 2: 282. Fernández, C., 2003, *Epidendrum arundinaceum*, in *Orquídeas Nativas del Táchira*, p. 69. Foldats, E., 1970, *Orchidaceae* in Tobias Lasser (ed.) *Flora de Venezuela* 15(3): 276-277. Kolanowska, M., E. Hágsater, D. L. Szlachetko, E. Santiago & L. Sánchez S., 2014, *Orchids of Department of Valle del Cauca* 2 (*Epidendroideae*): 160-162. Mansfeld, R., 1929, *Figuren Atlas zu den Orchideenfloren der Südamerikanischen Kordillerenstaaten* I. Venezuela; *Repert. Spec. Nov. Regni Veg.*, *Bieh.* 57: 95, fig. 367. Schlechter, R., 1919, *Die Orchideenfloren der südamerikanischen Kordillerenstaaten* I. Venezuela; *Repert. Spec. Nov. Regni Veg.*, *Bieh.* 6: 70.



Authors: E. Hágsater & E. Santiago

Illustrator: R. Peláez

Photo: M. Rincón G.

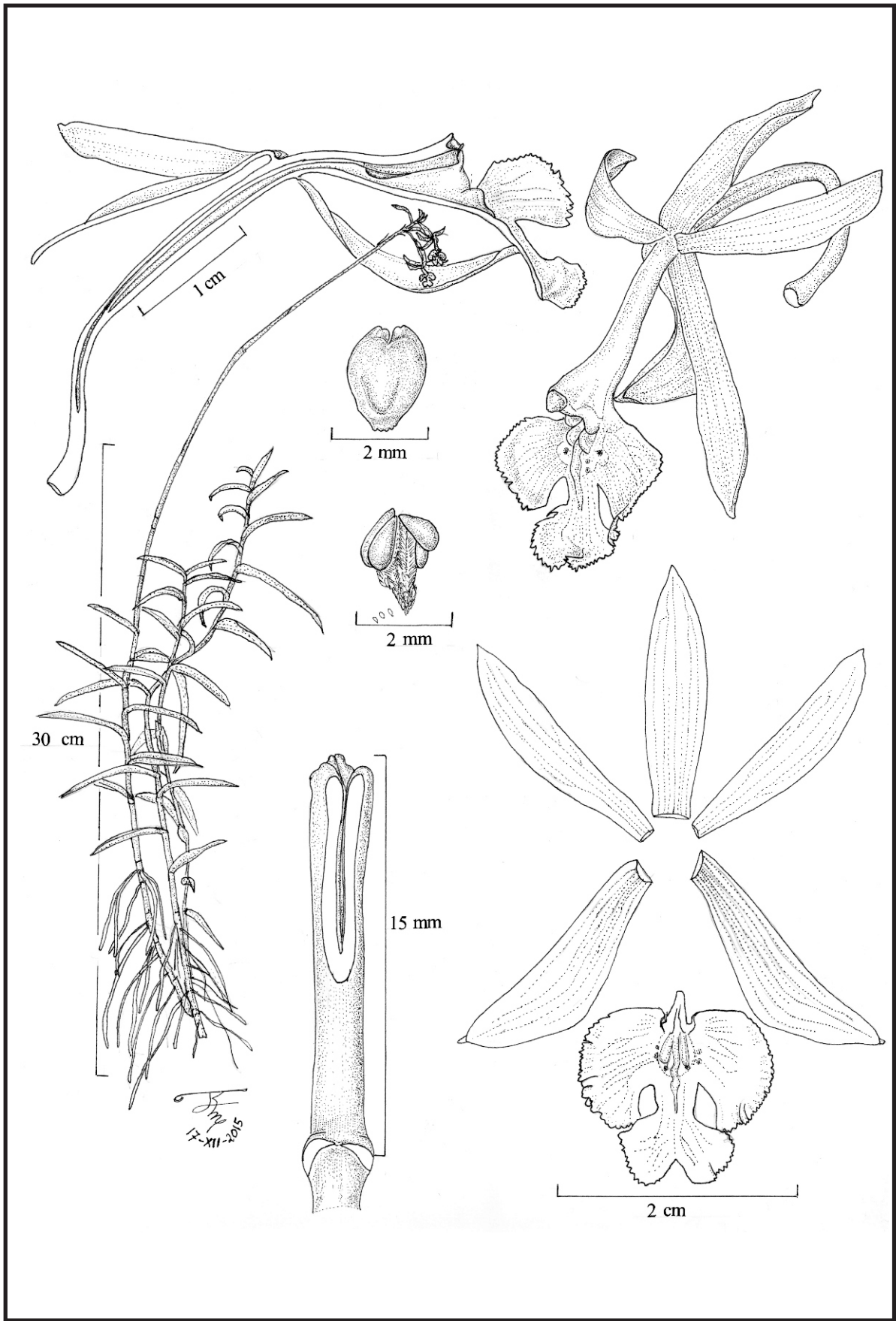
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1626



EPIDENDRUM IGNEOSICOLUM G.A.Romero, Carnevali & Hågsater

Plate 1627

EPIDENDRUM IGNEOSICOLUM G.A.Romero, Carnevali et Hågsater, *sp. nov.*

Type: VENEZUELA: Amazonas; Departamento Atures, south of Puerto Ayacucho, near the Orinoco River, Cerro Pintado, granite outcrop, slope east-southeast of famous petroglyphs, ca. 150 m, received 7 September 1978, flowered in cult. 17 December 2015. *G. Bergold sub Eric Hågsater 14499*. Holotype: VEN! (illustration voucher) Isotype: AMES!; Digital images of pretype AMO! Clonotypes: pressed October 2016: AMO! pressed October 2017, AMES! (photo voucher).

Similar to *Epidendrum ibaguense* Kunth, but the flowers larger, generally red-orange, with the column violet-red, the sides of the apex white, the calli and mid-rib yellow, and found exclusively on granitic outcrops along the Orinoco river and its tributaries.

Lithophytic, sympodial, caespitose, erect, **herb** to 100 cm tall including the inflorescence. **Roots** ca. 2 mm in diameter, basal, (under cultivation the roots are produced along the lower 1/3 of the stem, see illustration), fleshy, thin. **Stems** 18-30 cm, simple, cane-like, terete, thin, straight. **Leaves** numerous, distributed throughout the apical 2/3 of the stems, sheath 2.7-3.0 x 0.35 cm, tubular, minutely striated; blade 7-8 x 1.7-1.9 cm, coriaceous, smooth, oblong-elliptic, green, apex rounded, margin entire. **Inflorescence** to 54 cm long, apical, racemose, elongate; peduncle to 51 cm long, elongate, terete, thin, covered nearly totally by acute to acuminate, tubular, sheaths 4.5-6.1 cm long; rachis ca. 3 cm long, abbreviated, terete; produces successive racemes from the upper internodes of the peduncle. **Flowers** 3-15, successive, 2-8 open at one time, resupinate, orange-red, the lip orange, with a few red dots on the disc, calli and mid-rib yellow, column violet-red, the sides of the apex white, anther orange; without fragrance. **Floral bracts** 2-7 mm long, much shorter than the ovary, triangular, acute, embracing. **Ovary** 30-35 x 0.5 mm long, terete, thin, smooth. **Sepals** free, narrowly elliptic, acute, with a minute dorsal keel, 5-veined, with a pair of secondary veins on the sides of the mid-vein, margin spreading and entire; dorsal sepal 19-21 x 5 mm, reflexed, nearly parallel to the ovary; lateral sepals 19-22 x 6 mm, spreading, oblique, the upper margin nearly straight, the lower margin incurved above the middle. **Petals** 21 x 4.3 mm, spreading, free, narrowly elliptic, acute, oblique, 3-veined, the lateral veins much branched above the middle, margins spreading, entire. **Lip** 14.8 x 16 mm, united to the column, 3-lobed, base truncate, margin erose-dentate; bicallose, the calli thin, short, laterally compressed, somewhat divergent, with an intermediate keel that runs to the base of the isthmus, narrow, sinuous; lateral lobes 8 x 10 mm, obliquely semi-orbicular-dolabriform, the posterior margin rounded, entire; mid-lobe 8.0 x 9.6 mm, reminiscent of a fish-tail, with a narrow, cuneate isthmus 2.4 x 3.2, and the abruptly expanded into a bifid, sub-flabellate shape formed by two obliquely sub-quadrate lobes, 4.0 x 4.8 mm, divaricate, the apical margin erose-dentate. **Column** 15 mm long, slightly sinuous, slightly curved upwards towards the apex, thin, the apex truncate. **Clinandrium hood** reduced, entire. **Anther** ovate, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles longer than the pollinia, formed by tetrads which appear as stacked roof-tiles. **Rostellum** sub-apical, slit. **Nectary** penetrating slightly beyond the middle, narrow, minutely papillose. **Lateral lobes of the stigma** elongate, about 1/2 as long as the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: VENEZUELA; Amazonas, 12.5 km S of Puerto Ayacucho, 160 m, 1 XI 1971, *Davidse 2780*, AMO! MO! VEN! Atures, Río Autana, en raudal Ceguera, 100 m, 8 XI 1984, *Guánchez 3349*, VEN! 14 km al N de Puerto Ayacucho, 85-100 m, 8 XII 1977, *Huber 1337*, VEN! Orinoco river, 30 km below La Urbana, 100 m, 14 II 1949, *Maguire 29018*, AMES! Puerto Ayacucho, great rapid of the Orinoco, 1-1.5 km E of Hotel Amazonas, 100-120 m, 7 XI 1953, *Maguire 36036*, AMES! NY! VEN! Ibid. *Maguire 36036A* (flowers orange with yellow spot at base of lip) AMES! 3 km de Puerto Ayacucho, parte superior de laja, 140-180 m, 18 II 1977, *Morillo 6745*, VEN! [Isla] Nericagua, 78 m, 21 IV 1989, *Romero 1969*, CAS! MO! TFAV, VEN, (flowers lavender color, according to field notes). Puerto Ayacucho, igneous rocks, 200 m, 11 IX 1944, *Steyermark 58515*, AMES! Puerto Ayacucho, grown at New York Botanical Garden 699/60-90, 24 I 1961, NY! **Bolivar**: Cabeceras Río Turiba y Caño La Miel, 800 m, 1 VI 1989, *Fernández 5650*, MO! Represa Guri, on rock on top of ridge, 250-300 m, 31 III 1981, *Liesner 11000*, MO! VEN! Cedeño, vicinity of Panare village of Corozal, 90-400 m, 15 X 1985, *Boom 6395*, VEN! Cedeño, Laja del Pegón, camino hacia la prisión, laja granítica, 70-100 m, 25 II 1999, *Díaz s.n.*, VEN 309073! Cerro San Borja, 100-300 m, 12 XII 1955, *Wurdack 39846*, AMES! K! NY! VEN!

OTHER RECORDS: VENEZUELA; Amazonas; Río Orinoco near Puerto Ayacucho, V 1962, *Dunsterville 689*, illustration, AMES! AMO! K! near Puerto Ayacucho, IV 2010, *Romero s.n.*, Digital image, AMO! Ibid, I 2013, *Romero s.n.*, Digital image, AMO! Miranda, Baruta; Oripoto, 24 VII 2012, *Romero s.n.*, Digital image, AMO! Atabapo, Isla Nericagua, 25 VII 2012, *Romero s.n.* Digital image, AMO! Orinoquia, received IV 1996, *Romero s.n.*, Digital image, AMO!

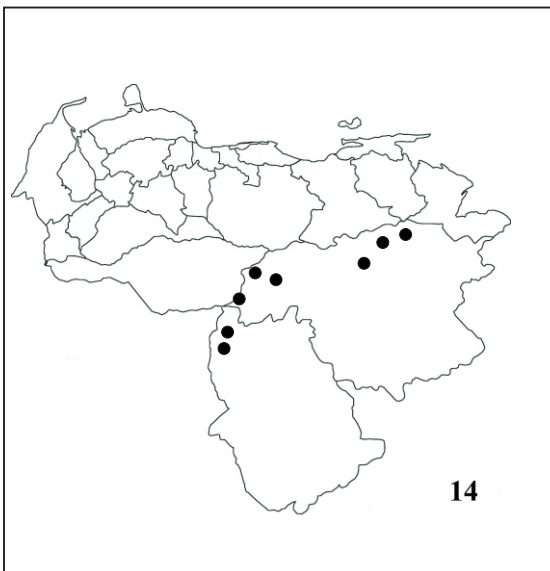
DISTRIBUTION AND ECOLOGY: Known presently along the Orinoco River basin, from La Urbana to Isla Nericagua, on both margins of the Orinoco along the border between Colombia (Vichada) and Venezuela (Amazonas); and also along rivers in Bolívar and Amazonas from represa El Guri south; lithophytic, on igneous, granitic rock, 150-800 m altitude. It has been found mainly on along the Orinoco River. Flowering from September to June, but mainly November through February.

RECOGNITION: *Epidendrum igneosicolum* belongs to the Calanthe Subgroup of the Amphiglottis Group which is characterized by the caespitose habit, simple, terete, stems, numerous, oblong-elliptic, leaves, mostly elongate inflorescence, with a raceme of successive flowers, the lip with two calli and a prominent, flexuous keel. The species is recognized by the orange-red flowers, the lip orange, with a few red dots on the disc, calli and mid-rib yellow, column violet-red, the sides of the apex white, somewhat larger flowers, sepals 19-22 mm long, column 15 mm long, and the habit which appears to be exclusively on igneous rock outcrops along the Orinoco River in the vicinity of Puerto Ayacucho. It is similar to *Epidendrum ibaguense* Kunth, which is similar in every way, but has smaller flowers, sepals being 12 mm long, column 8 mm long, orange-red, the lip orange with some dots on the disc, column orange-red, sometimes orange towards the apex; this species is found exclusively in the highlands of northern Colombia on the Cordillera Central and Cordillera Oriental. There are a number of plants in the northern edge of the Gran Sabana in Venezuela and along the Pakaraima Mountains on the Venezuela-Brazil border, ranging from white with a ring of dark purple at the apex of the column to deep purple with a white square at the base of the lip, including the calli which hybridize with *Epidendrum secundatum* Jacq. and rarely with *Epidendrum schomburgkii* Lindl. which require further study. One form of these hybrids has been described as *Epidendrum x gransabanense* Carnevali & I. Ramírez (2003), and it has non-resupinate deep purple flowers, bicallose, with a white square at the base of the lip. *Epidendrum odontopetalum* Hågsater, from Bolivia is similar, but the smaller flowers are pink, with yellow calli, sepals 7.5-10 mm long, petals narrowly elliptic, apex rounded, apical margin dentate, and lip wider than long, 6.5 x 10 mm, mid-lobe separated from the lateral lobes by a narrow, deep cleft.

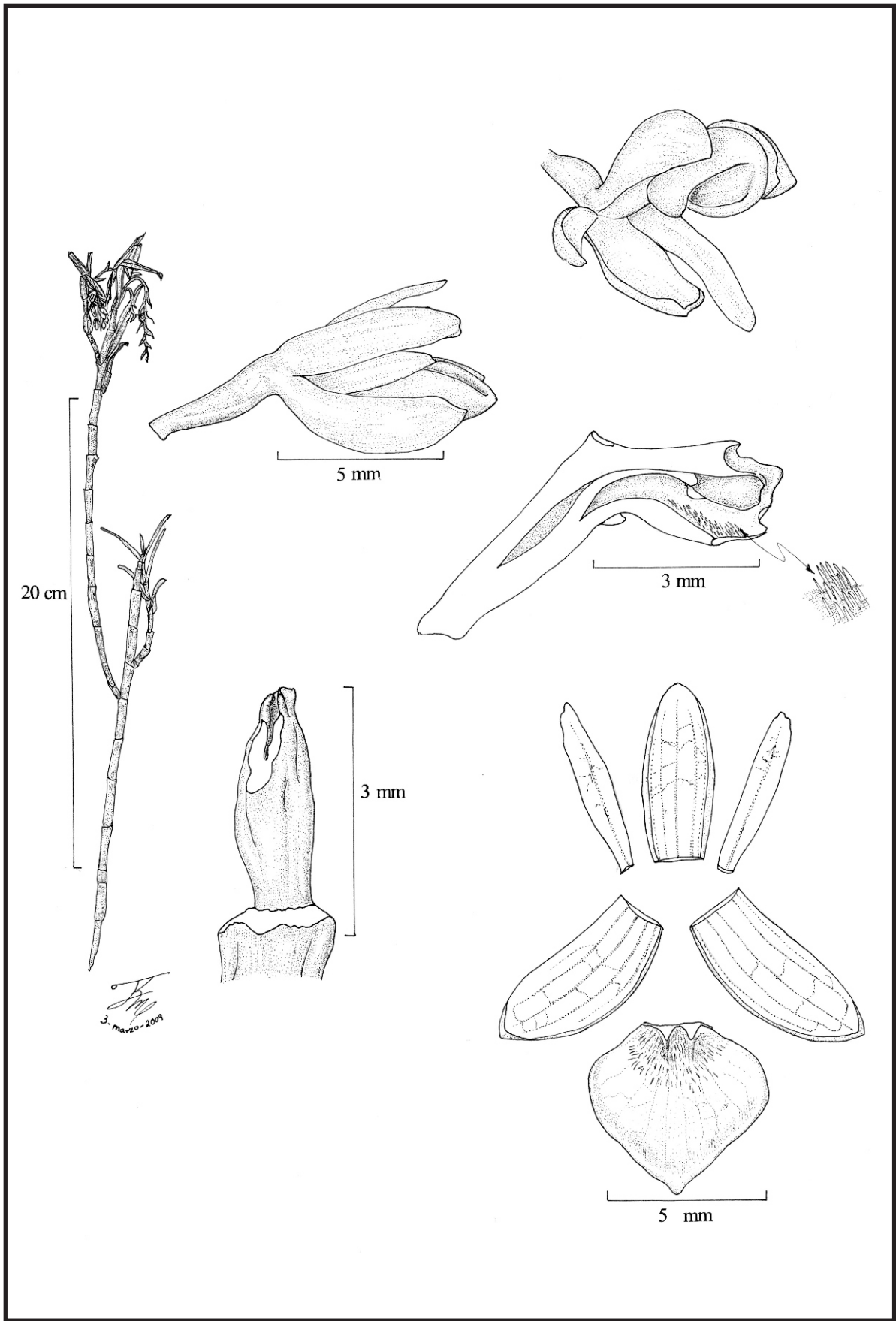
ETIMOLOGY: From the Latin, *igneus*, fire, and *column*, inhabiting, thus, growing on igneous rock, in reference to the plants that grow exclusively on igneous rock, such as granite. It is given an alternative name because the epithet *graniticum* is preoccupied in *Epidendrum*, i.e., *E. graniticum* Lindl. (= *Encyclia granitica* (Lindl.) Schltr.).

CONSERVATION STATUS: DD. Data deficient.

REFERENCES: Carnevali Fernández-Concha, G., & I. Ramírez-Morillo, 2003, Nomenclatural Novelties in the Orchidaceae from Venezuela and Guyana, *Novon* 13: 405-418. Hågsater, E., 2008, *Epidendrum odontopetalum*, in E. Hågsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1150. Ortiz Valdivieso, P. & C. Uribe Vélez, 2017, *Epidendrum ibaguense*, in *Orquídeas, Tesoro de Colombia* 2: 156, fig 263. Da Vinci Publicidad y Medios, S.A.S., Bogotá.



Authors: G. A. Romero, G. Carnevali & E. Hågsater Illustrator: R. Jiménez M. Photo: R. Jiménez M. Editors: E. Hågsater & E. Santiago



EPIDENDRUM IMTHURNII Ridl.

EPIDENDRUM IMTHURNII Ridl., *Timehri* 5: 203, 1886. (as *Epidendrum* “im Thurnii”)

Type: VENEZUELA: Bolívar; “GUYANA”, top of Mt. Roraima, [18 December 1884], *Everard Ferdinand im Thurn* 299, Set A*. Holotype: K-Lindl. 583713! (with sketch of flower prepared by Peter Taylor, 1976) sketch W! Isotypes: BM! (photo NY!) K-Lindl.! (sketch of flower prepared under the supervision of Dariuz Szlachetko, 2015, copy AMO!)
 Synonym: *Epidendrum imthurnii* Ridl., *Trans. Linn. Soc. London, Bot.* 2: 282, pl. 46A, f. 1-6, 1887.

Terrestrial erect, monopodial, branching **herb**, ca. 17-50 cm tall. **Roots** 3 mm in diameter, basal from the primary stem, fleshy, white. **Stems** cane-like, branching, terete, thin, erect, the primary stem ca. 17-21 x 0.2-0.3 cm; branches 2.8-3.3 x 0.15-2 cm, produced near the apex of the previous stem. **Leaves** 13 or more from the primary stem, 4-5 on the branches, distributed along the apical half of the branches; articulate, distichous, coriaceous, spreading, similar in size and shape, some slightly falcate; sheaths 3-12 x 1.5-3 mm, tubular, verrucose; blade 2.5-4.3 x 3-6 mm, linear-lanceolate, apex obtuse, margin entire, spreading. **Spathe** lacking. **Inflorescence** 2.4-3.5 cm long, apical, flowering only once, racemose to paniculate, arching-nutant; peduncle 5-8 mm long, laterally compressed, thin at the base and gradually widened towards the apex; rachis with 2-3 racemes, each raceme ca. 9-12 mm long, fractiflex, distichous, laxly few-flowered, each with 5-6 flowers. **Floral bracts** 2-3 mm long, prominent, as long as the ovary, triangular, acuminate, embracing, divaricate, somewhat recurved. **Flowers** 5-6 per raceme, resupinate, successive, ochre-yellow to greenish tallow; fragrance not registered. **Ovary** 3-6 mm long, terete, thin. **Sepals** 5.5-6.0 x 1.5-2.5 mm, partly spreading, free, membranaceous, lanceolate-oblong, sub-acute, 3-veined, the veins of the lateral sepals branching so as the appear 5-veined, margin entire, spreading; lateral sepals oblique. **Petals** 4.5-5.5 x 0.4-0.5 mm, partly spreading, linear, obtuse, 1-veined, margin entire. **Lip** 5-6 x 4-6 mm, united to the column, entire, ovate, cymbiform in natural position, base somewhat cuneate, apex acute, margin entire, spreading; bicolorous, the calli small, laminar, low, parallel; disc pubescent. **Column** 3 mm long, short, straight, thin at the base and gradually widened towards the apex, with a triangular tooth on each side at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex truncate, minutely apiculate, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles granulate, nearly as long as the pollinia. **Rostrum** sub-apical, slit. **Lateral lobes of the stigma** small, 1/5 the length of the stigmatic cavity. **Nectary** shallow, barely penetrating the base of the perianth, pubescent in front of the stigma, the pubescence reclining inwards. **Capsule** globose, 20-22 x 9-11 mm; pedicel 1.5 mm long, terete, body 13-15 x 9-11 mm; apical neck 5-6 mm long.

OTHER SPECIMENS: BRAZIL: Roraima: Monte Roraima, acampamento quati, 2681 m, 21 II 2017 *Cordeiro* 1143, EAN! **GUYANA: [Cuyuni-Mazaruni:]** Roraima, La Proa, East of border, near Lake Gladys, 2800 m, 13 IV 1988, *Liesner* 23230, MO! VEN! Roraima, La Proa; East of border, near Lake Gladys, 2800 m, 14 IV 1988, *Liesner* 23302, VEN! **VENEZUELA: Amazonas:** Cerro de la Neblina Camp. II, 2.5-3.5 km NE Pico Phelps (Neblina). 2085-2100 m, 16 II 1984, *Funk* 6382, VEN! Cerro de Marahuaca above Salto Los Monos, 25 II 1985, *Liesner* 17947, MO! SEL! VEN! Cerro Marahuaca, 2700 m, 13-14 X 1988, *Liesner* 24755, MO! VEN! Cerro Marahuaca, 2660 m, 12 X 1988, *Liesner* 25243, MO! VEN! Cerro Marahuaca, 2685 m, 15 I 1981, *Maguire* 65579, MO! VEN! Summit Mount Roraima, 8600 ft, 1898, *McConnell* 697, K-Lindl. 583712! (specimens mounted on the right side of the sheet, those on the left correspond to the holotype). P. N. Duida-Marahuaka: Marahuaca norte, 2500-2700 m, 8-14 XII 1992, *Pedrol* 10381, MO! Cerro de la Neblina, 1900 m, 16 X 1970, *Steyermark* 103971, VEN! Cerro Marahuaca, 2500 m, 16 II 1981, *Steyermark* 124424, VEN! MO! Cerro Marahuaca-Huha, 2580 m, 31 I 1982, *Steyermark* 125945, VEN! Cerro Marahuaca-Fhuif, 2480-2500 m, *Steyermark* 125975, NY! (illustration voucher) VEN! Cerro Marahuaca, 2480-2500 m, 1-2 II 1982, *Steyermark* 126061, VEN! Cerro Marahuaca, 2330-2470 m, 3-4 II 1982, *Steyermark* 126104, VEN! Cerro Marahuaca, 2800 m, 26 III 1983, *Steyermark* 129022, VEN! Cerro Marahuaca, 2580-2600 m, 30 III 1983, *Steyermark* 129198, COLI VEN! Cerro Marahuaca, 2580-2600 m, 30 III 1983, *Steyermark* 129291, VEN! Cerro Marahuaca, 2560 m, 10-12 X 1983, *Steyermark* 129606, VEN! Cerro Marahuaca 2250-2650 m, 26 II 1985, *Steyermark* 130683, MO! Mount Duida, 7050 ft, IV 1928, *Tate* 667, AMES! NY! NE de Cerro Marahuaca, y casi contiguas con, Cerro Duida, 2750 m, 2 II 1975, *Tillet* 752-364, NY! VEN! **Bolívar:** Cerro Roraima, 2810 m, 27 III 1984, *Aymard* 2494, VEN! Kukenan-tepuí, 2550 m, 11 IV 1988, *Liesner* 23133, MO! VEN! Murispán-tepuí, 2400-2500 m, 25-26 III 1987, *Delascio* 13076, MO! VEN! Kamarkaibaray-tepuí 2400-2500 m, *Delascio* 13106, VEN! Kukenan-tepuí, 2600 m, 8 IV 1989, *Delascio* 13993, VEN x2! Ilu-tepuí, 2500 m, 16 IV 1988, *Liesner* 23387, MO! VEN! Ilu-tepuí, lower plateau, 2500 m, 16 IV 1988, *Liesner* 23420, MO! VEN! Mount Roraima, 27 IX 1944, *Steyermark* 58797, AMES! VEN! Cumbre del Macizo de Chimantá, sector nororiental: Trepón (Torono)-tepuí, 2540 m, 24 II 1978, *Steyermark* 115863, MO! VEN! Aprada-tepuí, 2460-2500 m, 25 II 1978, *Steyermark* 115938, VEN! Auyán-tepuí, 2140 m, 28 II 1978, *Steyermark* 116136, VEN!

OTHER RECORDS: VENEZUELA: Amazonas: Sta. Isabel do Rio Negro: Cerro La Neblina, just inside Brazilian territory, 2300 m, *Dunsterville* 1162, illustration (published in *Dunsterville*, 1972 and 1973, and *Dunsterville & Garay*, 1972), AMES! VEN! **BRAZIL: Roraima:** nacimiento Rio Cottingo, cima Roraima-tepuí, 2673 m, 21 II 2017, *Hágsater* 15042 digital images & flowers in spirit, AMO! Ibid. *Hágsater* 15043, digital images & flowers in spirit.

DISTRIBUTION AND ECOLOGY: Ranging along the top of tepuis in the Parque Nacional Duida-Marahuaca, and Parque Nacional Canaima, and bordering Guyana, in particular Mt. Roraima; and on Macizo de la Neblina, on the border between Venezuela and Brazil; epiphytic or terrestrial, growing at 2250-3000 m altitude. Flowering throughout the year.

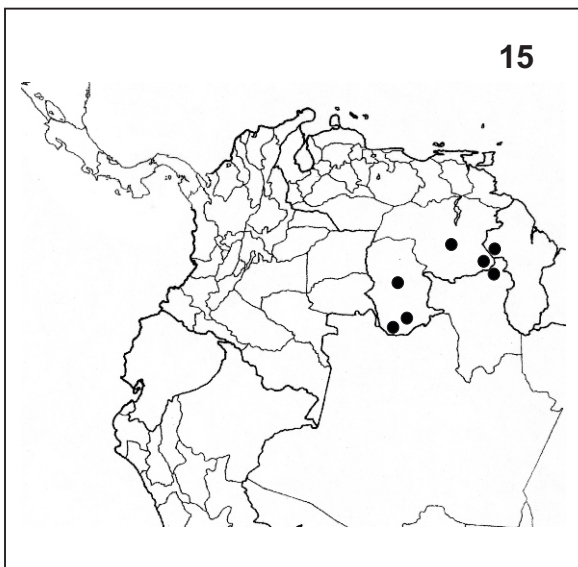
RECOGNITION: *Epidendrum imthurnii* belongs to the Eleanthoides Group, Rhombochilum Subgroup recognized by the branching habit, small fleshy leaves and a short 3-6 flowered, nutant inflorescence on a short thick peduncle. The species is recognized by the linear-lanceolate leaves 2.5-4.3 x 3-6 mm, small ochre-yellow to greenish yellow flowers, sepals 5.5-6.0 mm long, petals 4.5-5.5 x 0.4-0.5 mm, linear with the margin entire, and the lip ovate with the apex acute, the angle of the column and the ovary is close to 90°. Although relatively close to other species of the Eleanthoides Group, several morphological characteristics allow to distinguish it. *Epidendrum piconeblinaense* Hágsater is epiphytic, endemic to the Pico de la Neblina, in the southern tip of Venezuela, bordering on Brazil, the only difference appears to be the narrower, acute petals, and the angle between the column and the axis of the ovary is around 45°; this population is located some 300 km S of Mt. Marahuaca. *Epidendrum montigena* Ridl. has oblong leaves 2-3.5 x 0.4-1 cm, pink flowers, sepals 6.5-9 mm long, petals 6-8 x 2.0-2.5 mm, oblong-elliptic with the margin dentate, and the lip widely rhombic with the apex triangular. *Epidendrum alsum* Ridl. has ovate leaves 2.5-4.3 x 1.4-1.8 cm, yellow flowers, sepals 8-9 mm long, petals 7-9 x 1.9-2.1 mm, narrowly oblanceolate, the lip 3-lobed.

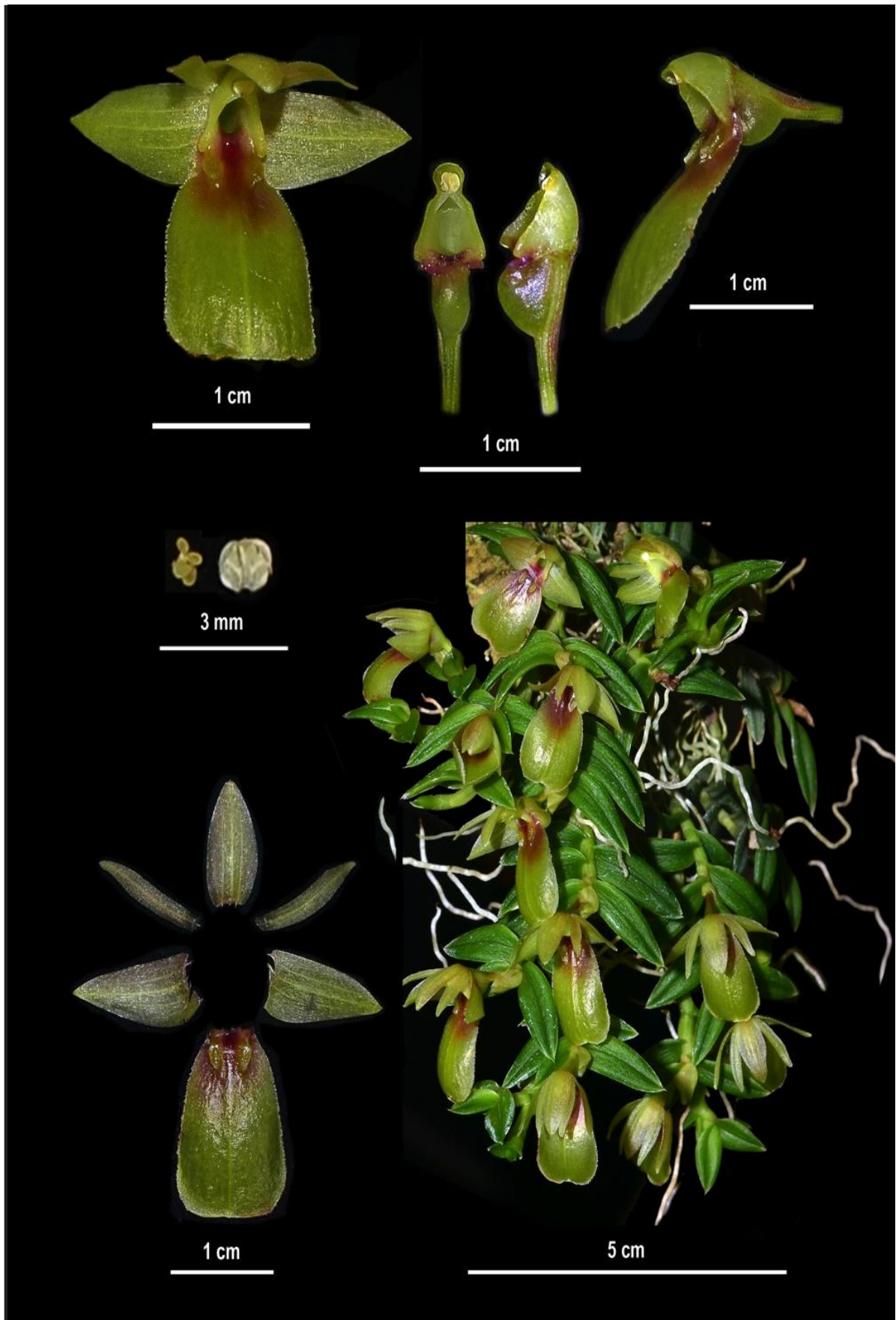
***NOTES:** Though the early expeditions to Mt. Roraima state the country of origin as Guyana, they all climbed the tepuí by the only route on foot, on the SW side which corresponds to Venezuela. Atop the tepuí, rarely did they venture beyond the immediate vicinity of the point of access. Only those recent collectors who have spent over a week on the summit or arrived by helicopter, can reach the Brazilian and Guyanese sectors. See note by Julian A. Steyermark, 1981. Though im Thurn was sent by Joseph D. Hooker of the British Museum to British Guiana, (and a set remains at BM), scientists at Kew Gardens, identified 53 new species, using the set sent to Kew. (plants.jstor.org>stable>al.ap.person.bm, 2017).

CONSERVATION STATUS: DD. Apparently common on the Summit of Mt. Roraima and other protected sites.

ETYMOLOGY: In honor of Sir Everard Ferdinand im Thurn (1852-1932), British author, explorer, botanist, photographer, and colonial administrator. In 1877 he became the curator of the British Guiana Museum. In 1884 he led the first successful European expedition to the summit of Mount Roraima (im Thurn, 1885; im Thurn & Hooker, 1887), ascending from the Venezuelan side (Steyermark, 1981). See notes in Santiago & Hágsater, (2017a) about the type collections.

REFERENCES: Baumbach, N., 2005. *Epidendrum*-Arten im Guayana-Hochland von Venezuela, *Die Orchidee* 56(4): 441-446. Carnevali, G., & I. Ramírez, *Epidendrum*, in P.E. Berry, K. Yatskievich & B. K. Holst (eds.), *Flora of the Venezuelan Guyana* 7: 325-352. *Dunsterville*, G. C. K., 1972, *Algumas Orquídeas das mais altas regiões do Brasil, Bradea* 1(12): 83-121. *Dunsterville*, G. C. K., 1973, *Algumas Orquídeas das Mais Altas Regiões do Brasil, Orquídea (Rio de Janeiro)*, 30(1): 16-31. *Dunsterville*, G. C. K. and L. A. Garay, 1972, as *Epidendrum imthurnii*, in *Venez. Orchid. III*. 5: 90-91. *Dunsterville*, G. C. K. and L. A. Garay, 1976, *Venez. Orchid. III*. 6: 40. Hágsater, E., 2004, *Epidendrum piconeblinaense*, in *The Genus Epidendrum* part 4, in E. Hágsater & L. Sánchez S. (eds.), *Icon. Orchid.* 7: t. 2004. Im Thurn, E.F., 1885, *The Ascent of Mount Roraima, Proc. Roy. Geogr. Soc. London*, n.s. 7: 497-521. Im Thurn, E.F., & J. D. Hooker, 1887, *The botany of the Roraima expedition of 1884, Trans. Linn. Soc. London, Bot.* ser 2, 2(13): 249-300. Santiago, E., & E. Hágsater, 2018, *Epidendrum alsum*, in *The Genus Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1602. Santiago, E., & E. Hágsater, 2018, *Epidendrum montigena*, in *The Genus Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1644. Steyermark, J. A., 1981, *Erroneous Citations of Venezuelan Localities, Taxon* 30(4): 816-817.





EPIDENDRUM IVAN-PORTILLAE Hågsäter & H.Medina

Plate 1629

EPIDENDRUM IVAN-PORTILLAE Hágsater et H.Medina, *sp. nov.*

Type: ECUADOR: Morona-Santiago: El Abanico, going on the road Macas to Riobamba, ca. 1800 m, flowered in cultivation in the collection of Ecuagenera at Gualaceo, January 2017, *Ivan Portilla 248*. Holotype: HA! (LCDP voucher)

Similar to *Epidendrum maxthompsonianum* Hágsater, but the flowers larger (sepals 10 mm long vs 6.5 mm), petals 1-veined (vs 3-veined), lip oblong-lanceolate, (vs. orbicular), apex truncate to shallowly emarginate, corners rounded (vs. apex rounded), flowers green, lip wine-red towards the base (vs. flowers yellowish green, lip totally wine-red.)

Epiphytic, sympodial, caespitose, sub-pendent herb, each segment ca. 5 cm long. **Roots** ca. 0.5 mm in diameter, fleshy, scarce, along the basal half of each stem. **Stems** ca. 20 x 2 mm, simple, cane-like, terete, straight, sub-pendent in natural position. **Leaves** alternate, 4-5, distributed throughout the stem, sheath 4 x 2 mm, tubular, smooth; blade 10-15 x 3-5 mm, articulate, lanceolate, acute, succulent, smooth, green, margin entire. **Inflorescence** apical, sessile, from mature growth, flowering only once. **Spathe** 5.4 x 6 mm (when spread), single, ovate, conduplicate, apex obtuse. **Flower** solitary, resupinate, tan to green, lip wine-red at base, or throughout; fragrance none registered. **Floral bract** very small, hidden by the spathe. **Ovary** 9 mm long, inflated ventrally behind the perianth, forming a very prominent, globose vesicle; basal section circular, striated. **Sepals** free, glabrous, 3-veined, margins entire, extended, dorsal sepal 10 x 5 mm, parallel to the column, ovate, apex narrowly rounded, lateral sepals 12 x 6 mm, spreading, triangular-ovate, acute, oblique. **Petals** 11 x 2 mm, partly spreading, oblong, slightly sigmoid, acute, membranaceous, 1-veined, margin entire, spreading. **Lip** 17 x 11 mm, united very shortly to the oblique column, oblong-obovate, apex truncate to shallowly emarginate, corners rounded, widest near the apex, all margins minutely dentate, flat in natural position; bicallose, calli thickened, elongate, in front of the column, with a very low, rounded, keel in the middle, running to the apex. **Column** ca. 4 mm long dorsally, the apex 6 mm high, base 0.8 mm long, triangular when seen from the side, dorsally arched, oblique, thick, short, ventrally forming a wide opening. **Clinandrium hood** cucullate, somewhat surpassing the body of the column, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, ovoid, laterally compressed, sub-equal; caudicles soft and granular, shorter than the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** ample, penetrating half of the ovary. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: ECUADOR: without locality, flowered in cultivation in the collection of Ecuagenera at Gualaceo, *H. Medina s.n.*, received 5 III 2010, digital image, AMO! **Napo:** faldas orientales del Cerro Sumaco, via Sumaco bajando al Coca [Puerto Francisco de Orellana], sector Guamani, ca. 1200 m, 29 IV 2016, *Iván Portilla 320*, plant photographed *in situ*, digital image AMO! (photo voucher). hort. Ecuagenera, 2 VI 2016, *I. Portilla s.n.*, Digital image! **PERU: Amazonas:** Prov. Bongará, Distrito Yambrasbamba, Selva Alegre, 3200 m, Hort. Orquideasamazonicas, *K. Villena s.n.* <http://www.orquideasamazonicas.com/es/Catalogo/Especie.php?seleccionar=123>

DISTRIBUTION AND ECOLOGY: Presently known from the eastern slope of the Cerro Sumaco, and the eastern slope of the Cordillera Oriental de los Andes above Macas, and reportedly from Peru, Dept. of Amazonas, at 800-1200 [3200] m altitude. Flowering from January to June.

RECOGNITION: *Epidendrum ivan-portillae* belongs to the Porpax Group, which is characterized by the small, creeping plants with succulent leaves, single flowers from a small spathe, mostly green with a usually shiny wine-red lip. The species is recognized by the oblique, arched triangular column the oblong, 1-veined petals, and the lip which is oblong-obovate, apex truncate to shallowly emarginate, corners rounded, widest near the apex, and the flowers green, with the lip only wine-red at the base or throughout. *Epidendrum maxthompsonianum* Hágsater & Dalström also has oblique column, the oblong, relatively wide petals, forming a cucullate hood with the dorsal sepal over the column in natural position, but the flowers are smaller, sepals 6.5 cm long, the petals wider, 3-veined, and the lip is orbicular and totally wide-red. *Epidendrum gnomus* Schltr. has narrowly triangular, nearly linear petals, outstretched in natural position, and the lip is ovate, somewhat cordate at the base. *Epidendrum viridibrunneum* Rchb.f. has linear, free petals, with the lip elliptic, the base somewhat cuneate, and elongate calli. *Epidendrum mathewsii* Rchb.f., which also grows in the region, has larger plants but similar sized flowers (identical to those of *E. porpax* Rchb.f. from Central America), with the lip reniform, convex, 3-keeled, with entire margins, and the nectary is elongate and does not form a globose vesicle on the underside of the ovary.

ETYMOLOGY: In honor of Iván Portilla, of Ecuagenera, who recently photographed the species *in situ*, and has dedicated his life, together with the Portilla family, to propagate and conserve the native orchid species of Ecuador.

CONSERVATION STATUS: DD. Data deficient. Aside from two recent collections, we do not have any information on the conservation status of the species. The species is being propagated at ECUAGENERA Ltda. It is also under cultivation at Agro Oriente Viveros, in Moyobamba, Peru.

REFERENCE: Hágsater, E., 2008, *Epidendrum gnomus*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1128. Hágsater, E., & S. Dalström, 2008, *Epidendrum maxthompsonianum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1140. Santiago, E., & E. Hágsater, 2010, *Epidendrum porpax*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1375.



Authors: E. Hágsater & H. Medina

LCDP: H. Medina

Photo: I. Portilla

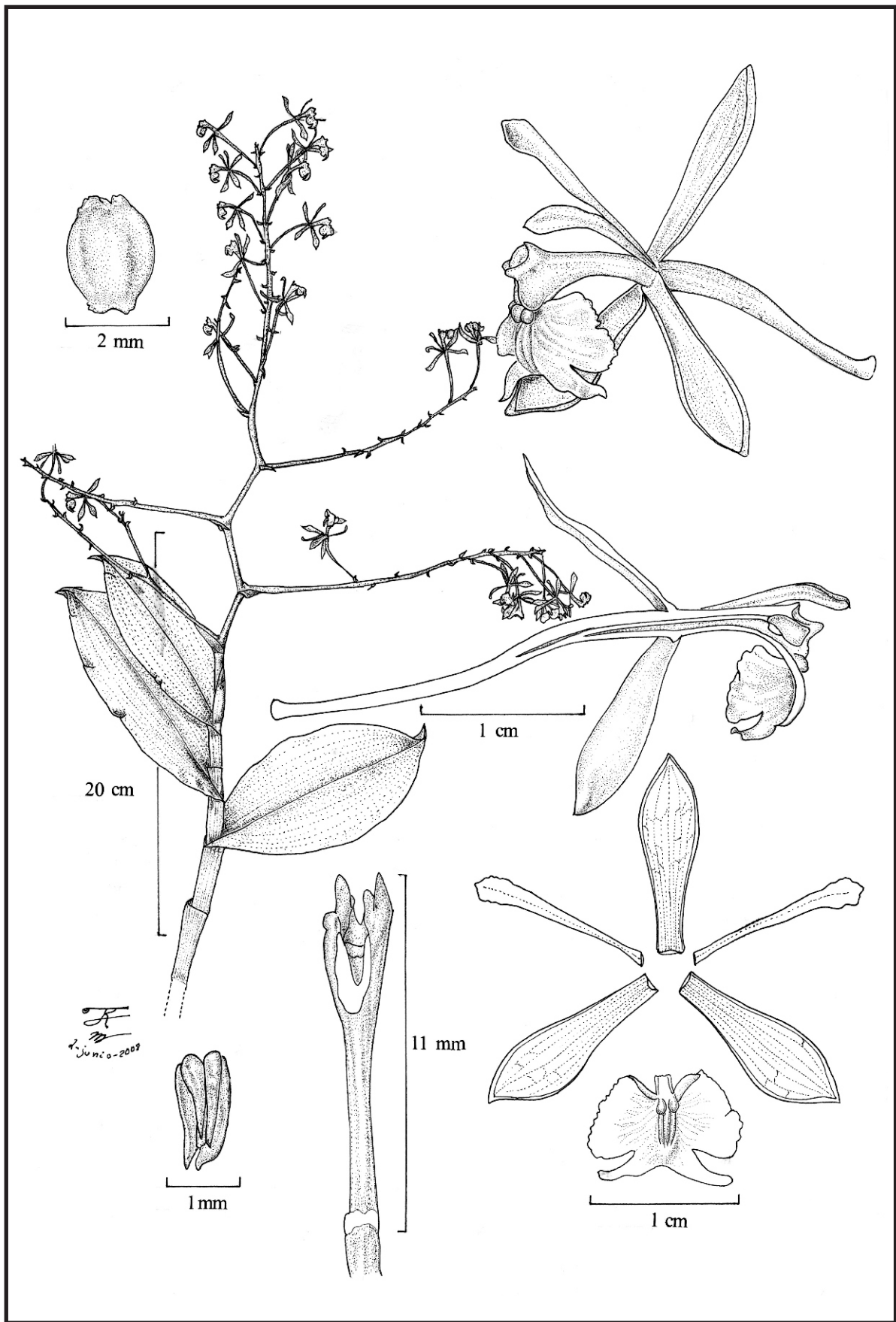
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1629



EPIDENDRUM JACARANDICHROMUM Hágsater, E.Santiago & Uribe Vélez

Plate 1630

EPIDENDRUM JACARANDICHROMUM Hágsater, E.Santiago et Uribe Vélez, sp. nov.

Type: Colombia, Mun.: Santa Marta; Santa Marta from Onaca, dry forest in a glen, growing on ground, 2500 ft, [782 m, north face of the Sierra Nevada de Santa Marta], 15 August 1898, **Herbert H. Smith 2377**, Holotype: NY! (illustration voucher). Isotypes: AMES 73818! CM 116386! K! US 600406! [For discussion on Smith's specimens numbering, see Ayers & Boufford (1988).]

Similar to *Epidendrum isthmii* Schltr. but the peduncle of the inflorescence with 1-3 large, conduplicate, brown bracts (vs. peduncle lacking any bracts), the lip of the flower with sub-reniform lateral lobes, the corners rounded (vs. sub-rectangular to ax-shaped, corners angled), and the calli of the lip usually lavender-blue, the color spreading from the calli onto the middle of the disc except for the white ribs on the disc (vs. calli and disc white, immaculate), and the lobes of the mid-lobe arched, apex rounded, margin entire (vs. nearly straight, apex truncate, margin irregular).

Terrestrial, sympodial, caespitose, erect **herb**, 91-200 cm tall. **Roots** 1.5-2.0 mm in diameter, basal, fleshy. **Stems** 35-170 x 1.0-1.5 cm, simple, cane-like, sub-terete, somewhat oval in cross section, erect, straight; base covered by tubular, scarious, non-foliar sheaths to 4.7 x 1.0 cm. **Leaves** 6-12, distributed throughout the apical half of the stems, articulate, alternate, sub-coriaceous, spreading; sheaths 1.3-6.0 x 0.5-1.0 cm, tubular, minutely striated, purple-brown; blade 2.5-23 x 0.6-5.3 cm, unequal, progressively larger until the penultimate leaf, elliptic, acute, margin entire, spreading. **Inflorescence** [10.5-127-30 cm long, apical, flowering only once, sub-erect to slightly arching, laxly-many-flowered, paniculate, occasionally racemose, commonly 4-6-branched, the branches spreading; peduncle ca. 3.5-15 cm long, thin, somewhat laterally compressed, straight, with 1-3-bracts 10-70 x 6-10 mm (with in natural position, conduplicate, not extended), conduplicate, acute, dark brown; bracts 9-22 mm long, subtending the branches similar to those of the peduncle, but progressively smaller. **Floral bracts** 3.0-6.5 mm long, narrowly triangular, acuminate, much shorter than the ovary. **Ovary** 25-32 mm long, terete, thin, not inflated, glabrous. **Flowers** [7]40-80, simultaneous, resupinate; sepals, petals and base of column green, apex of column and white, margin of the lip green, disc white, the calli usually lavender-blue, (reminiscent of *Jacaranda* sp. common in horticulture in tropical America), the color spreading from the calli onto the middle of the disc except for the white ribs on the disc, turning purple with age, as the flower yellows; fragrance citric, similar to some hybrid cattleyas (fide Diego Yepes, pers. comm.). **Sepals** 13.8-14.5 x 4.0-5.0 mm, spreading, to slightly reflexed, free, fleshy, narrowly spatulate-oblancoolate, the apical half concave, minutely apiculate, 5-veined, margin entire, spreading. **Petals** 12.5-14.0 x 1.5-1.8 mm, spreading the slightly reflexed, free, linear-oblancoolate slightly arching, acute, 1-veined, margin entire to somewhat erose, spreading. **Lip** 7-8 x 10-12 mm, united to the column, 3-lobed, base cordate, strongly convex; bicallous, the calli prominent, thin, somewhat divaricate; disc with 3 fleshy, sub-acute ribs, the mid-keel running sometimes to the apical sinus of the lip and the forming a micro, the lateral pair shorter; lateral lobes 3.0-4.5 x 5.7-7.0 mm, sub-reniform, margin erose; mid-lobe 2.3-4.5 x 8.0-9.2 mm, bilobed, the lobes 3.8-4.5 x 0.7-1.3 mm, oblong, some divergent, arched, apex rounded, margin entire. **Column** 11 mm long, straight, thin, long, dilated at the apex. **Clinandrium-hood** reduced, margin entire. **Anthor** 2 x 1.75 mm, sub-spherical, lightly elliptic, base minutely 3-lobed, apex sub-truncate, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, the outer pair 1.66 mm long, in the inner pair somewhat shorter. **Rostrum** sub-apical, slit. **Lateral lobes of the stigma** small, about 1/4 the length of the wide stigmatic cavity. **Nectary** shallow, penetrating ca. 1/6 of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: César: Mun. Valledupar; Corregimiento de Sogrome, La Honda, 800 m, 14 VII 1983, Cuadros 1723, COL 270023! **Magdalena:** Parque Nacional Tayrona, ca. 11°19'N 73°58'W, 100-150 m, 24 X 1972, Kirkbride 2510, COL x2! HB! NY! US! Minca, Hacienda La Victoria, 1302 m, Yepes, 54, UTM. (digital image of live plant, AMO!) **Norte de Santander:** Mun. El Tarra, VII 2016, Uribe-Vélez s.n., HUPJ! **VENEZUELA: Falcón:** Mun. Petit, Serranía de de San Luis, zwischen Coro un Curimagua, 1200 m, 21 XII 1951, Renz 7663, RENZ! **Lara:** Cerro Guacamuco, N von Siquisique, Cueva de los Encantos, 900 m, 2 X 1948, Renz 4865, RENZ x2! Along Río Yacambú at damsite, 33 km SE of Sanare, 500 m, 28 VII 1973, Steyermark & Carreño s.n., VEN 94012! **Trujillo:** Strasse Valera-Timotes, 900 m, 28 VII 1948, Renz 4766, RENZ x2! **Zulia:** Sierra de Perijá, Caño Las Piscinas, 730 m, VII 1975, Delascio Chitty 3256, AMO 26103! VEN 111791! VEN 111637! Mun. Munchiques; Sierra de Perijá, a lo largo del Río Yasa de Kasmera (Estación Biológica de la Universidad de Zulia), al SW de Machiques, 270-290 m, 24 VIII 1967, Steyermark 99692, AMES! AMES 106469! S! VEN 71789! (previously cited under *E. unguiculatum* (C.Schweinf.) Garay & Dunst.). Sierra de Perijá, entre Pshicacao [Pchikakaa] y la frontera con Colombia, 1600 m, hort, Caracas, VIII 1975, Dunsterville s.n. VEN 104142! Ver otros ejemplares de Renz de Lara y Barinas.

OTHER RECORDS: COLOMBIA: Magdalena: Sierra Nevada de Santa Marta, received 7 VI 2013, Diego Yepes s.n., digital images, AMO! Ibid, Minca, cuenca abajo del Río Sevilla, por el río Guaira, Yepes s.n., digital images, lacking the lavender blue on calli, AMO! **Norte de Santander:** Mun. El Tarra, VII 2016, Uribe-Vélez s.n., digital image series, AMO! (photo voucher). www.clanorchids.com, as *E. unguiculatum* 0072POS (1 Aug. 2016). Speciesidentificationtaskforce.blogspot.com, as *E. unguiculatum*, *Epidendrum clarenceanum*, award 20151917 (1 Aug. 2016). www.globalorchids.info, as *E. unguiculatum*, Expo. Charleroi, France, image by Albert Maas (1 Aug. 2016). **Venezuela: Lara:** Leonardo Andrade, digital image, AMO! **Táchira:** comprada a un matero, San Cristobal, received 4 II 2017, Angelita Avila s.n., digital image, AMO!

DISTRIBUTION AND ECOLOGY: Terrestrial and epiphytic, it is a typical taxa of colombo-venezolano Tropical Dry Forest (Td-F) at 100-800 m altitude and bimodal distribution of rains, Presently known from the base of the Sierra Nevada de Santa Marta in northern Colombia and south along the Cordillera de Perijá with allopatric populations in both Colombia and Venezuela (Zulia), as far as the northern tip of the department of Norte de Santander, and east to the Cordillera de Mérida (Trujillo and Lara), Serranía de San Luis (Falcón).

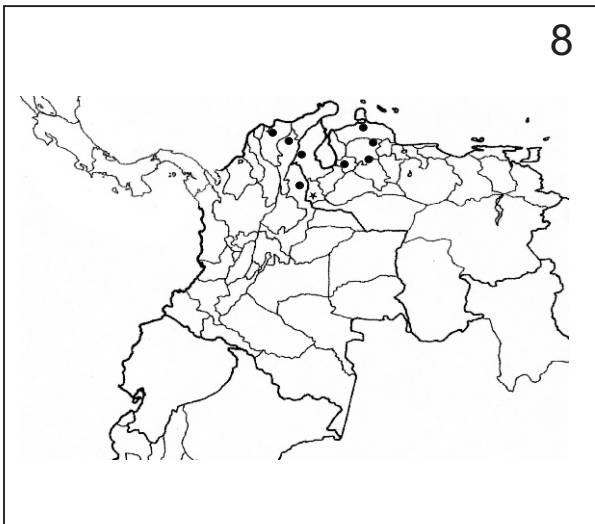
RECOGNITION: *Epidendrum jacarandichromum* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, without any spatheaceous bract, though it may have several bracts, the mostly filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, at least the inner pair, and Densiflorum Subgroup where the short-pedunculate inflorescence is paniculate, flowering only once, flowers are green, the apex of the column and disc of the lip creamy-white, the calli sometimes tinged purple, the petals are linear-oblong to linear-oblancoolate, never filiform, and the pollinia "bird-wing" type, unequal in shape, the inner pair smaller. The species is recognized by the peduncle of the inflorescence with 1-3 large, conduplicate, brown bracts, similar to those subtending the lower branches of the inflorescence, the lip of the flower with sub-reniform lateral lobes, the corners rounded, and the calli of the lip usually lavender-blue, the color spreading from the calli onto the sides of the disc except for the white ribs on the disc, lobes of the mid-lobe arched, apex rounded, margin entire. The following species are all found in the same general area and have a very similar plant habit. *Epidendrum isthmii* is most similar but lacks any bracts on the peduncle, the lateral lobes of the lip are sub-rectangular to ax-shaped, corners right-angled, calli and disc of the lip is white, the margin of the lip being often green, and the lobes of the mid-lobe are nearly straight, apex truncate, margin irregular. *Epidendrum agathosmicum* Rchb.f. has a similar plant habit, but the flowers are entirely white, the petals much wider, the lateral lobes of the lip have a dentate lip, and the mid-lobe, though also bifid has two somewhat orbicular lobes. *Epidendrum lilacinooides* Hágsater & E. Santiago, has purple flowers with a white lip, filiform petals, and the width of the mid-lobe of the lip is much wider than the lateral lobes, the apices being 14-18 mm apart, strongly divaricate, and linear-oblong. *Epidendrum macroceras* Schltr., also described from a collection by Herbert H. Smith from Santa Marta has yellow green flowers with an immaculate white lip, and also has filiform petals, and the lip is much wider between the apical lobes which are oblong, divaricate and falcate. *Epidendrum unguiculatum* (C.Schweinf.) Garay & Dunst. has similar flowers, but it produces successive new racemes from the initial inflorescence, flowers are larger (sepals 18-20 mm long), lateral lobes of the lip flabellate, the flowers generally green with the apex of the column and disc white, the calli occasionally purple (collection Steyermark 99692 had been assigned to that species).

ETYMOLOGY: In reference to the lavender-blue color of the flowers of the horticultural *Jacaranda* sp. and the Greek χρῶμα, color, which decorates the calli, and extends onto the disc except for the ribs, and is quite unique to this species.

CONSERVATION STATUS: DD. Data deficient. The species seems relatively widespread, over a distance of some 300 km in two adjacent mountain ranges.

ACKNOWLEDGMENT: We wish to thank Guillermo Reina-Rodríguez for his contribution to the understanding of the ecological niche occupied by this species.

REFERENCES: Ayers, Tina J., & David E. Boufford, 1988, Index to the vascular plant types collected by H. H. Smith near Santa Marta, Colombia, *Brittonia* 40(4): 400-432. Hágsater, E. & E. Santiago, 2010, *Epidendrum lilacinooides*, in E. Hágsater & L. Sánchez (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1347. Santiago, E. & E. Hágsater, 2008, *Epidendrum isthmii*, in E. Hágsater & L. Sánchez (eds.), *The Genus Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1132. Santiago, E. & E. Hágsater, 2010, *Epidendrum macroceras*, in E. Hágsater & L. Sánchez (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1352. Santiago, E. & E. Hágsater, 2013, *Epidendrum unguiculatum*, in E. Hágsater & L. Sánchez (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1492.



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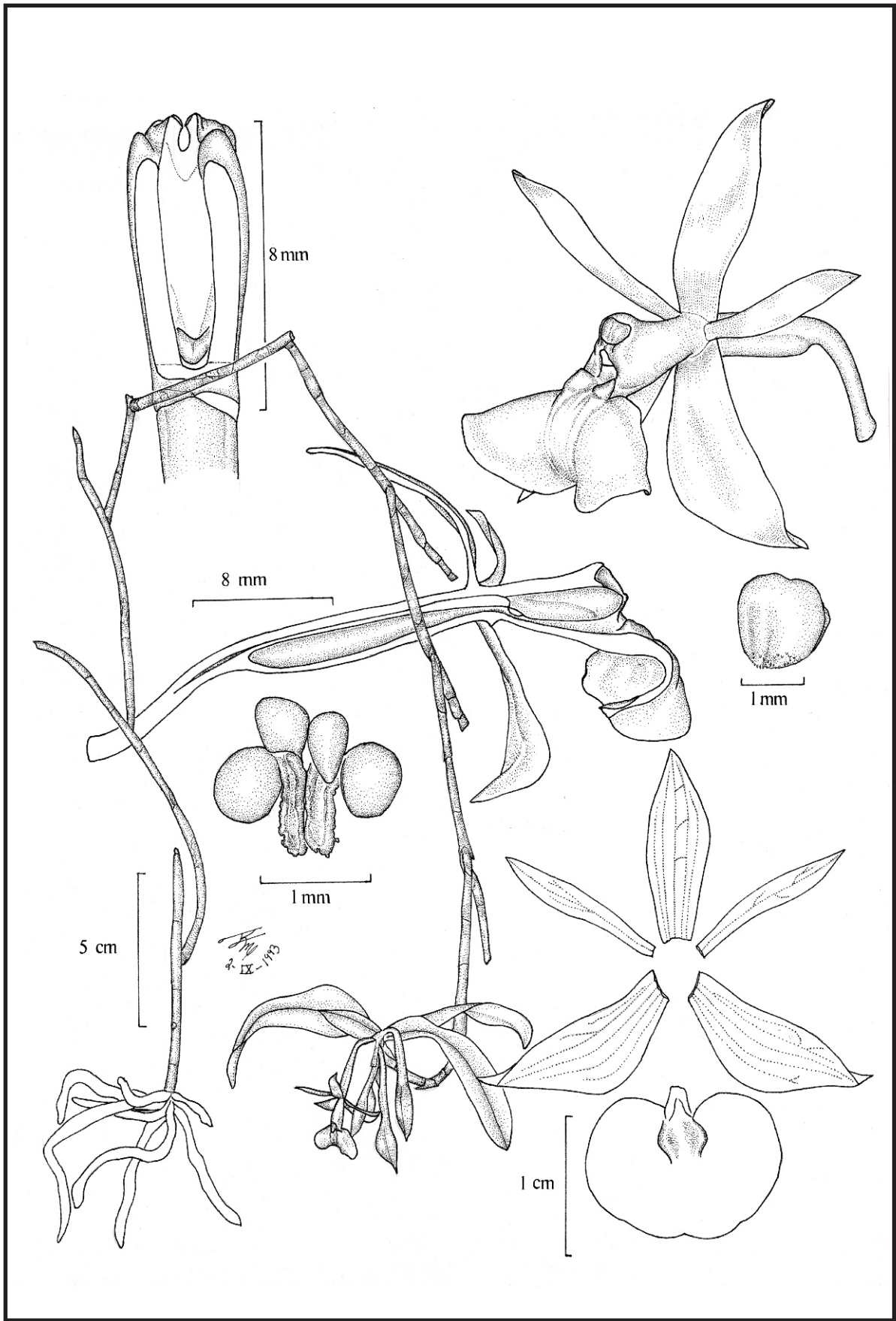
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1630



EPIDENDRUM JAMAICENSE Lindl.

Plate 1631

EPIDENDRUM JAMAICENSE Lindl., *Fol. Orchid.* 4 (Epidendrum): 82, 1853.

Type: JAMAICA: on trees in the woods of Dunrobin Castle, **William Purdie s.n.** Holotype: K-Lindl! Tracing W-Rchb.f. 38711!

Epiphytic, sympodial, erect to arching-pendent **herb**, 10-60 cm tall, where the new stem is produced from a sub-apical internode of the previous stem. **Roots** 3.0-3.5 mm, fleshy, from the base of the basal stem only. **Stems** 6-17 x 0.2-0.4 cm, simple, cane-like, terete, straight, new stem produced from a sub-apical internode of the previous stem. **Leaves** 2-5, distributed towards the apex of the stem; sheath 1.2-3.5 x 0.3-0.6 cm, tubular, striated, minutely rugose; blade 2.5-11 x 0.9-1.4 cm, articulate, narrowly elliptic, apex acute, sub-coriaceous, smooth, margin entire, spreading. **Spathes** lacking. **Inflorescence** 3-6.5 cm long, apical, from the mature stem, nodding, racemose, flowering only once; peduncle without bracts. **Floral bracts** 2.5-6 mm, much shorter than the ovary, ovate, acuminate. **Flowers** 5-10, successive, one open at a time, resupinate, pale green; without fragrance. **Ovary** 16-24 (28) mm long, prominently ventrally inflated at the apical two thirds, terete, unornamented. **Sepals** spreading, free, glabrous, thin, elliptic, apex acute, 5-veined, margin entire, spreading; dorsal sepal 11-15 x 3-5 mm; lateral sepals 10-15 x 3-5.7 mm, somewhat falcate, with an apical dorsal keel. **Petals** 10-15 x 1.8-2 mm, spreading, linear-elliptic to oblanceolate, oblique, apex acute to obtuse, 1-veined (branched), margin entire. **Lip** 9-15 x 10-15 mm, united to the column, reniform to sub-quadrate-obovate, somewhat emarginate, apex revolute, margin entire; bicallose, the calli elongate. **Column** 7-8 mm long, straight, thin. **Clinandrium hood** reduced, margin entire. **Anther** sub-globose, surface granulose, 4-celled. **Pollinia** 4, sub-globose; caudicles 2, longer than the pollinia, granulose; viscidium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of stigma** very short, but stigmatic cavity very long, occupying nearly the whole length of the column. **Nectary** penetrating two-thirds of the ovary, dilated at the base, unornamented. **Capsule** not seen.

OTHER SPECIMENS: CUBA: Santiago de Cuba: La Perla to Santa Ana, 11 II 1911, *Shafar 8591*, NY! **Granma:** Pico Caracas, 24 IV 1978, *Bisse 37465*, HAJB! **Guantánamo:** Cuchillas de Toa, 700 m, 24 III 1972, *Bisse 22685*, HAJB! **Holguín:** Nipe, 600-700 m, 16 X 1941, *Morton & Acuña 3235*, US! Along Río Medio near Woodfred, Sierra Nipe, 500 m, 18 X 1941, *Morton & Acuña 3274*, US! Loma de la Mesura, 31 V 1977, *Bisse 35826*, HAJB! Cabezas del Río Levisa, Sierra de Cristal, 27 XII 1955, *Liogier 4629*, HAC! LS (x2)! Mayarí, Sierra de Nipe, 20 IV 1960, *Liogier 7831*, HAC! Sierra Nipe, near Woodfred, 450-550 m, 5 I 1910, *Shafar 3457*, NY! Mayarí, Sierra de Nipe, 1 X 1966, *Verosta 26200*, HAC! Monte Verde, 1859, *Wright 1498*, AMES! K-L! P! Monte Verde, *Wright s.n.*, P! W-R 49691! **DOMINICA:** Ramage, 12 IV 1904, *Bryant 210*, K-L! Morne Trois Points, 400 m, 17 V 1968, *Renz 10316*, RENZ! Syndicate Estate, 26 I 1986, *Whiteoord 5245*, BM! **DOMINICAN REPUBLIC:** without locality, *Fuertes 531*, AMES! Pegonia Valley, 6 V 1940, *Hodge 3427*, NY! Banks of Bao river, ca. 1000 m, 17 IX 1968, *Liogier 12686*, AMES! NY! Mata Grande, 500 m, 13 X 1968, *Liogier 12987*, NY (x2)! Along Guacara River, La Guacara Arriba, tributary of Bao river S of San Jose de Las Matas, 1200 m, 5 XI 1968, *Liogier 13416*, AMES! NY! **Barahona:** Sierra de Bahoruco: Filipinas, Finca del mocano, al lado y más arriba de las minas de Larimar, 1000-1100 m, 14 I 1985, *Dod 1389*, Herb. Dod! Sierra de Bahoruco; Aguacate, por el puesto militar; carretera hacia Pedernales por la Frontera, 1180 m, 11 1982, *Dod 1709*, Herb. Dod! Cordillera Central: San José de Ocoa; carretera a La Laguna km 7, Finca Read, 850-900 m, III 1987, *Dod 2002*, Herb. Dod! Montaña Nueva, forested hills lopes SE of Polo, 3500 ft, 21 VIII 1946, *Howard 8434*, AMES! NY! Ibid. *Howard 8492*, AMES! NY! US! Montaña Nueva, between Polo and Barahona, 3500 ft, 3 VIII 1950, *Howard 12329*, AMES! Sierra de Yoroa, 850 m, 28 I 1969, *Liogier 13567*, NY! **Constanza:** Cuatro Alas, NE of La Culata, 1600 m, 25 IX 1969, *Liogier 16123*, NY! **Santo Domingo:** Prope Constanza, 1190 m, 1 IV 1910, *Tuerckheim 3235*, M! NY! US! **HAITI:** Les Cayes, Les Platons, base de Formond, 900 m, 11 1982, *Dod 979*, Herb. Dod! Plaine du Nord: Cap. Haitien, Chaîne Bonnet L'Evêque, 750-800 m, X 1985, *Dod 1216*, AMO! Herb. Dod (x2)! Massif de La Hotte: Camp. Perrin; carretera à Jérémie; 1 km antes de vado del Rivière Glace, 800 m, 22 IV 1982, *Dod 1837X*, Herb. Dod! **JAMAICA:** without locality, *Morris 481*, NY! W-Rchb.f.! Ecclesdown, 2000 ft, 27 V 1961, *Adams 9427*, AMES! St. Catherine's, Hollymount, 2600 ft, 21 IX 1962, *Adams 11682*, M! St. George's, Annodale, III 1906, *Broadway s.n.*, AMES! Central Highlands, rather damp, 17 IX 1993, *Cloudon sub Hågsater 11227*, AMO (illustration & photo voucher)! Ibid. 23 V 1997, AMO! Cockpit: Cockpit Country, 13 IX 1906, *Britton 491*, NY! Mansfield, near Bath, 26 IX 1895, *Harris 101*, K-Lindl.! Soho, St. Ann., 1400 ft, 11 V 1915, *Harris 11991*, AMES! BM! NY! St. Thomas: Northwestern slopes of Stone Hole Bump, 600-800 m, 9 VI 1926, *Maxon 9029*, AMES! NY! US! Maccasucker Bump, 825-1025 m, 25 VI 1926, *Maxon 9539*, AMES! NY! US! Jiggerfoot Valley, *Morris 2409*, K-Lindl.! John Crow Mts, 1000-1500 ft, 6 VIII 1954, *Webster 5146*, AMES! **GADELOUPE:** without locality, IV 1875, *L'Herminier s.n.*, P! Saralle, 4 V 1939, *Questel 4737*, P! La Soufrière, oberhalb Matouba, 800 m, 28 XI 1968, *Renz 10341*, RENZ! Rivière Petit David, 150 m, 1 XII 1968, *Renz 10347*, RENZ! Les Mamelles, 600-650 m, 26 I 1970, *Renz 10469*, RENZ! **MARTINIQUE:** ex Herb. A. Richard, P! **PUERTO RICO:** San German-Maricao, Maricao Forrest Reserve, Monte de Estado, bellow observation tower, 880 m, 2 IX 1985, *Ackerman 2167*, UPRRR! Río Grande, Luquillo Mts., El Toro Trail, 750 m, 30 VII 1988, *Ackerman 2441*, UPRRR! Maricao, 2500 ft, VI 1939, *Hom 5862*, AMES! Sierra de Luquillo, 650 m, 16 I 1961, *Renz 9954*, RENZ! Sierra de Luquillo, VI 1885, *Sintenis 1815*, W-R! Luquillo Mts, 20 IX 1964, *Wagner 688*, AMES! Maricao, 31 VIII 1941, *Winters s.n.*, AMES!

OTHER RECORDS: JAMAICA: "The plant comes from Jenman of Jamaica who describes it as rare..." [on other side of note, upper left-hand corner], *Jenman sub Moore s.n.* W-Rchb.f. 49992! (illustration),

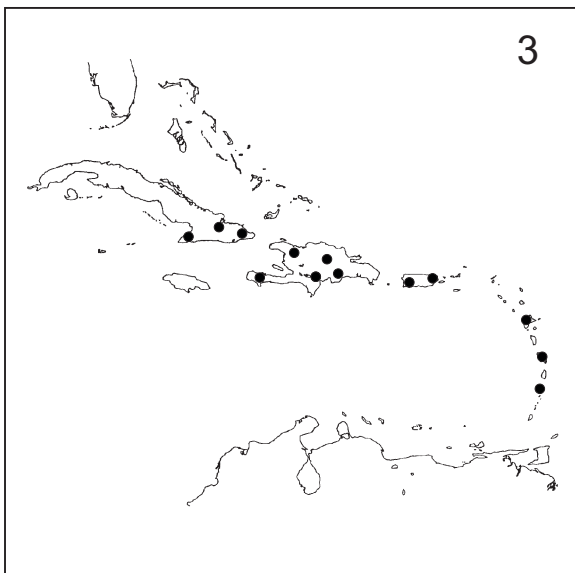
DISTRIBUTION AND ECOLOGY: Widespread in the Antilles, from eastern Cuba to Martinique. Epiphytic in wet forests. Flowering throughout the year. Altitude 250-1200 m.

RECOGNITION: *Epidendrum jamaicense* belongs to the Arbuscula Group and Incomptum Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy greenish to violet-green flowers with short ovaries, the lip entire to 3-lobed, and the Proligerum Complex, which has the ovary inflated, forming a vesicle behind the perianth. The species is recognized by the sub-coriaceous leaves, the successive flowers with a prominent ventral nectary which inflates the ovary over two-thirds its length, acute petals, reniform, bicallose lip, straight column, narrow, and the enormous stigmatic cavity which occupies the whole length of the column. *Epidendrum ochrochlorum* Barb.Rodr. is green and has larger flowers, sepals 14-15 mm long, acute, the lip is very similar in shape, the base cordate, with the mid-lobe of the lip emarginate and thus bilobed, but the sides of the lip are obliquely revolute, so that in natural position it looks triangular. *Epidendrum proligerum* Barb.Rodr. is also larger, with the sepals 12-13 mm long, has the mid-lobe of the lip entire, not emarginate, with the base of the lip cuneate. *Epidendrum morganii* Dodson has a widely cordiform, entire lip, sepals 13-18 mm long, petals 1-veined. For a recent discussion of Brazilian species in this group see Pessoa *et al.*, 2015.

CONSERVATION STATUS: DD. (Data deficient).

ETYMOLOGY: In reference to the island of Jamaica, where the type was collected.

REFERENCES: Ackerman, J. D., 1995, *An Orchid Flora of Puerto Rico*, The New York Botanical Garden, p. 68-70, fig. 36. Fawcett, W., & A. B. Rendle, 1982, *Orchids of Jamaica* 1: 88-89. Hågsater, E., & E. Santiago, 2015, *Epidendrum morganii*, in Hågsater, E. & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1541. Pessoa, E., M. R. Miranda & M. Alves, 2015, A new whitish flowered *Epidendrum* (Laeliinae-Orchidaceae) from the Atlantic Forest of southeastern Brazil, *Brittonia* 68(2): 115-119.



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Illustrator: R. Jiménez M.

Photo: R. Jiménez M

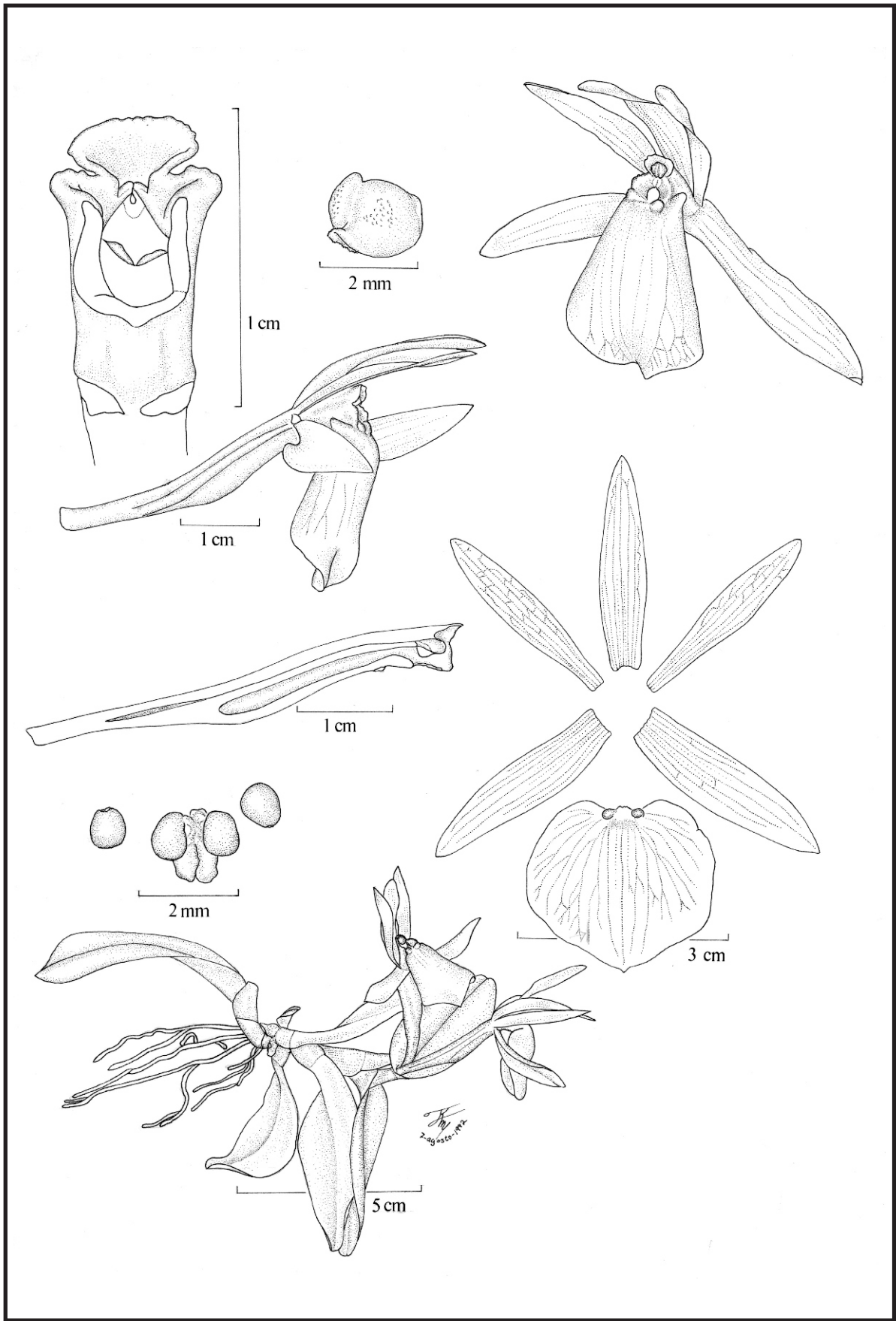
Editors: E. Hågsater & E. Santiago

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Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1631





EPIDENDRUM KERRYAE Hágsater & L.Sánchez

Plate 1632

EPIDENDRUM KERRYAE Hágsater & L.Sánchez, Orquideología 19 (2): 38. 1994.

Type: COLOMBIA: Departamento Chocó: drainage basin of Río San Juan, tributary Río Taparal, 4°15'N 77°10'W, 200 m, **J. van Rooden, B. J. H. ter Welle & S. M. C. Topper 694**. Holotipo: U!

Epiphytic, sympodial, caespitose **herb**, 7-42 cm tall. **Roots** 1.0-1.5 mm in diameter, basal, fleshy, thin. **Stems** 5-38 x 0.4-0.8 cm, simple, cane-like, somewhat laterally compressed, flexuous. **Leaves** 3-11, equally distributed throughout the stem; sheath 3.0-4.5 cm long, laterally compressed, smooth; blade 5.0-9.5 x 2.5-4.0 cm, ovate-elliptic, apex bilobed to retuse, sub-coriaceous, margin entire. **Inflorescence** apical from the mature stem, sessile, flowering only once. **Flowers** 1-2, simultaneous, resupinate, yellowish green; with nocturnal sweet fragrance. **Floral bracts** 4.5-5.0 x 2.8-3.0 mm, much shorter than the ovary, ovate, rounded. **Ovary** 25-44 x 3.0-5.0 mm, with ventral vesicle, behind the perianth, triginous, dorsally flat. **Sepals** coriaceous, glabrous, free, narrowly elliptic, acute, 7-veined, with two secondary veins and thus appearing 9-veined, the mid-vein thickened, margin entire, with a low dorsal keel; dorsal sepal 26.0-28.7 x 4.0-8.0 mm, partly spreading; lateral sepals 27.0-29.3 x 4.0-9.5 mm, oblique, spreading. **Petals** 26.0-28.3 x 2.5-7.0 mm, ascendent, partly spreading, narrowly elliptic, acute, margin entire, 3-veined, the lateral veins bifurcate near the base so as to appear 5-veined, the mid-vein thickened. **Lip** 20.0-22.0 x 18.0-26.8 mm, united to the column, entire, sub-orbicular, base somewhat cordate, apex sub-apiculate, widest beyond the middle, lateral margins entire, revolute, so as to appear cuneate when seen from in front, the central veins of the disc somewhat thickened; bicallose, the calli small, sub-globose. **Column** 8-9 mm long, straight, short; apical margins forming a fleshy funnel, margin slightly erose. **Clinandrium-hood** prominent, surpassing the apex of the body of the column, entire, funnel-shaped, margin erose. **Anther** 4-celled, sub-spherical, with a beak-like apex in front. **Pollinia** 4, sub-equal, semi-obovoid: caudicles soft and granulose, longer than the pollinia; viscidium viscous, translucent. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, ½ as long as the stigmatic cavity. **Nectary** penetrating ½ of the ovary, somewhat inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Without locality, hort. Santandercito, *Valdivieso 276*, HPUJ!, *ibid.*, watercolor, HPUJ! (slide and copy at AMO!) **Cauca:** Resguardo Indígena Calle Santa Rosa, Timbiquí, *Eraso (ALE) 701*, CAUP! **Chocó:** Bahía Solano, VII 1988, *Misas 43*, COL! HPUJ! Illustration, copy AMO! Margen del Río Aguila, *Ospina 374*, JAUM! **Nariño:** San Pablo, von Tuquerres, 1000-1500 m, *Lehmann 528*, K! Tumaco, Río Rosario, 100 m, 6 VI 1955, *Romero 5100*, COL! **Valle del Cauca:** Without locality, cultivado en Orquídeas del Valle cerca de Calí, *Escobar 5372*, (flower in spirit and color slide, AMO!). Calima, road to Juanchaco Palmeras, 12 VII 1958, *Gentry 47990*, CUV! MO! 8 km abajo del retén del policía de Anchicayá, 250 m, 27 IV 1983, *Hágsater 7384* (color slide and flower in spirit, AMO!) (illustration voucher). Um Buenaventura an der Küste, 1900, *Lehmann sub Bentham Trustees 244*, K! NY! Valle del Río Bravo, cerca de Playa Rica, 1100 m, 25 I 1982, *Silverstone 1100*, CUV!

OTHER RECORDS: COLOMBIA: Antioquia: Parque Nacional Natural Las Orquídeas, *Monsalve 457*, digital image, AMO! HUA. **Chocó:** without locality rec. 21 VI 2016, *Ojeda s.n.*, digital image, AMO! **Valle del Cauca:** Pacific slope of Cordillera Occidental, rec. 5 III 2015, *López Machado s.n.*, digital image, AMO! (photo voucher). Buenaventura, Consejo Comunitario Alto y Medio Dagua, 305 m, 4 II 2014, *Reina-Rodríguez s.n.* (digital image, AMO! BIDOVC.) Reserva Natural San Cipriano, Buenaventura, *Moreno s.n.*, digital image.

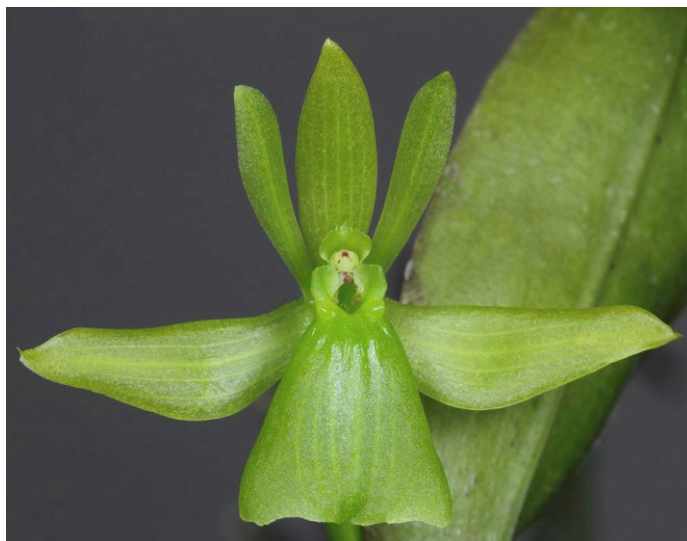
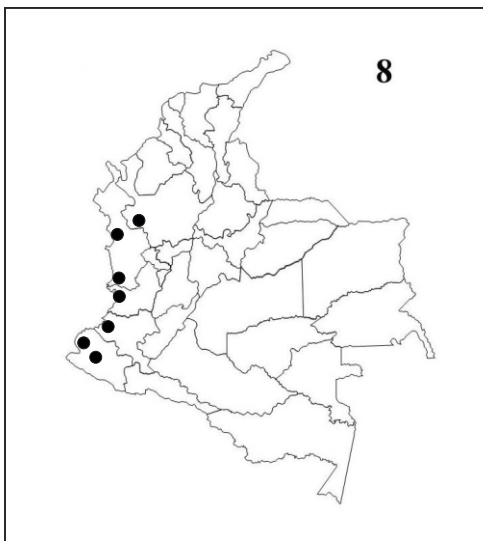
DISTRIBUTION AND ECOLOGY: Presently known only from the Chocó lowlands along the Pacific in Colombia. Epiphytic in very wet rainforest at 200-1100 m altitude. Flowering from throughout the year.

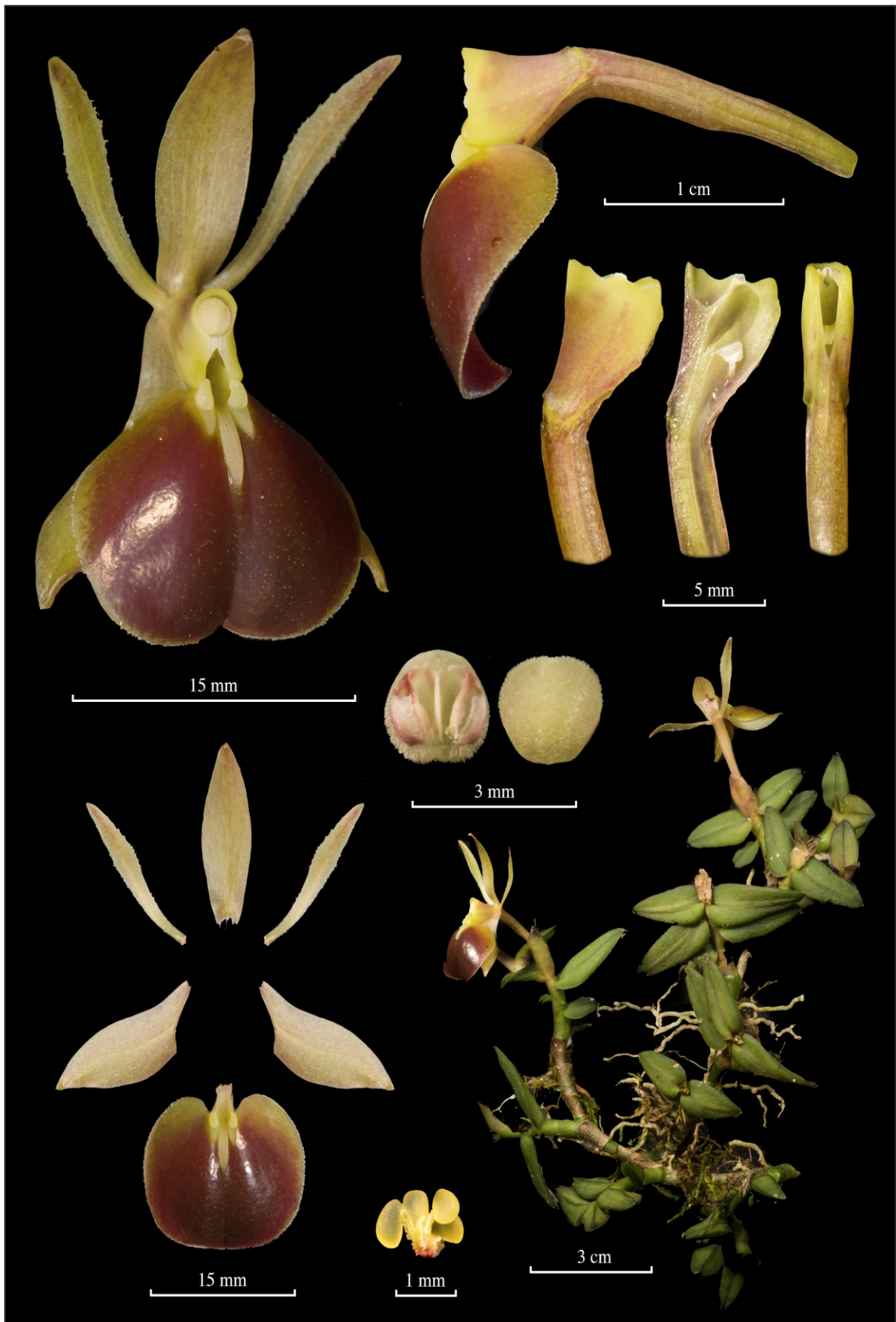
RECOGNITION: *Epidendrum kerryae* belongs to the difforme group which is characterized by the caespitose, sympodial plants, fleshy light green to glaucous leaves, apical inflorescence without any spathe, sessile, rarely with a short peduncle, one-flowered to corymbose, fleshy, and flowers green to yellowish-green, rarely white. The species is recognized by the single, successive, large flowers, disc of the lip with somewhat thickened central veins on the lip, clinandrium hood prominent, its margin entire, ovary forming a prominent vesicle behind the perianth, and the triginous pedicellate ovary dorsally flat. *Epidendrum platytilum* Schltr. is very similar and has been seen growing together with *E. kerryae* in Cauca, also has a triginous pedicellate ovary, has many thickened veins on the base of the lip, and the lip is wider; the clinandrium-hood is fimbriate, the ovary is not thickened forming any vesicle. *Epidendrum rhizomaniacum* Rchb.f. from southern Ecuador also has a triginous ovary, its 2-3 simultaneous flowers are white, and roots are produced from in between the leaves throughout the stem. *Epidendrum hunterianum* Schltr. from Costa Rica to Antioquia, Colombia has 4-6 simultaneous green flowers, lip is sub-orbicular, cordate, and lacks any thickened veins. *Epidendrum tobarii* Hágsater & Dodson from Ecuador has short plants, about 12 cm tall, single flowers, sepals and petals narrowly elliptic, petals are adnate to the basal third of the column, narrowly elliptic, and the lip is sub-quadrate with numerous thickened veins, the column long and arching with a prominent, erose-dentate clinandrium.

CONSERVATION STATUS: NT. Not threatened, the species is widespread along the lowlands of the Chocó, where there are few roads and many conserved areas by the local inhabitants. Rainfall is one of the highest in the Neotropics.

ETIMOLOGY: In honor of Kerry Dressler, who participated in the collection with Bob Dressler & Hágsater in 1983 and photographed the plant and flower used to prepare the illustration. Kerry has been a wonderful photographer and accompanied Bob throughout since those years, illustrating many of Dressler's publications.

REFERENCES: Hágsater, E., & C. H. Dodson 2004 in L. Sánchez S., *Epidendrum tobarii* in Hágsater, E. & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 796. Sánchez S., L., & E. Hágsater, 2006, *Epidendrum hunterianum* in Hágsater, E. & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 8: t. 842. Sánchez S., L., & E. Hágsater, 2009, *Epidendrum platytilum* in Hágsater, E. & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1276. Sánchez S., L., & E. Hágsater, 2010, *Epidendrum rhizomaniacum* in Hágsater, E. & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1380.





EPIDENDRUM LAMBEAUANUM De Wild.

Plate 1633

EPIDENDRUM LAMBEAUNUM De Wild., Chron. Orchideenne 2: 29. 1904.

Type: Colombia: importée en 1903 avec des *Cattleya labiata*, chez **M. Firm. Lambeau s.n.** Holotype: illustration, Dict. Icon. Orch. 4: Epidendr. t. 24, 1905.

Epiphytic, sympodial, creeping **herb**, ca. 6-8 cm tall. **Roots** 0.3-0.7 mm in diameter, basal, fleshy, thin, white, distributed throughout the rhizome 1-3 cm long, elongate, terete, formed by 3-4 internodes. **Stems** 3-6 x 0.1-0.3 cm, simple, cane-like, terete, somewhat reclining, prostrate and descending. **Leaves** 4-8, distributed throughout the stem, distichous, spreading, slightly arching, articulate, succulent; sheaths 3-8 mm long, tubular, somewhat widened towards the apex, laterally compressed; blade 10-30 x 4-8 mm, narrowly ovate-lanceolate, sub-acute, margin minutely ciliate at the apex. **Spathe** 7-12 mm long, single, hemi-elliptic when spread, conuplicate in natural position, apex rounded and slightly oblique. **Inflorescence** apical, sessile, single-flowered. **Floral bracts** much shorter than the ovary and totally hidden by the spathe. **Flower** 1, resupinate, fleshy, green with the lip reddish purple, lustrous, the margin frequently greenish; fragrance not registered. **Ovary** 16-24 mm long, terete, thin, slightly ventrally inflated along the apical half. **Sepals** 10-16.5 x 4-6 mm, sub-acute, minutely apiculate, 5-veined, margin entire, spreading; dorsal sepal free, elliptic-lanceolate; lateral sepals descending, obliquely adnate to the basal half of the column, triangular-ovate, with a low dorsal keel. **Petals** 10-14 x 1.5-2 mm, erect-spreading, free, narrowly oblanceolate, curved, 3-veined, apex rounded, margin spreading, crenate-denticulate towards the apex. **Lip** 11-16 x 13-18 mm, united to the column, bilobed, convex, base cordate, reniform, rounded, apex somewhat emarginate, margin erose-dentate; the calli prominent, globose; disc with 3 sub-acute ribs, the lateral pair much shorter than the prominent central rib which disappears at the middle of the lip. **Column** 7-8 mm long, straight, thin at the base, thickened towards the apex. **Clinandrium-hood** prominent, cucullate, margin entire. **Anther** spherical, the surface strongly speculate, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles as long as the pollinia, soft and granulose; viscidium semi-liquid. **Rostellum** sub-apical, split. **Lateral lobes of the stigma** prominent, occupying 1/3 of the stigmatic cavity. **Nectary** penetrating 1/2 the ovary, not inflated, unornamented.

OTHER SPECIMENS: COLOMBIA: *Sine loc.*, hort. Medellín, rec. 1 VIII 1990, pressed 10 X 1997, *Colomborquídeas sub Hágsater 11560*, AMO x2! **Valle del Cauca:** Forest of Yacota [Yotoco?], W Andes of Cali, 1400-1800 m, *Lehmann 8339*, V 1894, AMES! K x2! Cordillera Central, vertiente occidental. Hoya del río Palo, márgenes del río Tacueyó & La Tolda. Alt. 1780-1900 m, 19 X 1944, *Cuatrecasas 19497*, AMES! F! MO! NY! US! VALLE! Mpio. Cali. Cordillera Occidental, vertiente oriental; Hoya del río Cali, vertiente derecha confluencia del río Pichindécio & el Pichindé, 1580-1650 m, 7 XI 1944, *Cuatrecasas 18763* VALLE! Mpio. La Cumbre. "Mozambic", N of La Cumbre, Cordillera Occidental, 16 IX 1922, *Killip 11272*, AMES ex GH! US! Hindu tea plantation above Bitaco, ca 2000 m, 10 X 1982, *Folsom 10445* AMO x2! Road to Bitaco, 5000 ft, 18 XI 1963, pressed 21 II 1967, *Hutchison 3056*, UC! Mpio. Dagua; Bei Porquera am obren Río Dagua, 1800 m, 24 XI 1882, *Lehmann 1890*, C! bei Papagayeros, 24 XI 1878, *Lehmann s.n.*, W! an den Quebrada Agua Clara über Palmira, 6000 ft, 25 X 1877, *Lehmann s.n.*, W! Mpio. Darién, Top of Mtn. overlooking dam at Calima, near main road from Buga, 1650 m 17 X 1982, *Folsom 10515*, AMO! West Cordillera, Las Pares, 2300 m, *Dryander 2469*, US! Mpio. Restrepo, Calima Valley, NW of Restrepo, 4500 ft, Robinson 36, K! US! Mpio. Yotoco: Reserva Natural de Yotoco, Estación "Complejo Epibiótico", 1200-1700 m. 30 V 2007, *Pérez 19*, VALLE! Reserva Natural de Yotoco, the upper part of the Reserve, 11 II 2010, *Kolanowska s.n.* UGDA - flower in spirit. Reserva Forestal de Yotoco, Cordillera Occidental, vertiente oriental, 18 km W de Buga, bosque, 3°52'N 76°33'W, 1600 m, 29 IV 1995 *Silverstone-Sopkin 7496*, AMO! CLVC!

OTHER RECORDS: COLOMBIA: Valle del Cauca: Mpio. Calima El Darién, cerca del Lago Calima, *J. Sebastián Moreno s.n.* Digital images, AMO! (LCDP and photo voucher).

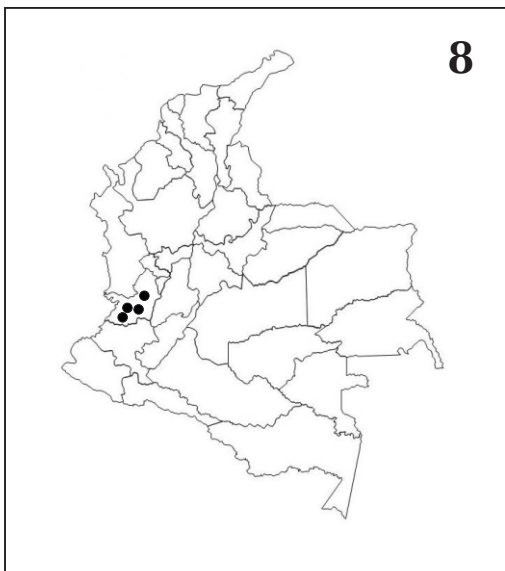
DISTRIBUTION AND ECOLOGY: Known presently only from the Cordillera Occidental in southwestern Colombia, from the Department of Valle del Cauca. In Premontane and montane forest; 1200-1900 m. It grows on many different phorophytes, including *Ladenbergia magnifolia* (Ruiz & Pav.) Klotzsch (Rubiaceae), *Pouteria caimito* (Ruiz & Pav.) Raldk. (Sapotaceae) and *Albizia saman* (Jacq.) F.Muell. Flowering in February-May, September-December.

RECOGNITION: *Epidendrum lambeauanum* belongs to the Porpax Group, which is characterized by the sympodial, somewhat repent habit, usually forming large mats, short, cane-like stems with very fleshy, succulent, articulate, distichous leaves, single-flowered inflorescence, sessile flowers, and the lip generally reddish purple. The species is recognized by larger, prostrate, descending plants, the stems with 4-6 lanceolate leaves 10-30 x 4-8 mm, the flowers are cream-colored with the lip reddish purple, and the petals linear-oblanceolate, 1.5-2.0 mm wide. *Epidendrum mathewsii* has small, compact plants with erect stems, leaves 7-3 x 2.5-7.0 cm, linear-elliptic to linear-lanceolate, semi-terete, acute, lip orbicular-sub-quadrate with the apex obtuse, and linear, acute petals, 0.9-2.0 mm wide. *Epidendrum porpax* has somewhat larger plants with somewhat reclining stems, leaves 7-20 x 3-7 mm, flat, narrowly ovate-lanceolate, subacute, the green flowers with a lustrous, convex, reddish purple lip proportionately wider than long, the apex rounded, sepals 8.5-14 x 4-5 mm, elliptic-lanceolate. It has been often confused with *Epidendrum peperomia* Rchb.f. which is vegetatively similar but the lip of that species is orbicular-cordiform, spreading, as wide as it is long, with the apex obtuse; and known from Venezuela and bordering Colombia. The flowers of all these species are very similar, and best recognized by the vegetative habit. *Epidendrum microporpax* Hágsater has smaller leaves (10-16 x 3.5-5.0 cm) on a relatively elongate erect stem, the flowers yellowish green with the center of the lip pale wine-red, sepals small 6.3 x 3.6 mm, ovate, and the lip flat, with the mid-rib very short, barely surpassing the calli. *Epidendrum althianorum* Hágsater & Collantes, from southern Peru (Cusco) and neighboring Bolivia, is distinguished by the linear-triangular acuminate petals, and the heart-shaped wine-red blotch on the lip. *Epidendrum dolichoporpax* Hágsater has short stems with ovate, acute leaves, flat, the petals linear, acute, with the margin minutely erose, lip orbicular, cordate and the three ribs of the lip long, reaching the middle of the blade, about equal in length.

ETYMOLOGY: In honor of the provider of the specimen for its description, Mr. Firm. Lambeau, of Brussels.

CONSERVATION STATUS: NT. Apparently common along the Cordillera Occidental in southwestern Colombia. Found in protected habitats.

REFERENCES: Hágsater, E., 2018, *Epidendrum dolichoporpax*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1615. Hágsater, E., 2018, *Epidendrum mathewsii*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1640. Hágsater, E., 2018, *Epidendrum microporpax*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1643. Hágsater, E., & B. Collantes, 2013, *Epidendrum althianorum*, in Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1403. Kolanowska, M., E. Hágsater, D. Szlachetko, E. Santiago Ayala & L. Sánchez Saldaña, 2014, **Orchids of the Department of Valle del Cauca (Colombia)**, 2: **Orchidaceae; Epidendroideae (Epidendreae 1)**, 393 pp; Koeltz Scientific Books, Koenigstein, Germany. Santiago, E., & E. Hágsater, 2010, *Epidendrum porpax* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1375.



Author: E. Hágsater

LCDP: J. S. Moreno

Photo: J. S. Moreno

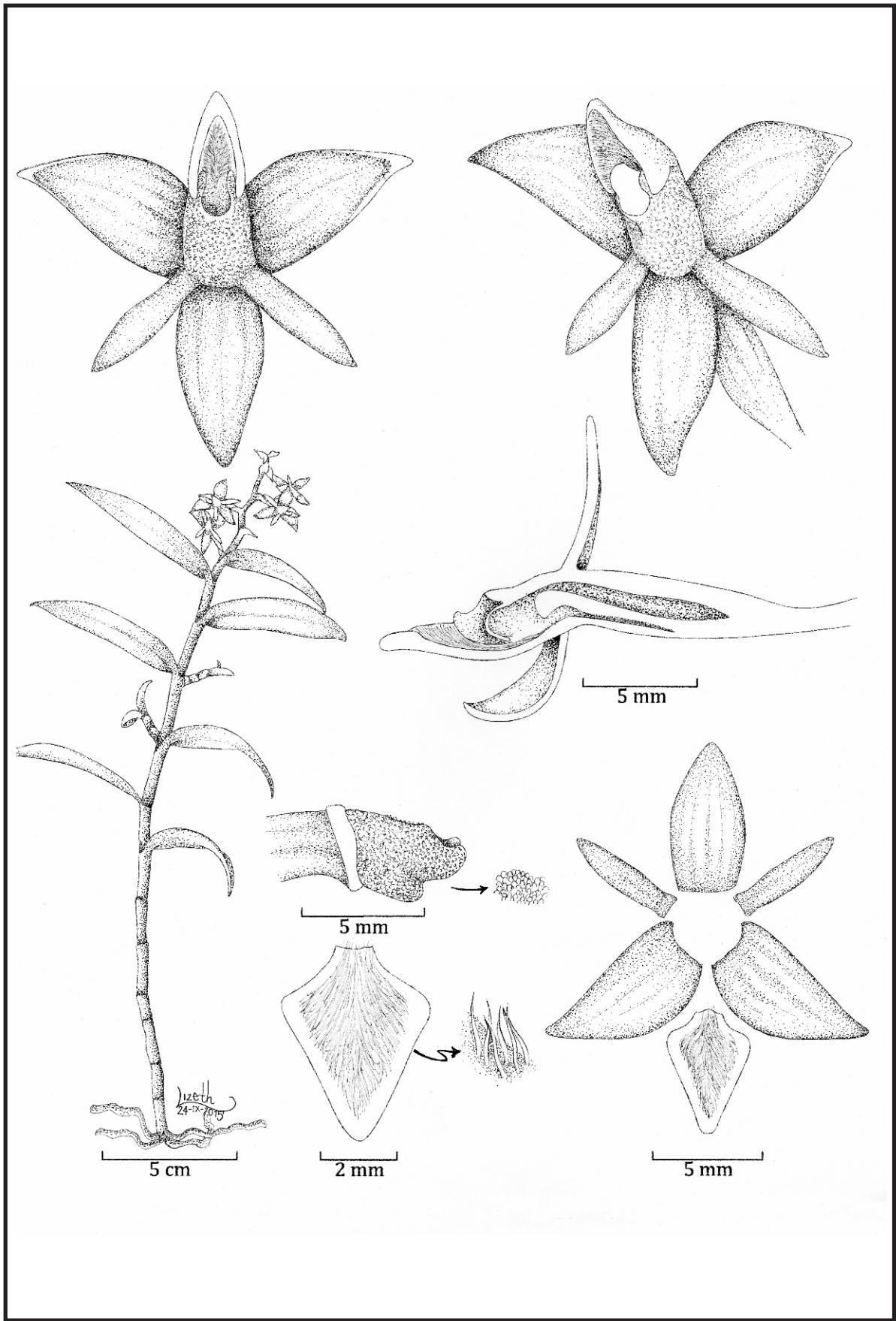
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1633



EPIDENDRUM LASIOSTACHYUM Rodr.-Mart., Hágsater & E.Santiago

Plate 1634

EPIDENDRUM LASIOSTACHYUM Rodr.-Mart., Hágsater & E.Santiago, *Lankesteriana* 16(1): 30. 2016.

TYPE: COLOMBIA: Valle del Cauca: Municipio Dagua, Corregimiento San José del Salado, 1800-1900 m, 21 November 2014, **Lizeth Rodríguez Martínez 254**. Holotype: COL! (illustration and photo voucher)

Epiphytic, monopodial, caespitose, erect **herb**, 25-30 cm tall. **Roots** 1.5-2.0 mm in diameter, filiform. **Stems** 20-25 x 0.3-0.5 cm, cane-like, terete, erect, branching when mature, base covered by sheaths 1.2-1.6 cm long, tubular, non-foliar, scarious. **Leaves** 7, distributed throughout the stems, articulate to the foliar sheath, spreading with respect to the stem, similar in size and shape, green, concolor; sheaths 1.5-2.5 cm long, tubular, minutely striated, rugose, pale green; blade 4.5-6.0 x 0.8-1.0 cm, lanceolate, apex acute, margin minutely serrate. **Inflorescence** 6 cm long, apical, developing from mature stems, distichous, erect, laxly few-flowered; peduncle 5-7 x 1.5-2.0 mm, terete, thin, straight; rachis 5.0-5.5 x 0.1-0.2 cm, slightly flexuous, greenish. **Floral bracts** 5-7 x 2 mm, much shorter than the ovary, triangular-lanceolate, apex acute, margin slightly serrate, embracing, perpendicular to the rachis. **Flowers** 6, simultaneous, non-resupinate, distichous, distributed along the rachis; sepals and petals yellow, lip pale yellow, column greenish yellow with the apex purple; without fragrance. **Ovary** 15 x 2 mm, terete, thin, striated, lime green. **Sepals** 7-8 x 3-4 mm, free, spreading, fleshy, narrowly ovate, apex acute, 5-veined, margin entire, spreading; lateral sepals oblique, slightly falcate. **Petals** 4-5 x 1.5 mm, spreading, free, oblong-oblancoelate, apex acute, 1-veined, margin entire, spreading. **Lip** 7 x 4 mm, united to the column, entire, trullate, the base widely cuneate, apex narrowly rounded, embracing the column in natural position without covering it; ecallose, densely sericeous, the trichomes covering the entire surface of the lip except for the margin, and reclining towards the nectary. **Column** 4-5 mm long, short, thick, slightly arched at the base, apex deflexed, the surface minutely papillose. **Clinandrium** reduced, margin entire. **Anther** not seen. **Rostellum** apical, slit. **Nectary** penetrating 2/3 of the ovary, densely sericeous in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

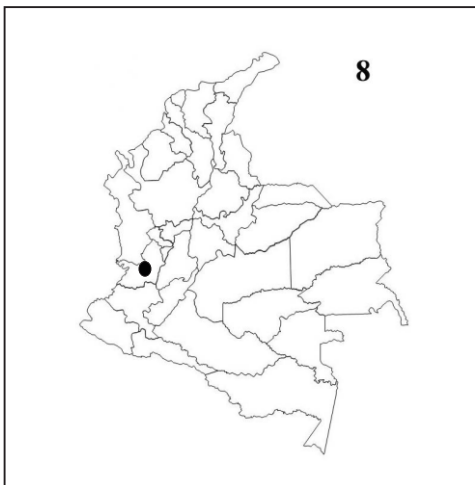
DISTRIBUTION AND ECOLOGY: Known presently from the western slope of the Western Cordillera of the Andes, only from one collection from the mountains of San José del Salado; in remnant very wet forest, at 1800-1900 m, on *Tibouchina* sp. tree. Flowering in November.

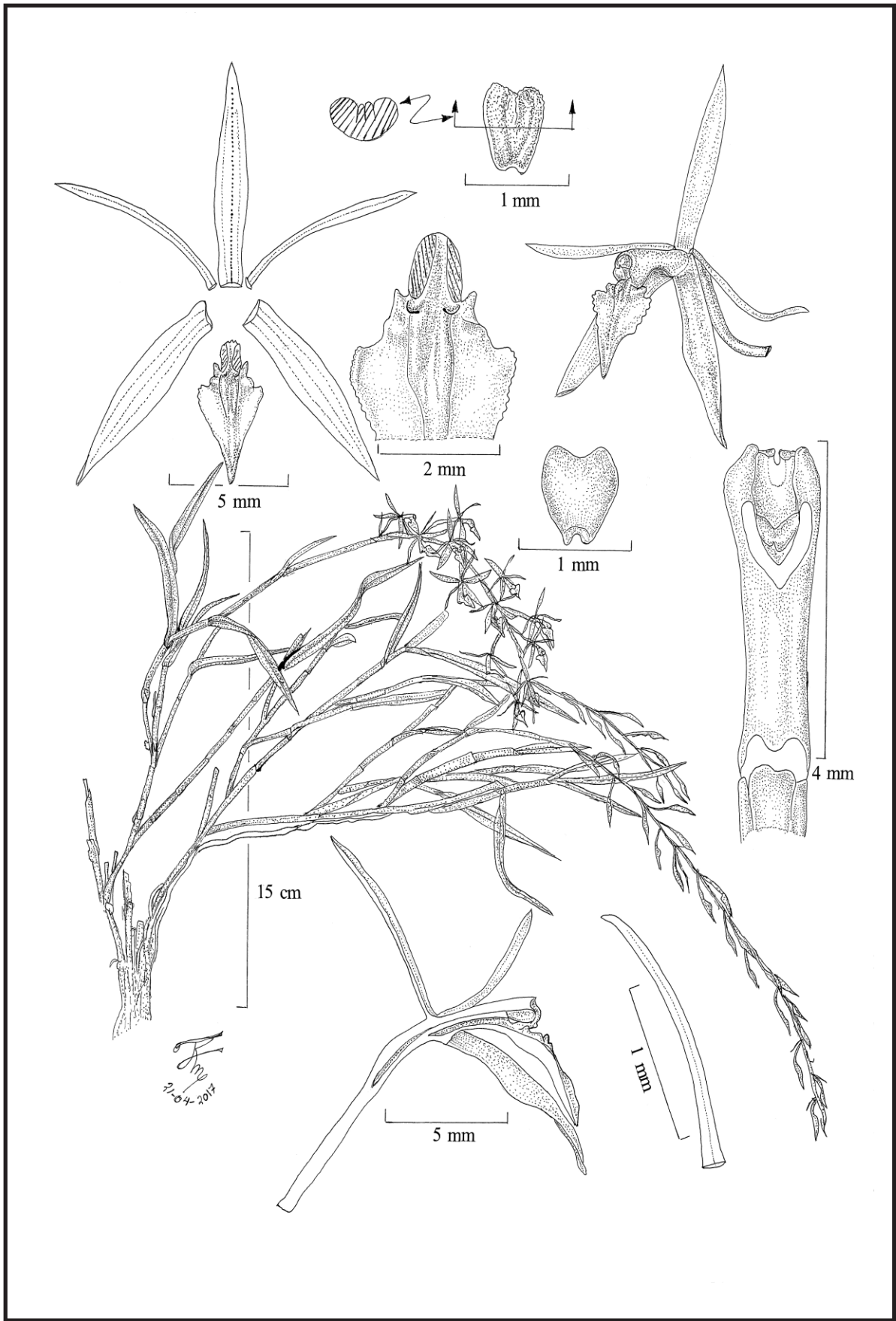
RECOGNITION: *Epidendrum lasiostachyum* belongs to the *Macrostachyum* Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the relatively small plants (to 30 cm tall), with lanceolate leaves 4.5-6.0 x 0.8-1.0 cm, distichous, few-flowered inflorescence, with 6 yellow flowers, the apex of the column tinged purple; lip trullate, base widely cuneate, strongly pubescent except for the margin, and the column minutely papillose. It is similar to *Epidendrum microrigidiflorum* Hágsater, endemic to northern Panama, which has taller plants (60-100 cm tall), a secund inflorescence with up to 16 flowers which are greenish yellow or cream colored, the lip widely rhombic, and minutely papillose throughout the ventral surface, column glabrous. *Epidendrum polyanthostachyum* Hágsater, E.Santiago & García-Ramírez also has taller plants (to 102 cm), narrowly elliptic leaves (3.5-15 x 1.8-4.7 cm), the inflorescence densely many-flowered, with up to 40 flowers, these yellow, concolor, lip widely deltate with the base cordate, scarcely pubescent in front of the column.

CONSERVATION STATUS: DD (data deficient). Known presently only from the type.

ETYMOLOGY: From the Greek *λασιος*, shaggy, woolly, and *σταχυς* ear of corn; in reference to the lip which is completely (but not the margin) covered by long, straight trichomes reclining towards the nectary that distinguish this species from other *Macrostachyum* Group members.

REFERENCES: Hágsater, E., 2006, *Epidendrum microrigidiflorum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 853. Hágsater, E., E. Santiago & D. García-Ramírez, 2013, *Epidendrum polyanthostachyum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1477. Hágsater, E., E. Santiago & L. Rodríguez Martínez, 2016, *Epidendrum lasiostachyum* (Orchidaceae): a new Colombian species of the *Epidendrum Macrostachyum* group, **Lankesteriana** 16(1): 27-37.





EPIDENDRUM LEPTOPHYTUM Hágsater

EPIDENDRUM LEPTOPHYTUM Hágsater, sp. nov.

Type: ECUADOR: Loja: Pasando el puerto de Villonaco hacia Catamayo, 2487 m, col. 18 septiembre 2016, preparado de material cultivado 21 abril 2017, *Eric Hágsater, Gerardo A. Salazar, Francisco Tobar y Efraín Freire 14628*. Holotype: QCNE! Isotype: AMO! (illustration and photo voucher).

Similar to *Epidendrum alpicoloscandens* Hágsater & Dodson, but very delicate overall, leaves grass-like, linear, 2.1-6.5 x 0.1-0.5 cm (vs. fleshy, lanceolate, 4-10.8 x 0.5-0.85 cm), flowers delicate, pale green (vs. pale orange-yellow, sepals and petals faintly greenish tinted dorsally, lip whitish); lip overall entire, lip overall triangular-rhomboid, with the lateral margins denticulate towards the base, entire towards the apex, basal corners rounded, the base abruptly narrowed, cuneate, fleshy, provided with a pair of very small, basal, retrorse appendages, nearly parallel to the column (vs. 3-lobed, lateral lobes dolabriform, margin erose, mid-lobe narrowly triangular, rounded, fleshy thickened).

Epiphytic, caespitose, straggling, arching, fine, delicate herb, new stems produced from the middle of the previous stem, to 32 cm long. **Roots** 0.8-1.8 mm in diameter, fleshy, thin, produced from the lower stems only. **Stems** 6-10 x 0.14-0.26 cm, cane-like, terete at the base to laterally compressed at the apex, progressively slightly arching, the new stem produced from a middle internode of the previous stem. **Leaves** 2-3 per stem, distributed along the apical half of the stems, distichous, partly spreading, articulate, grass-like; **sheaths** 0.9-2.5 x 0.17-0.28 cm, laterally compressed, ancipitose, minutely striated and rugose when dry; **blade** 2.1-6.5 x 0.1-0.5 cm, linear, acuminate, minutely apiculate, margin crenulate, slightly revolute. **Spathe** 3.0-4.0 x 0.10-0.13 cm, single, tubular, ancipitose, apex cuspidate, closely appressed to the peduncle. **Inflorescence** 9.5-11 cm long, racemose, laxly, few-flowered, arching; peduncle 2.7-3.5 cm long, laterally compressed, straight, nearly totally covered by the spathe; rachis 7.0-7.5 cm long, terete, very thin, without being filiform. **Floral bracts** 3-11 mm long, shorter than the ovary (except for the basal flower), linear, acuminate, 1-veined, papiraceous, embracing, gradually smaller towards the apex of the rachis. **Flowers** 14-16, simultaneous, the lip always facing the rachis, delicate, pale green; fragrance none observed. **Ovary** 7-9 x 0.1 mm, terete, thin, slightly arching. **Sepals** 8.5-9.0 x 1.4-1.7 mm, spreading, linear-elliptic, acuminate, 3-veined, margin entire, spreading. **Petals** 8.0 x 0.4 mm, spreading, free, linear, acuminate, oblique, 1-veined, margin entire. **Lip** 4.6 x 2.7 mm, united to the column, overall entire, triangular-rhomboid in outline; bicallose, calli elongate, parallel, fleshy, blending into a low mid-rib which runs down the middle of the lip; lip overall triangular, with the lateral margins denticulate towards the base, entire towards the apex, basal corners rounded, the base abruptly narrowed, cuneate, fleshy, provided with a pair of basal, very small, retrorse appendages, nearly parallel to the column. **Column** 4.0 mm long, thin, straight, somewhat dilated towards the apex. **Clinandrium hood** short, entire. **Anther** apparently 4-celled; ovoid-cuneate, with a wide sinus at the base, apex emarginate. **Pollinia** could not be separated from the anther, but apparently 4, the inner pair laterally compressed, the outer pair ovoid. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, occupying 1/3 the length of the stigmatic cavity. **Nectary** short, without penetrating the ovary, penetrating 1/2 of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently form a single collection from the upper western slope of the Cordillera Occidental of the Andes in the province of Loja, epiphytic on large trees in windswept, steep montane forest at 2500 m altitude. In spite of the very delicate plant and flowers, this species was found close to *Epidendrum xerophyticum* Hágsater & E.Santiago, which has thick terete leaves, which would seem better adapted to the windswept habitat. Flowering in cultivation in April.

RECOGNITION: *Epidendrum leptophytum* belongs in a new Leptophytum Group, which is characterized by the straggling vegetative habit, delicate, grass-like, linear leaves inflorescence racemose, subtended by a narrow, conduplicate spathe, flowers pale green, delicate, lip entire to 3-lobed, bicallose, calli elongate, parallel, fleshy, blending into a low mid-rib which runs down the middle of the lip. The species is recognized by the straggling vegetative habit, delicate, grass-like, linear leaves to 6.7 x 0.5 cm in size, inflorescence racemose, subtended by a narrow, conduplicate spathe, flowers pale green, delicate, sepals 8.5-9.0 x 1.4-1.7 mm, and the lip rhomboid-triangular in outline, bicallose, calli elongate, parallel, fleshy, blending into a low mid-rib which runs down the middle of the lip. At first sight, the plant appears to be a very delicate plant related to *Epidendrum alpicoloscandens* from the same Cerro Villonaco, at 2700 m altitude, but that species has fleshy leaves 4-10.8 x 0.5-0.85 cm, and the lip is clearly 3-lobed, the lateral lobes dolabriform, prominent, margin erose, and the mid-lobe narrowly triangular, sepals 7.0-8.6 mm long, the flowers are also fleshy pale orange-yellow, lip whitish. *Epidendrum triloboleptophytum* Hágsater, Naranjo & A.E.Mend. is similar in every way, but is distinguished by the clearly 3-lobed lip, the lateral lobes dolabriform.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: from the Greek λεπτός fine, thin, slender, and φυτόν, plant, in reference to the very delicate plant and flowers which distinguish this species.

REFERENCE: Hágsater, E. & C. H. Dodson, 2001, *Epidendrum alpicoloscandens* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 3, *Icon. Orchid.* 4: t. 407. Hágsater, E. & E. Santiago, 2016, *Epidendrum xerophyticum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(2): t. 1600. Hágsater, E., C. J. Naranjo F. & A. E. Mendoza C., 2018, *Epidendrum triloboleptophytum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1661.



Author: E. Hágsater

Illustrator: R. Jiménez M.

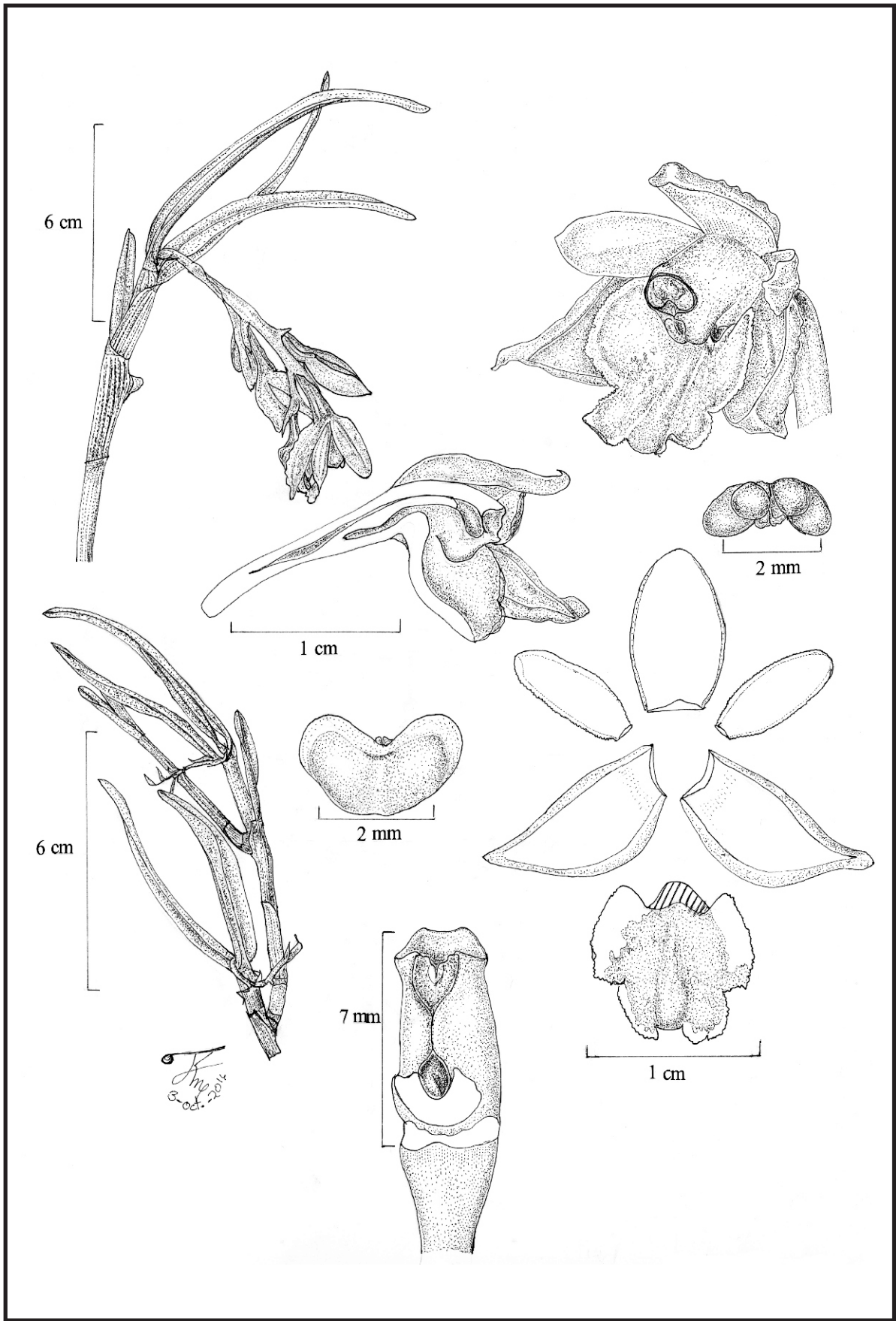
Photo: R. Jiménez M.

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1635



EPIDENDRUM LITTERAËNSE Hágsater, E.Santiago & Uribe Vélez

Plate 1636

EPIDENDRUM LITTERAËNSE Hágsater, E.Santiago et Uribe Vélez, *sp. nov.*

Type: COLOMBIA: Caldas: Páramo de Letras, Finca de Luz María Botero, 2900 m, **Carlos Uribe Vélez s.n.** Holotype: HPUJ! (illustration and photo voucher)

Similar to *Epidendrum tropinectarium* Hágsater & E.Santiago but the sepals dorsally pustulate (vs. glabrous), ovary triquetrous (vs. terete), lateral sepals with dorsal erose keel (vs. lacking any dorsal keel), lip united to basal half of the column (vs. united all the length of the column), and petals narrowly elliptic, apex rounded (vs. petals linear, acute).

Epiphytic, monopodial, branching **herb**, to 30 cm tall. **Roots** none seen. **Stems** branching near the apex when mature, new branches produced in succession from the sub-apical internodes of the previous stems, cane-like, terete, thin; primary stem 10 x 0.3-0.4 cm; branches 5.0-6.3 x 0.3-0.4 cm. **Leaves** those of the primary stem not seen, 3-4 on the branches, aggregated towards the apex of each stem, sub-erect, alternate, articulate, somewhat canaliculate especially towards the conduplicate base, dark green with the margin reddish, shiny above, glaucous on the underside; sheath 13-18 mm long, tubular, striated, reddish brown; blade 1.7-5.8 x 0.6-0.7 cm, oblong-lanceolate, sub-acute, minutely apiculate, margin entire. **Spathes** lacking. **Inflorescence** 2.3-3.8 cm long, apical, racemose, arching-nutant, few-flowered; peduncle 10 mm long, terete, provided with a bract 7 mm long; rachis 13-28 mm long, terete. **Floral bracts** 5-7 mm long, half as long as the ovary, narrowly triangular, acuminate. **Flowers** 10, simultaneous, resupinate, when mature reddish brown with the column yellow, floral buds green, scarcely tinged with reddish brown; segments vernicose on the inside, mate outside; fragrance not registered. **Ovary** 10-11 mm long, sub-triquetrous, thin, verrucose, not inflated. **Sepals** partly spreading, free, fleshy, elliptic, 5-veined, margin entire, spreading; dorsal sepals 9 x 5.5 mm, apex rounded; lateral sepals 11.5 x 5.5 mm, concave, oblique, apex acute, with a prominent dorsal erose keel, and dorsally pustulate. **Petals** 8.5 x 3.0 mm, partly spreading, free, fleshy, narrowly elliptic, apex rounded, 3-veined, margin crenate, spreading. **Lip** 8.0 x 9.7 mm, obliquely united to half the length of the column, 3-lobed, base cordate, apex widely mucronate, margin erose; ecallose, provided with a low, narrow mid-rib which widens and becomes fleshy towards the apex; lateral lobes 4.5 x 5.5 mm, dolabriform; mid-lobe 3.0 x 6.5 mm, bilobed, each lobe sub-quadrate. **Column** 6.5 mm long, thick, basal half of the column which is oblique, dorsally long and arching, the underside short, thus nearly triangular when seen from the side, the apex long with narrow involute, lateral wings, forming a very narrow vertical aperture. **Clinandrium-hood** prominent, flush with the apex of the column, margin entire. **Anther** reniform. 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, as long as the pollinia; viscidium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** shallow, a very high cavity in the column, becoming a narrow channel penetrating ¼ of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from a single locality. It is thus endemic to Colombia, from the Páramo de Letras, contiguous to the P. N. N. Los Nevados. It is on the western slope of the Cordillera Central, in the basin of the Chinchiná River, at 2900 m altitude in the transition to the páramo. Rainfall in the area is >1000 mm <2000 mm, with mean temperatures of 3-6°C. According to Holdridge the vegetation is subalpine pluvial páramo **pp-SAT**, or low páramo or sub-páramo according to Cuatrecasas (1958). The dominant genera of trees are *Weinmannia*, *Ilex rosuletum*, *Puya*, *Guzmania*, *Diplostephium*, and in shrubs *Plantago* and mainly grasses of the genus *Calagrostis*. Epiphytic, flowering in August.

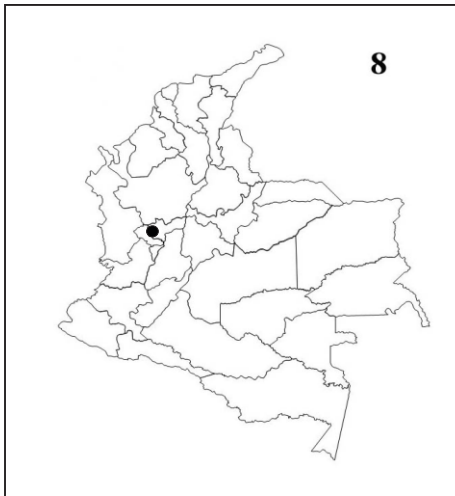
RECOGNITION: *Epidendrum litteraëense* belongs to the Diathoea Group and Subgroup, characterized by the branching habit, linear-lanceolate to lanceolate, bilobed leaves, arching-nutant, racemose inflorescence, membranaceous or rarely fleshy flowers, the lip entire to 3-lobed, with an erose margin, ecallose, without or with 1-10 thin, glabrous to erose keels, the column united to the lip from totally to obliquely to free. The species is recognized by the reddish brown flowers with the lip obliquely united to the basal half of the column which is oblique, triangular, dorsally long and arching, the underside short, the apex long with narrow involute, lateral wings; lateral sepals 11.5 mm long, dorsally pustulate, with a prominent, erose dorsal keel; ovary triquetrous, the apex of the column forming a very narrow vertical aperture. *Epidendrum pustulosum* Hágsater, M.Rincón & García-Revelo is very similar but the flowers are yellow, concolor, and the apex of the column has a very wide aperture. *Epidendrum tropinectarium* Hágsater & E.Santiago has pink flowers, the column pale green, lip united to the column throughout its length, column thin and arched upwards, petals linear, with apex acute. It is very similar to *Epidendrum aureoglobiflorum* Hágsater & Dodson from southern Ecuador, but that species has a straight column, entire lip and sepals 8.3-9.4 mm long, dorsally verrucose, and a terete ovary. *Epidendrum dolichorhachis* Hágsater & Dodson has similarly colored flowers, but the inflorescence is 6-12.5 cm long, with up to 30 flowers, the lip united to the column throughout its length, the column thick, arched upwards, lip with 5 erose-serrate ribs, and the ovary terete.

CONSERVATION STATUS: The Páramo de Letras and surrounding areas in the departments of Caldas and Tolima, is subject to problems due to cattle grazing, potato cultivation, and desiccation of wetlands which are being drained. Less than 5 localities are known, so the inferred distribution is less than 5 km². Climatic change is another latent threat is that species of the páramos tend to migrate altitudinally (Reina-Rodríguez *et al.*, 2016), this being a critical factor for this species, as it is restricted to the highest altitudinal range, and can thus suffer from "extinction at mountain tops, as its future thermal niche, cannot overlap with the present climate (Colwell *et al.* 2008; Lenoir *et al.* 2008). As this is the only known population, it would classify as **VU D2** (UICN, version 3.1).

ETYMOLOGY: From the Latin *littera*, letters, in reference to the locality where the type was collected, the Páramo de Letras.

ACKNOWLEDGMENT: We wish to thank Guillermo Reina-Rodríguez for his contribution to the understanding of the ecological niche occupied by this species.

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EPIDENDRUM LUCEROAE J.S.Moreno, Hågsater, E.Santiago & García-Revelo

Plate 1637

EPIDENDRUM LUCEROAE J.S.Moreno, Hågsater, E.Santiago et García-Revelo, *sp. nov.*

Type: COLOMBIA: Valle del Cauca: Municipio El Cairo, Cordillera Occidental, Reserva Natural Comunitaria (RNC) Cerro El Inglés, 2200 m, 3 septiembre 2016, *Jairo Santiago García Revelo, Juan Sebastián Moreno & Astrid Lucero Erazo 179*. Holotype: CUVCI (LCDP and photo voucher).

Similar to *Epidendrum polythallum* Est.Domínguez, J.S.Moreno, Hågsater & E.Santiago, but the flowers greenish yellow, concolor, base of lip cordate, lateral lobes dolabriform, apex rounded; mid-lobe evidently constricted in the middle, apical margin of petals denticulate.

Epiphytic, monopodial, branching **herb**, 220-240 cm tall. **Roots** not seen. **Stems** cane-like, terete, branching, the branches produced from the apical internodes of the previous stem; primary stem 180-190 x 0.4-0.7 cm, scandent, producing alternate branches sub-apically; secondary branches 7.6-26 x 0.3 cm, these producing tertiary branches 5.5-13.4 x 0.4 cm, and successively shorter branches, from which the flowers are produced; base of all branches covered by sheaths 2.3-3.1 cm long, tubular, non-foliar, scarious. **Leaves** of the main stem not seen; 3-5 persistent at time of flowering, distributed towards the apex of the stems, sub-coriaceous, dark green above, underside pale green, concolor, sub-spreading, slightly arched; sheaths 3-16 x 2-8 cm, tubular, striated; blade 3.5-6.7 x 0.7-1.3 cm, oblong-lanceolate, sub-acute, margin sub-entire, minutely ciliate towards the apex, spreading. **Spathe** lacking. **Inflorescence** 4.5-5.0 cm long, apical, racemose, pendent, laxly few-flowered; peduncle 1.0-1.3 cm long, terete. **Flowers** 2-4, simultaneous, resupinate, greenish yellow; without fragrance. **Floral bracts** 4 x 3 mm, much shorter than the ovary, triangular-lanceolate, acute, embracing. **Ovary** 20-21 mm long, slightly inflated ventrally along the apical 1/3, terete, unornamented. **Sepals** spreading, narrowly elliptic, acute, prominently aristate, 3-veined, lateral veins producing a pair of short branches, margin entire, strongly revolute; dorsal sepal 18 x 4 mm, free; lateral sepals 17 x 4 mm, obliquely united to the base of the column, slightly falcate. **Petals** 15 x 2 mm, free, reflexed, descendant, elliptic, oblique, minutely apiculate, 3-veined, glabrous, apical margin denticulate, strongly revolute. **Lip** 13 x 8.5 mm, totally united to the column, 3-lobed, base cordate, slightly convex, margin sub-entire, slightly revolute; bicallose, calli prominent, fleshy, laterally compressed, divergent; disc with 5, low ribs which become united into a single prominent elongate mid-rib that reaches the apex of the lip; lateral lobes 3.0 x 3.5 mm, dolabriform, with three very short radiating ribs; mid-lobe 5 x 4 mm, sub-rectangular, constricted in the middle, apex apiculate. **Column** 11 mm long, straight, base thin, gradually widened towards the apex which ends in a pair of minute teeth. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/2 of the length of the stigmatic cavity. **Nectary** penetrating 2/3 of the ovary, unornamented. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles nearly as long as the pollinia, granular. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

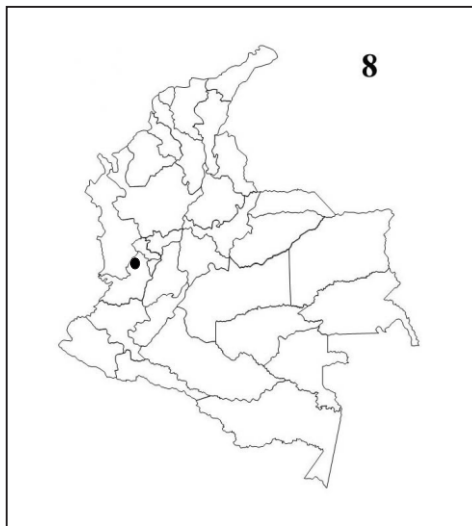
DISTRIBUTION AND ECOLOGY: Endemic to Colombia, Valle del Cauca, municipality of El Cairo, Cordillera Occidental of the Andes, Reserva Natural Comunitaria Cerro El Inglés, the first natural reserve of the civil society (RSC) in the "Serranía de los Paraguas", managed by Serraniagua and in collaboration with the local community; it is expected in the neighboring Tatamá National Natural Park. Precipitation in the area >2700 mm <4000 mm, temperatures ranging from 17 to 22°C; epiphytic, growing at 2200 m altitude. The vegetation according to Holdridge (1987) is Bosque Muy Humedo Montano Bajo, **BmH-Mb**, or Selva Andina according to Cuatrecasas (1958). The predominant tree genera there are *Weinmannia*, *Ilex*, *Miconia* and *Podocarpus*. Flowering in September.

RECOGNITION: *Epidendrum luceroae* belongs to the Polythallum Group, recognized by the monopodial, much branched stems, with a tall primary stem, numerous secondary and tertiary stems and the numerous shorter flowers stems, the nodding inflorescence bears only 3-4 pale yellow flowers, lip 3-lobed, bicallose, with 5 parallel ribs on the disc, which merge into a much-thickened mid-rib. The species is recognized by the plants to 220-240 cm tall, with sub-apical branching, leaves 3.5-6.7 x 0.7-1.3 cm, oblong-elliptic, sub-spreading and somewhat arched, laxly few-flowered, producing 2-4 greenish yellow, concolor flowers, rachis straight; lip base cordate, lateral lobes dolabriform, petals with apical margin denticulate. It is vegetatively similar to *Epidendrum polythallum*, but that species has pale yellow flowers with the lip wine-red, base of the lip cuneate and lateral lobes obliquely triangular, margin of petals entire. *Epidendrum amplexisardense* Hågsater & E.Santiago produces a new stem from an apical internode of the previous stem, leaves 4-11.7 x 1.5-3.2 cm, elliptic, the inflorescence with the rachis flexuous and up to 30 green flowers, base of lip cuneate and the lateral lobes obliquely oblong.

CONSERVATION STATUS: **VU D2** IUCN (Version 3.1). In spite of the problems of deforestation, conservation is underway thanks to Serraniaguas (local NGO). Sufficient conservation is expected. Though only one location has been identified, it is inferred that the habitat covers more than 20 km².

ETYMOLOGY: In honor of Astrid Lucero Erazo Erazo, (1991-) botanist of the University of Cauca, who has worked in the conservation of tropical dry forest in the department of Cauca and has found for the first time in nature the only two species within this new group. We dedicate this species using the second given name of Ms. Erazo, as that is how she is known amongst her friends and collaborators.

REFERENCES: Cuatrecasas, J., 1958, Aspectos de la vegetación natural de Colombia, *Revista Acad. Colomb. Ci. Exact.* 10(40): 221-268. Hågsater, E., & E. Santiago, 2013, *Epidendrum amplexisardense* in E. Hågsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1406. Domínguez, E. V., J. S. Moreno, E. Hågsater, & E. Santiago, 2016, *Epidendrum polythallum* in E. Hågsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(2): t. 1593. Holdridge, L., 1987, *Ecología basada em zonas de vida*, IICA, San José, Costa Rica, 216 pp.

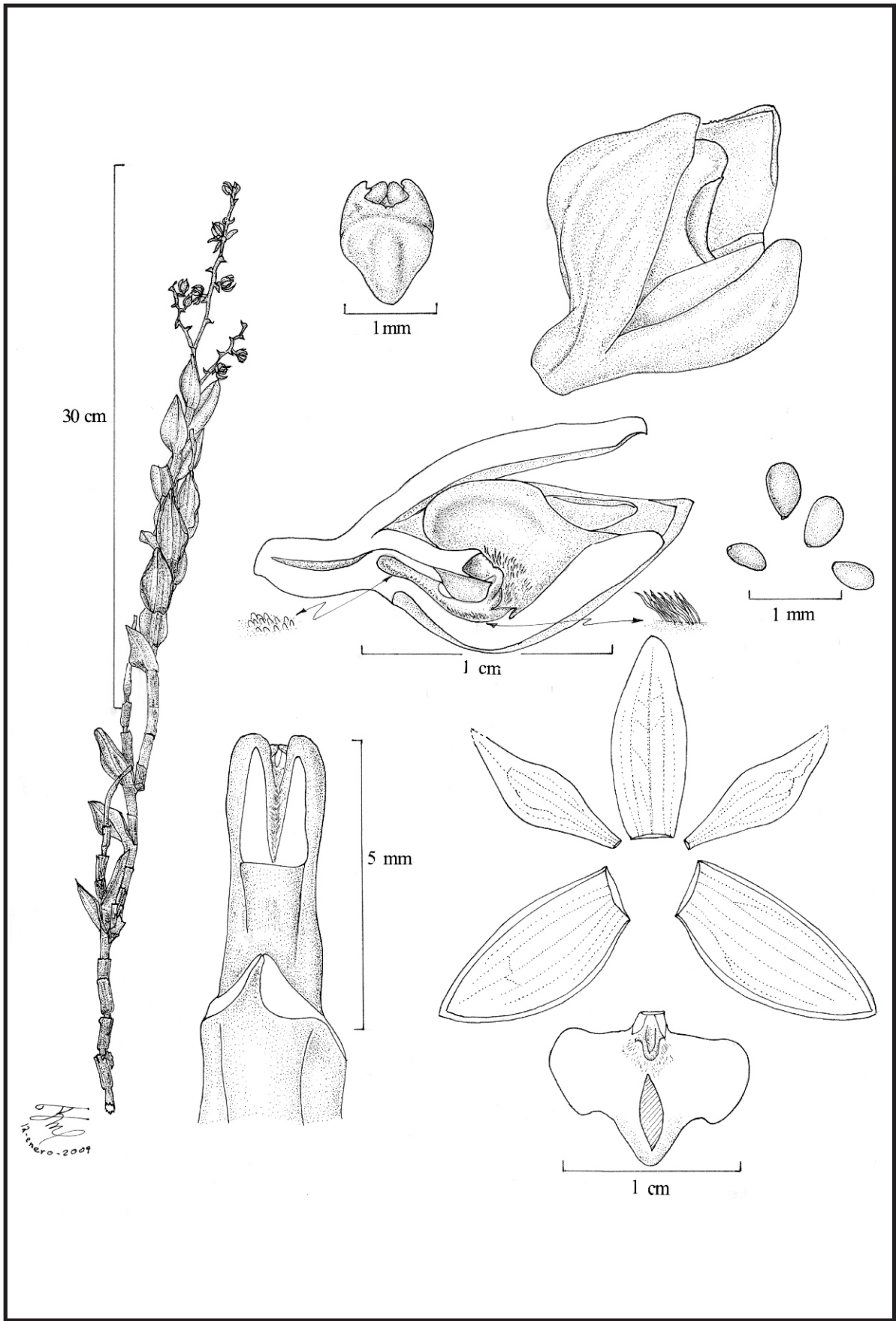


Authors: J. S. Moreno, E. Hågsater, E. Santiago & J. S. García-Revelo LCDP: J. S. Moreno Photo: J. S. Moreno Editors: E. Hågsater & E. Santiago

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ICONES ORCHIDACEARUM 16(1). 2018. Plate 1637



EPIDENDRUM LUTEYNII Hágsater & E.Santiago

EPIDENDRUM LUTEYNII Hágsater et E.Santiago, *sp. nov.*

Type: VENEZUELA: Amazonas: Río Negro; Altiplanicie en la cumbre del brazo noroccidental, al norte del campamento base a lo largo del río Mawarinuma, afluente del río Baria, 0°52-53'N 66°05'W, 1880 m, 7-8 February 1984, **James L. Luteyn & Julian A. Steyermark 9405**. Holotype: NY! (illustration voucher). Isotype: MO!

Similar to *Epidendrum commelinispathum* Carnevali & I.Ramírez but the inflorescence elongate and laxly many-flowered (vs. much shorter and few-flowered), flowers greenish orange (vs. greenish yellow, tinged brown), petals narrowly rhombic (vs. linear oblong), and the lip clearly 3-lobed (vs. shallowly 3-lobed).

Terrestrial, monopodial, sub-apically branching, erect **herb**, 85-150 cm tall. **Roots** 2-4 mm in diameter, basal from the primordial stem, thick, white. **Stems** cane-like, branching, terete, erect, straight, the primordial stem ca. 60-120 x 0.5-1 cm; the branches 25 x 0.5-0.6 cm. **Leaves** from the main stem not seen, 11-19 on the secondary branches, distributed throughout the stems, 4 on the tertiary branches, persistent at the apex of the branches, articulate, distichous, coriaceous, very rigid, sub-parallel to the stem, unequal in size and shape; sheaths 15-30 x 6-10 mm, tubular, rugose; blade 3.0-3.2 x 0.8-1.8 cm, ovate, apex acute, minutely apiculate, margin entire, spreading to slightly revolute. **Spathes** lacking. **Inflorescence** 6-13 cm long, apical, flowering only once, racemose (mainly on the branches) to panicle, erect; peduncle 1.3-2.0 cm long, terete, straight, erect, rachis flexuous to slightly sinuous; branches 3.5-6.5 cm long. **Floral bracts** 3-6 x 4-5 mm, slightly longer than the ovary, ovate, cucullate, acute, embracing, at 90° with respect to the rachis. **Flowers** 18-25, fleshy, non-resupinate, simultaneous, greenish orange; fragrance not registered. **Ovary** 3-4 mm long, short, thin. **Sepals** partly spreading, free, concave, elliptic, 5-veined, margin entire; dorsal sepals 11 x 4 mm, obtuse, margin spreading; lateral sepals 12.8 x 5.5 mm, margin slightly involute. **Petals** 10 x 3 mm, partly spreading, narrowly rhombic, acute, 3-veined, margin entire, spreading. **Lip** 10 x 11 mm, united to the column, 3-lobed, base truncate, fleshy, conduplicate in natural position, embracing and totally covering the apex of the column, margin entire; callus single, laminar, "U" shaped; disc pubescent, without ribs; lateral lobes 5.2 x 4.7 mm, rectangular with the apex hemi-ovoid; mid-lobe 3.0 x 5.2 mm, widely triangular, fleshy; apex sub-obtuse, somewhat rounded. **Column** 5 mm long, short, straight, thick, the apex with a pair of rounded teeth. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, with a central low, wide rib. **Pollinia** 4, obovoid, unequal in size, somewhat laterally compressed; caudicles not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** 1/3 de length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity, papillose behind, the pubescence reclining backwards. **Capsule** not seen.

OTHER SPECIMENS: VENEZUELA: Amazonas: Río Negro, Cerro de La Neblina, Camp II, 2.5-3.5 Km NE Pico Phelps (=Neblina), 2085-2100 m, 28 I 1985, *Funk 6719*, VEN x2! Brazil border- Cerro Neblina, 1900-2100 m, 17 IV 1984, *Gentry 46696*, MO! VEN! Río Negro, Cerro de La Neblina, Río Yatua, 5 km W of Cumbre Camp, 1900 m, 6 I 1954, *Maguire 37129*, AMES! Río Negro, Cerro de la Neblina, Río Yatua, 5-18 km SW of cumbre Camp, 1900-2100 m, 1-2 XII 1957, *Maguire 42275*, AMES! VEN! Río Negro, Camp II, 2085-2100 m, 30 I 1985, *Renner 2023*, VEN x2! Cerro de la Neblina Camp II. Neblina Massif, 2.8 Km NE Pico Phelps, 2100 m, 15 IV 1984, *Stein 1563*, MO! VEN Atabapo, Cerro Duida, cumbre, sección oriental-central, 1500 m, 16 II 1981, *Steyermark 124562*, MO! VEN! Atabapo, Cerro Duida. Cumbre, cerca de la escarpa oriental, 1230 m, 10 II 1982, *Steyermark 126385*, VEN! Atabapo, Estación D21, (al NNE del "Savanna Hills Camp" de "Tate"), Cerro Duida, inmediatamente al N de La Esmeralda, en el Alto Río Orinoco, ca. 1500 m, 2 II 1987, *Tillett 752-167*, HB!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from the high tepuis in southern Venezuela: Pico de Neblina Massif, Cerro Marahuca and Cerro Sipapo, at 1700-2700 m altitude. Flowering from October to April.

RECOGNITION: *Epidendrum luteynii* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pillose. The new species is recognized by the ovate, acute leaves generally sub-parallel to the stem and imbricated, erect inflorescence, panicle to racemose, flowers greenish orange, laxly distributed on the rachis with floral bracts 3-6 x 4-5 mm, petals narrowly rhombic, and the lip clearly 3-lobed with the base truncate. *Epidendrum commelinispathum* is vegetatively very similar, but the inflorescence is much shorter and few-flowered, the flowers greenish yellow, tinged brown, densely aggregate on the rachis, floral bracts 5-7 x 6-8 mm, petals linear-oblong, and the lip shallowly 3-lobed, the base broadly cuneate. *Epidendrum ulei* Schltr. has oblong leaves, sub-spreading, inflorescence straight with greenish yellow to ochre flowers, petals linear-oblong.

CONSERVATION STATUS: DD. Data deficient. Apparently common atop the summit on the mountains where it is found, in protected areas.

ETYMOLOGY: In honor of James Leonardo Luteyn (1948-) American botanist and explorer, specialized in Ericaceae, associated with the New York Botanical Garden, and who has extensively collected in neotropical America, particularly in the Andes in Venezuela, Colombia, Ecuador, Peru and Bolivia. He collected the type.



REFERENCES: Carnevali, G., & I. Ramírez, 2000, *Epidendrum commelinispathum* in G. A. Romero & G. Carnevali (eds.), **Orchids of Venezuela, An Illustrated Field Guide** (ed. 2) 3: 1132. Hágsater, E., & G. Calatayud, 2010, *Epidendrum lindamazonicum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1349. Santiago, E., & E. Hágsater, 2018, *Epidendrum commelinispathum* in *The Genus Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1612. Santiago, E., & E. Hágsater, 2018, *Epidendrum ulei* in *The Genus Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1663.

Authors: E. Hágsater & E. Santiago

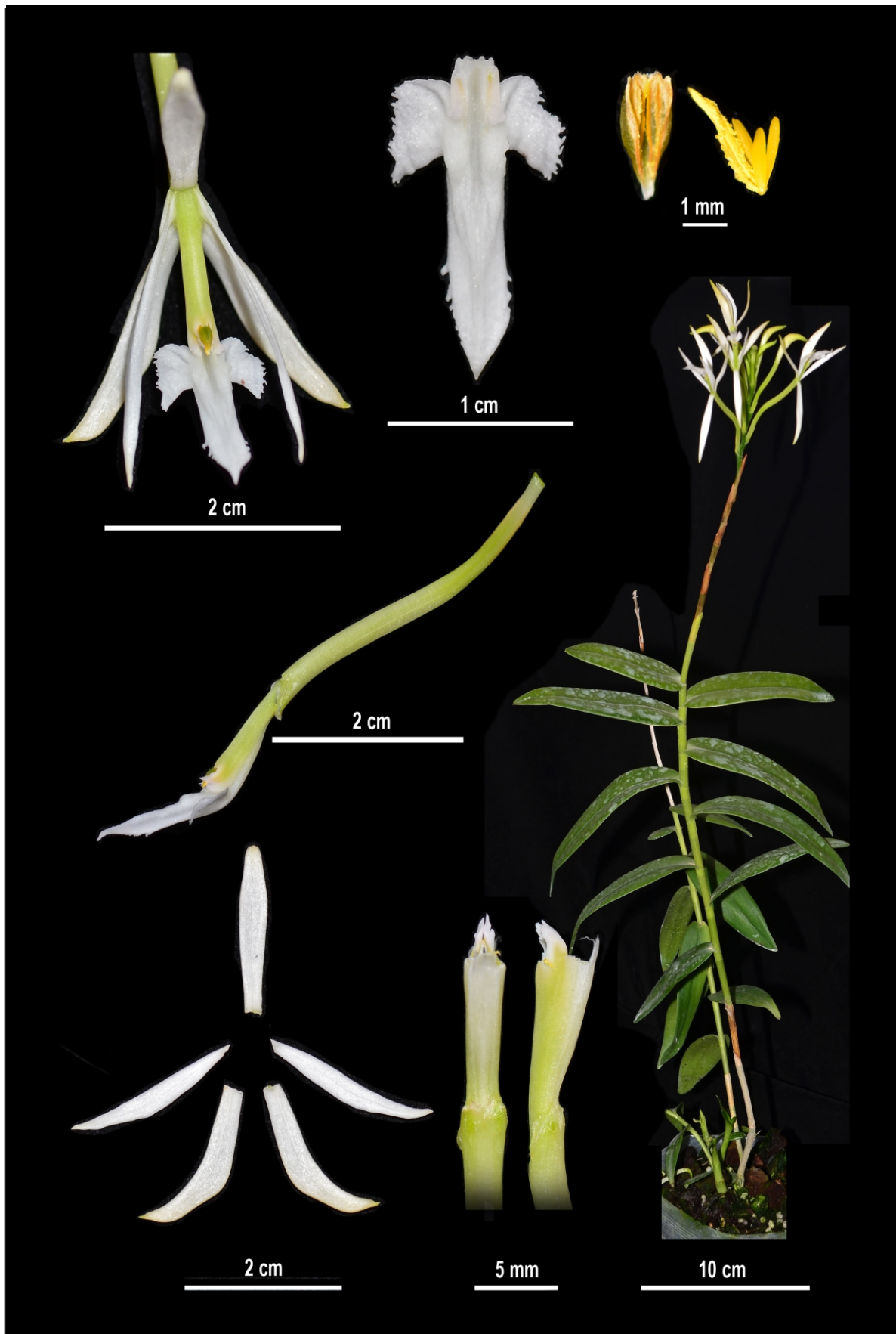
Illustrator: R. Jiménez M.

Editors: E. Hágsater & E. Santiago

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ICONES ORCHIDACEARUM 16(1). 2018. Plate 1638



EPIDENDRUM MAINUANUM Hágsater & H.Medina

Plate 1639

EPIDENDRUM MAINAUANUM Hágsater et H.Medina, *sp. nov.*

Type: ECUADOR: Morona-Santiago, Mun. Chiguinda, Hort. Ecuagenera, 2000 m, flowered in cultivation in the collection of Ecuagenera at Gualaceo, December 2016, **Ivan Portilla 238**. Holotype: QCNE! Isotype HA!

Similar to *Epidendrum glossaspis* Rchb.f. but with pure white flowers, (vs. rose-purple flowers), with the large callus white, flowers large, sepals 22 mm long (vs. 33 mm), straight, petals 3-veined, 1.6 mm wide (vs. 1-veined, 1.0 mm wide), lip with short sub-quadrate lateral lobes that are only about ¼ the length of the lip, sub-quadrate to sub-rhomboid, apex acute (vs. lip formed by 3, sub-parallel lobes, the lateral lobes about half as long as the lip, sub-rhombic, acuminate).

Terrestrial and epiphytic, sympodial, caespitose, erect **herb** over 50-160 cm tall including the inflorescence. **Roots** 1-2 mm in diameter, basal, fleshy, thin. **Stems** 27.5-100 x 0.6-0.8 cm, simple, cane-like, terete, erect, straight, green. **Leaves** 9+, distichous, distributed throughout the stem, alternate, articulate, green, unequal in size, the basal and apical leaves somewhat shorter; sheaths 16-25 x 6-8 mm, tubular, minutely striated; blade 4-12 x 1.5-2.5 cm, narrowly elliptic-lanceolate to lanceolate oblong, apex sub-obtuse, coriaceous, dark green. **Spathaceous bract** lacking. **Inflorescence** 22.5-50 cm long, apical, racemose, many-flowered; peduncle 15 cm long, elongate, terete, covered by 5 bracts 4.5 cm long, tubular, acute, not imbricated, brown. **Flowers** numerous, successive, though around 4-25 can be open at one time, non-resupinate, white, the callus white, ovary pale yellow; without fragrance. **Floral bracts** 2 mm long, much shorter than the ovary, linear-triangular, acuminate, embracing. **Ovary** 33-38 mm long, terete, thin, not inflated, unornamented. **Sepals** 22 x 4 mm, spreading, free, linear-elliptic, falcate, acuminate, margin entire, dorsal sepal 7-veined, lateral sepals 5-veined. **Petals** 20 x 1.6 mm, spreading, free, linear-elliptic, acuminate, 3-veined, margin entire, spreading. **Lip** 15 x 10 mm when spread, united to the column, 3-lobed, the lobes lateral lobes spreading, base sub-cordate; callus simple, massive, formed by a lanceolate thickened mass, the apex elongate, reaching the middle of the mid-lobe, the basal 2/3 sulcate; lateral lobes 3.0 x 3.2 mm, only about ¼ the length of the entire lip, sub-quadrate to sub-rhomboid, apex acute, the outer apical margin short-fimbriate; mid-lobe 11 x 3.0 mm, oblong, apex triangular, separated from the lateral lobes by wide sinuses, apex acute. **Column** 12.2 mm long, straight, thin, with a pair of prominent wings like at the apex, these wing-like, triangular, the inner margin dentate. **Clinandrium-hood** reduced, margin entire. **Anther** narrowly obovoid, elongate, the apex acute, 4-celled, green. **Pollinia** 4, narrowly obovoid, elongate, the inner pair slightly shorter; caudicles twice as long as the pollinia, formed by tetrads which look like a pile of roof tiles; viscidium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Morona-Santiago: surroundings of Chiguinda, ca. 2000 m, propagated by Ecuagenera, *H. Medina s.n.* (LCDP voucher). Surroundings of Chiguinda, ca. 2000 m, propagated by Ecuagenera, 23 IX 2016, *Hágsater 14811*, QCNE! Flowers in spirit, AMO!

OTHER RECORDS: ECUADOR: Hort. Guatemala, by Silvia Maria Palmieri, awarded in Guatemala, AOS 20164053, Species Identification Task Force Digital Images, provided by *Agustín Fernández Palmieri*, Digital images, AMO! (photo voucher). Without locality, *Lourens Grobler*, as *E. blepharoclinium* var. *album*, digital image, IOSPE (downloaded 31 XII 2016).

DISTRIBUTION AND ECOLOGY: Known presently from a single locality, plants propagated by seed at Ecuagenera. ca. 2000 m altitude. Flowering in September-October.

RECOGNITION: *Epidendrum mainauanum* belongs to the Amphyglottis group, Glossaspis subgroup which is recognized by the caespitose habit, simple stems, leaves oblong-lanceolate, coriaceous, bilobed and elongate peduncle of the erect, racemose inflorescence, the flowers non-resupinate, the callus simple, elongate, fleshy, sulcate towards the base. The new species is recognized by the pure white flowers, with the large callus white, flowers large, sepals 22 mm long, straight, petals 3-veined, 1.6 mm wide, lip has short sub-quadrate lateral lobes that are only about ¼ the length of the entire lip, sub-quadrate to sub-rhomboid, apex acute. It very much resembles *Epidendrum glossaspis*, which, however, has rose-purple flowers, with a white callus, spreading, 26-33 mm long sepals, straight petals, linear-triangular 1 mm wide at the base, and the lip formed by 3, sub-parallel lobes, the lateral lobes about half as long as the entire lip, sub-rhombic, acuminate. *Epidendrum glossaspis* has been confused with *E. blepharoclinium* Rchb.f. is quite similar in color, but the lip is wider in all its parts, the mid-lobe rhombic, about as wide as it is long, the petals as wide as the sepals which are 21-26 mm long; the callus is massive, formed by a lanceolate thickened mass, with a pair of digitate, short, upturned calli at the base, continued by two thickened, elongate processes terminating in a bilobed apex, and underneath these a thickened "Y" shaped rib, the base wide, somewhat sulcate, and ending in a progressively thinner mid-rib that reaches the apex of the mid-lobe of the lip. *Epidendrum hookerianum* Rchb.f. is similar but the sepals and petals are very narrow, the lateral lobes are semi-ovate, deeply fimbriate towards the apex of the outer margin, and the mid-lobe is linear-lanceolate, the margin sub-dentate and has a mid-rib running down the middle.

ETYMOLOGY: In honor of the Island of Mainau, on Lake Constance, on the border between Germany and Switzerland. It is a park and garden built around 1827 by the Hungarian Fürst Nikolaus II Esterházy and is rife with exotic and domestic plants with millions of tulips, rhododendrons, scented roses and perennials as well as colorful dahlias. The manor house receives 1.5 million visitors a year, and has organized orchid exhibitions for 35 years.

CONSERVATION STATUS: DD. Data deficient. Known presently only from the area of Chiguinda, Morona-Santiago, eastern slope of the Cordillera Oriental of the Andes in southern Ecuador. The species has been propagated from seed by Ecuagenera.

REFERENCES: Hágsater, E., & E. Santiago, 2018, *Epidendrum blepharoclinium* in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12; *Icon. Orchid.* 16(1): t. 1606. Hágsater, E., & H. Medina, 2018, *Epidendrum glossaspis* in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1620.



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LCDP: H. Medina

Photo: A. Fernández P.

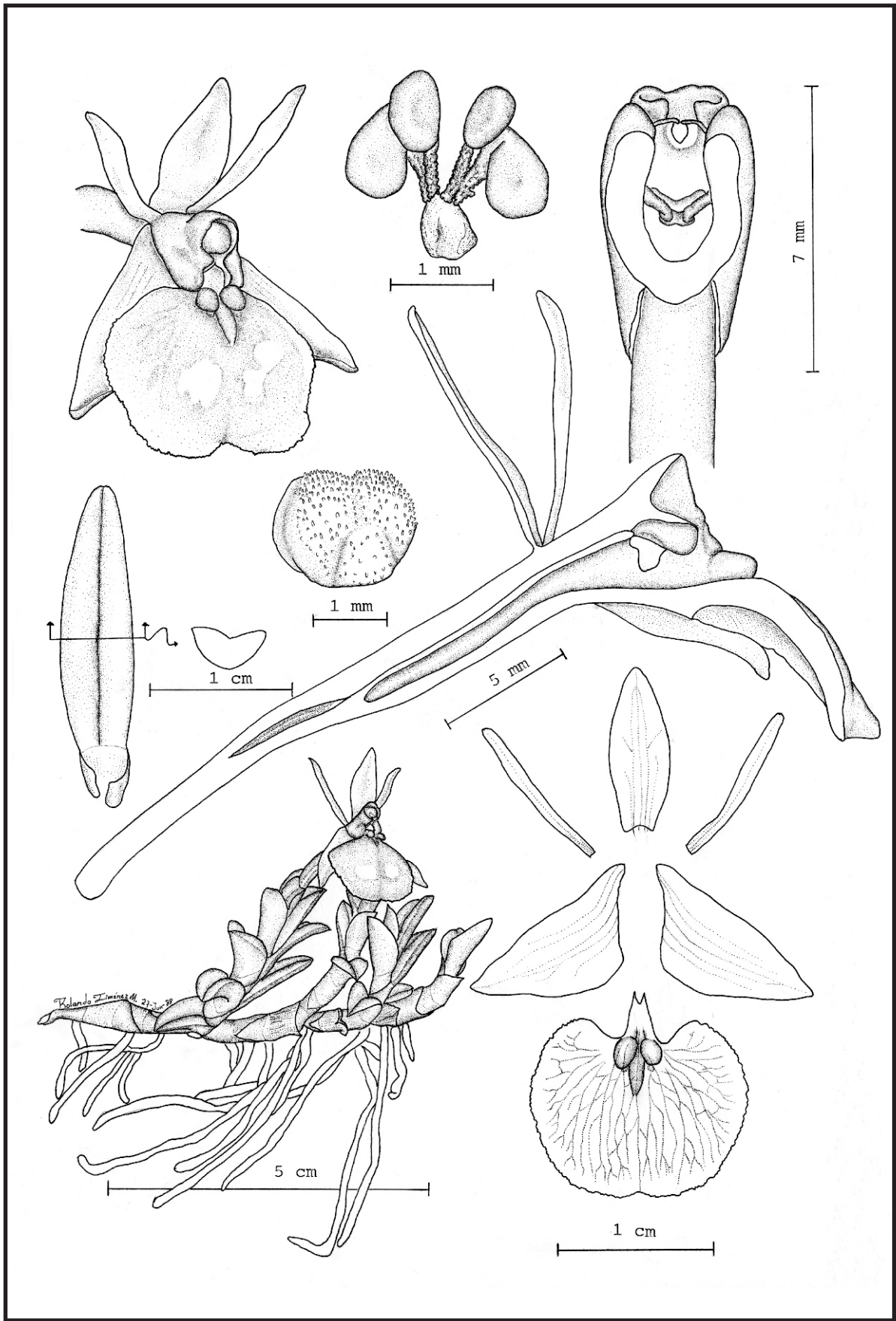
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

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Plate 1639



EPIDENDRUM MATHEWSII Rchb.f.

EPIDENDRUM MATHEWSII Rchb.f., *Linnaea* 41: 81. 1876.

Type: PERU: [Amazonas:] Chachapoyas, **Andrew Mathews 262**. Holotype: W-R 4172! (the specimen on the upper right-hand corner; mounted with *Mathews 206* and *W. Lobb s.n.*) Isotypes: (*Mathews 3185*) BM! G! K! P! illustration, K! Photo of specimen at G (CMNH neg.#24724): F! G! MO! NY! SEL! Synonyms: *Nanodes mathewsii* (Rchb.f.) Rolfe, *Illustration Horticole* 39: 43. 1892. *Neolehmannia mathewsii* (Rchb.f.) Garay, *Orch. Digest* 41 (1): 22. 1977. Orthographical variant: *Epidendrum mathewsii* Rchb.f., *Gard. Chron*, ser. 2, 26: 458, 1886; and *Gard. Chron*, ser. 3, 2: 431, 1887. should be treated as orthographical variants and do not represent a different taxon, they are horticultural notes relating to this species.

Epiphytic, caespitose, sympodial, dwarf, repent, **herb**, 2.5-10.0 cm (excluding the flower). **Roots** 0.2-0.7 mm in diameter, from the basal rhizome, scarce, thin, white. **Stems** 1.6-5.7[8.3-10] x 0.25-0.35 cm, rhizome 0.5-30 x 0.2-0.3 cm, cane-like, simple, terete, erect, straight to slightly sinuous. **Leaves** 6-11[20], distichous, fleshy-coriaceous, deep green above, purple-green below; sheath 0.3-0.7 x 0.25-0.30 cm, tubular; blade 0.7-3.0 x 0.25-0.70 cm, linear-elliptic to linear-lanceolate, semi-terete, acute, minutely apiculate, very fleshy coriaceous, margin entire. **Spathes** 0.7 x 0.7 cm (spread), sub-orbicular, obtuse, apiculate, greenish yellow tinged with reddish purple. **Inflorescence** apical, very short, sessile, single-flowered. **Floral bract** not seen. **Flower** single, resupinate, sepals, petals and column pale yellowish green, tinged reddish purple; lip wine-red, occasionally green; calli and mid-rib pale yellowish green; without fragrance. **Ovary** 16.8 mm long, smooth and slightly thickened along the apical half. **Sepals**: dorsal sepal 10.3-13.2 x 2.4-5.3 mm, free, spreading, elliptic, acute, fleshy, 3-veined, the lateral veins bifurcate, margin entire, spreading; lateral sepals 11.7-14.5 x 5.4 cm, oblique ovate-triangular, 5-veined. **Petals** 10.0-12.6 x 0.9-2.0 mm, free, spreading, linear, apex rounded, slightly falcate, margins entire, spreading, 1-veined. **Lip** 10.0-13.4 x 13-14.5 mm, united to the column, entire, sub-orbicular-cordiform, base cordate, apex emarginate, margin erose minutely dentate towards the apex; bicallose, the calli sub-spherical; central rib short, surpassing the calli, with a pair of very short ribs in front of the calli, low, rounded. **Column** 4.3-6.3 mm long, short, dilated towards the apex. **Rostellum** apical, slit. **Clinandrium-hood** conspicuous, projecting beyond the anther, margin entire. **Anther** reniform, minutely papillose, 4-celled. **Pollinia** 4, in two unequal pairs, the larger outer pair ellipsoid, complanate, convex-flat, the inner pair widely obovate, complanate, flat, caudicles granulose, cylindrical, about as long as the pollinia; viscidium semi-liquid. **Lateral lobes of the stigma** about ½ the length of the stigmatic cavity. **Nectary** penetrating half of the ovary, slightly inflated, unornamented. **Capsule** not seen. Measurements in [*] are under cultivation.

OTHER SPECIMENS: Botanische Garten Zürich sub *Hágsater 5993*, received 1 X 1979, hort. Mexico, 18 IX 1988, AMO! **ECUADOR**: **Azuay**: Río Ricay, 1500 m, pressed in cult., Mexico City, 26 VI 1990, *Pozo & Dodson sub Hágsater 9597*, AMO! (illustration AMO!) Río Ricay, 1640 m, 23 X 1985 m, *Madsen 61077*, AAU! **Morona-Santiago**: Hort. Paute, *Andreetta s.n.*, received 24 XI 1988, hort. Mexico, pressed 26 IV 1995, *Hágsater 9744*, AMO! QCNE! **PERU**: **Amazonas**: Dry slopes near Chachapoyas, 2000 m, *Werner Rauh 53850 sub Hágsater 6861*, pressed in cult. Mexico City, 1 VII 1990, AMO! COL! F! QCA! QCNE! USM! Ibid: pressed in cult, Mexico City, 22 VII 1990, *Werner Rauh 53850 sub Hágsater 6861* (illustration voucher) AMO! USM! Chachapoyas, Mendoza, in fog-woods, 2200 m, *Werner Rauh 54063*, hort. Heidelberg, received Mexico City, 26 VII 1982, *sub Hágsater 6862*, color slide, AMO! Camporredondo, entre Brasil y Pucho, 1570-1780 m, 22 VI 1999, *Campos 6077*, MO! Chachapoyas, cerca de Balsas, 2300-2400 m, 17 V 1985, *Navarro s.n.*, USM! Leimebamba, 2400 m, 21 XII 1962, *Woytkowski 7768*, MO! **Huánuco**: Muña, 7000 ft, 23 V 1923, *MacBride 4044*, AMES!

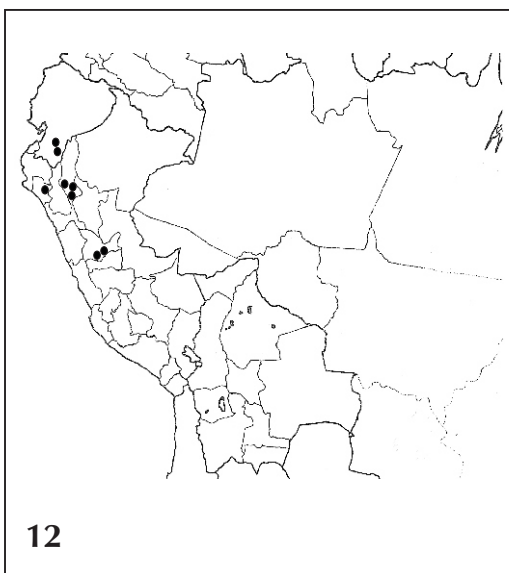
OTHER RECORDS: **ECUADOR**: **Azuay**: Girón, 1600 m, *Gerlach s.n.*, digital image, AMO! **PERU**: **Amazonas**: Moyobamba-Pomacochas at Aguas Verdes, 1400 m, col. 1 X 1987, *Cordelia Head 10/87*, received 6 XI 1991, *Hágsater 11111*, hort. AMO, described 4 IX 2016, in cult, AMO! **Huánuco**: Chinchao, complejo Arqueológico de Huancacuare, 3000 m, received 9 V 2016, *Morón s.n.*, digital image, AMO! **Lambayeque**: sin localidad, *Alex Díaz s.n.*, digital image, AMO! (photo voucher).

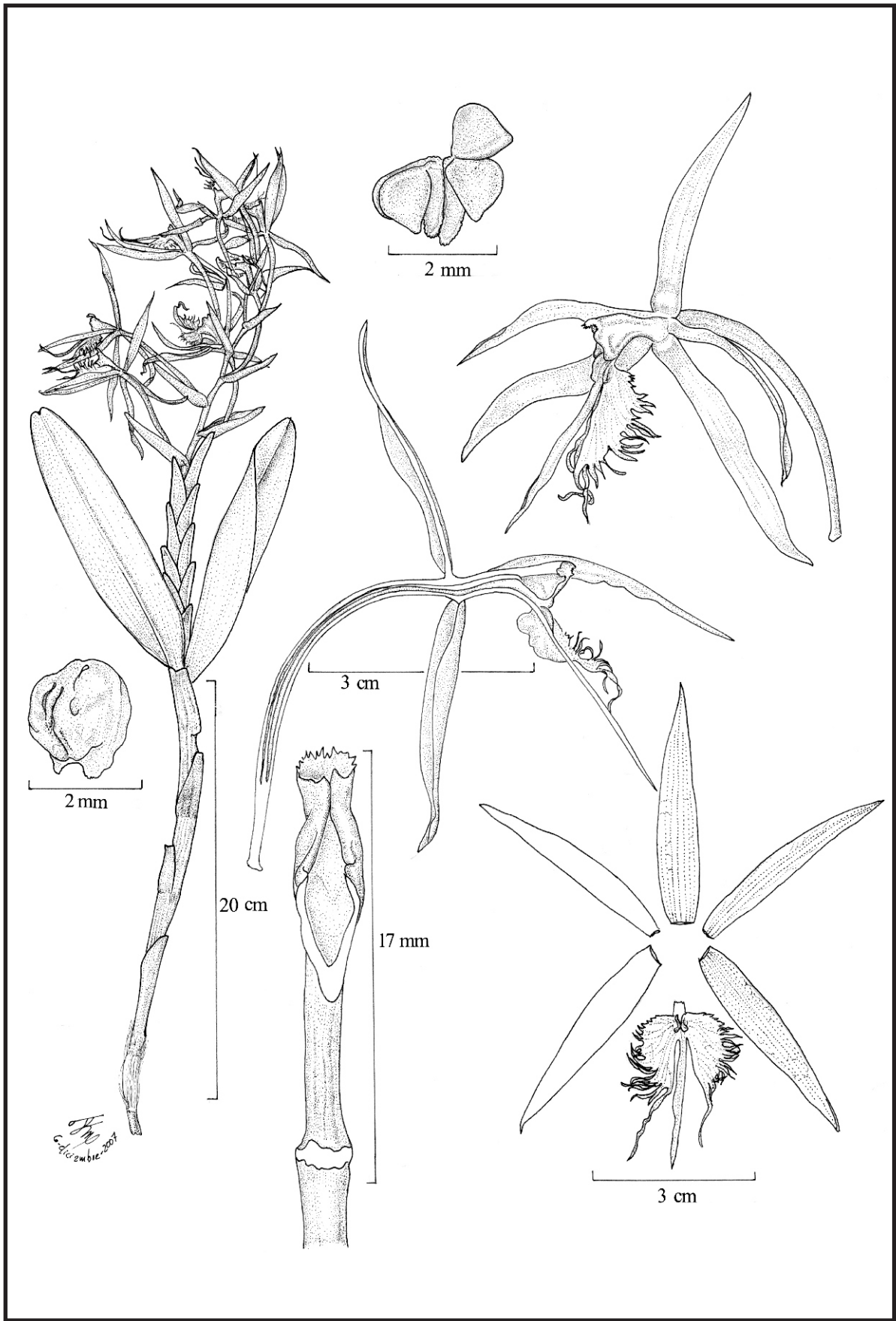
DISTRIBUTION AND ECOLOGY: Widespread along the Cordillera Oriental of the Andes from southern Ecuador (Azuay) to northern Peru (Huánuco), and on the Cordillera Occidental (Lambayeque), epiphytic, at 1500-3000 m altitude. Flowering in May to December in the field.

RECOGNITION: *Epidendrum mathewsii* belongs to the Porpax Group, which is characterized by the sympodial, somewhat repent habit, usually forming large mats, short, cane-like stems with very fleshy, succulent, articulate, distichous leaves, single-flowered inflorescence, sessile flowers, and the lip generally reddish purple. The species is recognized by the small, compact plants with erect stems, an orbicular-sub-quadrate lip with the apex obtuse, and linear, acute petals. *Epidendrum porpax* has somewhat larger plants with somewhat reclining stems, the green flowers with a lustrous, convex, reddish purple lip proportionately wider than long, the apex rounded, sepals 8.5-14 x 4-5 mm, elliptic-lanceolate. It has been often confused with *Epidendrum peperomia* Rchb.f. which is vegetatively similar but the lip of that species is orbicular-cordiform, spreading, as wide as it is long, with the apex obtuse; and known from Venezuela and Colombia. *Epidendrum lambeauanum* De Wild. has larger, prostrate, descending plants, the stems with 4-6 lanceolate leaves 17-38 mm long, the flowers are cream-colored with the lip reddish purple, and the petals linear-oblancoleate. The flowers of all these species are very similar, and best recognized by the vegetative habit. *Epidendrum microporpax* Hágsater has smaller leaves (1.0-1.6 x 0.35-0.50 cm) on a relatively elongate erect stem, the flowers yellowish green with the center of the lip pale wine-red, sepals small 6.3 x 3.6 mm, ovate, and the lip flat, with the mid-rib very short, barely surpassing the calli. *Epidendrum althaniorum* Hágsater & Collantes, from southern Peru (Cusco) and neighboring Bolivia, is distinguished by the linear-triangular, acuminate petals, and the heart-shaped wine-red blotch on the lip. *Epidendrum dolichoporpax* Hágsater has short stems with ovate, acute flat leaves, the petals linear, acute, with the margin minutely erose, lip orbicular, cordate and the three ribs of the lip long, reaching the middle of the blade, about equal in length.

CONSERVATION STATUS: DD. Deficient. The species is widespread along the eastern slope of the Andes in southern Ecuador and northern Peru. Apparently uncommon.

REFERENCES: Hágsater, E., & B. Collantes, 2013, *Epidendrum althaniorum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1403. Hágsater, E., 2018, *Epidendrum dolichoporpax*, in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1615. Hágsater, E., 2018, *Epidendrum microporpax*, in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1643. Hágsater, E., 2018, *Epidendrum lambeauanum*, in Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1633. Santiago, E., & E. Hágsater, 2010, *Epidendrum porpax* Rchb.f., in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1375.





EPIDENDRUM MEGALEMMUM (Schnee) Carnevali & G.A.Romero

Plate 1641

EPIDENDRUM MEGALEMMUM (Schnee) Carnevali & G.A.Romero, **Nuevo Cat. Vasc. Venezuela**, 763. 2008.

Basionym: *Epidendrum ciliare* L. var. *squamatum* Schnee, Revista Fac. Agric. Univ. Centr. Venezuela 1: 206. 1953. Type: VENEZUELA: Bolívar: Alrededores de La Paragua, **Ludwig Schnee 1254**. Holotype: MY, not seen.

Epiphytic, rarely lithophytic, sympodial, caespitose herb to 29-45 cm tall. **Roots** 1.5-2.5 mm in diameter, basal, fleshy, thick. **Stems** 10-21 x 0.8-1.3 cm, simple, thickened into fusiform, heteroblastic, straight pseudobulbs; covered when young by 2-3 papery sheaths. **Leaves** [1]2-3, aggregate towards the apex of the pseudobulb, coriaceous, articulate; blade 7.5-15.0 x 2.5-3.5 cm, elliptic, acute. **Spathe** lacking. **Inflorescence** 16-25 cm long, apical, produced from the mature pseudobulb, racemose, distichous; peduncle laterally compressed, covered by 5-10 imbricating, conduplicate, acute bracts 1.5-3.5 cm long, progressively longer, the apical ones 4.0-4.5 cm long; rachis terete, thin, straight to slightly sinuous. **Floral bracts** 1.5-3.5 cm long, 1/3-1/2 the length of the ovary and embracing it, oblong-triangular, conduplicate, acuminate. **Ovary** 45-60 x 1.0-1.7 mm, terete, not inflated, smooth. **Flowers** 4-9, simultaneous, resupinate, sepals and petals pale green, lip and column white; with nocturnal fragrance. **Sepals** 38-40 [42-48] x 3.5-4.0 [5.2-6.3] mm, spreading, free, lanceolate, acuminate, 5-veined, with numerous secondary veins, and thus appearing 9-veined, margin entire, somewhat revolute; lateral sepals slightly oblique. **Petals** 36-39 [47] x 2.0-3.2 [4.5] mm, spreading, arching forward, free, elliptic, oblique, acuminate, 3-veined with a pair of secondary veins and thus appearing 5-veined, margin entire, spreading. **Lip** 25-30 x 14-16 mm, united to the column, deeply 3-lobed, base truncate at slightly cordate; bicallous, the calli laminar, prominent; lateral lobes 10-14 x 3.5-7.0 mm, obliquely semi-ovate, acute, the inner margin entire, the outer margin deeply lacinate to fimbriate; mid-lobe 20-26 x 1.0-1.5 mm, linear, acuminate, margin entire. **Column** 10-15 mm long, straight to arching, long. **Clinandrium-hood** prominent, margin dentate to fimbriate. **Anthor** sub-spherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** apical, slit. **Nectary** deep, penetrating nearly the whole ovary, smooth. **Capsule** ellipsoid.

OTHER SPECIMENS: PUERTO RICO: Río Grande, W of Río Mar, edge of Enseñanzas Comezón, 19 XI 1983, *Ackerman 1851*, UPRRP! Maricao, San Germán, Barrio, Cañ Alto, 680-780 m, 14 V 1986, *Proctor 41675*, SJ! Prope Adjuntos ad arbores primaceae montis Galsa, 9 IV 1886, *Sintenis 4215*, BR! F! G x3! L! M! MO! P x2! S! W! Z! Prope Ulti, civia Cayuco, *Sintenis 6558*, CM! Martín Peña, 14 X 1917, *Stevenson 6771*, NY! **ST. THOMAS:** W. Indies, 1850, *Halmarpon s.n.*, S! Ibid. *Schomburgk 42*, W! Signal hill, 400 m, XII 1880, *Eggers 333*, W! **ANTIGUA:** Sugar loaf Mt., 900 ft, 24 X 1937, *Box 1218*, US! **GUADELOUPE:** Morne, Chameau, Iles des Saintes (Terre de Haunt), 280 m, 15 V 1937, *Stehlé 1683*, NY! **MARTINIQUE:** Without locality, *D'Adrien de Jussieu 454*, P! Ibid. *Rodríguez 1371*, P! Ibid. *Sieber 207*, MO! Caravelle Peninsula at Lighthouse, 50-100 m, 1 XII 1976, *Larsen 35579*, AAU! (illustration voucher). Birinia Piloto, 29 V 1950, *Rodríguez 3480*, P! **ST. LUCIA:** British Rep. Ciceron, 15 ft., 8 XII 1984, *Slane 393*, GH! **NETHERLANDS ANTILLES: Saba:** Weg windward side, 19 VIII 1947, *Arnoldo 682*, U! Hellsgate, 600 m, III 1949, *Burgers 507*, U! Saba, 15 III 1932, *Fairchild 3867*, US! Saba, the Mountain, 14 III 1953, *Stoffers 4625*, U! Saba slope of the Mountain, 15 III 1953, *Stoffers 4636*, U! **San Martín:** St. Martin, *Sieber 207*, W! St. Martin, 4 V 1885, *Suringnar s.n.*, L! **VENEZUELA:** Without locality, *Linden 637*, W! Ibid. *Otto 1004*, W x2! Caracas, Llanos de Venezuela, *Geay s.n.*, P! **Bolivar:** Headwaters and upper part of Quebrada Caballape, W of Hato de Nuria E of Miamo, Altiplanicie de Nuria, 230-350 m, 21 I 1961, *Steyermark 88647*, P! **COLOMBIA: La Guajira:** Serranía de La Macuire, Cerro Chimado, 800-1000 m, 30 III 1947, *O. Renz 4230*, Herb. RENZ x2!

OTHER RECORDS: MARTINIQUE: Illustration published. Select. Stimp. Amer. Hist. t. 179, fig. 89. 1763. **VENEZUELA:** Hort. Jardín Botánico de Caracas, 31 I 2013, *Hágsater 14523*, digital image, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: The species ranges in the Caribbean (Puerto Rico, St. Thomas, Antigua, Guadeloupe and Martinique); northern Colombia, Venezuela and neighboring Guyana, in very dry areas in Eastern Venezuela. Epiphytic and lithophytic, at 50-280 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum megallemum* belongs to the Coelostylis Group which is characterized by the sympodial, caespitose plants, the stems forming a fusiform, heteroblastic pseudobulb, with an apical, racemose, distichous, inflorescence, the peduncle covered by large bracts, and flowers large, star-shaped, with long, narrow sepals and petals. The species is recognized by the deeply fimbriate-laciniate outer margin the lateral lobes of the lip, the inflorescence which originates from the mature, fusiform, pseudobulb with 2-3 apical, leaves, rarely 1; the peduncle is covered by 5-10 imbricating, conduplicate, acute bracts, and the narrow petals, 2.0-3.2 [4.5] mm wide. It closely resembles *Epidendrum ciliare* L. which is widely distributed from southeastern Mexico, through the Antilles, Central America and South America (Colombia, Venezuela, the Guianas, N. Brazil, Ecuador and Peru), shares the deeply fimbriate-laciniate outer margin the lateral lobes of the lip, but produces the inflorescence from the immature stem (rarely mature), the peduncle is covered by only 1-6 tubular, conduplicate, imbricating bracts and the petals are slightly wider, 3-6 mm wide. *Epidendrum ciliocentrale* Hágsater & L. Sánchez is endemic from the Pacific slope of Mexico (Sinaloa, Nayarit, Jalisco, Guerrero, Mexico, Michoacán and Chiapas, flowers from the mature pseudobulb which is usually single-leaved, rarely 2, and has a peduncle covered by 6-22 closely imbricating bracts, and somewhat wider petals, generally 3-5 mm wide. *Epidendrum oerstedii* Rchb.f., has shorter, thicker pseudobulbs, the inflorescences appear from young, immature stems, the margins of the lateral lobes of the lip are entire, and the mid-lobe of the lip is widened towards the middle. *Epidendrum x dorotheae* P.H. Allen is apparently a natural hybrid between *Epidendrum nocturnum* Jacq., and *E. ciliare*, produces flowers from an immature stem, on a rather simple, few-bracted peduncle, and the outer margin of the lateral lobes of the lip serrulate to slightly fimbriate. *Epidendrum oerstedii* Rchb.f. also flowers from the immature growth, but the margins of the lip are entire, and the mid-lobe of the lip is widened in the middle. *Epidendrum sandiorum* (Hágsater, Karremans & L. Sánchez) Hágsater, Karremans & L. Sánchez has short, sub-spherical to ovoid pseudobulbs, single apical leaf, inflorescence produced from the immature stem, the outer margins of the lateral lobes of the lip fimbriate to lacinate, the 45 mm long mid-lobe truncate beyond the middle, apex long-acuminate, margin erose; it is presently known only from the border of Costa Rica and Panama at around 1900 m altitude, it was originally thought to be a natural hybrid between *E. ciliare* and *E. oerstedii*. The new *Epidendrum esperanza-mejiae* Hágsater, E. Santiago & Uribe-Vélez has cane-like, barely thickened stems, 2 apical leaves, the inflorescence with an elongate peduncle somewhat longer than the leaves, flowers entirely white, including the calli, petals arched, and the lateral lobes of the lip not much longer than wide, obliquely semi-ovate, the inner margin a convex arch.

CONSERVATION STATUS: DD. Data deficient.

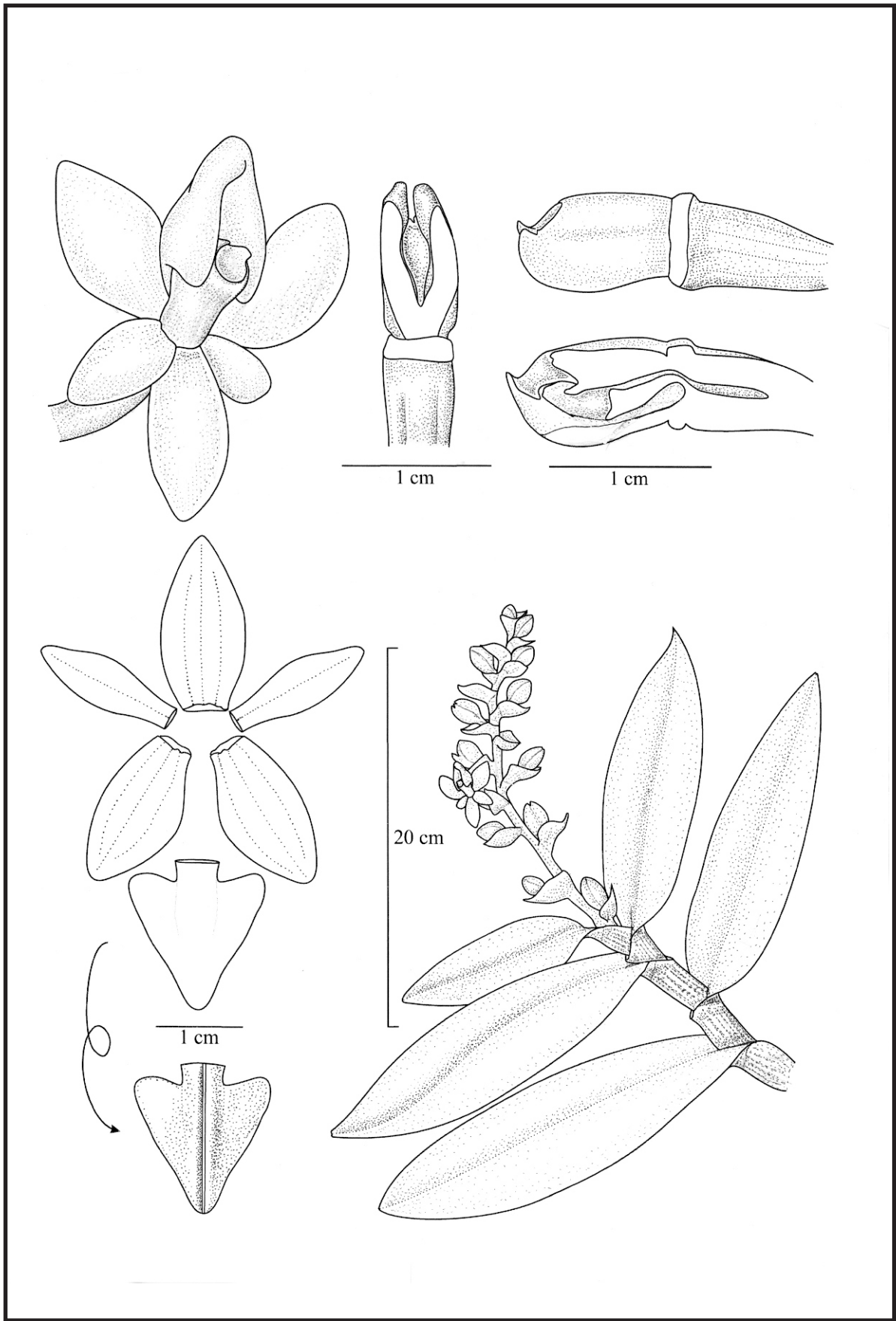
ETYMOLOGY: From the Greek μέγας, big, large, and λέμμα, husk, a valve of a flowering glume, in reference to the large, prominent floral bracts that cover the ovary, and eventually the fruit.

REFERENCES: Hágsater, E., A. P. Karremans & L. Sánchez S., 2013, *Epidendrum sandiorum*, in Hágsater, E. & L. Sánchez Saldaña (eds.), The Genus *Epidendrum* Part 10, **Icon. Orchid.** 13: t. 1483. Hágsater, E. & C. Uribe V., 2018, *Epidendrum esperanza-mejiae*, in in The Genus *Epidendrum*, Part 12, E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1617. Hágsater & L. Sánchez S., 2008, *Epidendrum ciliocentrale* in The Genus *Epidendrum*, Part 7, E. Hágsater & L. Sánchez S. (eds.), **Icon. Orchid.** 11: t. 1110. Sánchez, L. & E. Hágsater, 2008, *Epidendrum x dorotheae* in Hágsater, E. & L. Sánchez S. (eds.) The Genus *Epidendrum* Part 8, **Icon. Orchid.** 11: t. 1119. Sánchez, L. & E. Hágsater, 2008, *Epidendrum oerstedii* in Hágsater, E. & L. Sánchez S. (eds.) The Genus *Epidendrum* Part 8, **Icon. Orchid.** 11: pl. 1151. Sánchez, L. & E. Hágsater, 2010, *Epidendrum ciliare* in Hágsater, E. & L. Sánchez S. (eds.) The Genus *Epidendrum* Part 9, **Icon. Orchid.** 13: t. 1317.



Authors: L. Sánchez S.† & E. Hágsater Illustrator: R. Jiménez M.
Herbario AMO Ciudad de México, MÉXICO

Photo: E. Hágsater Editors: E. Hágsater & E. Santiago
ICONES ORCHIDACEARUM 16(1). 2018. Plate 1641



EPIDENDRUM MEGALOPHYLLOSTACHYUM Hágsater, E.Santiago & Rodr.-Mart.

Plate 1642

EPIDENDRUM MEGALOPHYLLOSTACHYUM Hágsater, E.Santiago et Rodr.-Mart., *sp. nov.*

Type: COLOMBIA: Cauca: Municipio El Tambo, Parque Nacional Natural Munchique, 2600 m, 24 April 1979. **Gustavo Morales L., James L. Luteyn & María L. Lebron-Luteyn 139.** Holotype: COL! (illustration voucher)

Similar to *Epidendrum xylostachyum* Lindl. but the leaves larger, elliptic, apex acute, 10-18 x 3-5 cm, (vs. oblong-elliptic, apex rounded, 5-13 x 2-3 cm), the inflorescence elongate with the floral bracts spaced (vs. compact, densely few-flowered), sepals 18-20 mm long (vs. sepals 14 mm long).

Terrestrial, monopodial, branching, erect **herb**, to 200 cm tall. **Roots** not seen. **Stems** cane-like, terete, erect, branching sub-apically in mature plants; primary stem 100-150 x 1.5 cm; branches 9-11 x 1.3 cm, short. **Leaves** numerous on the primary stem, distributed throughout the stems, articulate, spreading; sheaths 3-5 x 1.0-1.5 cm, tubular, striated, rugose; blade 10-18 x 3-5 cm, elliptic, apex acute, margin entire, slightly revolute in pressed specimens; 4-5 leaves per branch, 3.6-16.0 x 2.6-5.5 cm, unequal, the lower and apical leaves smaller, the penultimate being the largest. **Inflorescence** 14-18 cm long, apical from primary and secondary stems, racemose, erect; peduncle 1.0-1.5 x 0.7-0.8 cm, short, terete, straight; rachis 13-17 x 0.5-0.7 cm. **Floral bracts** 10-25 x 10-20 mm, much longer than the ovary, triangular-ovate, apex acute, margin slighter serrate, embracing. **Flowers** 16, green-yellow to pale green, simultaneous, non-resupinate. **Ovary** 10 x 5 mm, terete, striated. **Sepals** 18-20 x 9-12 mm, free, spreading, fleshy, elliptic, apex acute, margin entire. **Petals** 16-17 x 5-6 mm, spreading, free, spatulate, apex acute, margin entire. **Lip** 18 x 15 mm, united to the column, triangular, base cuneate, apex rounded, fleshy (the apex is thicker than the rest), embracing the column in natural position without covering completely it; ecallose, glabrous. **Column** 9 mm long, thick, straight, glabrous. **Clinandrium-hood** reduced, margin entire. **Anther** not seen. **Rostellum** apical, slit. **Nectary** penetrating $\frac{1}{2}$ of the ovary, glabrous. **Capsule** 53-68 x 28-29 mm, pedicel 5 mm long, very short and thin, apical neck reduced, perianth segments persistent.

OTHER SPECIMENS: COLOMBIA: Cauca: Mun. El Tambo; Parque Nacional Natural Munchique, km 45-47 vía la Romelia a la Galleria, 2440 m, 11 IV 1994, *Álvarez 23*, COL! Parque Nacional Natural Munchique, *Chaparro 124*, FMB! El Tambo, vertiente occidental del Cerro Munchique, 2200 m, 24 VI 1971, *Ortiz Valdivieso 479*, HPUJ! Mun. El Tambo; Parque Nacional Natural Munchique, sector la Romelia, vía km 8.1, 11 V 2000, *Salgado 102*, COL!

OTHER RECORDS: COLOMBIA: Cauca: El Tambo, vertiente occidental del Cerro Munchique, 2200 m, 24 VI 1971, *Ortiz Valdivieso 479*, watercolor voucher, digital image, AMO!

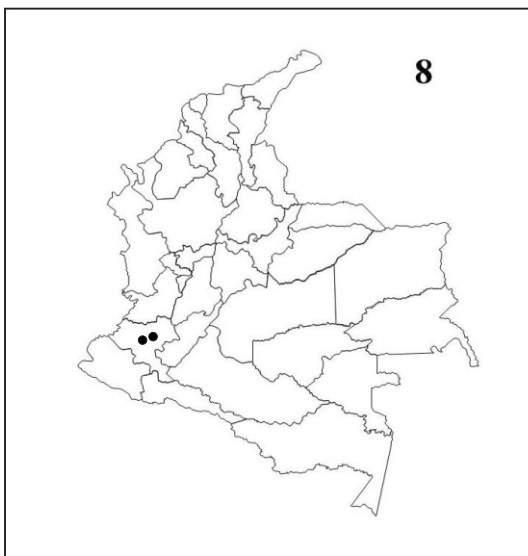
DISTRIBUTION AND ECOLOGY: Known presently only from the Parque Nacional Natural Munchique on the western slope of the Cordillera Occidental in southern Colombia, at 2400-2600 m altitude. Rainfall in the area is >2000 mm < 4000 mm, temperatures between 6 and 12°C. To be expected also in the unexplored hills near Eagle's Peak (Mun. Morales) and Serranía del Pinche (Mun. Argelia). Vegetation according to Holdridge (1987) corresponds to Bosque Pluvial Montano, **Bp-M**, Selva Andina according to Cuatrecasas (1958). Dominant tree vegetation corresponds to *Weinmannia*, *Ilex*, *Miconia*, *Befaria*, and *Podocarpus*. Flowering in April to June.

RECOGNITION: *Epidendrum megalophyllostachyum* belongs to the Macroctachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the plants to 2 m tall, robust stems 1.5 cm in diameter, large, elliptic leaves, 10-18 x 3-5 cm, apex acute, inflorescence 14-18 cm long, lax-flowered, bracts triangular ovate, spaced along the rachis, longer than the ovary, 10-25 x 10-20 mm, sepals 18-20 x 9-12 mm, flowers pale green to green-yellow. *Epidendrum xylostachyum* has smaller oblong-elliptic leaves, 6-13 x 2-3 cm, apex rounded, inflorescence dense, compact, to 7 cm long, floral bracts nearly imbricated, 10-15 x 10-18 mm, sepals 14 x 8 mm. *Epidendrum munchiquense* Hágsater, E.Santiago & García-Revelo has smaller plants, to 1 m tall, leaves narrowly elliptic, apex acute to sub-acute, inflorescence 25-40 cm long, lax-flowered, floral bracts spaced, triangular, 6-13 x 4-8 mm, sepals 14-18 x 5-8 mm long, flowers scarlet red. *Epidendrum macroctachyum* Lindl. has similar sized plants, but leaves are lanceolate-elliptic, 12-13 x 3 cm (on the primary stem), inflorescence 16-30 cm long, flowers black-brown, the color of ripe olives, floral bracts triangular ovate, 8-18 x 5-14 mm, and sepals 11 x 5-6 mm.

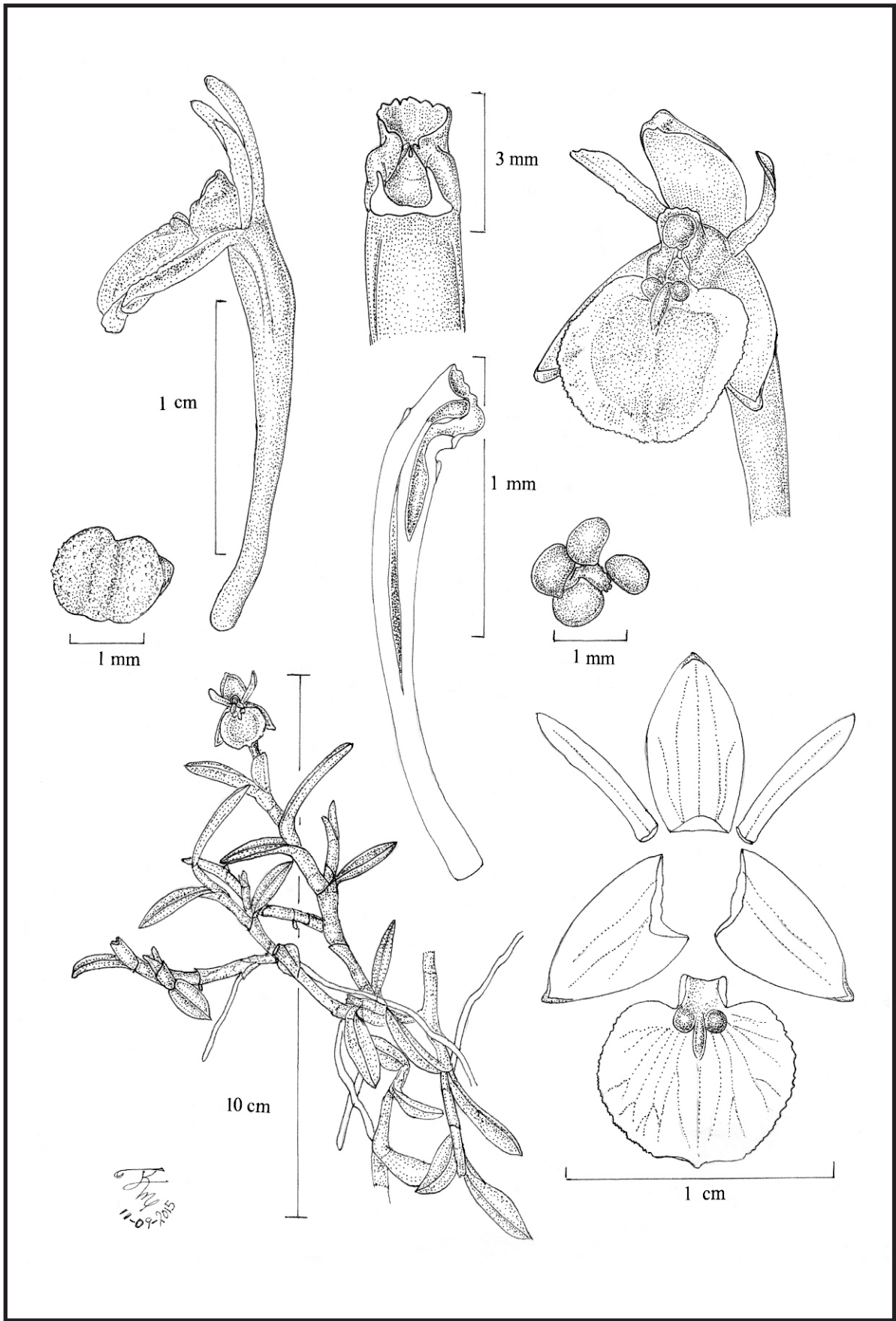
CONSERVATION STATUS: VU-D2, IUCN (Version 3.1). In spite of the Natural National Park presenting problems with deforestation and mining, the species is known from at least 3 localities, and inferred ranges is below 20 km².

ETYMOLOGY: From the Greek *μακρος*, large, *φυλλον* leaf, and *σταχυς*, ear of corn, in reference to the unusually large leaves of this species of the Macroctachyum Group.

REFERENCES: Cuatrecasas, J., 1958, Aspectos de la vegetación natural de Colombia, *Revista Acad. Colomb. Ci. Exact.* 10(40): 221-268. Hágsater, E., E. Santiago & S. García Revelo, 2015, *Epidendrum munchiquense* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 10, *Icon. Orchid.* 15(1): t. 1544. Holdridge, L., 1987, Ecología basada em zonas de vida, IICA, San José, Costa Rica, 216 pp. Santiago, E., & E. Hágsater, 2013, *Epidendrum macroctachyum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 14: t. 1454.



Authors: E. Hágsater, E. Santiago & L. Rodríguez Martínez Illustrators: L. Rodríguez M. Watercolor: P. Ortiz V. Editors: E. Hágsater & E. Santiago



EPIDENDRUM MICROPORPAX Hágsater

Plate 1643

EPIDENDRUM MICROPORPAX Hágsater, sp. nov.

Type: **BOLIVIA:** hort. California, hort. AMO, received 20 October 2013, illustrated and pressed 11 September 2015, **Walter Teague via Marni Turkel sub Hágsater 14556**. Holotype: AMO! (illustration & photo voucher).

Similar to *Epidendrum porpax* Rchb.f. but smaller leaves and flowers, leaves semi-terete (vs. flat), stems sub-erect, lax-leaved (vs. reclining, compact), and proportionately widely spaced between each other and at a right angle to the axis of the stem (vs. relatively compact, with the blades sub-parallel to the stem); flowers smaller, sepals 6.3 x 3.6 mm (vs. sepals 8.5-14 x 4-5 mm), lip 5.9 x 7.3 mm, flat (vs. 6.7-10 x 8.5-14 mm, convex), mid-rib of the lip very short, barely surpassing the calli (vs. the mid-rib ending near the middle of the lip).

Epiphytic, caespitose, sympodial, dwarf **herb**, 4.5-7.0 cm. **Roots** 0.5 mm in diameter, from the basal rhizome, scarce, thin, white. **Stems** 3.5-6.0 x 0.15-0.20 cm, cane-like, simple, terete, erect, straight to slightly sinuous. **Leaves** 5-6, distichous, fleshy-coriaceous, deep green above, purple-green below; sheath 0.3-0.6 x 0.15-0.20 cm, tubular; blade 1.0-1.6 x 0.35-0.50 cm, ovate-elliptic, semi-terete, minutely apiculate, margin entire. **Spathes** 0.72-0.85 x 0.25-0.32 cm, obtuse, greenish yellow tinged with reddish purple. **Inflorescence** apical, very short, sessile, single-flowered. **Floral bract** not seen. **Flower** single, resupinate, sepals, petals and column pale yellowish green, tinged reddish purple; lip pale green with a pale wine-red spot on the disc; calli and mid-rib pale yellowish-green; without fragrance. **Ovary** 16 mm long, smooth and slightly thickened towards the apex. **Sepals** 6.3 x 3.6 mm, free, spreading, ovate, acute, fleshy, margin entire, spreading; dorsal sepal, 3-veined; lateral oblique, 2-veined. **Petals** 6.0 x 1.0 mm, free, spreading, linear, acute, slightly falcate, margins entire, spreading, 1-veined. **Lip** 5.9 x 7.3 mm, united to the column, entire, sub-orbicular, base sub-cordate, apex apiculate, margin erose minutely dentate towards the apex; bicallous, the calli sub-spherical; central rib, short, slightly surpassing the calli, low, rounded. **Column** 4 mm long, short, dilated towards the apex. **Rostellum** apical, slit. **Clinandrium-hood** conspicuous, projecting beyond the anther, margin erose. **Anther** reniform, with a low keel in front, minutely papillose, 4-celled. **Pollinia** 4, in two unequal pairs, the larger pair ellipsoid, convex-flat, the inner pair widely obovate, convex-flat, caudicles granulose, shorter than the pollinia; viscidium semi-liquid. **Lateral lobes of the stigma** about ½ the length of the stigmatic cavity. **Nectary** penetrating the apex of the ovary, slightly inflated behind the perianth, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: BOLIVIA: hort. California, *Mary Gerritsen s.n.*, digital image, received 27 IV 2013, AMO! hort. California, *Ron Parsons s.n.*, digital image, received 30 IX 2015, AMO! sine loc., 18 X 2015, *Florence Schertzing*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known presently only from cultivated material originating in Bolivia, without locality. Flowering in cultivation in October in Mexico.

RECOGNITION: *Epidendrum microporpax* belongs to the Porpax Group, which is characterized by the sympodial, somewhat repent habit, usually forming large mats, short, cane-like stems with very fleshy, succulent, articulate, distichous leaves, single-flowered inflorescence, sessile flowers, and the lip generally reddish purple. The species is recognized by the small leaves (1.0-1.6 x 0.35-0.50 cm) on a relatively elongate erect stem, the flowers yellowish green with the center of the lip pale wine-red, sepals small 6.3 x 3.6 mm, ovate, and the lip flat, with the mid-rib very short, barely surpassing the calli. *Epidendrum porpax* has somewhat larger plants with reclining stems, the green flowers with a lustrous, convex, reddish purple lip proportionately wider than long, the apex rounded, sepals 8.5-14 x 4-5 mm, elliptic-lanceolate, it has been often confused with *Epidendrum peperomia* Rchb.f. which is vegetatively similar but the lip of that species is orbicular-cordiform, spreading, as wide as it is long, with the apex obtuse; and known from Venezuela and Colombia. *Epidendrum lambeauanum* De Wild. has larger, prostrate descending plants, the stems with 4-6 lanceolate leaves 17-38 mm long, the flowers are cream-colored with the lip reddish purple, and the petals linear-oblongate. *Epidendrum mathewsii* Rchb.f. from Colombia, Ecuador and Peru has small, compact plants with erect stems, an orbicular-sub-quadrate lip with the apex obtuse, and linear acute petals. The flowers of all these species are very similar, and best recognized by the vegetative habit. *Epidendrum althaniorum* Hágsater & Collantes, from southern Peru (Cusco) and neighboring Bolivia, is distinguished by the linear-triangular, acuminate petals, and the heart-shaped wine red blotch on the lip.

NOTE: Vásquez and Ibsch (2004) included several images and an illustration and cited a dozen specimens under *E. peperomia* and *E. porpax*. However, we have not been able to study the material in detail to identify the species, and it appears to include a least 3 species, including *E. microporpax* and *E. althaniorum*.

CONSERVATION STATUS: DD. Data deficient. Inadequate information to make a direct, or indirect, assessment of its risk of extinction. Data based on abundance and/or distribution are lacking.

ETYMOLOGY: From the Greek μικρός, small, and πορπαξ, a Greek shield, (in particular the arm band inside the shield), referring to the convex orbicular lip. In reference to the similarity of this species with *E. porpax* but noticeably smaller, particularly in the leaves.

REFERENCES: Hágsater, E., & B. Collantes, 2013, *Epidendrum althaniorum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1403. Hágsater, E., 2018, *Epidendrum lambeauanum*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1633. Hágsater, E., 2018, *Epidendrum mathewsii*, in Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1640. Santiago, E., & E. Hágsater, 2010, *Epidendrum porpax* Rchb.f., in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1375. Vásquez Ch, R., & P. L. Ibsch, 2004, Orquídeas de Bolivia: diversidad y estado de conservación 2: 130-131.



Author: E. Hágsater

Illustrator: R. Jiménez M.

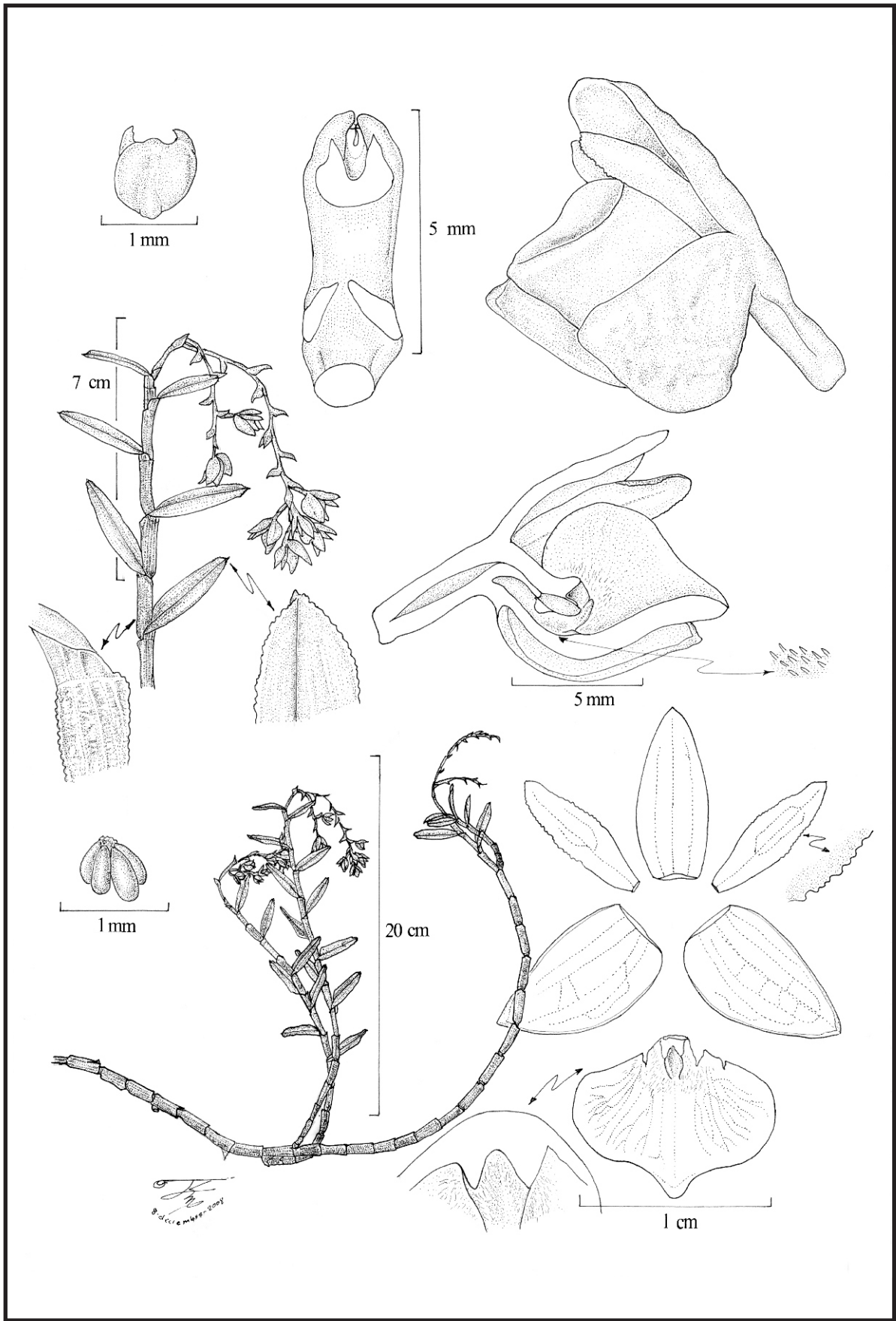
Photo: R. Jiménez M.

Editors: E. Hágsater & E. Santiago

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Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1643



EPIDENDRUM MONTIGENA Ridl.

EPIDENDRUM MONTIGENA Ridl. in Thurn*, Timehri 5: 203, 1886.

Type: VENEZUELA: Bolívar*; "GUYANA:" Mt Roraima, ledge and top of Roraima, 7500-8000 ft, 1884, *Everard Ferdinand im Thurn 322, Set A**, Holotype: K-L 583710! (includes camera lucida illustration of flower made by Peter Taylor, 1976.) (photo AMES!) (sketch, W-R 21187) Isotypes: Ibid. *Everard Ferdinand im Thurn 322, Set B*, BM! Ibid. *Everard Ferdinand im Thurn 322, K!*

Isonym: *Epidendrum montigena* Ridl. ex Oliv., Trans. Linn. Soc. London Bot. 2(13): 282, 1887.

Terrestrial or lithophytic, monopodial, branching above, erect herb, 33-50 cm tall. **Roots** 1.3-2.0 mm in diameter, basal, fleshy, white. **Stems** cane-like, branching above, terete, erect, straight, main stem ca. 30-41 x 0.2-0.4 cm; branches 8-21 x 0.2-0.3 cm. **Leaves** 15 or more on the main stem, 6-10 on the branches, distributed throughout the stems, articulate, distichous, sub-coriaceous, spreading, similar in size and shape, green with the margin reddish, upper-side lustrous; sheaths 8-15 x 3-5 mm, tubular, rugose, striated, reddish; blade 2.0-3.5 x 0.4-0.6[1.0] cm, oblong, apex rounded, apiculate, apical margin denticulate, somewhat revolute (in herbarium specimens). **Spathes** lacking. **Inflorescence** 3-9 [16.5] cm long, apical, flowering only once, nutant, racemose to paniculate, few-flowered; peduncle 0.95-2.3 cm long, thin at base, gradually wider towards the apex, laterally compressed, somewhat ancipitose, reddish, the base with a bract 3-7 mm long, tubular, small, amplexicaul, apex sub-acute; rachis straight, reddish. **Floral bracts** 4.0-6.0 x 3.5-4.0 mm, prominent, slightly shorter than to as long as the ovary, same color as the rachis, ovate, acute, embracing, rigid, disposed at a right angle with respect to the rachis. **Flowers** 10-21[28], small, resupinate, opening in succession from the base to the apex of the inflorescence (though several may be open simultaneously), pink; fragrance not registered. **Ovary** 3-5 mm long, short, thin, not inflated, unornamented. **Sepals** partly spreading, free, membranaceous, concave, acute, margin entire, spreading; dorsal sepal 6.5-8.5 x 3.0-4.0 mm, narrowly obovate, 3-4-veined; lateral sepals 7.0-9.0 x 4.0-5.0 mm, ovate, slightly oblique, with a low dorsal keel. **Petals** 6.0-8.0 x 2.0-2.5 mm; partly spreading, fleshy, oblong-elliptic, sub-acute, 1-veined, margin (along apical half) dentate, spreading. **Lip** 6.0-7.8 x 8.0-10.5 mm, united to the column, widely rhombic in outline, somewhat 3-lobed, base slightly cuneate, somewhat fleshy, margin entire, spreading; disc densely pubescent, bicallose, the calli thin, pubescent and parallel (apex generally converging to the base of a very narrow, low mid-rib; lateral lobes 3.7-5.1 x 4.2-5.8 mm, rounded (they can be spread without tearing), embracing and totally covering the apex of the column in natural position; mid-lobe 2.0-2.3 x 2.8-3.0 mm, triangular, apex obtuse. **Column** 4-5 mm long, slightly arched upwards, base thin and slightly widened towards the apex, with a triangular tooth on each side at the apex. **Clinandrium** reduced, margin entire. **Anther** ovoid, apex truncate, 4-celled. **Pollinia** 4, obovoid; caudicles very short, granulose, **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity, the pubescence reclining towards the end of the nectary. **Capsule** not seen.

OTHER SPECIMENS: BRAZIL: Roraima: Monte Roraima, Campamento Coatí, 2681 m, 21 II 2017, *Cordiero 1102*, EAN! (digital photo, AMO). Mt. Roraima*, 2500 m, XII 1909, *Ule 8571*, C! K! L! MG! U! **GUYANA:** Mt. Roraima, SW Plateau, 8700 ft, 9 I 1939, without collector data, *R23*, K 2886! Roraima summit. La Proa Camp, East of border, Near Lake Gladys, 2800 m, 11 IV 1988, *Liesner 23300*, VEN! Mount Roraima, 8600 ft, *McConnell 694*, BM! K! Mount Roraima, VII 1895, *Quelch 37*, K 583711! Mt. Roraima, 26 XI 1927, *Tate 436*, AMES! **VENEZUELA: Bolívar:** Matahui tepui, 2700-3000 m, 22 VIII 1982, *Castillo 1817*, MO! Kukenan Tepui, 2600 m, I 1977, *Delascio 4902*, VEN! Cerro Roraima, 2810 m, IX 1982, *Delascio 11872*, VEN! Murisipán Tepui, al este del Auyán tepui, 2400-2500 m, 25-26 III 1987, *Delascio 13050*, MO! VEN! Kamarkaibaray tepui, Este del Auyán-tepui, 2400-2500 m, 25-26 III 1987, *Delascio 13105*, MO! VEN! Camarcaibarai-tepui, 4th of 4 tepuis from W to E in Aparamán range, 2400 m, 26 III 1987, *Holst 3612*, MO! VEN! Kukenan tepui, 2550 m, 10 IV 1988, *Liesner 23095*, MO! VEN! Kukenan tepui, 2550 m, 11 IV 1988, *Liesner 23119*, VEN x2! Ilú tepui. Lower plateau, 2500 m, 15 IV 1988, *Liesner 23372*, VEN! Cumbre del Aprada tepui, 2500 m, 30 VI 1984, *Huber 9561*, NY! (illustration voucher) VEN! Ilú tepui, 2300-2600 m, 20 III 1952, *Maguire 33529*, AMES! NY! (illustration, AMO!) Mount Roraima, 8700 ft, 9 I 1939, *Pinkus 99*, AMES! NY! US! Mt. Roraima, NW section, 2610-2740 m, 27 IX 1944, *Steyermark 58836*, AMES! VEN! Cerro Roraima: parte noreste de Venezuela inmediatea al sur del Hito que marca los límites con Guyana, Brasil y Venezuela, 2750-2800 m, 26 VIII 1976, *Steyermark 112468*, K x2! VEN! Aprada tepui, 2469-2500 m, 25 II 1978, *Steyermark 115873*, VEN! Aprada tepui, 2460-2500 m, 2460-2500 m, 25 II 1978, *Steyermark 115884*, MO! VEN!

OTHER RECORDS: BRAZIL: Roraima: pasando el río Cotingo, cima del Roraima tepui, 2698 m, 21 II 2017, *Hágsater 15046*, digital images, flowers in spirit, AMO! (photo voucher). **VENEZUELA: Amazonas:** Kukenán tepui, *Michelangeli*, photograph by Fabián Michelangeli Ayala. (fide G. A. Romero, pers comm, 2017). **Bolívar:** slopes of Mt. Roraima, *Vladimir Dinets 16*, digital image of live material, AMO! summit of Roraima, 2600 m, *Dunsterville 1359*, illustration, AMES! K! Mt. Roraima, 7 III 2016, *Ladislav Hoskovec s.n.*, digital images, http://botany.cz/cs/epidendrum-montigenum/downloaded_21_1_2017.

DISTRIBUTION AND ECOLOGY: Endemic to the summit of the tepuis along the Guiana Shield, from the Roraima tepui and west to the Kamarkaibaray tepui; terrestrial or lithophytic at 2250-3000 m altitude; flowering throughout the year.

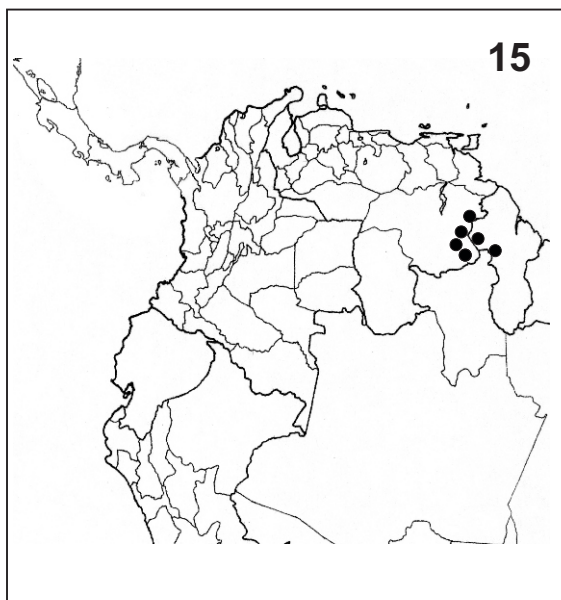
RECOGNITION: *Epidendrum montigena* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. Recognized by the oblong leaves with rounded apex, nutant inflorescence, rachis and peduncle reddish, racemose to paniculate, flowers successive, pink, lateral sepals 7-9 mm long, petals oblong-elliptic, apical margin (along apical half) dentate, lip widely rhombic in outline, with a pair of narrow, parallel calli which converge into a thin, short mid-rib. *Epidendrum imthurnii* Ridl. has much narrower leaves, linear-lanceolate, flowers ochre yellow or greenish yellow, sepals 5.5-6.0 mm long, petals linear, margin entire, lip ovate, apex acute. *Epidendrum alsum* Ridl. has ovate leaves, inflorescence nutant with the rachis and peduncle green, flowers yellow, sepals 8-9 mm long, petals narrowly oblanceolate, margin entire, lip clearly 3-lobed.

*NOTE: Though the early expeditions to Mt. Roraima state the country of origin as Guyana, they all climbed the tepui by the only route on foot, on the SW side which corresponds to Venezuela. Atop the tepui, rarely did they venture beyond the immediate vicinity of the point of access. Only those recent collectors who have spent over a week on the summit or arrived by helicopter, can reach the Brazilian and Guyanese sectors. See note by Julian A. Steyermark (1981). Though im Thurn was sent by Joseph D. Hooker of the British Museum to British Guiana, (and a set remains at BM), scientists at Kew Gardens, identified 53 new species, using the set sent to Kew. ([plants.jstor.org>stable>al.ap.person.bm](https://plants.jstor.org/stable/al.ap.person.bm), 2017). The spelling and author citation of *Epidendrum montigena* has been subject to automatic changes at various times, sometimes as *E. montigenum*. Montigena, however, is a noun, not an adjective, and thus it is not subject any change.

CONSERVATION STATUS: DD. Data Deficient.

ETYMOLOGY: From the Latin *montis*, mountain, and *genus*, born or produced in a certain place or condition, thus born in the mountains, in reference to the species being found atop the tepuis.

REFERENCES: Carnevali, G., & I. Ramírez, *Epidendrum*, in P. E. Berry, K. Yatskiyevich & B. K. Holst (eds.) *Flora of the Venezuelan Guyana* 7: 325-352. Santana, G. G., 2005, *Bromelias y orquídeas de los tepuyes*, páginas 81-91 en Armando Michelangeli Ayala, Editor, Tepui-Colosos de la Tierra, Fundación Terramar, Caracas. Santiago, E., & E. Hágsater, 2018, *Epidendrum alsum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 16(1): t. 1602. Santiago, E., & E. Hágsater, 2018, *Epidendrum imthurnii* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 16(1): t. 1628. Steyermark, J. A., 1981, Erroneous Citations of Venezuelan Localities, *Taxon* 30(4): 816-817.



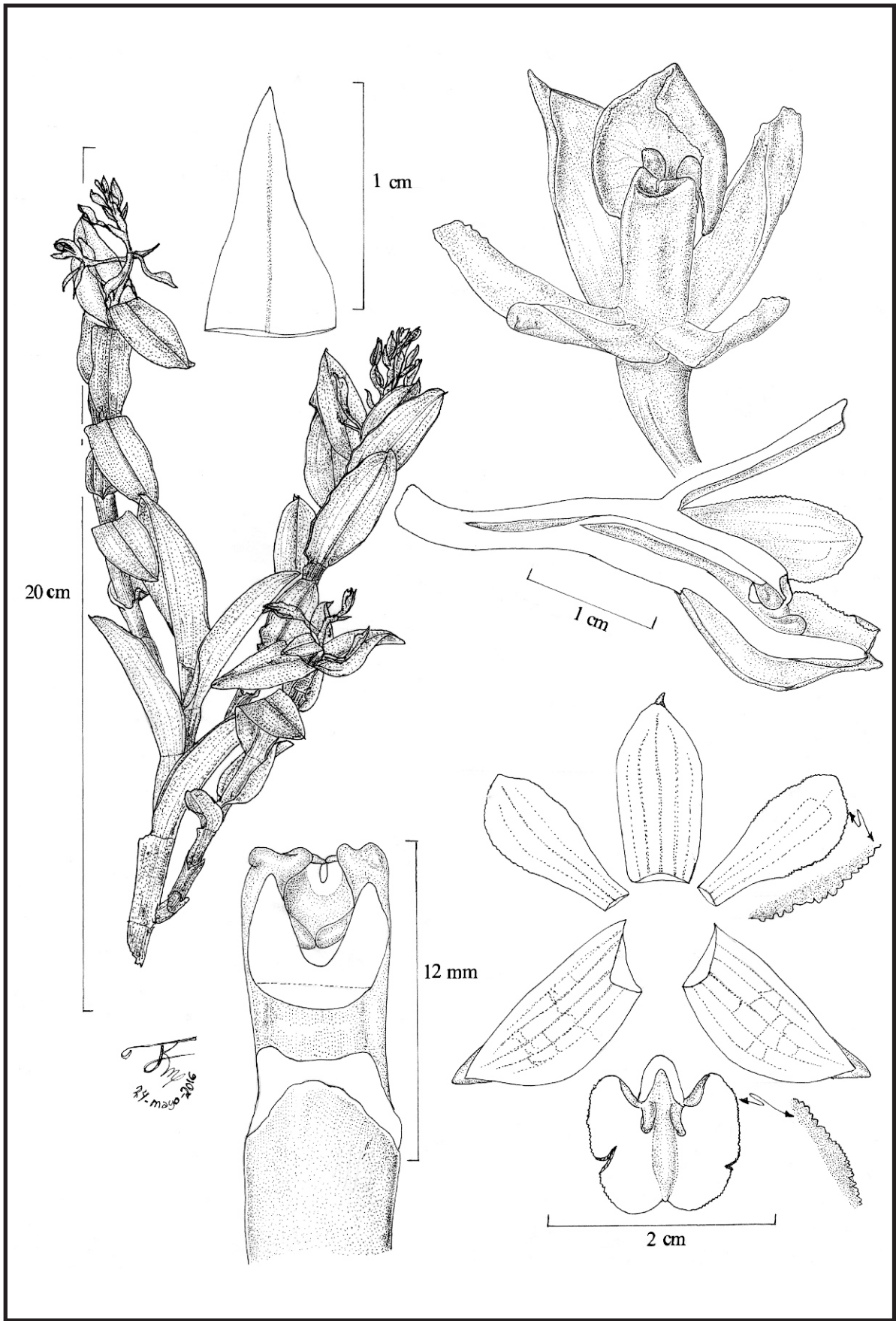
Authors: E. Santiago & E. Hágsater Illustrator: R. Jiménez M.

Photo: E. Hágsater Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1644



EPIDENDRUM MONTISTOLETANUM Hågsater & E.Santiago

Plate 1645

EPIDENDRUM MONTISTOLETANUM Hágsater et E.Santiago, *sp. nov.*

Type: ECUADOR: Loja: Cerro Toledo, Podocarpus National Park, along road that leads from Yangana to antennas on the peak, 3200 m, 30 October 2008, **Florian A. Werner 2623**. Holotype: AMO 25844! (illustration voucher).

Similar to *Epidendrum chaoticum* Hágsater & E.Santiago but the plants smaller, terrestrial and erect (vs. plants 3 m tall, epiphytic and scandent), flowers green tinged purple-black to totally purple-black, column green at base and purple-black or black at the apex (vs. flowers yellow), petals spatulate (vs. linear-oblongate).

Terrestrial, monopodial, **herb**, to 120 cm tall, branching above. **Roots** basal, fleshy thick. **Stems** cane-like, branching sub-apically when mature, erect, straight; main stem to 120 x 1.4 cm, branches 15-20 x 0.5-0.8 cm. **Leaves** numerous on the main stem, 7-8 persistent towards the apex when producing branches; 8 on the branches, distributed throughout, distichous, sub-coriaceous, sub-spreading, very rigid, green, lustrous above, glaucous on the underside; sheaths 20-40 mm long, tubular, striated, green tinged purple-black; blade 2.5-9.0 x 2.5-3.2 cm, elliptic, apex rounded, margin entire. **Spathe** lacking. **Inflorescence** ca. 6.2 cm long, apical, flowering only once, racemose, erect, densely few-flowered; peduncle 5 mm long, terete, lacking bracts. **Flowers** 12, successive, non-resupinate, fleshy, green tinged purple-black to totally purple-black, except for the column which is green at the base; fragrance apparently none. **Floral bracts** 8-11 mm long, prominent though shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 12-20 mm long, terete, thin, the apex slightly dilated, striated, arched. **Sepals** free, somewhat convex, elliptic, apiculate, 5-veined, margin entire, slightly revolute; dorsal sepals 11-16 x 4-7 mm, spreading, apex rounded; lateral sepals 12-20 x 6-8 mm, partly spreading, oblique. **Petals** 11-17 x 4-7 mm, spreading, free, spatulate, slightly oblique, apex obtuse, 3-veined, margin crenate, slightly revolute. **Lip** 9-12 x 9-13 mm, united to the column, entire, sub-quadrate in general outline, the corners rounded, base cordate, margin crenate, the sides slightly cleft beyond the middle; bicallose, the calli thin, somewhat divaricate towards the apex; disc with a wide rib, fleshy running down the middle to form a small apical mucro in the apical sinus of the lip. **Column** 10-14 mm long, thick, slightly arched. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** penetrating 1/4th of the ovary, wide, unornamented. **Anther, pollinia** and **capsule** not seen.

OTHER SPECIMENS: ECUADOR: Loja: Cantón Saraguro, Bosque de Huashapamba, 3000-3200 m, 12 VII 2007, *Carvajal 100*, ECUAMZ! **Zamora-Chinchipe:** Parte alta de Cerro Toledo, Parque Nacional Podocarpus, Nudo de Sabanilla, arriba de Yangana, 3130 m, 20 IX 2016, *Hágsater 14680*, QCNE! (digital image voucher).

OTHER RECORDS: ECUADOR: Zamora-Chinchipe: Límite provincial entre Loja y Zamora-Chinchipe, vía Yangana-Valladolid, 2800 m, 7 VIII 2011, *Jiménez 108*, digital photo, AMO!

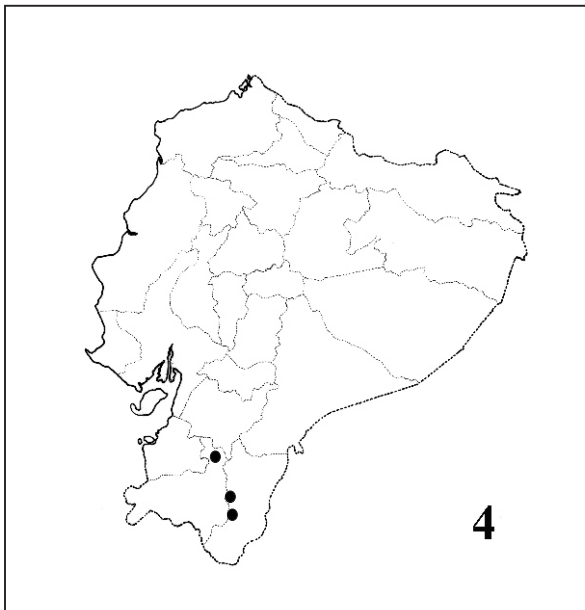
DISTRIBUTION AND ECOLOGY: Known presently from the SE Ecuador, provinces of Loja and Zamora-Chinchipe, from the Cerro Toledo, Bosque de Huashapamba, growing terrestrial on road banks, at 2800-3200 m altitude, on or near the summit of peaks in very windy, foggy, cold conditions. Flowering from July to November.

RECOGNITION: *Epidendrum montistoletanum* belongs to the Andean Group, Orgyale Subgroup which is characterized by the monopodial, subapical branching habit, erect to sub-erect inflorescences, lax, non-resupinate flowers, the lip entire. The species is recognized by the terrestrial, erect stems to 120 cm tall, leaves 2.5-9.0 x 2.5-3.2 cm, elliptic, very rigid, inflorescence erect, the flowers green tinged purple-black to entirely purple-black, except for the green base of the column; lip sub-quadrate, corners rounded, sides slightly cleft beyond the middle, and the spatulate petals. *Epidendrum chaoticum* Hágsater & E.Santiago has plants up to 3 m tall, epiphytic, scandent, leaves 4-7 x 1.5-1.8 cm, narrowly elliptic, yellow flowers, lip slightly 3-lobed, and petals linear-oblongate. *Epidendrum panduratum* Hágsater & Dodson is vegetatively very similar, but the inflorescence is secund, flowers are yellow with the apex of the column and disc of the pandurate lip slightly dotted purple. *Epidendrum quadrangulatum* A.D.Hawkes has leaves 6.5-10 x 1.8-2.0 cm, oblong-lanceolate, petals linear-oblongate, and the lip entire, quadrate.

CONSERVATION STATUS: DD. Data deficient. Apparently relatively widespread in SE Ecuador, though restricted to higher peaks on the Eastern Cordillera de los Andes.

ETYMOLOGY: From the Latin *montis*, mountain, and *toletanus*, the classical Latin for the city of Toledo, Spain, in reference to Cerro Toledo, in Ecuador, where the species has been collected.

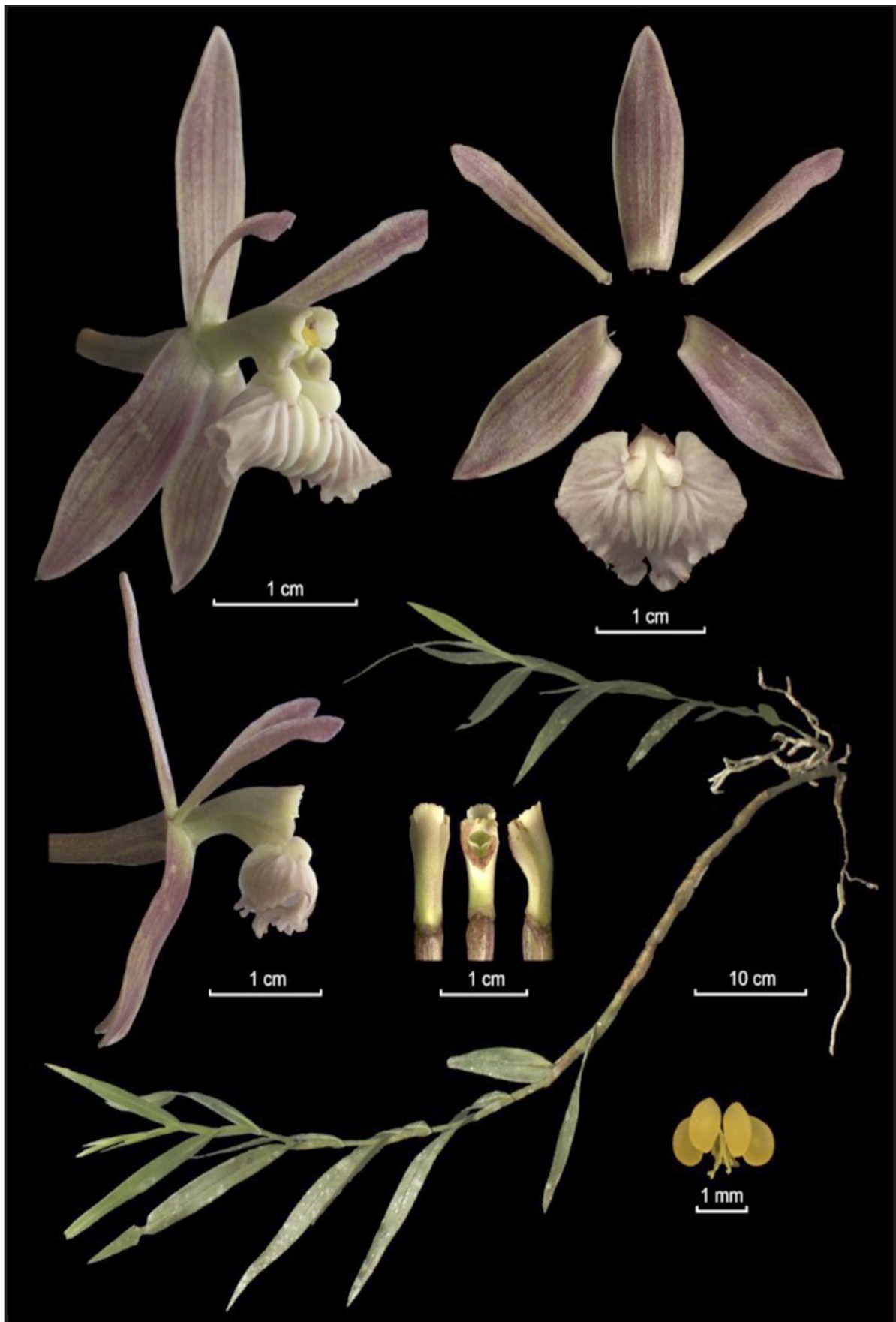
REFERENCES: Hágsater, E. & E. Santiago, 2009, *Epidendrum chaoticum* in Hágsater, E., & L. Sánchez S., (eds.) *The Genus Epidendrum*, **Icon. Orchid.** 12: t. 1219. Santiago E. & E. Hágsater, 2009, *Epidendrum quadrangulatum* in Hágsater, E., & L. Sánchez S., (eds.) *The Genus Epidendrum*, **Icon. Orchid.** 12: t. 1281. Hágsater, E. & C. H. Dodson, 1993, *Epidendrum panduratum* in Hágsater, E., & G. A. Salazar (eds.) *The Genus Epidendrum*, **Icon. Orchid.** 2: t. 172.



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Photo E. Hágsater **Editors:** E. Hágsater & E. Santiago
ICONES ORCHIDACEARUM 16(1). 2018. Plate 1645



EPIDENDRUM MORALESII Hágsater, N.Gut. & E.Santiago

Plate 1646

EPIDENDRUM MORALESII Hágsater, N.Gut. et E.Santiago, *sp. nov.*

Type: COLOMBIA: Santander: Municipio La Belleza, Vereda Vista Hermosa, finca Moravia. Fragmento de bosque andino maduro en medio de pastizales, interior de bosque, 2440 m, 18 noviembre 2016, **Nicolas Gutiérrez Morales 001** Holotype: JBB! (Lankester Composite Digital Plate (LCDP) and photo voucher).

Similar to *Epidendrum jatunsachanum* Dodson & Hágsater, but the lip entire, widely hexagonal, base deeply cordate, apex deeply emarginate, revolute in natural position, veins prominently thickened towards the disc, producing 3 thickened, parallel ribs in the middle, (vs. deeply 3-lobed, base truncate, margin fimbriate; disc with a single, narrow, elongate rib reaching the apical sinus), flowers larger, sepals 19-20 x 6.4-6.9 mm (vs. 16 x 3-4 mm).

Epiphytic, sympodial, caespitose **herb** to 63-85 cm long. **Roots** 3.0-4.2 mm in diameter, fleshy, from the base of the stems. **Stems** 49-72 x 0.16-0.7 cm long, cane-like, laterally compressed, terete at base, ancipitose above, straight, progressively zig-zag towards the apex. **Leaves** 9-11, distributed throughout the stem; sheath 3.2-4.1 x 0.7-1.1 cm, ancipitose, striated; blade 9.4-19.7 x 1.2-2.6 cm, all similar in size, narrowly lanceolate, acuminate. **Spathes** lacking. **Inflorescence** 13.6 cm long, apical, racemose; peduncle 12.5 cm long, elongate, ancipitose, flexuous, with prominent bracts 3-8 x 0.4-0.7 cm at the internodes, somewhat-leaf-like, especially the basal ones, progressively smaller, the base tubular, ancipitose, above conduplicate; rachis very short. **Floral bracts** 36 mm long, equal to longer than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 27 mm long, terete, slightly inflated ventrally near the apex. **Flowers** successive, one at a time, resupinate, sepals and petals dull purple-brown, column greenish, white towards the apex, lip dirty white; not fragrant. **Sepals** 19-20 x 6.4-6.9 mm, spreading, free, narrowly elliptic, acute, 5-veined, margin entire, spreading. **Petals** 18 x 2.8 mm, free, partly spreading, oblanceolate, acute, 3-veined, margin entire. **Lip** 13 x 17.5 mm, united to the column, entire, widely hexagonal, base deeply cordate, apex deeply emarginate, revolute in natural position, veins prominently thickened towards the disc, producing 3 thickened, parallel ribs in the middle, the lateral ribs in front of the calli, margin erose; bicallose, the calli clavate, prominent, divergent. **Column** 11.5 mm long, thin, slightly arched. **Clinandrium** prominent, surpassing the column, margin widely erose. **Anther** sub-globose, 4-celled. **Pollinia** 4, obovoid, sub-equal, caudicles granulose, somewhat longer than the pollinia, narrow; viscidium semi-liquid, translucent. **Rostellum** subapical, slit. **Lateral lobes of the stigma** prominent, about ½ as long as the stigmatic cavity. **Nectary** penetrating 1/4 the ovary, widened behind the perianth, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

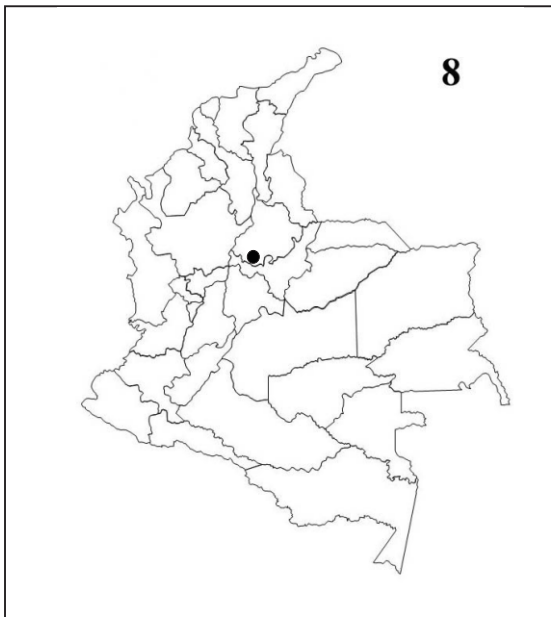
OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from the type, from the western slope of the Cordillera Oriental in the Department of Santander, at 2440 m altitude, epiphytic in Tropical Moist Forest. Found on a fallen tree, cultivated until flowering. Flowering in July and November

RECOGNITION: *Epidendrum moralesii* does not fit well into any of the presently recognized groups. The species is recognized by the sympodial, caespitose habit, many-leaved, laterally compressed, ancipitose stems, straight, becoming somewhat flexuous towards the apex, leaves narrowly lanceolate, acuminate, inflorescence elongate, peduncle flexuous, with prominent leaf-like bracts progressively smaller, sepals narrowly elliptic, petals oblanceolate, lip entire, widely hexagonal, base deeply cordate, apex deeply emarginate, revolute in natural position, veins prominently thickened towards the disc. The plant habit is very close to *Epidendrum jatunsachanum* Dodson & Hágsater from Ecuador to southern Peru with stems laterally compressed, ancipitose, many leaved and the fractiflex inflorescence with prominent long acuminate bracts and flowers produced singly in succession, the lip however, is deeply 3-lobed, base truncate, margin fimbriate; disc with a single, narrow, elongate rib reaching the apical sinus; lateral lobes obliquely rectangular; mid-lobe flabellate, slightly emarginate, forming a pair of sub-quadrangle lobes. The flowers are reminiscent of *Epidendrum laxicaule* D.E.Benn. & Christenson, with the prominently thickened veins, entire clinandrium hood.

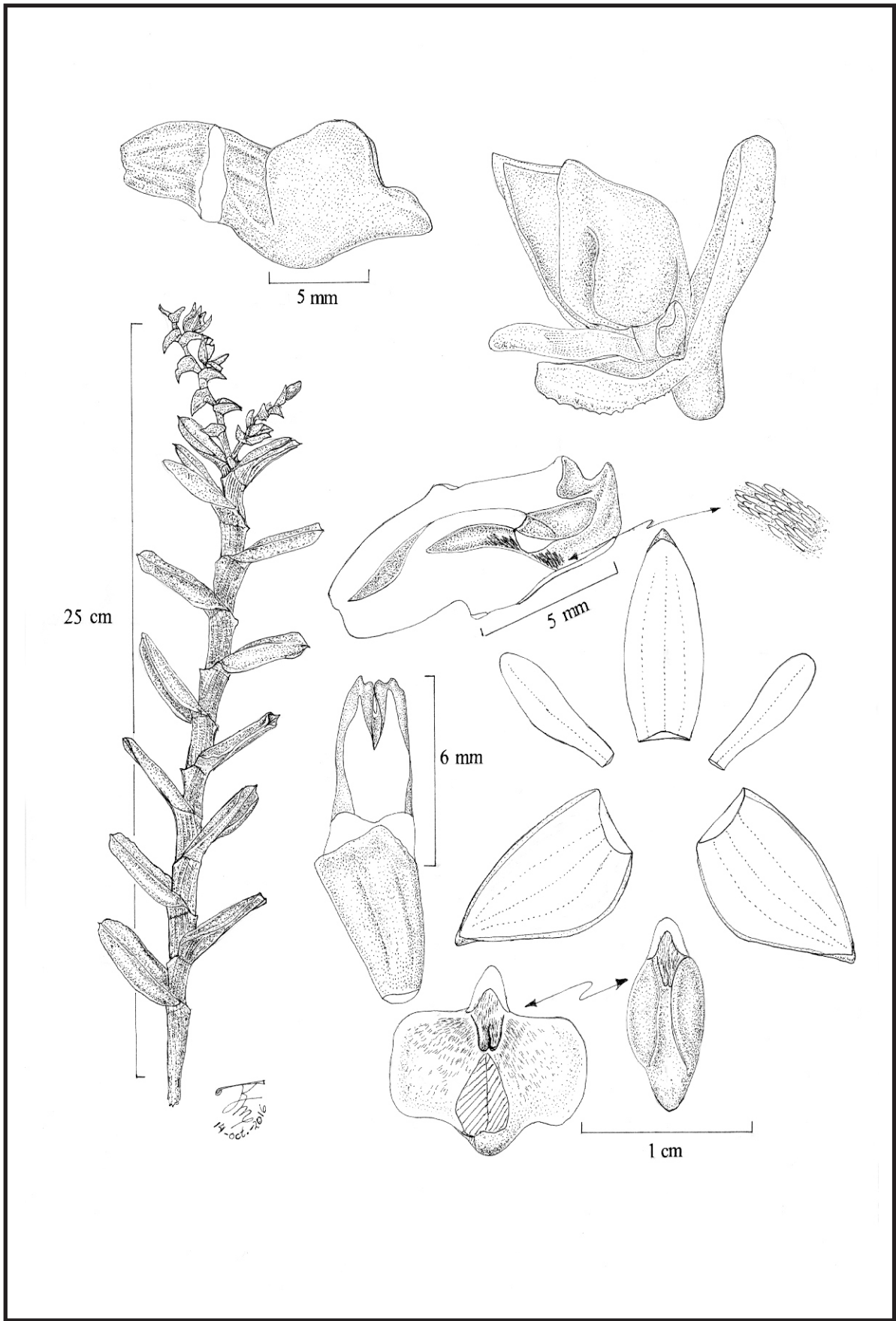
ETYMOLOGY: In honor of Gilberto Morales (1914-1989), maternal grandfather of the second author, who purchased the Finca Moravia and cared for it to preserve its biodiversity. Gilberto, born in Jesús María, Santander, tended, along with his wife, their modest cloth store in Sucre, Santander. He inherited the farm to his children and grandchildren, who have maintained it producing cattle and milk, with patches of conserved tropical moist forest.

REFERENCES: Bennett, Jr., D. E., & E. A. Christenson, 1998, *Epidendrum laxicaule*, **Icon. Orchid. Peruvianum** t. 462. Santiago, E., & E. Hágsater, 2010, *Epidendrum jatunsachanum* in Hágsater, E., & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1342.



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Photo: N. Gutiérrez Editors: E. Hágsater & E. Santiago
ICONES ORCHIDACEARUM 16(1). 2018. Plate 1646



EPIDENDRUM NEILLII Hágsater & E.Santiago

Plate 1647

EPIDENDRUM NEILLII Hágsater et E.Santiago, sp. nov.

Type: ECUADOR: Zamora-Chinchipe: Yantzaza, Cordillera del Cóndor. Machinaza plateau summit area. Adjacent to obelisk-shaped border marker at end of trail from upper Paquisha military post precisely at Ecuador-Peru border. Nearly level sandstone plateau with low scrub vegetation; charred stems and regrowth indicate that area was burned about 15 years previously, 2420 m, 15 March 2008, *David Neill & Wilson Quizhpe 16137*. Holotype: QCNE! (illustration voucher).

Similar to *Epidendrum alsum* Ridl. but the leaves oblong-elliptic (vs. ovate), inflorescence sub-erect and few-flowered (vs. nutant and many-flowered) floral bracts amplexicaul, 5-10 x 6-10 mm (vs. embracing, 5-6 x 4-5 mm), sepals 11 mm long (vs. 8-9 mm long), petals oblanceolate, obtuse (vs. narrowly oblanceolate, acute), and lip entire with base truncate (vs. 3-lobed with base cuneate).

Terrestrial, monopodial, erect **herb**, more than 26 cm tall. **Roots** not seen. **Stems** 20 x 0.7-0.9 cm, cane-like, terete, erect, probably sub-apically branching. **Leaves** 13 or more on the single stem seen, distributed throughout, alternate, articulate, coriaceous, very rigid, fleshy, sub-spreading, all similar in size and shape; sheaths 6-16 x 7-9 mm, tubular, striated, rugose; blade 2.5-3.6 x 1.0-1.8 cm, oblong-elliptic, obtuse, minutely apiculate, margin entire, revolute. **Spathes** lacking. **Inflorescence** 6 cm long, apical, paniculate (with a small second raceme arising from near the base of the peduncle), sub-erect, few-flowered; peduncle 5 mm long, sub-terete; rachis slightly sinuous. **Floral bracts** 5-10 x 6-10 mm, prominent, longer than the ovary, widely ovate, cucullate, subacute, embracing, rigid, forming a right angle with the rachis. **Flowers** 14, fleshy, non-resupinate, simultaneous, greenish yellow, lip and column lemon yellow; fragrance not registered. **Ovary** 3-4 mm long, striated, thick, not inflated. **Sepals** partly spreading, free, fleshy, slightly concave, minutely apiculate, 3-veined, margin entire, dorsal surface with scarce minute papillae; dorsal sepals 11 x 4.5 mm, elliptic, apex rounded; lateral sepals 11 x 6.4 mm, ovate, sub-acute, oblique. **Petals** 8.3 x 2.4 mm, partly spreading, fleshy, oblanceolate, apex obtuse, 1-veined, margin entire, spreading. **Lip** 8 x 11.5 mm, united to the column, entire, base truncate, apex with a wide, rounded mucro, conduplicate in natural position, embracing the column which is totally hidden, fleshy, tearing apically when spread, margin entire; calli thin, parallel; disc pubescent, lacking ribs. **Column** 5 mm long, straight, thick, the apex bidentate, with a pair of truncate wings. **Clinandrium-hood** reduced, margin entire. **Anther** and **pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** shallow, barely penetrating the ovary, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently from a single collection at the Machinaza plateau in Cordillera del Condor, Ecuador/Peru, from a nearly level sandstone plateau with low scrub vegetation. The Machinaza plateau (Neill, photo voucher) is an Andean Tepui, similar to those found in the Guyana Shield though formed later, in the Cretaceous and Tertiary periods (Neill et al., 2014). Terrestrial at 2420 m altitude. Flowering in March.

RECOGNITION: *Epidendrum neillii* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, and erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the leaves 2.5-3.6 x 1.0-1.8 cm, oblong-elliptic with the margin revolute, inflorescence sub-erect and few-flowered with prominent floral bracts (5-10 x 6-10 mm), sepals 11 mm long, petals 8.3 x 2.4 mm, oblanceolate with the apex rounded, and the lip entire with base truncate. *Epidendrum alsum* has similar-sized leaves but ovate, inflorescence nutant, sub-densely many-flowered, floral bracts small (5-6 x 4-5 mm), embracing, sepals 8-9 mm long, petals 7-9 x 1.9-2.1 mm, narrowly oblanceolate, apex acuminate, and the lip 3-lobed, base cuneate. *Epidendrum urbanianum* Cogn. has oblong-lanceolate leaves 2.5-9.5 x [0.7]1.0-2.0 cm, inflorescence arching with the bracts nearly as long as the flower (5-12 x 7-10 mm); sepals 7-10 mm long, and petals linear, 5.5-7.0 x 1.0-1.5 mm. Other species related to this group from the Andean tepuys are *Epidendrum stenocalymnum* Hágsater & G. Calatayud, which has very similar floral bracts and flowers in size and shape, but the inflorescence is racemose, leaves 1.2-2.1 x 0.9-1.2 cm, ovate; petals 7.7-8.0 x 2.0-2.2 mm, oblanceolate with the base unguiculate, and base of the lip cuneate. *Epidendrum lindamazonicum* Hágsater & G. Calatayud has narrowly lanceolate-elliptic, leaves 1.4-2.7 x 0.3-0.5 cm, inflorescence erect with small floral bracts (3-7 x 2-4 mm), sepals 8 mm long, petals 5.7 x 0.4-1.1 mm, linear, acuminate, and lip with a single apiculate callus. *Epidendrum campylorhachis* Hágsater & Dodson has narrowly elliptic, leaves 2.1-4.4 x 0.4-1.1 cm, inflorescence with the rachis flexuous, with each segment incurved below the bract so that the bracts are retrorse, 2.2-4.0 x 3.0-4.0 mm, flowers small, sepals 5.2-5.5 mm long, and base of the lip cuneate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of David Alan Neill, associated with the Missouri Botanical Garden and now Research Director and Professor at the Herbario Amazónico del Ecuador, Universidad Estatal Amazónica (ECUAMZ), in Puyo, Pastaza, Ecuador. He has dedicated of his professional life to study the taxonomy, ecology, phylogeny, biogeography and conservation of Neotropical Magnoliaceae, especially in Ecuador and Peru, and collected the type specimen.

REFERENCES: Hágsater, E., & E. Santiago, 2004, *Epidendrum campylorhachis* Hágsater & Dodson, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 717. Hágsater, E., & G. Calatayud, 2004, *Epidendrum stenocalymnum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 790. Hágsater, E., & G. Calatayud, 2010, *Epidendrum lindamazonicum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1349. Neill, D. A., M. Ríos Paredes, L. A. Torres Montenegro, T. J. Mori Vargas, and C. Vriesendorp, 2014, Vegetación y flora / Vegetation and flora, in N. Pitman, C. Vriesendorp, D. Alvira, J. A. Merkel, M. Johnston, E. Ruelas Inzunza, A. Lancha Pizango, G. Sarmiento Valenzuela, P. Alvarez-Loayza, J. Homan, T. Wachter, A. del Campo, D. F. Stotz, and S. Hielpern (eds.), Perú: Cordillera Escalera-Loreto; **Rapid Biological and Social Inventories Report** 26: 98-119, 292-311, 408-465; The Field Museum, Chicago. Santiago, E., & E. Hágsater, 2018, *Epidendrum alsum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1602. Santiago, E., & E. Hágsater, 2018, *Epidendrum urbanianum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1664.



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Illustrator: R. Jiménez M.

Photo: D. Neill

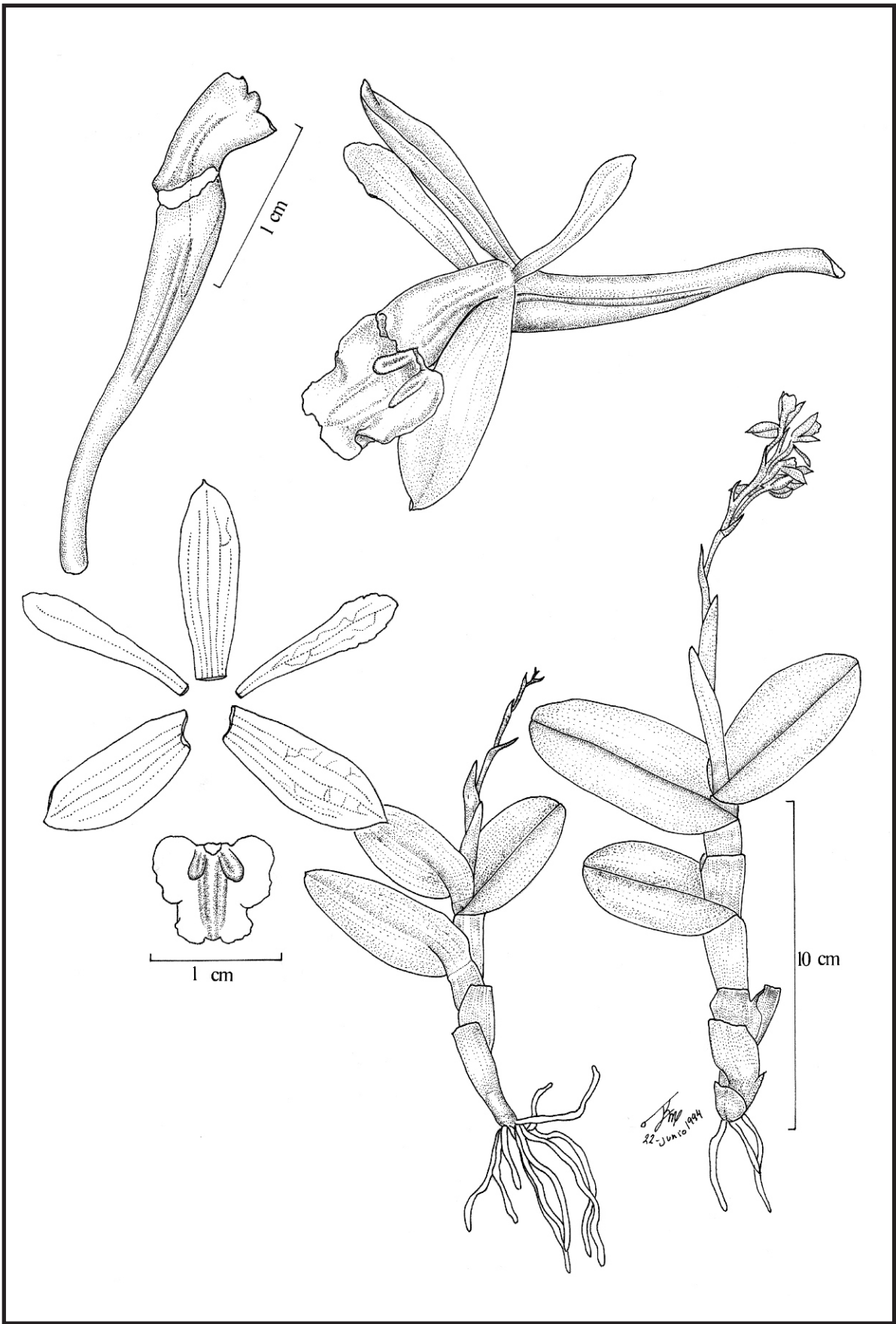
Editors: E. Hágsater & E. Santiago

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Plate 1647



EPIDENDRUM ODONTOSPATHUM Rchb.f.

Plate 1648

EPIDENDRUM ODONTOSPATHUM Rchb.f., Xenia Orchid. 3: 23.

Type: BOLIVIA: La Paz: Larecaja; Viciniis Sorata, monte Chilieca, Catarguata, supra arbores, 2700 m, V-VI 1860, **Gilbert (Gustav) Mandon 1144**. Holotype: B, destroyed. Lectotype (here designated): W-Rchb.f. 4347! (specimen), W-Rchb.f. 33753! (sketch of flower and description). Isotypes: K-Lindl.! P! (illustration voucher).

Synonym: *Epidendrum refractoides* C.Schweinf., Bot. Mus. Leafl. 11: 114, fig. 1943. Type: PERU: Huánuco: Cani, 7 mi. NE of Mito, ca. 2600 m, in dense stream wood, 16 April 1923, **J. Francis Macbride 3391**. Holotype: F 534461! Isotype: AMES 61559!

Epiphytic, simpodial, caespitose **herb**, 14.1-60 cm tall. **Roots** 1.6-5 mm in diameter, basal, fleshy. **Stems** 7-26.1 x 0.4-2.4 cm, simple, cane-like, laterally compressed, erect; the base with 3 non-foliar, scarios, imbricating bracts 1.0-3.5 cm long. **Leaves** 4-9, sub-erect with respect to the stem, alternate, articulate, coriaceous, somewhat conduplicate at the base; sheath 0.5-4.9 x 0.8-2.4 cm, tubular, ancipitose, minute striated, wide; blade 3.5-12.5 x 2-5 cm, widely elliptic, apex rounded and short-bilobed, with a minute dorsal apicule, margin crenulate. **Spathaceous bract** 1-4, 2.2-9.5 x 0.15-1.6 cm, conduplicate, ovate-lanceolate (when spread), basal half tubular, the apical half open, acute, margin denticulate. **Inflorescence** 7-35 cm long apical, paniculate, sub-erect, slightly arching, lax-flowered, much surpassing the apical leaf; peduncle 3.3-12 cm long, wide, laterally compressed, ancipitose; rachis 2.7-16.3 cm long, with 3 short, lax, few-flowered branches 0.7-5.8 cm long, each arising from a bract similar to the spathaceous bract but progressively smaller. **Floral bracts** 2-25 mm long, prominent, gradually much shorter towards the apex of the rachis, longer to much shorter than the ovary, triangular-lanceolate, acuminate, embracing. **Flowers** 4-30, successive, though many open at one time, resupinate, fleshy, green, orange-yellow to brown; fragrance not registered. **Ovary** 20 x 1.6-3 mm, short, terete, thin, slightly inflated behind the perianth. **Sepals** 14-15 x 5.0-5.5 mm, elliptic, rounded, minutely apiculate, 4-5-veined, margin entire, spreading; dorsal sepal free, spreading, the lateral sepals obliquely united to the base of the column, partly spreading, somewhat oblique. **Petals** 14-15 x 2-4 mm, free, spreading, oblanceolate, rounded, 1-veined, the vein short-branched throughout, margin crenulate towards the apex, spreading. **Lip** 6 x 5-9 mm, united to the column, 3-lobed, base cordate, margin erose, spreading; bicallose, the calli small, sub-globose; disc with 3, fleshy, low keels that reach the apex of the mid-lobe; lateral lobes 2.5-5.0 x 2.7-4.4 mm, obliquely reniform; mid-lobe 3.1-3.7 x 6.0-6.6 mm, semi-circular, broadly rounded. **Column** 7 x 3-4 mm, straight. **Clinandrium-hood** short, margin entire. **Pollinia** 4, obovoid; caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** apical slit. **Lateral lobes of the stigma** none seen. **Nectary** shallow, penetrating 1/5 of the ovary, slightly inflated, unornamented. **Capsule** ellipsoid, pedicel thin, 11 mm long; body 27 x 13 mm; apical neck 6 mm long.

OTHER SPECIMENS: BOLIVIA: La Paz: Sorata, Hohe bei Hucumanimi, VI 1919, *E. Guenther s.n.* US 1134097! Yungas, 6000 ft, 1885, *Rusby 2742*, NY! **PERU: Cusco:** La Convención: Dist. Sta. Teresa, Collpapampa, 2900 m, VI 2009, *Callalli s.n.*, CUZ! Paucartambo: Acjanaco, Parque Nacional del Manú, 3100-3200 m, 8 V 1990, *Cano 3575*, USM! (illustration AMO!) Quispicanchis: Marcapata, Cuchupampa, 2688 m, 17 III 2007, *Villafuerte 652*, CUZ! Urubamba, Quebrada de Haytampu, 3200 m, 3 VIII 1991, *Tupayachi 1546*, CUZ! Urubamba: Pisqa-cchucho, 3550 m 8 II 1992, *Tupayachi 1884*, CUZ! Urubamba: Machu Picchu, Huayllabamba hacia Pukará, 3450 m 30 VI 2001, *Tupayachi 5229*, CUZ! Urubamba: Machu Picchu: Huayllabamba hacia Pukará, 3450 m, 30 VI 2001, *Tupayachi 5230*, CUZ!

OTHER RECORDS: PERU: Apurimac: Tambruco; Santuario Nacional de Ampay, *E. Cervantes Zavala 47*, digital images, from flickr, by Jan Baiker, 31 III 2011, AMO! **Cusco:** Paucartambo: Acjanaco, Parque Nacional del Manú, on *Polylepis sp.*, 3600 m, 7 III 2011, *Hágsater s.n.*, digital images, AMO! **Junín:** Valle de Chanchamayo, Selva Central, 2500 m, *Moron s.n.*, digital images, AMO! (photo voucher) Quispicanchis: Marcapata, Cuchupampa, 2688 m, 17 III 2007, *M. Villafuerte 652*, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Known from western Bolivia and southern Peru, on the upper slopes of the Cordillera Oriental of the Andes at 1800-3600 m altitude. Epiphytic in elfin forest of *Polylepis sp.*, and "pajonal" with bushes and rocks, and riverside forest, on slopes. Flowering in March to June.

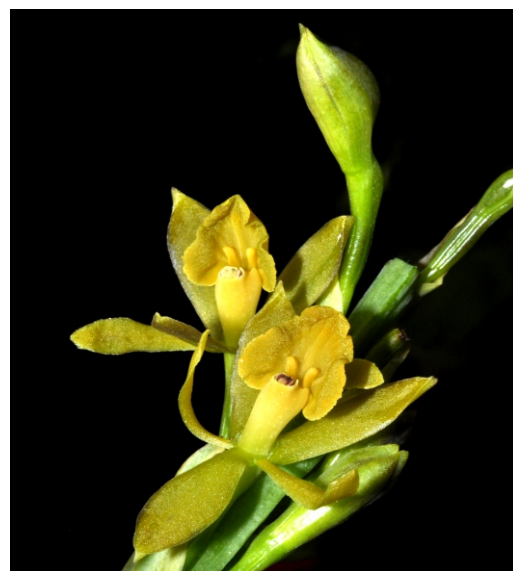
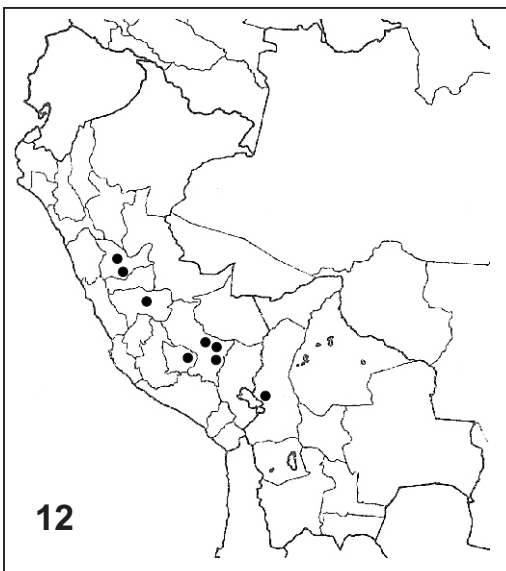
RECOGNITION: *Epidendrum odontospathum* belongs to the Odontospathum Group which is recognized by the simpodial, caespitose habit, laterally compressed stems, successive flowers and a generally sub-erect, paniculate inflorescence, the peduncle with up to 4 prominent, conduplicate, ancipitose, bracts covering the lower part of the peduncle. The species is recognized by the wide, laterally compressed stem, wide, apically bilobed leaves, the inflorescence with several large, conduplicate bracts, spaced on an ancipitose peduncle, with branches produced from each bract and flowers green, orange-yellow to brown. *E. refractoides* var. *humile* C.Schweinf. has smaller plants, shorter leaves, a racemose inflorescence with 5-6 flowers, a clearly 3-lobed lip, and has a single elliptic, acute spathaceous bract. *Epidendrum philippi* Rchb.f. has acute leaves, does not have any spathaceous bracts, and the infundibuliform leaf-sheaths are reminiscent of *E. ardens* Kreanzl., with large floral bracts perpendicular to the rachis; the lip is 4-lobed, as if formed by 4 circles. *Epidendrum lezliae* R. Vásquez & P.L. Ibsch from eastern Bolivia has narrow, oblong-lanceolate, acute leaves, a somewhat similar inflorescence, with the long, zigzag peduncle bearing prominent conduplicate bracts, non-resupinate flowers, but the margin of the lip irregularly serrate-denticulate; the inflorescence is racemose to paniculate.

NOTES: Bennett and Christenson (1995) confused this species with *Epidendrum fruticetorum* Schltr. Schweinfurth (1970) had mistakenly reduced his *E. refractoides* var. *humile* to a synonym of *E. odontospathum*, in his supplement to the Orchids of Peru.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek *οδοντος* tooth, and *σπαθη*, spathe, in reference to the spathe which was described as being dorsally denticulate.

REFERENCES: Bennett Jr., D. E., & E. A. Christenson, 1995, *Epidendrum odontospathum*, **Icon. Orchid. Peruvianum** 247. Santiago, E., & E. Hágsater, 2009, *Epidendrum ardens*, in E. Hágsater & L. Sánchez S., (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 2: t. 1206. Santiago, E., & E. Hágsater, 2013, *Epidendrum refractoides*, in E. Hágsater & L. Sánchez S., (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1478. Schweinfurth, C., 1970, First Supplement to the Orchids of Peru, **Fieldiana: Bot.** 33: 1-80.



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Illustrator: R. Jiménez M.

Photo: E. Morón

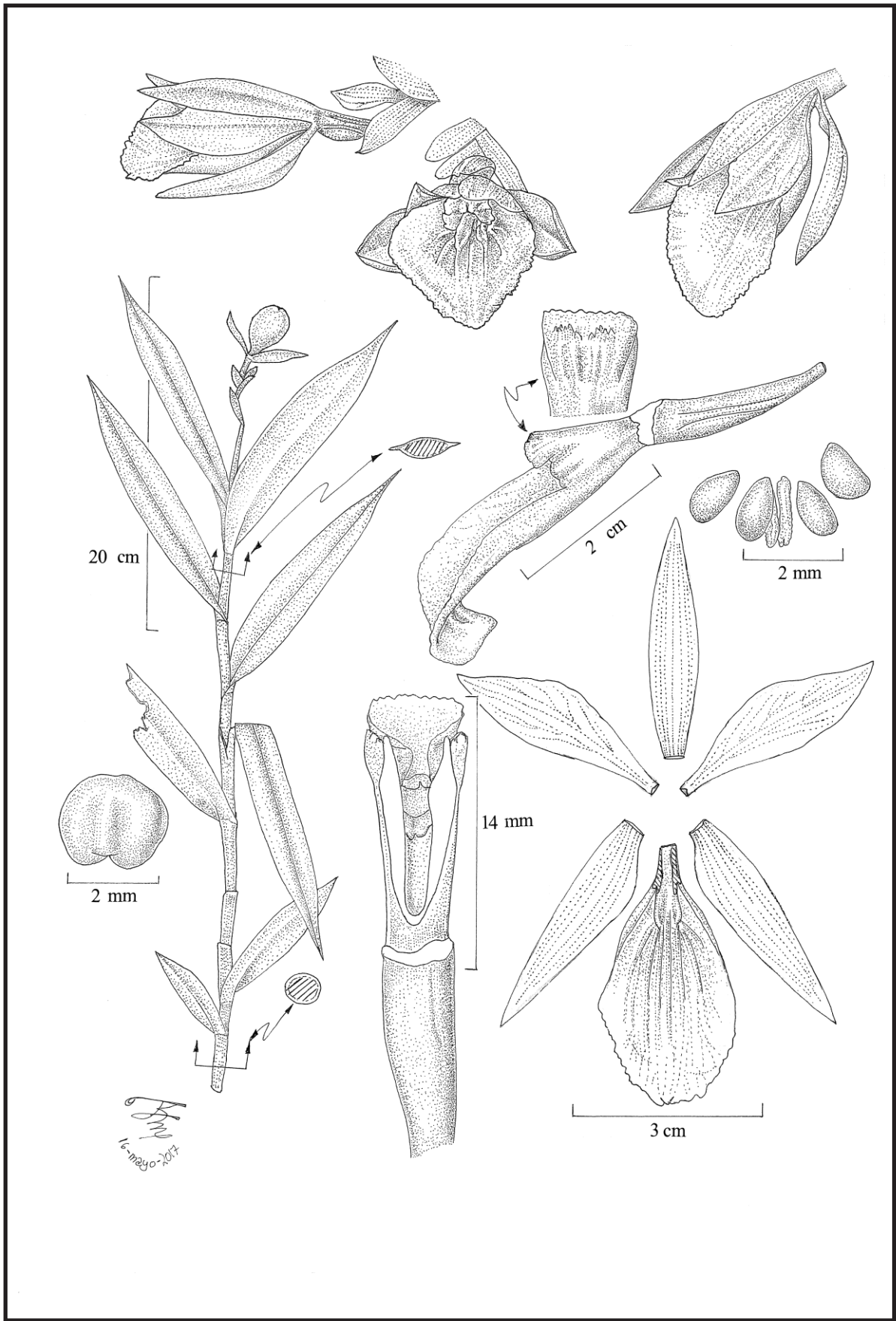
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018.

Plate 1648



EPIDENDRUM PHTIARICHILUM Hągsater, E.Santiago & Tobar

EPIDENDRUM PHTIARICHILUM Hágsater, E.Santiago et Tobar, *sp. nov.*

Type: ECUADOR: Zamora-Chinchi: Cordillera del Cóndor, Mun. El Pangui, Parroquia Tundayme, laderas del tepuí andino vía Canales, ca. 1600 m, 10 April 2017, **Gerardo Salazar Chávez, Francisco Tobar Suárez, Itzi Fragozo Martínez, Adriana Benítez Villaseñor, Juan Carlos Monge sub Eric Hágsater 15207**. Holotype: QCNE! Isotypes: AMO! (specimen & flower in spirit, illustration and photo voucher). MEXU!

Similar to *Epidendrum dalessandroi* Hágsater & Dodson, especially vegetatively, but the flowers about twice as large, sepals 35-40 mm long (vs. 20-22 mm long), petals lanceolate-elliptic, 35-40 x 11-12 mm (vs. oblong, 20 x 2.6-3.0 mm), and lip obovate-elliptic, 40 x 26 mm (vs. cordiform 17 x 22 mm).

Epiphytic, sympodial, caespitose, straggling, **herb**, to 58 cm tall. **Roots** 0.3-0.4 mm thick, basal, terete. **Stems** 45 x 0.5-0.8 cm, simple, cane-like, terete at the base, laterally compressed towards the apex, erect, straight; covered near the base by non-foliar sheaths 4.0 x 0.6 cm, scarios, becoming fibrous with time. **Leaves** up to 11, distributed throughout the stem, alternate, articulate, sub-spreading; sheaths 3.2-6.0 x 0.6-0.85 cm, tubular, ancipitose, striated; blade 10-17.5 x 2.0-3.5 cm, elliptic, acuminate, margin entire, spreading. **Spathe** 21 x 4 mm, single, at the apex of the peduncle of apical inflorescences, conduplicate, oblong, apiculate. **Inflorescence** 5.5-9.0 cm long, apical and lateral, the lateral produced near the base of the mature stems, sometimes appearing to be basal inflorescences, generally producing short, few-flowered racemes in successive years from the same inflorescence; peduncle 4-5 cm long, terete and thin at the base, laterally compressed and gradually wider towards the apex, slightly ancipitose, green, concolor; rachis totally hidden by the spathe and floral bracts. **Floral bracts** 13-15 x 5-6 mm, half as long as the ovary, ovate elliptic (when spread), narrowly elliptic, oblique and conduplicate in natural position, acute, imbricating at the base, persistent in old inflorescences, greenish brown. **Flowers** 3-4 per inflorescence, developing in succession, one at a time, resupinate, pale green, sepals dorsally tinged copper color, petals dorsally slightly tinged brownish, especially along the veins, lip concolor and immaculate; without fragrance. **Ovary** 15 mm long, terete, thin, striated, strongly inflated ventrally beyond the middle, forming a prominent vesicle, pale green tinged brown. **Sepals** 35-40 x 8-10 mm, partly spreading, free, lanceolate, short-acuminate, margin entire, spreading; dorsal sepal 5-veined; lateral sepals oblique, 7-veined. **Petals** 35-40 x 11-12 mm partly spreading, nearly parallel to the column, free, lanceolate-elliptic, acute, 5-veined, the lateral veins much branched, margin entire, spreading. **Lip** 34-40 x 22-26 mm, united to the column, entire, concave at the base, the sides upright, thus shovel-like, obovate in natural position, elliptic when spread, base cuneate, apex obtuse, margin crenate, especially towards the apex, involute along the basal half, spreading beyond; bicallose, the calli prominent, laminar, parallel, the surface in between canaliculate; disc with 5 evident, thin, raised ribs, the three central ribs parallel but widely separated, reaching the middle of the lip, the lateral pair shorter, bifurcate, somewhat divergent. **Column** 14 mm long, thin at base, progressively widened towards the apex, with a fleshy, rounded wings on each side at the apex. **Clinandrium-hood** prominent, funnel-shaped with the lateral wings of the column, apical margin crenulate. **Rostellum** located at 2/3 of the column, slit. **Lateral lobes of the stigma** prominent, occupying 1/3 of the stigmatic cavity. **Nectary** penetrating about 1/2 of the ovary, somewhat inflated, unornamented. **Anther** 4-celled, sub-spherical, with a wide, rounded ridge in front, truncate near the apex. **Pollinia** 4, sub-equal, obovate, slightly laterally compressed; caudicles in two pairs as long as the pollinia, granulose; viscidium semi-liquid. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Zamora Chinchi: Mun. El Pangui, Tundayme, 1561 m, 18 X 2016, *Tobar 2098*, QCA! QCNE!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Epiphytic in wet tropical forest, at 1561-1600 m altitude, on the western slopes of the Cordillera del Cóndor, an Andean Tepuí. Flowering in October to April (probably throughout the year).

RECOGNITION: *Epidendrum phtiarichilum* belongs to the Albertii Group, characterized by the sympodial habit, stems laterally compressed to ancipitose, or somewhat thickened and fusiform, inflorescence apical and/or lateral, racemose, distichous, the bracts more or less imbricating, conduplicate, producing one flower at a time, and the Albertii Subgroup which has apical and more frequently lateral inflorescences. The new species is recognized by the tall plants, to 58 cm, but especially by the very large flowers, sepals lanceolate 35-40 mm long, with a shovel-shaped lip obovate-elliptic, 40 x 26 mm, and petals lanceolate-elliptic, acute, 35-40 x 11-12 cm. *Epidendrum dalessandroi* has taller plants to 130 cm tall, ancipitose cane-like stems; long, ancipitose peduncle of the inflorescence covered partially by rounded conduplicate bracts, and smaller flowers, sepals 20-22 mm long, petals oblong, 20 x 2.6-3.0 mm, and the lip 17 x 22 mm, convex, cordiform, emarginate, the column prolonged by the long, entire clinandrium. *Epidendrum phyllocharis* Rchb.f. has somewhat flattened stems, bilobed leaves, and smaller flowers, the dorsal sepal spreading, erect, lip 5-angled. *Epidendrum chuspipatense* Hágsater & R. Vásquez from Bolivia also has tall plants, but flowers are smaller, sepals 21-22 mm long, and the lip is cordate to suborbicular, the margins spreading and the sides somewhat recurved in natural position so as to be saddle-shaped in natural position, instead of shovel-shaped.

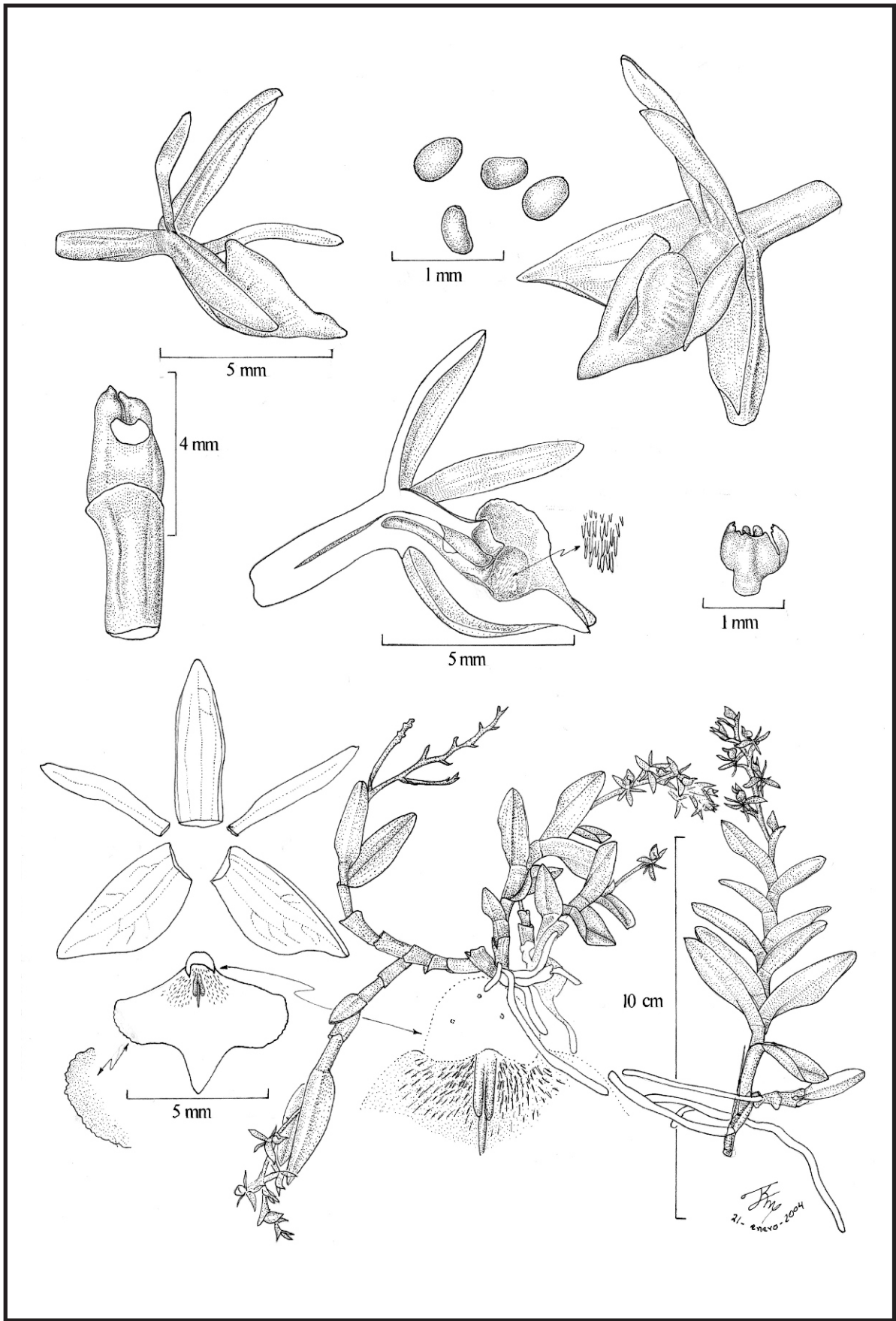
CONSERVATION STATUS: DD. Data deficient. Inadequate information to make a direct, or indirect, assessment of its risk of extinction. Data based on abundance and/or distribution are lacking.

ETYMOLOGY: From the Greek $\phi\tau\upsilon\alpha\rho\iota$, shovel, and $\chi\epsilon\upsilon\lambda\omicron\varsigma$, lip, in reference to the peculiar lip which is shaped like a shovel, with the lateral basal margins upright.

REFERENCES: Hágsater, E. & C. H. Dodson, 2001, *Epidendrum dalessandroi* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 3, *Icon. Orchid.* 4: t. 433. Hágsater, E. & R. Vásquez, 2004, *Epidendrum chuspipatense* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 4, *Icon. Orchid.* 7: t. 724. Santiago, E., & E. Hágsater, 2007, *Epidendrum phyllocharis* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 6, *Icon. Orchid.* 9: t. 973.



Authors: E. Hágsater, E. Santiago & F. Tobar Illustrator: R. Jiménez M. Photo: E. Hágsater Editors: E. Hágsater & E. Santiago



EPIDENDRUM PSEUDAVICULA Kraenzl.

EPIDENDRUM PSEUDAVICULA Kraenzl., Kongl. Svenska Vetenskapsakad. Handl., n.s. 46(10): 57, 1911.

Type: BRAZIL: Paraná: Bei Serrinha an einem Bache, 22 November 1908, *Per Karl Hjalmar Dusén 7190*. Holotype: S! Isotypes: AMES! BM! HB! HBG 501645! LI! MO 2481342, NY! P! PR! S! (Illustration voucher).

Synonym: *Epidendrum rojasii* Cogn., Repert. Spec. Nov. Regni Veg. 10: 343. 1912. Holotype: PARAGUAY: Amambay: In altiplanitie et declivibus, "Sierra de Amambay", June 1907, *Teodoro Rojas sub Emile Hassler 10503*. Holotype: BR! Isotypes: BM! G x6! K! LY MO, NY! W!

Epiphytic, erect, sympodial, sometimes branching, usually sub-apically, **herb**, 7-20 cm tall. **Roots** 1.0-1.5 mm in diameter, basal, fleshy, white. **Stems** 3-12 x 0.2-0.5 mm, simple, cane-like, terete at base, laterally compressed above, branches erect to slightly arching upwards as they are produced from the previous stem at a wide angle, covered at the base by 2 sheaths 4-7 mm long, non-foliar, tubular, scarious. **Leaves** 5-13, distributed throughout the stem, articulate, sub-spreading, coriaceous, similar in size and shape; sheath 0.4-1.3 x 0.2-0.5 cm, tubular, striated; blade 1.0-3.5 [8.0] x 0.6-1.0 [1.8] cm, narrowly ovate to oblong-lanceolate, apex rounded, margin entire. **Spathes** lacking. **Inflorescence** 3.5-7.0 cm long, flowering only once, racemose to paniculate, erect, sub-terete, straight; base provided with a bract 4-7 mm long, triangular; rachis 1.7-6 cm long, straight. **Floral bracts** 3-6 mm long, as long as to slightly longer than the ovary, widely ovate-triangular, apex sub-acute, embracing. **Ovary** 3-5 mm long, nearly totally hidden by the floral bracts, terete, thin, not inflated, unornamented. **Flowers** 5-14, simultaneous, distichous, non-resupinate, fleshy, yellow-green; fragrance not registered. **Sepals** free, fleshy, slightly concave, sub-acute, 3-veined, the lateral veins short-branched, margin entire; dorsal sepals 5.0-6.0 x 1.6-2.0 mm, spreading, oblong; lateral sepals 5.6-6.0 x 2.5 mm, partly spreading, obliquely ovate. **Petals** 5.0-5.3 x 0.75-0.8 mm, free, spreading, linear, acute, 1-veined, margin entire, spreading. **Lip** 4.0-4.3 x 6.0-7.0 mm, cymbiform in natural position, embracing and totally covering the apex of the column; 3-lobed, base cuneate; bicallose, the calli small, thin, parallel, disc pubescent, with a mid-rib thin and short; lateral lobes 2.6 x 2.0 mm, obliquely rectangular, apex obtuse, margin crenate; mid-lobe 1.6 x 1.6 mm, triangular, apex sub-acute. **Column** 3-4 mm long, straight, apex turned slightly upwards. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, narrow. **Anther** reniform, the apex rectangular, truncate, 4-celled. **Pollinia** 4-lenticular, slightly unequal in size and shape. **Capsule** 14-15 x 6-7 mm, ellipsoid; pedicel 1-2 mm long, very short; body 7-9 x 6-7 mm; apical neck 5 mm long.

OTHER SPECIMENS: BRASIL: Paraná: Jaguariaíva [Jaguaraíva], 5 II 1910, *Dusén 9531*, S! [Lapa:] Serrinha ad rivulum, 26 XI 1911, *Dusén 13438*, AMES! K! MO 2820945, NY x2! S! Serrinha, in campo ad ripam rivulum, ca. 840 m, 9 X 1914, *Dusén 15580*, AMES! MO! S x3! Mun. Palmira, Rio das Pombas, 6 I 1948, *Hatschbach 862*, SP! Mun. Arapoti, Rio das Quinzan, Barra do Predizes, 24 X 1961, *Hatschbach 8520*, HB! LI! Mun. Campo Largo, Rio Papagaio, 930 m, 18 XI 1961, *Hatschbach 8809*, HB! Mun. Jaguariaíva, Estr. do Sertão, 4 XII 1964, *Hatschbach 11971*, HB! K! Mun. Arapoti, Rio das Cinza, 10 X 1968, *Hatschbach 19968*, CTES! UC! Mun. Jaguariaíva, Sertão de Cima, 18 XI 1970, *Hatschbach 25489*, NY! UC! Senges: Rio Pelame, 7 X 1971, *Hatschbach 27142*, C! HB! UC! S! Mun. Palmeira, Rod. do Café, rio Tibagi, 16 XI 1977, *Hatschbach 40227*, NY! Rio Papagaio, na rodovia Curitiba-Ponta Grossa, ca. 1100 m, 16 XI 1959, *Leinig 158*, HB! Mun. Pirai do Sul, Serra das Furnas, 1100-1200 m, 16 I 1965, *Smith 14561*, AMES! HB! P! UC! US! **PARAGUAY:** Without locality data, *Plantae Paraguasiensis, Hassler s.n.*, BAF!

OTHER RECORDS: BRASIL: Paraná: Bei Serrinha an einem Bache, 22 XI 1908, *Dusén 7190*, Kongl. Svenska Vetenskapsakad. Handl., n.s. 46(10): t. 9, fig. 3, 1911, (illustration of type).

DISTRIBUTION AND ECOLOGY: Growing in Paraguay and southern Brazil, from the Sierra de Amambay on the border with Paraguay, east to the State of Paraná and bordering Sao Paulo, at 840-1200 m altitude. Flowering from September to February.

RECOGNITION: *Epidendrum pseudavicula* belongs to the Aquaticum Group which is characterized by the usually monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, flowers fleshy, and the disc of the lip and/or nectary often pilose. The species is recognized by the small plants, 7-20 cm tall, leaves narrowly ovate to oblong-lanceolate, 1.0-3.5 [8.0] x 0.6-1.0 [1.8] cm, yellow-green flowers, sepals 5.6-6.0 mm long, petals linear, 5.0-5.3 x 0.75-0.8 mm, calli small, thin, parallel. *Epidendrum aquaticum* Lindl. has similar sized plants, but the leaves are lanceolate, 1.3-5.1 x 0.4-0.6 cm, flower green, sepals ca. 5 mm long, and the lip with the base truncate. *Epidendrum carnosum* Lindl. has much taller plants, to 125 cm tall, leaves lanceolate, 4-8.6 x 0.6-1.3 cm, flowers yellow or yellow-green, sepals 9-10 mm long, petals 8-9 x 1.5-2.5 mm, lanceolate-rhombic, and the lip with a single callus, apically bilobed. *Epidendrum dendrobioides* Thunb. has linear-lanceolate leaves 3.5-6.0 x 0.5-0.8 cm, yellow flowers, sepals 6.0-7.5 mm long, petals 5.5-6.0 x 1.0-1.2 mm, the calli thin convergent towards the apex, forming a "Y" with a narrow mid-rib in between the calli.

CONSERVATION STATUS: DD. Data deficient. Apparently common in southern Brazil.

ETYMOLOGY: From the Latin, *pseudo*-similar, and *avicula*, bird-like, in reference to the superficial similarity at first glance of the vegetative structure of this species with *Epidendrum avicula* Lindl., as well as the similarity of the floral buds to the head of a small bird, which gave the latter species its name.

REFERENCES: Santiago, E., & E. Hágsater, 2018, *Epidendrum aquaticum*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1604. Santiago, E., & E. Hágsater, 2018, *Epidendrum carnosum*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1608. Santiago, E., & E. Hágsater, 2018, *Epidendrum dendrobioides*, in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1614.



Authors: E. Santiago & E. Hágsater

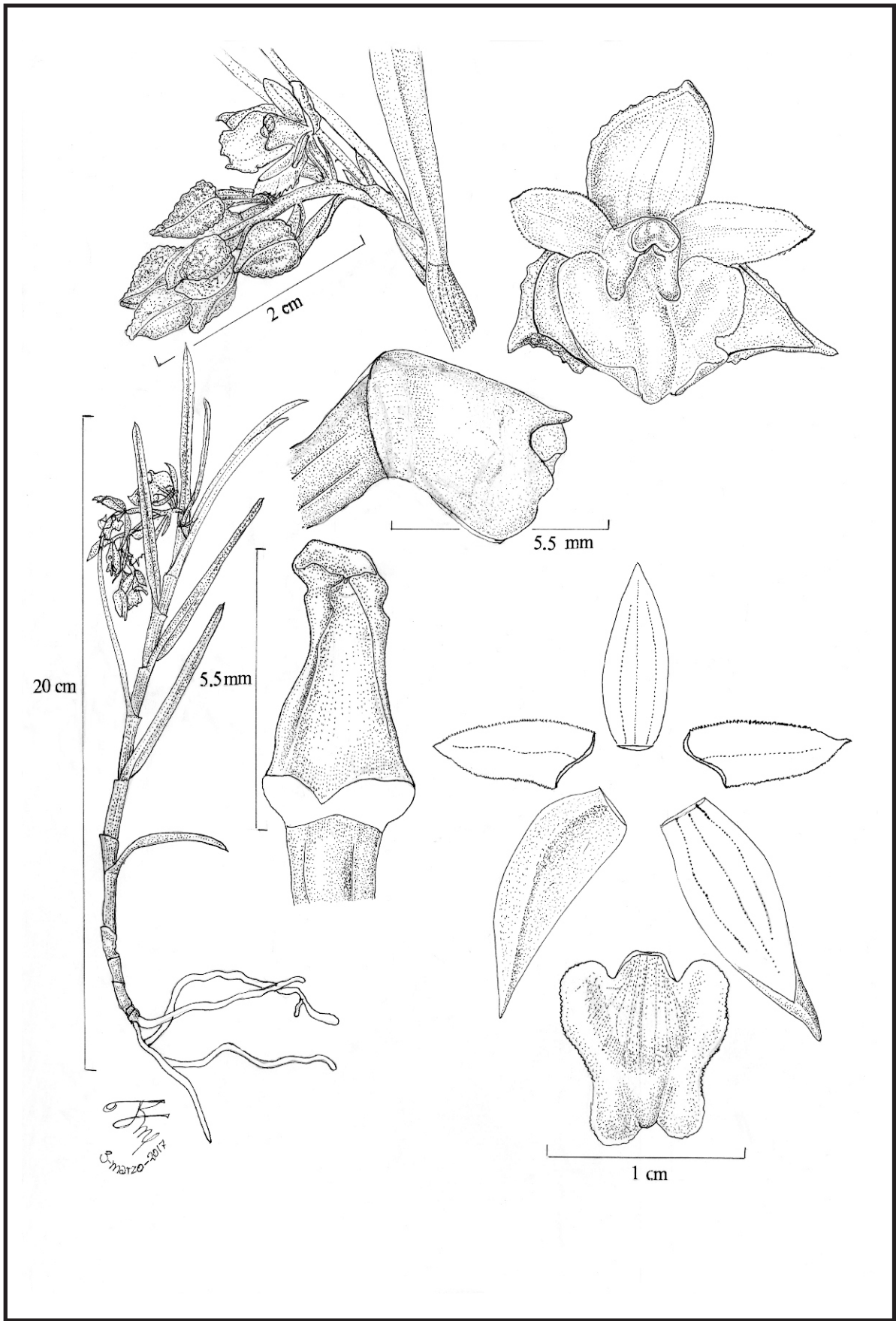
Illustrator: R. Jiménez M.

Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1650



EPIDENDRUM PUSTULOSUM Rinc.-González, García-Revelo & Hágsater

Plate 1651

EPIDENDRUM PUSTULOSUM Rinc.-González, García-Revelo et Hągsater, *sp. nov.*

Type: COLOMBIA: Tolima: Roncesvalles-Paramo de La Yerbabuena, 3100 m, 15 de junio 2015, **Milton Rincón-González, Boris Villanueva and David Campos 474**. Holotype: TOLI! (illustration voucher)

Similar to *Epidendrum litteraense* Hągsater, E.Santiago & C.Uribe-Vélez, but the flowers yellow, concolor, (vs. green marked with reddish brown) and the apex of the column forming a wide aperture (vs. a narrow vertical aperture).

Epiphytic, monopodial, scarcely branching, erect **herb**, ca. 15-23 cm tall. **Roots** basal from the primary stem, fleshy. **Stems** scarcely branching near the apex when mature, cane-like, terete, thin; the primary stem 15-18.5 x 0.3-0.4 cm, the branches 4.6-6.0 x 0.3 cm. **Leaves** 10-12 on the primary stem, 3 on the branches, sub-erect, alternate, articulate; sheath 2.3-2.5 x 0.4 cm long, tubular, striated, reddish green; blade 4.6-7.8 x 0.3-0.4 cm, narrowly lanceolate, apex sub-acute, minutely apiculate, margin entire. **Spathe** lacking. **Inflorescence** 2.5-3.2 cm long, apical, racemose, arching-nutant, few-flowered; peduncle 5 mm long, terete; rachis 14-24 x 1.0-1.5 mm, terete. **Floral bracts** 4-6 mm long, half as long as the ovary, narrowly triangular, acuminate. **Ovary** 5-10 mm long, terete, thin, not inflated. **Flowers** 6-10, opening in succession, but eventually all open at one time, resupinate, sepals and petals yellow, lip and column green; fragrance not registered. **Sepals** partly spreading, free, fleshy, elliptic, 3-veined, dorsal surface pustulate, margins entire, spreading; dorsal sepals 9 x 5.5 mm, apex sub-acute; lateral sepals 12.5 x 5 mm, concave, elliptic, oblique, apex acute, with a prominent dorsal keel, margin erose. **Petals** 8.5 x 3 mm; partly spreading, free, fleshy, oblong-elliptic, apex sub-acute, 1-veined, margin erose, spreading. **Lip** 9.2 x 10.2 mm, united to the basal half of the column, 3-lobed, base cordate, apex widely mucronate, margin crenate, slightly revolute; ecallose and provided with a low mid-rib with the apex widened and fleshy; lateral lobes 5.0 x 3.2 mm, dolabriform; mid-lobe 4.2 x 7.0 mm, bilobed, each lobe sub-quadrate. **Column** 5.5 mm long, thick, forming nearly a right angle with the ovary, slightly arched, conical when seen ventrally, apex with a pair of rounded, straight, non-involute wings, forming a wide aperture at the apex of the column. **Clinandrium-hood** prominent though without surpassing the body of the column, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid. **Rostellum** apical, slit. **Lateral lobes of the stigma, nectary and capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Tolima: Roncesvalles, Paramo de La Yerbabuena, Reserva Natural de las Aves Loro Orejiamarillo, 3300 m, 20 II 2016, *García-Revelo 122*, CUVCI: digital image, AMO! digital images of live flowers, AMO! (photo voucher).

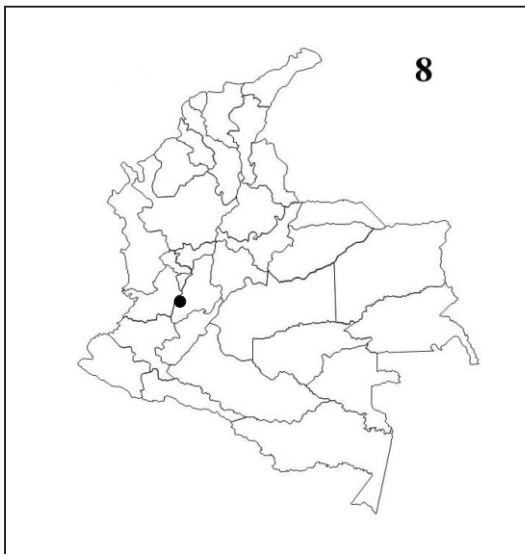
DISTRIBUTION AND ECOLOGY: Known presently only from a single locality in Tolima, the Páramo de La Yerbabuena, Roncesvalles, epiphytic at 3100 m altitude. Flowering February, June.

RECOGNITION: *Epidendrum pustulosum* belongs to the Diothonea Group and Subgroup, characterized by the branching habit, linear-lanceolate to lanceolate leaves, the apex usually narrowly bilobed, arching-nutant, racemose inflorescence, membranaceous or rarely fleshy flowers, the lip entire to 3-lobed, with an erose margin, ecallose, without or with 1-10 thin, glabrous to erose keels, the column variously united to the lip from totally, to obliquely, to totally free. *Epidendrum pustulosum* is recognized by the monopodial, mature plants scarcely branching, with yellow and green flowers, sepals dorsally pustulate, lip 3-lobed, margin slightly revolute, column slightly arched and the apex forming a wide aperture. It is very similar to *Epidendrum litteraense* but that species has very much branched stems, flowers green marked with reddish brown, and the apex of the column forming a very narrow vertical slit, as an entrance to the nectary. *Epidendrum aureoglobiflorum* Hągsater & Dodson has yellowish brown flowers, sepals dorsally ornate with prominent, spaced warts; lip entire, and the inflorescence is very short and dense (1 cm long). *Epidendrum gratissimum* (Rchb.f.) Hągsater & Dodson has flowers varying in color from pink to yellow, the sepals dorsally glabrous, lip 3-lobed, with the mid-lobe itself bilobed, column with a pair of prominent, involute wings. *Epidendrum tropinectarium* Hągsater & E.Santiago has pink colored flowers, sepals glabrous, column arched upwards, petals linear, acute.

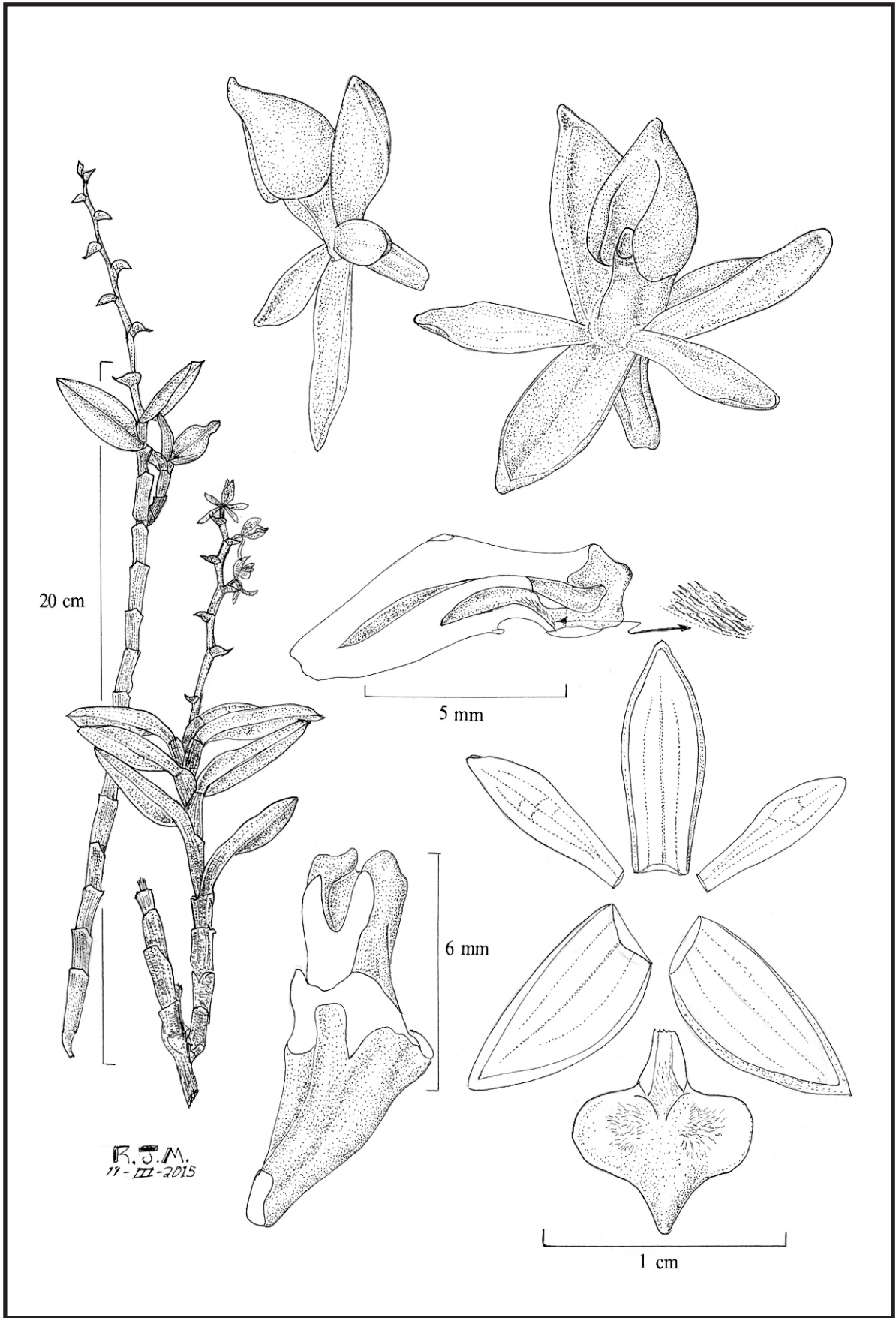
CONSERVATION STATUS: DD. Data deficient. Presently known from two recent collections from the same locality.

ETYMOLOGY: From the Latin *pustula*, a pustule or low projection like a blister or pimple, but larger than a papilla. In reference to the sepals which are dorsally pustulate, characteristic of this species and other closely related species in the Diothonea Group.

REFERENCES: Hągsater, E., & C. H. Dodson, 2004, *Epidendrum aureoglobiflorum* in E. Hągsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 709. Hągsater E., & E. Santiago, 2004, *Epidendrum tropinectarium* in E. Hągsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 797. Hągsater, E., & E. Santiago, 2006, *Epidendrum gratissimum* in E. Hągsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 838. Hągsater, E., E. Santiago & C. Uribe V., 2018, *Epidendrum litteraense* in E. Hągsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1636.



Authors: M. Rincón González, J. S. García Revelo & E. Hągsater Illustrator: R. Jiménez M. Photo: J. S. García R. Editors: E. Hągsater & E. Santiago



EPIDENDRUM RECLINATUM Carnevali & I.Ramírez

EPIDENDRUM RECLINATUM Carnevali & I.Ramírez, *Novon* 13(4): 409, 2003.

Type: GUYANA: [Mazaruni-Potaro: Guyana-Venezuela border area, Roraima summit, La Proa Camp, E of Border, near Lake Gladys, mostly open rocky areas with ravines and lake, 2800 m, 14 April 1988, **Ronald L. Liesner 23315**. Lectotype (here designated): VEN 233599! (sheet with two stems) Isotypes: CICY, MO, VEN 233599! (sheet with a single stem) [There are two specimens at VEN under the same collection and also herbarium number; we consider the sheet with two stems as the holotype, the other with one stem therefore being an isotype.]

Terrestrial, prostrate, sprawling and creeping **herb**, ca. 28-47 cm tall. **Roots** 1-2 mm in diameter, basal from the primary stem, fleshy. **Stems** cane-like, rarely branching when mature, terete, prostrate, decumbent, the primary stem ca. 21-40 x 0.4-0.6 cm; the branches 6.5-15 x 0.2-0.3 cm; the base covered by non-foliar sheaths 15-20 mm long, tubular, scarious. **Leaves** 5-10 on the main stem, 3 on the branches, distributed along the apical 1/3rd of the stems, articulate, distichous, sub-coriaceous, sub-spreading with respect to the stem, similar in size and shape, light yellowish green; sheath 10-20 x 4-6 mm, tubular, rugose, striated; blade 3.5-5.0 x 0.8-1.1 cm, lanceolate, acute to sub-acuminate, apical margin denticulate, revolute. **Spathe** lacking. **Inflorescence** 3.5-5.0 cm long, apical, flowering only once, erect to slightly arching, racemose, laxly few-flowered; peduncle 1.0-1.5 cm long, terete, thin; rachis 2.5-4.0 cm long, straight. **Floral bracts** 6.0-7.0 x 3.0-5.0 mm (not spreading), prominent, longer than the ovary, cucullate, widely ovate when spread, acute, fleshy, at a right angle with respect to the rachis. **Flowers** 6-8, small, non-resupinate, the lip always facing the rachis, opening in succession from the base towards the apex of the inflorescence, though several are open at the same time; white to yellowish white; fragrance not recorded. **Ovary** 4-5 mm long, thin. **Sepals** partly spreading, free, fleshy, concave, margin spreading; dorsal sepal 7.0-8.0 x 2.5-2.7 mm, elliptic-oblong, obtuse, 3-5 veined, with a dorsal keel, margin entire; lateral sepals 7.9-8.1 x 4.0-4.5 mm, widely elliptic, slightly oblique, acute, 3-veined, the lateral veins branching from the base so as to appear 5-veined, margin erose towards the apex. **Petals** 6.5-8.0 x 2.1-2.6 mm, partly spreading, fleshy, narrowly spatulate, sub-acute, 3-veined, margin erose, spreading. **Lip** 8-9 x 6.5-8.0 mm, united to the column, fleshy, concave and embracing the apex of the column in natural position, transversely rhombic when spread, base cuneate, apex mucronate, the mucro 1.2-1.5 mm long, obtuse and very fleshy, margin spreading, entire; disc **Column** 3.5-4.0 x 2.5 mm, **Clinandrium-hood** reduced, margin entire. **Anther** not seen. **Pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma**, small, occupying about 1/3 the length of the stigmatic cavity. **Nectary** penetrating, about 1/4 of the ovary, wide, pilose in front of the stigmatic cavity, the hairs reclining backwards. **Capsule** not seen.

OTHER SPECIMENS: VENEZUELA: Amazonas: Atabapo, open rocky plateau of Cerro de Marahuaca above Salto Los Monos on tributary of headwaters of Río Iguapo, 2555 m, 26 II 1985, *Liesner 17970*, MO! VEN! Cerro Marahuaca, afluente del Río Negro, 2560 m, 10-12 X 1983, *Steyermark 129605*, MO! (illustration voucher) VEN! **Bolivar:** Cima del Roraima, Lago Gladys, sector noreste del tepui, 2700 m, 5 IV 1989, *Delascio 13972*, VEN x2! Kukenan tepui, Summit, 2250 m, 17 IV 1988, *Liesner 23452*, VEN! Ilu-tepui, Gran Sabana, 2300 m, 20 III 1952, *Maguire 33520*, AMES! NY!

OTHER RECORDS: Brazil: Roraima; summit of Roraima tepui, basin of the source of Rio Cotingo, among *Bonnetia roraimae* Oliv. shrubs, 2698 m, 21 II 2017, *Hágsater 15045*, Digital image of sterile plant, AMO! (photo voucher).

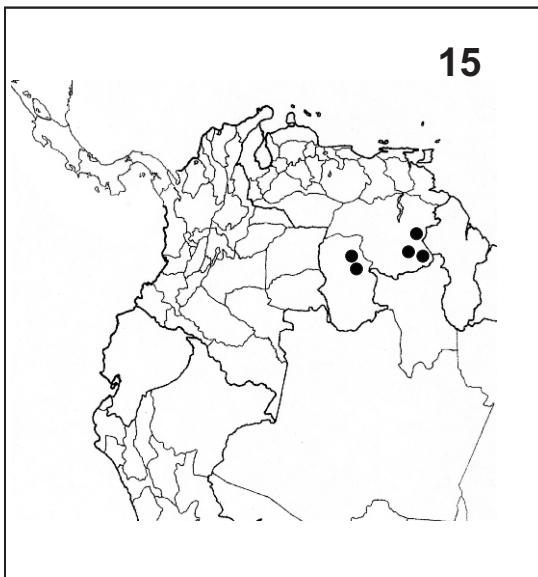
DISTRIBUTION AND ECOLOGY: Venezuela, Guyana and Brazil; known presently only from the summit of the higher Tepuis in the Guiana Shield and south to the Cerro Marahuaca, terrestrial at 2250-2800 m altitude, terrestrial among *Bonnetia roraimae* shrubs; flowering in April.

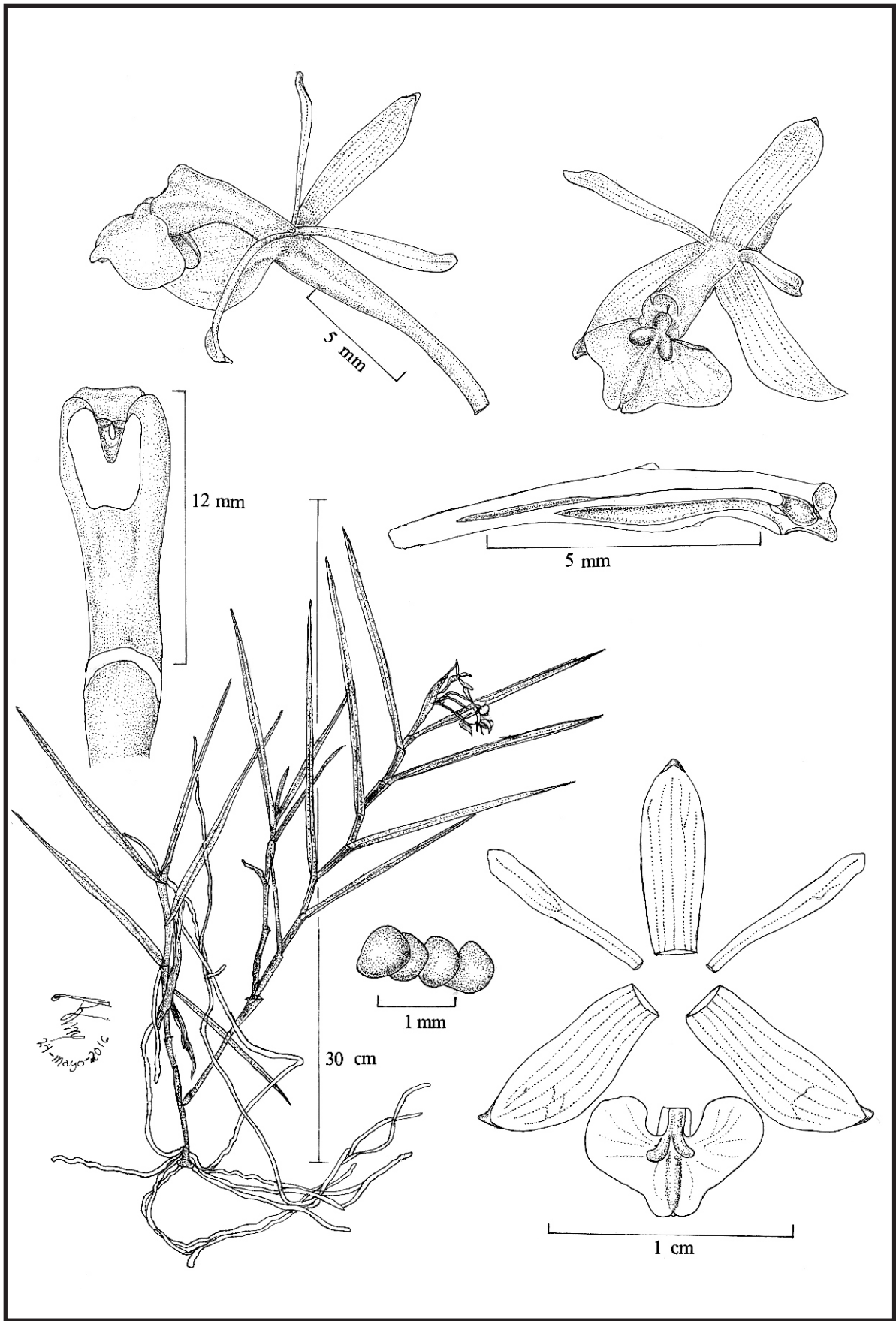
RECOGNITION: *Epidendrum reclinatum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the short, prostrate plants with scarcely branching stems, lanceolate leaves 3.5-5.0 x 0.8-1.1 cm, light yellowish green in color, inflorescences short, erect to somewhat arching, about twice as long as the apical leaf, racemose, with 6-8 white to yellowish white flowers, petals spatulate with the margin erose, 6.5-8.0 x 2.1-2.6 mm, the lip widely rhombic with a prominent, fleshy apical mucro at the apex. *Epidendrum montigena* Ridl. has oblong leaves 2.0-3.5 0.4-0.6[1] cm, the inflorescence is racemose to paniculate, and nutant with 10-21[28] pink flowers, the petals oblong-elliptic, the apical margin dentate, lip somewhat 3-lobed, with the mid-lobe triangular. *Epidendrum alsum* Ridl. has ovate leaves 2.5-4.3 x 1.4-1.8 cm, the inflorescence paniculate and nutant, flowers yellow, petals narrowly lanceolate, 7-9 x 1.9-2.1 mm.

CONSERVATION STATUS: DD. Endemic to protected areas difficult to reach.

ETYMOLOGY: From the Latin *reclinatus*, reclining, though the stems are decumbent, that is prostrate with the tip rising upwards.

REFERENCES: Carnevali, G. & I. Ramírez, 2003, *Epidendrum reclinatum*, in *Novelties in Orchidaceae*, *Novon* 13(4): 409-411, 2003. Santiago, E., & E. Hágsater, 2018, *Epidendrum alsum* in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icones Orchid.* 16(1): t. 1602. Santiago, E., & E. Hágsater, 2018, *Epidendrum montigena* in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icones Orchid.* 16(1): t. 1644.





EPIDENDRUM RIOFRIOAE Hágsater, F.Werner & E.Santiago

Plate 1653

EPIDENDRUM RIOFRIOAE Hágsater, F.Werner et E.Santiago, *sp. nov.*

Type: ECUADOR: [Zamora-Chinchipec]: "Arco Iris"; entrance to Podocarpus National Park on road Loja-Zamora, 2100 m, 17 June 2006, **Florian A. Werner & R. Arias 2048**. Holotype: AMO! (illustration and photo voucher).

Similar to *Epidendrum ampelospathum* Hágsater & Dodson, but in every way smaller, plant pendent, leaves to 12 x 0.3 cm, linear-lanceolate, sepals oblong obovate, 8.0-8.5 mm long, column thin at the base and progressively wider and slightly arched, the lip shallowly 3-lobed, deeply reniform, slightly convex, base prominently cordate, apex truncate and emarginate.

Epiphytic, pendent, sympodial **herb**, to 24 cm tall. **Roots** 0.8-1.5 mm in diameter, produced from the base of the primary stem, thin, white. **Stems** 12-18 x 0.12-0.34 cm, thin, cane-like, terete at the base, laterally compressed towards the apex, each new stem produced from a middle internode of the previous stem; old stems having lost their leaves, the new stems covered along the basal half by non-foliar sheaths 14-20 mm long, tubular, scarious. **Leaves** 4-8, distributed along the apical half of the stem, articulate, coriaceous, sub-spreading, straight, lustrous on the upper side, glaucous on underside; blade 4.1-12 x 0.15-0.3 cm, linear-lanceolate, apex acuminate, margin entire, slightly revolute; sheaths 3-20 mm long, tubular, ancipitose. **Spathe** 1, 2.2-3.7 x 0.3 cm, tubular, along the basal half, conduplicate towards the apical half, acuminate. **Inflorescence** 3 cm long, apical, racemose, laxly few-flowered; peduncle 23 mm long, thin, laterally compressed, ancipitose; rachis 7 mm long, terete, thin, straight. **Floral bracts** 1.0-1.5 mm long, much shorter than the ovary, triangular, acuminate, embracing. **Ovary** 10-13 mm long, terete, thin, slightly inflated ventrally along the apical 1/3, minutely striated, green tinged with reddish purple. **Flowers** 6, simultaneous, resupinate, pale green, slightly tinged with red-purple, lip and column white-green; fragrance not registered. **Sepals** 8.0-8.5 x 2.6-3.0 mm, free, oblong-obovate, minutely apiculate, 5-veined, margin entire, spreading; dorsal sepals spreading, apex rounded; lateral sepals partly spreading, slightly oblique, sub-acute. **Petals** 7.6 x 1.0 mm, free, spreading, linear-oblongate, to linear, sub-acute, 1-veined, margin entire, spreading. **Lip** 4.8 x 7 mm, totally united to the column, shallowly 3-lobed, deeply reniform, slightly convex, base prominently cordate, apex truncate, emarginate, margin entire, spreading; bicallose, the calli small, fleshy, divergent; disc with a mid-rib reaching the apical sinus; lateral lobes 3.3 x 2.8 mm, much larger than the mid-lobe, obliquely semi-elliptic, somewhat retrorse; mid-lobe small, 0.9 x 2.3 mm, trapezoid, apex truncate, emarginate, formed by a pair of rounded arches, minutely apiculate in the sinus. **Column** 12 mm long, base thin, gradually widened towards the apex, slightly arched. **Clinandrium-hood** short, margin entire. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Anther** not seen. **Pollinia** 4, obovoid. **Nectary** penetrating 1/3 of the ovary, slightly inflated, unornamented. **Capsule** 28-30 x 4-5 mm, fusiform, perianth persistent; pedicel 2 mm long, body 16-18 x 4-5 mm; apical neck 8-10 mm long.

OTHER SPECIMENS: None seen.

OTHER RECORDS: ECUADOR: **Zamora-Chinchipec:** km 24 vía Loja-Zamora a 4 km de la estación "Arco Iris", 2250 m, (images received) 3 VII 2007, *Riofrío s.n.*, Digital images, AMO!

DISTRIBUTION AND ECOLOGY: Known presently only from Ecuador, Zamora, from northern side Podocarpus National Park, epiphytic, at 2100-2250 m altitude. Flowering in June-July.

RECOGNITION: *Epidendrum riofrioae* resembles loosely the *Ampelospathum* Group which is characterized by the scandent habit, the new stem produced from a middle internode of the previous stems, roots produced only at the base of the primary stem, a racemose inflorescence subtended by 1-2 spathes, a 3-lobed lip and 2 small calli. The new species is recognized by the pendent plants with successive stems originating from a middle internode of the previous stem, leaves 4.1-12 x 0.15-0.3 cm, sub-spreading, linear-lanceolate, acuminate, inflorescence subtended by a narrow spathe 2.2-3.7 cm long, covering the whole peduncle of the inflorescence, rachis very short, and 6 pale green flower tinged red-purple, lip and column white-green, ovary 10-13 cm long, slightly inflated along the apical 1/3. We find no closely related species; the habit, though sympodial, only produces roots from the primary stem, and the inflorescence is subtended by a spathe, as in *Epidendrum ampelospathum* Hágsater & Dodson, but that species as large, vigorous plants and flowers have very wide segments, leaves 11-18 x 1.3-1.6 cm, sepals short oblong, 10-14 mm long, and the lip is deeply 3-lobed, lateral lobes about the same size as the mid-lobe, reniform, the mid-lobe triangular, truncate, apex rounded. The pendent habit and narrow leaves are reminiscent of an oversized *Epidendrum rolfeanum* F.Lehm. & Kraenzl. but the inflorescence is simple, not paniculate, and flowers are much larger. The flowers are suggestive of *E. cuchibambae* F.Lehm. & Kraenzl. due to the large retrorse, rounded lateral lobes, but that species has a caespitose, erect habit, and flowers are much larger, sepals 25-30 mm long.

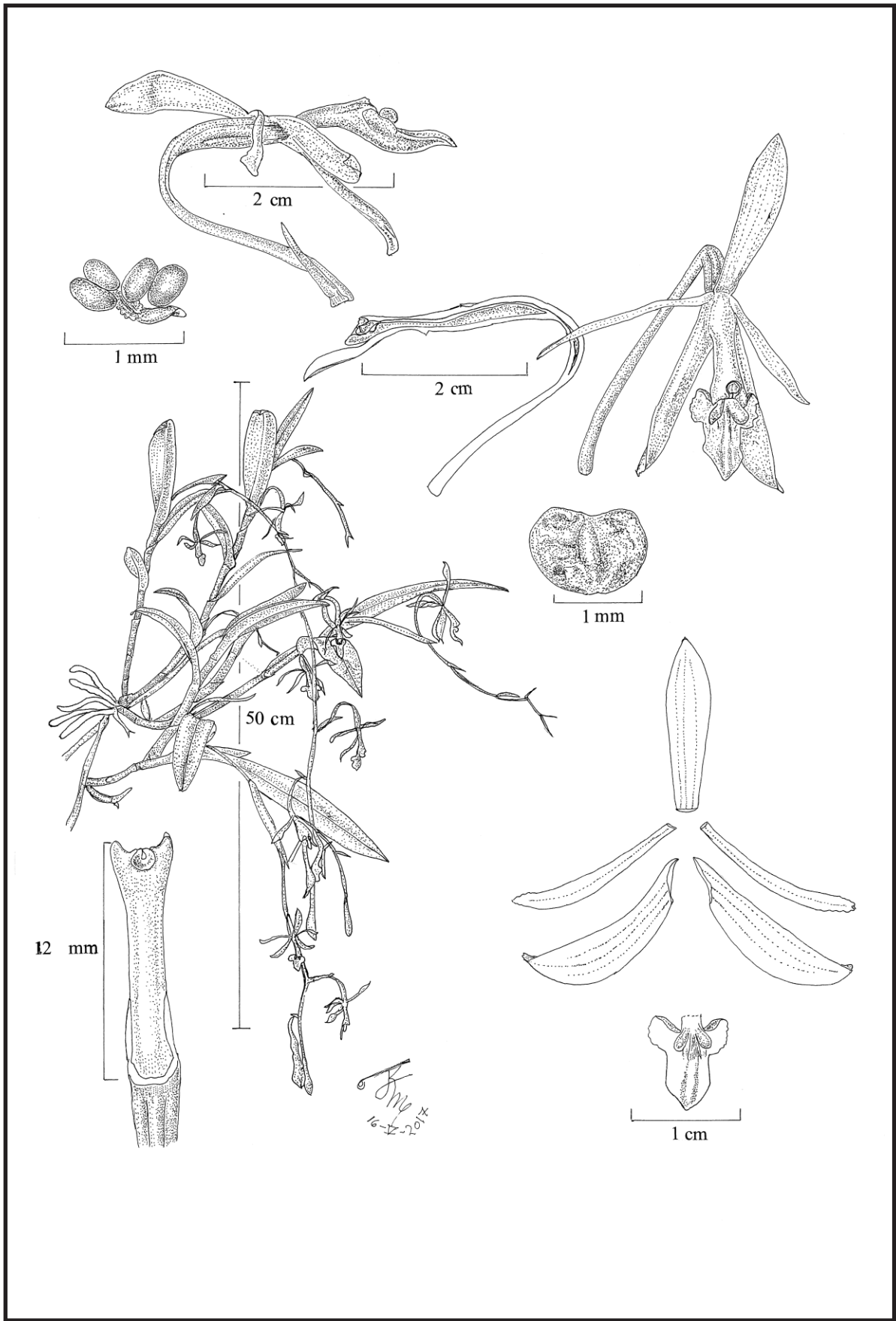
CONSERVATION STATUS: **DD.** Data deficient. The species is known presently only from the Podocarpus National Park, in areas which appear well protected.

ETYMOLOGY: In honor of Lorena Riofrío, (1977-), Biologist at the Universidad Técnica Particular de Loja, Ecuador, who brought this species to our attention since 2007, but we were unable to identify it at the time. She has published numerous articles on the ecology of Andean orchids and association with mycorrhiza.

REFERENCES: Hágsater, E., 2015, *Epidendrum cuchibambae*, in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1517. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum ampelospathum*, in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 703. Santiago, E., & E. Hágsater, 2018, *Epidendrum rolfeanum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): t. 1656.



Authors: E. Hágsater, F. Werner & E. Santiago Illustrators: R. Jiménez M. Photo: F. Werner Editors: E. Hágsater & E. Santiago



EPIDENDRUM ROBINSON-GALINDOI Hágsater, Uribe Vélez & E.Santiago

Plate 1654

EPIDENDRUM ROBINSON-GALINDOI Hágsater, Uribe Vélez et E.Santiago, *sp. nov.*

Type: COLOMBIA: Cundinamarca: Mun.: Fómeque: sendero de las Plantas, en el borde la Laguna de Chingaza, Parque Nacional Chingaza, 3200 m, 10 April 2017, **Robinson Galindo Tarazona & Carlos Uribe Vélez s.n.** Holotype: HPUJ! (illustration & photo voucher).

Similar to *Epidendrum trulliforme* Garay & Dunsterv. but stems with 3 unequal leaves in size, (vs. 5 leaves of similar size), inflorescence much longer than the apical leaf, 21 cm long (vs. inflorescence as long as the apical leaf, 10 cm long), dorsal sepals reflexed (vs. dorsal sepal spreading) and lip 3-lobed with base cordate (vs. lip entire, with base cuneate), calli obovate, laterally compressed (vs. calli thin, horn-like).

Epiphytic, sympodial, caespitose **herb** 35 cm tall, including the inflorescence which is nutant and longer than the stems. **Roots** 3 mm in diameter, basal, thick, white. **Stems** 13-14 x 0.5-0.7 cm, simple, cane-like, terete at the base, somewhat laterally compressed along the apical half, sub-erect, covered at the base by sheaths 2.8-3.0 cm long, tubular, non-foliar, scarious. **Leaves** 3, sub-erect, alternate, articulate, coriaceous; sheath 2-3 x 0.5-0.7 cm, tubular, minutely striated, ancipitose, green, concolor; blade 5.2-9.0 x 1.3-1.6 cm, unequal in size (the basal leaf smaller), narrowly elliptic, apex acute, minutely apiculate, margin entire, spreading. **Spathe** 1, 4.5-7.3 x 0.6-0.8 cm, narrowly elliptic, conduplicate in natural position, tubular at base, acute, amplexicaul, ochre-green, concolor, not sessile, but at the apex of peduncle of the inflorescence. **Inflorescence** 21 cm long, apical, racemose or rarely paniculate, arching-nutant, laxly few-flowered; peduncle 1.0-2.5 x 0.6 cm, laterally compressed at the base, ancipitose at the apex, rachis laterally compressed, pale green, slightly sinuous. **Floral bracts** 6-9 mm long, much shorter than the ovary, linear-triangular, acuminate, embracing. **Flowers** 6-7, opening in succession, so that 1-2 apical buds present when the lower flowers are totally developed, resupinate, greenish yellow, concolor; fragrance not registered. **Ovary** 25-30 mm long, terete, dilated along the apical 1/4, strongly arched behind the dilated part, thus forming an arch, minutely striated. **Sepals** 17-18 x 0.4-0.5 mm, slightly convex, apex acute, minutely apiculate, 3-veined, margin entire, spreading; dorsal sepals free, reflexed, oblanceolate; lateral sepals obliquely united to base of column, partly spreading, oblong-elliptic, oblique. **Petals** 15 x 3 mm, spreading, free, linear-oblanceolate, acute, 1-veined, margin spreading, slightly crenate towards the apex. **Lip** 10 x 7 mm, united to the column, 3-lobed, base cordate; bicallose, the calli prominent, obovate, laterally compressed, fleshy, divergent; disc 3-ribbed, the mid-rib striated (between the calli), elongate to the apex of the mid-lobe, the lateral pair of ribs in front of the calli, very short; lateral lobes 2.5 x 3.5 mm, small, dolabriform, margin crenate, posterior margin upright; mid-lobe 6.5 x 4.0 mm, rectangular-oblong, apex sub-acute, margin entire, spreading. **Column** 12 mm long, straight, thin along the basal 2/3, gradually dilated along the apical 1/3. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, longer than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/4 the length stigmatic cavity. **Nectary** shallow, penetrating 1/4 of the ovary, slightly inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: COLOMBIA: Cundinamarca: Mun. Fómeque: sector de Montes Negro, Parque Nacional Natural Chingaza, 3342 m, 19 VI 2017, *Galindo s.n.*, digital photo, AMO!

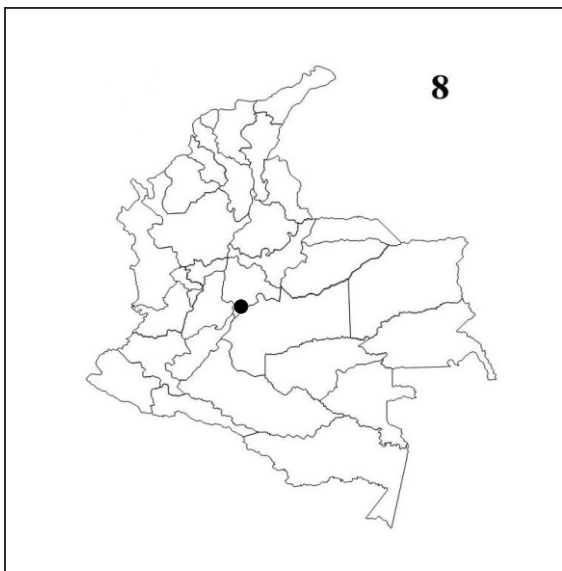
DISTRIBUTION AND ECOLOGY: Known presently only from the Cordillera Oriental in northern Colombia, from the Páramo de Chingaza, epiphytic, at 2100 m altitude. Flowering in April-May.

RECOGNITION: *Epidendrum robinson-galindoi* belongs to the Friderici-guilielmi Group characterized by the sympodial habit, tall, unbranched stems, few (3-5), unequal leaves, the sub-erect inflorescence with prominent spathe. The species is recognized by the pendant, epiphytic plants and nutant inflorescence longer than the stem and the apical leaf, to 35 cm long, laxly few-flowered, stems with 3 unequal leaves, 6-7 greenish yellow, concolor flowers, sinuous rachis, lateral sepals oblong-elliptic, petals linear-oblanceolate, acute, lip 3-lobed, mid-lobe rectangular-oblong, apex sub-acute, larger than the lateral lobes, disc 3-ribbed (the mid-rib elongate reaching the apex of the lip). *Epidendrum trulliforme* Garay & Dunsterv. has stems with 5 leaves of similar size, inflorescence as long as the apical leaf, with 3 green flowers tinged pink, lateral sepals narrowly oblanceolate, lip entire, base cuneate. *Epidendrum carlos-uribei* Hágsater & E.Santiago has a similar vegetative habit, but is lithophytic at 3500 m altitude, inflorescence has up to 10 orange brownish flowers with lip and column yellow, sepals oblong, petals narrowly oblanceolate, apex rounded, lip with mid-lobe cuneate and apex rounded, disc with a single wide rib. *Epidendrum cocuyense* Hágsater & E.Santiago, has 4-5-leaved stems, flowers green tinged purple; lip with orbicular lateral lobes, margin entire and mid-lobe oblong with apex truncate. *Epidendrum sigaense* Hágsater has larger, more robust plants, a racemose inflorescence with larger flowers, sepals 19-20 mm long, the dorsal sepals reflexed, nearly parallel to the ovary, lateral lobes of the lip semi-ovoid, and the mid-lobe rectangular-oblanceolate-spatulate, dorsally verrucose, petals linear-oblong, apex rounded, lip 3-lobed with lateral lobes orbicular, mid-lobe truncate at the apex, calli laminar.

CONSERVATION STATUS: DD. Data deficient. DD. Data deficient. Known presently only from the type, expected to be more widespread, along the Cordillera Oriental of the Andes in northern Colombia.

ETYMOLOGY: In honor of Robinson Galindo Tarazona, (1974-), Biologist, Head of the Parque Nacional Natural Chingaza, one of many in the string of Parques Nacionales Naturales de Colombia.

REFERENCES: Dunsterville, G. C. K., & L. A. Garay, 1976, *Epidendrum trulliforme*, **Venez. Orchid. III.** 6: 148-149. Hágsater, E., 2001, *Epidendrum sigaense*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 3, **Icon. Orchid.** 4: t. 485. Hágsater, E., & E. Santiago, 2016, *Epidendrum carlos-uribei*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(2): t. 1575. Hágsater, E., & E. Santiago, 2016, *Epidendrum cocuyense*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(2): t. 1578.

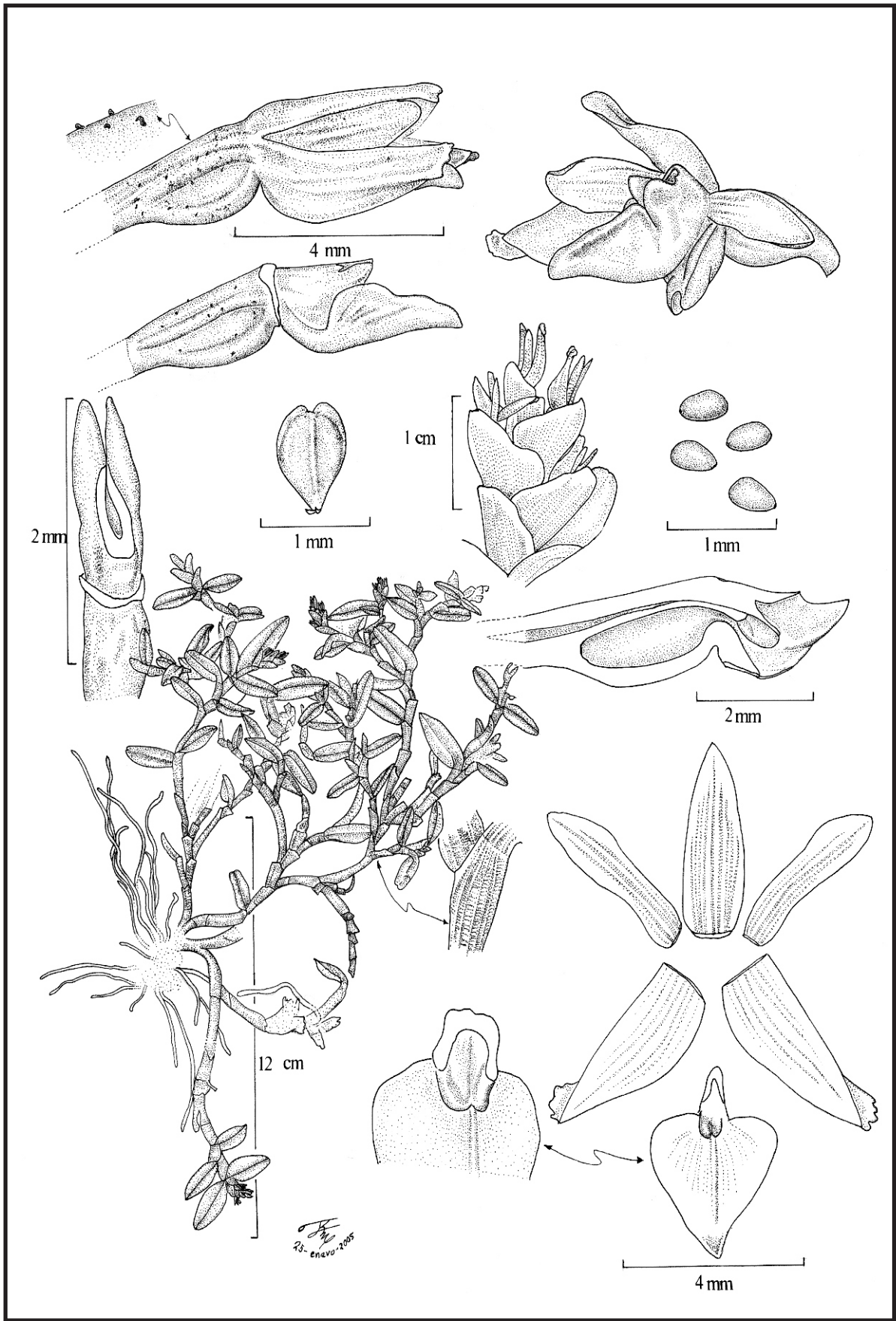


Authors: E. Hágsater, C. Uribe Vélez & E. Santiago Illustrator: R. Jiménez M. Photo: C. Uribe V. Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1654



EPIDENDRUM RODRIGUESII Cogn.

EPIDENDRUM RODRIGUESII Cogn., Fl. Bras. 3(5): 176-177, t. XIII, fig. II. 1898.

Basionym: *Epidendrum mosenii* Barb.Rodr., Gen. Sp. Orchid. Nov. 2: 144, t. 754. 1882.

Type: BRAZIL: São Paulo: Santos, 23 January 1875, Mosén 3487. Holotype: S! (illustration voucher). Isotypes; P x2! illustration: manuscript of Iconographie des Orchidées du Brésil, original RB, 6; t. 302, copy t. 754, K! Published and edited by Sprunger (1996) in Icon. Orchid. du Brésil 1: t. 430. Non *Epidendrum mosenii* Rchb.f., Gard. Chron. ser. 2, 14: 390. 1880.

Epiphytic, repent to pendent, sub-monopodial, branching **herb**, 8-17 cm long. **Roots** to 1 mm thick, basal, only from the primary stem, thin, flexuous. **Stems** 3-5 x 0.1-0.2 cm, short, the new stems produced from the nodes of the previous stem and from the base of the inflorescence, thus appearing to be longer, terete at base, laterally compressed towards the apex, fractiflex, the branches generally shorter than the previous stem, but sometimes equal or even longer. **Leaves** 4-8 on the primary stem, 2-5 on the branches, spreading, distributed throughout the stem, articulate, carinate, deciduous, succulent, distichous; sheath 7-10 mm long, tubular rugose; blade 1.0-3.0 x 0.3-0.8 cm, carinate, ovate-elliptic when spread, apex acute, mucronate; margin entire, surface rugose. **Spathes** lacking. **Inflorescence** 1.5-2.0 cm long, apical, simple, distichous; peduncle 1.0-1.5 mm long, covered by 1, rarely 2 bracts, similar to the floral bracts. **Floral bracts** 6.5-7.0 mm long, longer than the ovary, slightly imbricating, oblong-ovate, obtuse, scarious. **Flowers** 2-4, opening in succession, though all eventually open at one time, white; without any perceptible fragrance. **Ovary** 2.5-3.0 x 1.2-1.5 mm, ventrally inflated along the apical half, forming a prominent vesicle, scarcely verrucose. **Sepals** 2.5-3.0 x 1.2-1.5 mm, partly spreading, ovate-lanceolate, acute, coriaceous, succulent, with a prominent dorsal keel, 7-veined, margin entire, spreading; lateral sepals oblique. **Petals** 3.0-3.5 x 0.6-0.7 mm, partly spreading, linear, obtuse, 3-veined, margin entire, spreading. **Lip** 2.8-3.0 x 2.5-2.7 mm, united to the column, entire, triangular-cordiform; callus, bilobed, joined at the floor, fleshy; disc with a single central, low rib which nearly reaches the apex of the lip. **Column** 1.3-1.5 mm long, straight, short, thickened towards the apex, terminating in a pair of wide, acute, laminar processes. **Clinandriumhood** short bifid, margin entire. **Anther** obovate, 4-celled, apically ending in a pair of acute horns. **Rostellum** apical, slit. **Nectary** half as long as the ovary, prominently inflated behind the perianth, unornamented. **Pollinia** 4, obovoid, sub-equal, laterally compressed; caudicles soft and granulose, nearly as long as pollinia. **Lateral lobes of the stigma** short, ½ as long as the stigmatic cavity. **Capsule** 9-10 x 5-6 mm, sub-globose, elliptic-ovoid, sessile.

OTHER SPECIMENS: BRAZIL: Espírito Santo: Serra do Espírito Santo, Santo Amaro, 27 I 1943, *Rotti* 316, SP! **Rio de Janeiro:** Neves-Armond 37, BR! Nova Friburgo, Macaé de Cima, pr. [Nova] Friburgo 1000 m, 5 I 1960, *Pabst* 5249, HB! **São Paulo:** I. a. h. i, *Brade* s. n., HB! Pirajuçara, 2 I 1933, *Gehrt* s. n., SP! **Paraná:** Morretes 1 I 1943, *Guimaraes* s. n., RB! **Paraguá Matinhos,** 27 I 1961, *Hatschbach* 2123, SP! **Guaratuba;** Pedra Branca de Araraquara, 20 I 1964, *Hatschbach* 2330, HB! **Morretes Usina Elétrica Morumbi,** Pico de Morumbi in Serra do Mar, 4 I 1966, *Hatschbach* 13414, U! **Guaratuba,** 350 m, 6 I 1960, *Leinig* 170, HB! **Santa Catarina:** Lagoinha de Loste, Pântano do Sul, 200 m, 22 III 1971, *Braselini* 229, HB! Joinville in silvis paledosis, pr. Aeroporto, 20 II 1950, *Pabst* 515, HB! pr. Paulo Lopes 20 m in silva paludosa, 12 II 1952, *Pabst* 1364, HB! Barra do Sul, Araquari, 5 m, 12 VI 1953, *Reitz* 779, HB! Florianópolis; Costa dos Lagos, Ilha de Santa Catarina, 11 IV 1965, *Rohr* 2275, HB x2! Barra Velha, no litoral, fl. cult. 27 I 1968, *Seidel* 968, HB! pr. Barra Velha 22 I 1980, *Seidel* 1273, HB!

OTHER RECORDS: BRAZIL: Rio Grande do Sul: Lagoa dos Quadros, Capão da Canoa, *Luiz Filipe Varella* s. n. digital photos, received 23 IX 2013, AMO! Lagoa Itapeva, Arroio do Sal, *Luiz Filipe Varella* s. n. digital photos, AMO! (Varella, L. F. K., & J. Klein, www.orkuideasgauchas.net, seen 20 October 2014, photo voucher)

DISTRIBUTION AND ECOLOGY: Species endemic to the Mata Atlântica in Brazil, in the states of Rio de Janeiro, São Paulo, Paraná and Santa Catarina; (Rio Grande do Sul, fide Dungs & Pabst, 1967). Epiphytic, at 5-1000 m altitude. Flowering from January to April, in fruit in June.

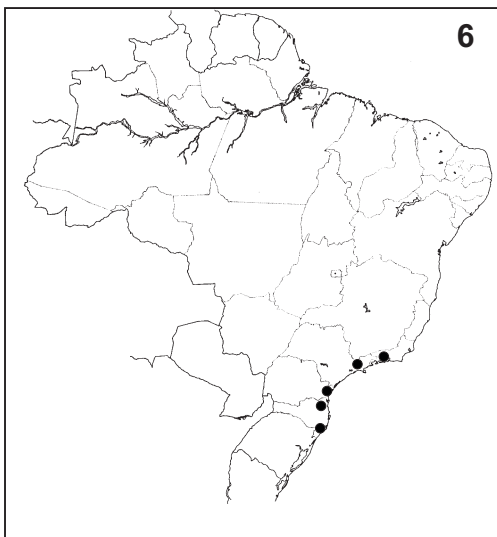
NOTE: Specimens reported for Amapá (Pabst, 1967) correspond to *E. strobiliferum*.

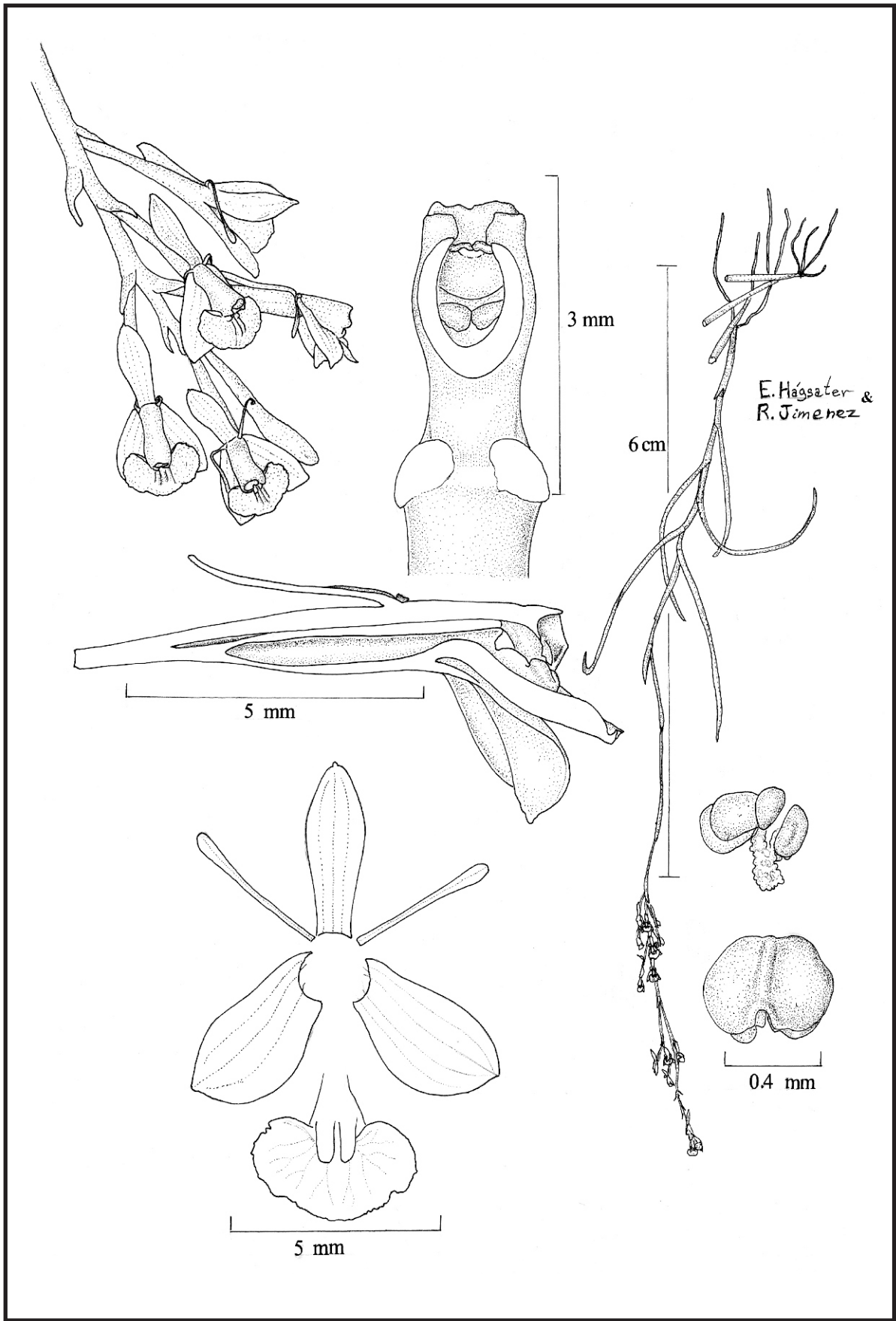
RECOGNITION: *Epidendrum rodriguesii* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the short plants, up to 17 cm long, without an evident main stem, the new stems (3-5 cm long) produced from the basal nodes or the inflorescence of the previous stem, ovary scarcely verrucose, flowers green to greenish white, sepals 3.0-3.8 mm long, 7-veined, lip triangular-cordiform, callus a single-bilobed platform, giving the appearance of two calli, disc of the lip with a central, low rib which disappears near the apex of the lip; column with a pair of wide, acute teeth. Similar to *Epidendrum strobiloides* Garay & Dunsterv., a species endemic to the Guianas, the Gran Sabana in Venezuela and the Amazon slope of Ecuador, flowering from April to June, has shorter, compact plants, 2-7 cm tall, with short stems produced from the apex of the previous stem, flowers small, pale green, (sepals 1.8-2.5 mm long, ovary 2.0-2.5 mm long), sepals 3-veined, ovary unornamented, the lip with a single callus covering 4 cavities separated by 3 low veins, with the central vein nearly reaching the apex of the lip. *Epidendrum strobiliferum* Rchb. f. is widely distributed throughout the neotropics and forms large massive plants, 20-30 cm long, with comparatively large flowers, cream to greenish white, sepals 3.4-4.3 mm long, ovary 4.6-6.0 mm long, and the callus "Y" shaped, ovary unornamented. *Epidendrum cornanthera* F. Lehm. & Kraenzl., a species from Colombia, Ecuador and the Atlantic side of southern Panama, has pendent plants, larger flowers (sepals 5-6 mm long, ovary 5-7 mm long), lanceolate sepals, the callus on the lip is a plate over two cavities, column with a pair of apical incurved teeth. *Epidendrum luckei* Bock is found along the Pacific lowlands in the Darién in Panama, through Colombia to Ecuador, below 550 m altitude, plants are up to 60 cm long, with an evident main stem, larger flowers (sepals 5.0-6.2 mm long, 5-6 mm long), flowers green somewhat suffused with brown, with the anther and apex of the column purple, lip with a tridentate callus, the mid-tooth longer, anther ending in a pair of laminar, elongate horns, column arching upwards at the apical half.

CONSERVATION STATUS: (DD). Data deficient.

ETYMOLOGY: In honor to João Barbosa Rodrigues (1842-1909) noted Brazilian naturalist, founded and directed the Museu Botânico do Amazonas in Manaus in 1883, and later directed the Jardim Botânico do Rio de Janeiro. He prepared the monumental Iconographie des Orchidées du Brésil, where this species was first illustrated (though it was only published in 1996, edited by Sprunger et al.).

REFERENCES: Dungs, F., & G. Pabst, 1967, *Epidendrum rodriguesii* in Orchidaceae Brasiliensis (Continuação), *Orquídea (Rio de Janeiro)* 29(6): 280. Pabst, C. F. J., 1967, As Orquídeas do Território Federal do Amapá, *Orquídea (Rio de Janeiro)* 29(6): 258-273. Miller, D., R. Warren, I. Moura Miller e H. Seehawer, 2006, Serra Dos Órgãos, sua História e suas Orquídeas, 567 pp. Sánchez S., L. 2007, *Epidendrum cornanthera*, in Hágsater, E. & L. Sánchez Saldaña (eds.). *Icon. Orchid.* 9: pl. 923. Sánchez, S. L. 2007, *Epidendrum luckei*, in Hágsater, E. & L. Sánchez Saldaña (eds.). *Icon. Orchid.* 9: pl. 953. Sánchez, S. L. 2010, *Epidendrum strobiliferum*, in Hágsater, E. & L. Sánchez Saldaña (eds.). *Icon. Orchid.* 13: pl. 1390. Sprunger, S., P. Cribb & A. Toscano de Brito (eds.), 1996, *Icon. Orchid. du Brésil* 1: 430; Friedrich Reinhardt Verlag, Basle.





EPIDENDRUM ROLFEANUM F. Lehm. & Kraenzl.

EPIDENDRUM ROLFEANUM F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26: 468.1899.

Type: COLOMBIA: Antioquia: in silvis haud ita densis in altiplanitie San Pedro, 2500 m, September 1884, **Friedrich Carl Lehmann 8182**. Lectotype, here designated: K! Isolectotype: AMES 10562!

Epiphytic, caespitose, sympodial **herb**, 12-18 cm long. **Roots** 1.0-1.5 mm in diameter, basal, scarce, thin, white. **Stems** 4.5-8 x 2-3 mm, simple, short, cane-like, terete at the base, laterally compressed above, thin, flexuous; base covered by sheaths 5 mm long, tubular, non-foliar, minutely striated, scarious. **Leaves** 6-7, distributed throughout the stem, alternate, spreading to sub-parallel to the stem, acicular, straight; sheath 4-13 x 2-3 mm, minutely striated, green with the apex slightly tinged brown; blade 4-11 x 0.1-0.2 cm, linear, acuminate, sub-coriaceous, semi-terete, margin entire, spreading. **Spathes** lacking. **Inflorescence** 6-12.5 cm long, apical, paniculate, erect to slightly arched, many-flowered; peduncle 3.5 cm long, thin, ancipitose, sinuous with 2-4 bracts, 5-16 mm long, distributed throughout the peduncle, tubular, ancipitose at the base, spreading towards the apical half, long-acuminate; rachis filiform with 3 racemes 0.7-1.5 cm long, each raceme straight, short, laxly few-flowered, subtended by a bract similar to the bracts of the peduncle but progressively shorter. **Floral bracts** 1-3 mm long, much shorter than the ovary, triangular, long-acuminate, embracing. **Flowers** 15-20, 3-6 per raceme, small, membranaceous, simultaneous, resupinate, purple-brown or greenish purple to greenish pink*, with the disc of the lip greenish yellow; fragrance not registered. **Ovary** 7 mm long, terete, thin, ventrally inflated along the apical half, forming an elongate vesicle. **Sepals** 3-4 x 1.5-2.0 mm, slightly convex, narrowly obovate, apex rounded, 3-veined, margin entire, spreading; the dorsal sepal free, reflexed, nearly parallel to the ovary; lateral sepals obliquely united to the column, spreading, oblique, minutely apiculate, dorsally carinate. **Petals** 3 x 0.5 mm, reflexed, free, filiform (the apex wider), 1-veined, apex rounded, margin entire, spreading. **Lip** 2 x 3.5 mm, totally united to the column, flat to slightly convex, entire, reniform, base cordate, margin erose, spreading; bicallose, the calli small, sub-globose, disc with a prominent mid-rib running to the apical sinus of the lip, and flanked by a shorter, narrower rib on each side, apical to the calli. **Column** 3 mm long, slightly arched. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles soft and granulose, as long as the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, half the length of the stigmatic cavity. **Nectary** penetrating more than half the ovary, inflated, unornamented. **Capsule** ellipsoid, 12 x 8 mm.

OTHER SPECIMENS: COLOMBIA: Antioquia: Without locality data, cult. by Edwin Granada, *Escobar* 5327, AMO! La Unión, El Chuscal, 5 km oeste de La Unión, 2650 m, *Dodson* 15285, MO x 2! El Carmen, Alto de San Lorenzo, 2600 m, 17 IX 1984, *Dodson* 15327, MO! San Pedro bei Medellín, 2500 m, 29 IX 1884, *Lehmann* 160, G x 2! Río Negro, La Ceja, 2200 m, 20 IX 1883, *Lehmann* 3143, G! LE! La Unión, 5 km W of Mesopotamia, 2400 m, 8 IV 1988, *Luer* 13075, MO! El Retiro, Hacienda "Normandía", quebrada "Argelia", 2200 m, *Ospina Hernández* 61-11, JAUM! El Retiro, Cordillera Central, Hacienda Normandía, 2500 m, 2 XII 1956, *Ospina Hernández* 64, AMES! Carretera entre "Las Palmas" y Río Negro, Laderas del Río Negro, 2300 m, 12 VIII 1957, *Ospina Hernández* 184, AMES! COL! El Retiro, Vda. Pantanillo, ca. 2400 m, VI 1969, *Ortiz Valdivieso* 269, HPUJ! El Retiro, *Ortiz Valdivieso* 4205, HPUJ! **Cundinamarca:** Suba, 2650-2700 m, *Martín Schneider* 379, S! Suba, 2600-2700 m, *Martín Schneider* 379/1, COL! Facatativá, Hacienda Cuatro Esquinas, 2800-2900 m, *Martín Schneider* 379/2, COL! **Tolima:** Ibagué, corregimiento de Juntas, entre el Mirador y el silencio, *Rincón* 290, TOL! **Valle del Cauca:** West Cordillere Über Cali, 2000 m, 23 III 1884, *Lehmann* 3751, G x 2! LE! [this is the only record we have from the Cordillera Occidental in Colombia, a mislabeling could have occurred, as *Lehmann* had been collecting a week earlier near Popayán]. **ECUADOR: Napo:** Baeza, km 84 Quito-Tena, 1850 m, 17 VI 1983, *Dodson* 14003, SEL! Baeza, km 81 on road Quito to Baeza, 1800 m, 17 XI 1985, *Dodson* 16222, RPSC! Baeza, km 199 Quito to Baeza, 1900 m, 31 IV 1987, *Dodson* 17097, MO! Cuyuja, km 73 Quito to Baeza, 2400 m, 22 VI 1987, *Dodson* 17204, MO! QCNE! Cordillera de los Guacamayos, 2010 m, 28 IV 2000, *Haro* 3, QCA! Baeza, 1800 m, *Hirtz* 853, SEL! Carretera entre Cuyuja y Baeza, 2100 m, 8 V 1990, *Palacios* 4959, QCNE! Vicinity of Baeza, 2000 m, XII 1985, *Luther* 981, MO! km 0.5 Baeza-Quito, 7000-10000 ft, VI 1983, pressed cult. 21 XII 1984, *Thurston sub Hågsater* 7472, AMO! (digital image and illustration) F! QCNE! **Morona-Santiago:** Gualaquiza, Cordillera del Cóndor, Cuangos, 20 km east of Gualaquiza, near disputed Peru-Ecuador border 03°29'57"14"W, 1500 m, 19 VII 1993, *Gentry* 80240, QCNE! Chiguinda, Hort. Ecuagenera, 1600 m, pressed cult. 8 III 2003, *Medina sub E. Hågsater* 13863, AMO! Road from Chuchumbeza to Tundeimi in the Cordillera del Condor, 1450-1650 m, 21 V 1988, *Hirtz* 3828, MO! Gualaquiza, Area de Bosque Vegetación Protectora Tambillo 3.16 S 78.50 W. 2440 m, 13 IV 2001, *Suín* 968, QCNE! **Tungurahua:** Ambato, 2500 m, *Hirtz* 1504, AMO!

OTHER RECORDS: COLOMBIA: Antioquia: Monte Santa Elena, alrededor de Medellín, ca. 2500 m, *Duque* 1045, photo, AMO! Río Negro, 2200 m, *Mesa Londoño* s.n. digital image, AMO! **Cauca:** procedente de la Bota Caucana, *Uribe Vélez sub E. Hågsater* 14630, digital images and flowers in spirit, AMO! **ECUADOR: Napo:** El Chaco-Baeza, 1500 m, *Thurston* 4068 sub *Hågsater* 7735, slide and illustration, AMO! **Zamora-Chinchipe:** Estación Científica San Francisco (03°58' S, 79°04' W), road Loja-Zamora, ca. 35 km from Loja; moist montane forest, 2000-2050 m, 12 IX 2004, *Werner* 1132, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Known from the Cordillera Central in Colombia, as well as the Cordillera Oriental in Colombia and Ecuador. Epiphytic, pendent herb growing at [1500] 2200-2900 m altitude. Flowering from April to December. The localities in central Colombia correspond as Holdridge (1987) the Low montane very wet forest (**Bmh-MB**) and Premontane wet forest (**Bh-PM**), while those on the Cordillera Oriental of the Andes in southern Colombia and Ecuador correspond to Tropical humid forest (**Bh-T**) (Fide Guillermo Reina-Rodríguez, personal communication, 2016).

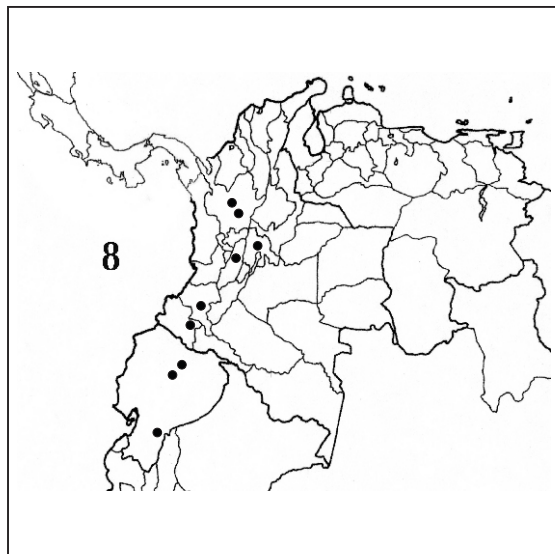
*NOTE: The plants from Colombia have purple-brown flowers, whereas those from Ecuador are greenish purple to greenish pink, but are otherwise indistinguishable. As per the analysis of the predominant vegetation, they also appear to occur in different life zones.

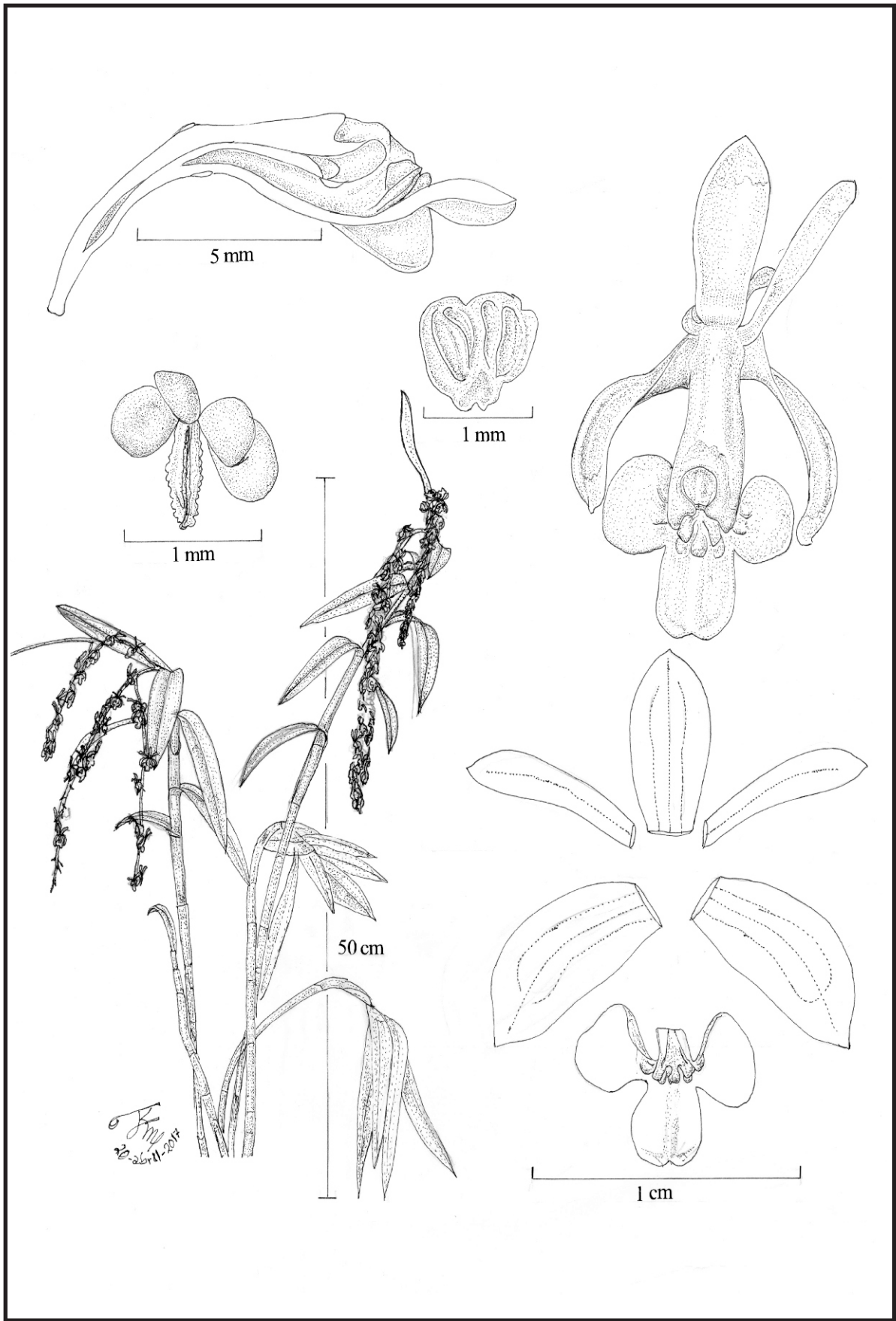
RECOGNITION: *Epidendrum rolfeanum* belongs to the Epidendropsis Group, Gracillimum Subgroup characterized by the sympodial, caespitose, relatively small plants with non-thickened stems, long, narrow, sub-coriaceous leaves, and a long, paniculate inflorescence, and delicate small flowers. The species is recognized by the acicular leaves 4-11 x 0.1-0.2 cm, the inflorescence with 3, laxly flowered racemes with 3-6 purple-brown or greenish purple flowers, sepals 3-4 mm long, dorsal nearly parallel to the ovary, and the lip entire with the margin erose. *Epidendrum gracillimum* Rehb.f. has wider leaves, 4.5-6.5 x 0.2-0.3 cm, linear-lanceolate, sepals 5 mm long, dorsal sepal spreading in relation to the column, and the lip 3-lobed, with the margin entire. *Epidendrum cryptorhachis* Hågsater, has larger plants, 17-43 cm long, leaves 2.8-10 x 0.4-0.8 cm, linear-lanceolate, inflorescence composed of 6-9 densely flowered racemes, sub-parallel to the rachis, and the flowers reddish brown, petals narrowly spatulate. *Epidendrum schlimii* Rehb.f. has linear-lanceolate leaves 1-4[5.5] x 0.2-0.3 cm, inflorescence with 3 very short, laxly few-flowered racemes of 2 flowers each, purple-brown, the base of the column and lip green, the lip widely cordiform with the margin entire. *Epidendrum physophorum* Schltr. Has linear-lanceolate leaves 3.5-6 x 0.15-0.3 cm, a many-flowered inflorescence and the ovary with a very prominent vesicle formed by the nectary behind the perianth. *Epidendrum xerophyticum* Hågsater & E.Santiago is found on the western slope of the Cordillera de los Andes in southern Ecuador, in dry scrub bush among cacti, and has shorter, wider, fleshy, thick leaves 2-4.5 x 0.4-0.6 cm, sepals 3.5 mm long, and the dorsal sepals somewhat spreading, sub-parallel to the column.

CONSERVATION STATUS: According to IUCN 2001, it qualifies as Least Concern (LC). Species with many current localities, and which has extensive habitat in acceptable condition. The species is widely widespread in both Colombia and Ecuador.

ETYMOLOGY: In honor of Robert Allen Rolfe (1855-1921), English botanist, specialized in orchids first curator of the orchid herbarium at the Royal Botanic Gardens, Kew.

REFERENCES: Hågsater, E., 2006, *Epidendrum cryptorhachis* in Hågsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5; **Icon. Orchid.** 8: t. 823. Hågsater, E., & E. Santiago, 2016, *Epidendrum xerophyticum* in Hågsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11; **Icon. Orchid.** 15(2): t. 1600. Holdridge, L., 1987, Ecología basada en zonas de vida, IICA, San José Costa Rica, 216 pp. IUCN Red List Categories and Criteria version 3.1, 2001.





EPIDENDRUM SANCTAE-ROSAE Hagsater, Sauleda, Uribe Vález & E.Santiago

Plate 1657

EPIDENDRUM SANCTAE-ROSAE Hágsater, Sauleda, Uribe Vélez et E.Santiago, sp. nov.

Type: COLOMBIA: Cauca; Mun. Santa Rosa; Santa Rosa, upper reaches of the Caquetá river, 1600 m, November 2016, **Ruben P.**

Sauleda sub Carlos Uribe Vélez s.n., Holotype: HPUJ! (illustration and photo voucher) Digital images of pretype AMO!

Similar a *Epidendrum purum* Lindl. but the stems only slightly thickened, without forming a fusiform pseudobulb, inflorescence, paniculate, nutant, flowers densely compact on a short ovary, sepals 6-7 mm long, petals narrowly oblanceolate, apex rounded, lip lateral lobes transversely elliptic; mid-lobe sub-quadrangle, corners rounded, apex somewhat emarginate.

Epiphytic, sympodial, caespitose **herb**, ca. 30-63 cm tall. **Roots** basal, thick, fleshy. **Stems** 28-53 x 0.8-1.1 cm, cane-like, terete at base, laterally compressed towards the apex, slightly thickened in the middle (though without forming an evident fusiform pseudobulb), erect, straight, the base covered by non-foliar, tubular, scarious sheaths. **Leaves** 8, distributed along the apical half of the stems, articulate, alternate, spreading and somewhat arched, green with the margin tinged with reddish purple; sheath 1.7-5.5 x 0.8-1.1 cm, tubular, minutely striated, tinged with reddish purple; blade 8.5-15 x 1.3-2.5 cm, oblong-lanceolate, acute, margin entire, spreading. **Spathes** lacking. **Inflorescence** 31 cm long, apical, paniculate, flowering only once, nutant, many-flowered, the flowers densely packed throughout the branches, on very short ovaries; peduncle ca. 2.0 cm long, laterally compressed, straight, without bracts; main raceme 28 cm long, with 2 branches 20-22 cm long, nutant. **Floral bracts** 2-3 mm long, shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 4-6 mm long, terete, thin, slightly inflated behind the perianth, longitudinally striated, green, somewhat tinged rose-purple, scarcely pubescent. **Flowers** 109, 45 on the main raceme, 25-39 on the branches, opening simultaneously, resupinate, pale green, sepals, petals and apex of the column tinged rose-purple; fragrance nor registered. **Sepals** somewhat thick, succulent, slightly concave, 3-veined, the apex rounded, minutely apiculate, unornamented, margin entire, spreading; dorsal sepal 6 x 3 mm, free, reflexed, parallel to the ovary; lateral sepals 7 x 3 mm, obliquely united to the base of the column, partly spreading, sub-parallel to the column, slightly oblique. **Petals** 6 x 1.2 mm, free, reflexed, narrowly oblanceolate, apex rounded, 1-veined, unornamented, margin entire, spreading. **Lip** 4.5 x 7 mm, united to the column, deeply 3-lobed, base cordate, margin entire, spreading, disc provided with 3 very short, reaching the base of the mid-lobe, prominent ribs, united at the base, apically narrowly rounded, the mid-rib straight, the lateral ribs divergent, formed by a simple rib with a wider, sulcate rib on top; lateral lobes 2 x 3 mm, transversely elliptic; mid-lobe 2.5 x 2.5 mm, sub-quadrangle, corners rounded, apex somewhat emarginate. **Column** 6 mm long, straight, base thin, gradually widened towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, reniform. **Pollinia** 4, obovoid, similar in size and shape. **Rostellum** apical, split. **Lateral lobes of the stigma** very small. **Nectary** shallow, without penetrating the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

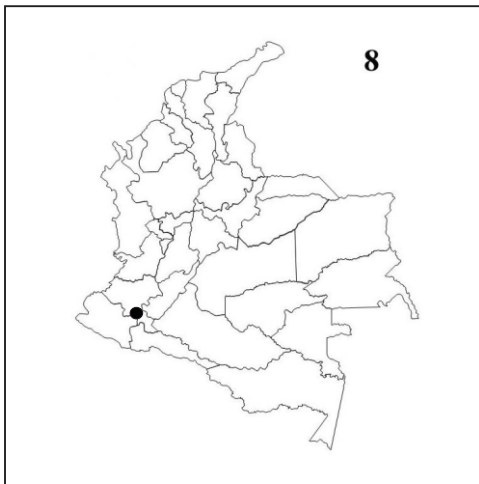
DISTRIBUION AND ECOLOGY: Known only for southeast Cauca department, the *Bota Caucana*, from the upper basin of the Caquetá river, at 1600 m altitude. Epiphytic. Flowering in November.

RECOGNITION: *Epidendrum sanctae-rosae* belongs to the Amblostomioides group recognized by the sympodial habit, with somewhat fusiform-thickened stems, sub-coriaceous, bilobed leaves, paniculate inflorescence, and ovary or flowers often pubescent, lip 3-lobed. The species is recognized by the nutant, many-flowered inflorescence, the flowers densely packed throughout the branches, on very short ovaries; the flowers small, sepals 6 x 3 mm, disc of the lip provided with 3 very short, prominent ribs, reaching the base of the mid-lobe, united at the base, apically narrowly rounded, the mid-rib straight, the lateral ribs divergent, formed by a simple rib with a wider, sulcate rib on top; lateral lobes 2 x 3 mm, transversely elliptic; mid-lobe 2.5 x 2.5 mm, sub-quadrangle, corners rounded, apex somewhat emarginate. *Epidendrum purum* Lindl. has oblong leaves 15.6-20.8 x 1.3 cm, an erect inflorescence with larger flowers, sepals 12-13 mm long, narrowly lanceolate, acuminate, dorsal sepal spreading, petals linear, spreading, and the apex of dolabriform lateral lobes of the lip acute. *Epidendrum subpurum* Rchb.f. has a racemose inflorescence, laxly few-flowered, sepals 8 mm long, lateral lobes of the lip ovoid, acute.

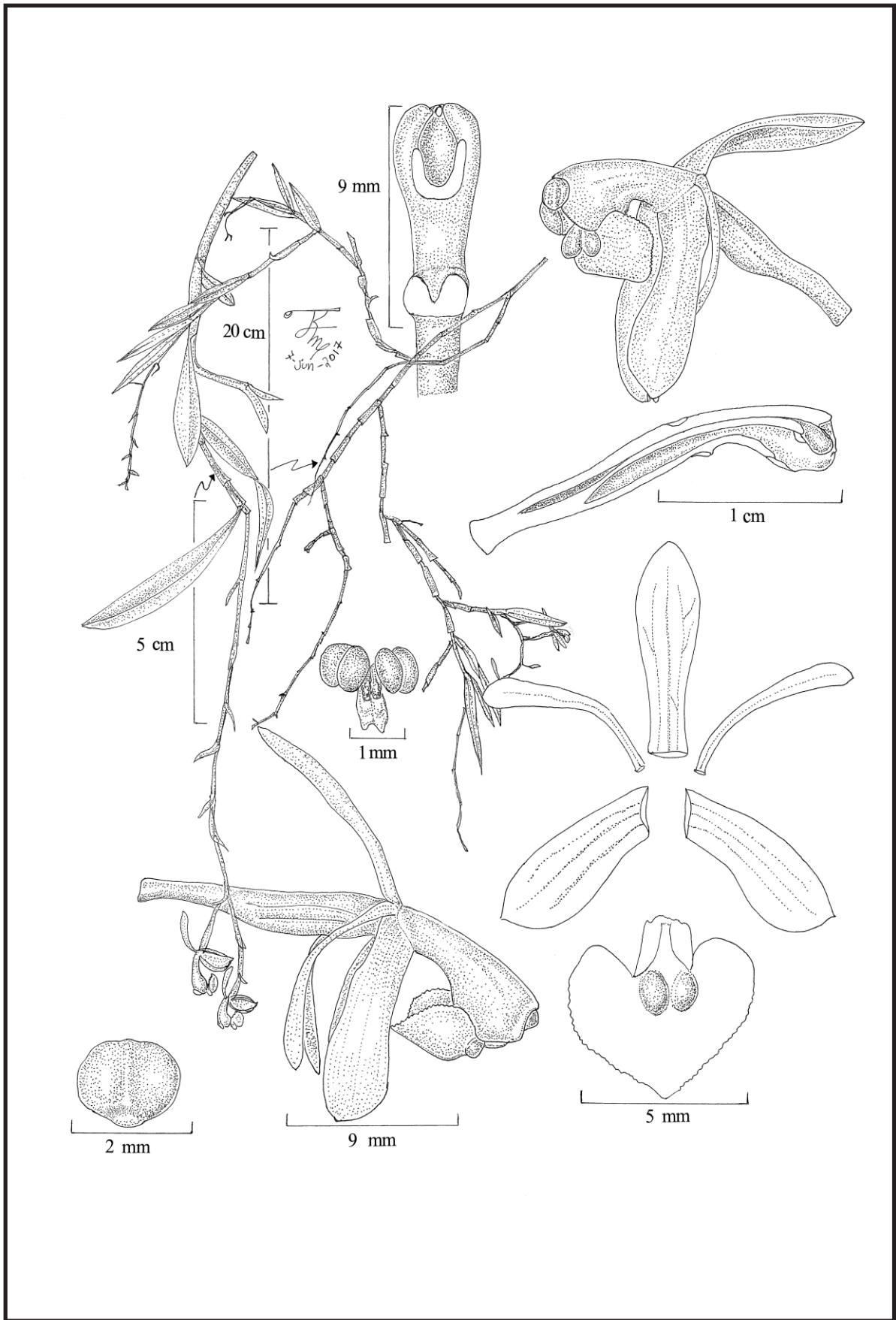
CONSERVATION STATUS: DD. Known presently from a single collection. There are four protected areas in the region: Alto Fragua Indivasi area (68,000 ha); Nature reserve Upper basin of the Mocoa river (34,000 ha); Biological Corridor Guácharos Puracé (73,000 ha); and the Serrania de los Churumbelos (87,760 ha). It is presumed that *E. sanctae-rosae* still has well-preserved areas. (parquesnacionales, downloaded 2017).

ETYMOLOGY: In reference to the town and municipality of Santa Rosa, in the *Bota Caucana*, Department of Cauca, on the Amazon slope of the Cordillera Oriental of the Andes, upper reaches of the Río Caquetá, where the type was collected.

REFERENCES: <http://runap.parquesnacionales.gov.co/>



Authors: E. Hágsater, R. P. Sauleda, C. Uribe V. & E. Santiago Illustrators: R. Jiménez M. Photo: C. Uribe V. Editors: E. Hágsater & E. Santiago



EPIDENDRUM SISNANENSE Hágsater & E.Santiago

Plate 1658

EPIDENDRUM SISNANENSE Hágsater et E.Santiago, *sp. nov.*

Type: ECUADOR: Chimborazo; Mun. Alausi, Carretera Guamoto-Macas, Parque Nacional Sangay, sendero Sisñan, 3417 m, 7 April 2017, **Eric Hágsater, Francisco Tobar, Juan Carlos Monge, Gerardo A. Salazar, Itzi Fragoso Martínez, Adriana Benítez Villaseñor, Efraín Freire 15127**. Holotype: QCNE! (illustration voucher, plant habit). Isotypes: AMO! (pressed specimen and flowers in spirit, illustration voucher) MEXU! (Photo voucher: digital images of pretype).

Similar to *Epidendrum erosum* Ames & C.Schweinf. but all parts more delicate in every way; plants pendent (vs. erect), inflorescence pendent (vs. arching), leaves narrowly lanceolate, acuminate, grass-like (vs. elliptic-lanceolate, apex acute to obtuse, sub-coriaceous), flowers yellowish brown, immaculate (vs. greenish yellow with the lip greenish yellow marked with purple-black), petals 11 x 1 mm, deflexed, linear the apex somewhat dilated (vs. petals 11.5 x 2.5-3.0 mm, spreading, cuneate-spatulate).

Epiphytic, pendant, branching **herb**, ca 40 cm long. **Roots** thin, basal. **Stems** 3-17 x 0.15-0.3 cm, cane-like, terete at bases, somewhat laterally compressed towards the apex, each successive stem produced from a sub-apical internode of the previous stem, base covered by sheaths 0.6-1.4 cm long, tubular, non-foliar, minutely striated. **Leaves** 4, distributed along the apical 2/3 of each stem, grass-like, distichous, articulate, pendent, green, concolor; sheaths 0.8-1.4 x 0.15-0.3 cm, tubular, minutely striated, rugose, yellowish green, tinged brown; blade 1.8-6.7 x 0.4-0.8 cm, narrowly lanceolate, acuminate, margin entire, spreading. **Spathe** lacking. **Inflorescence** 5.5-12.5 cm long, racemose, laxly few-flowered, pendent; pedicel 1.3-5.0 cm long, terete, thin; rachis 3.5-9.0 cm long, terete, thin, sinuous, green with purple dots. **Floral bracts** 3-10 x 2-3 mm, shorter than the ovary, narrowly triangular, acuminate, embracing. **Flowers** 5-10, simultaneous, resupinate, sepals and petals yellowish brown (turning nearly totally brown with age), lip and column yellow; fragrance none detected. **Ovary** 13-16 mm long, terete, thin at base, inflated ventrally along the apical 2/3, green with pale purple tinge, minutely striated. **Sepals** 12 x 3 mm, oblanceolate-spatulate, apex rounded, minutely apiculate, 3-veined, margin entire, revolute; dorsal sepals free, slightly reflexed; lateral sepals obliquely united to the column, convex, depressed, nearly parallel to each other. **Petals** 11 x 1 mm, free, strongly deflexed, arching, (often hidden behind the lateral sepals), linear-ob lanceolate (dilated towards the apex), 1-veined, apex rounded, margin entire, slightly revolute. **Lip** 5 x 6.5 mm, united to the column, convex, entire, widely cordiform, base slightly cordate, apex sub-acute, margin denticulate; disc bicallose, the calli prominent, sub-globose. **Column** 10 mm long, somewhat arched, basal half thin, abruptly widened along the apical half. **Clinandrium-hood** short, margin entire. **Anther** reniform, with a low, wide rib in front, yellowish rose, 4-celled. **Pollinia** 4, obovoid; caudicles somewhat longer than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, occupying 1/4 the length of the stigmatic cavity. **Nectary** penetrating half of the ovary, inflated, unornamented. **Capsule** 4.7 x 2.5 cm; pedicel 9 mm long, terete, thin; body 3.0 x 2.5 cm, spherical; apical neck 8 mm long.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

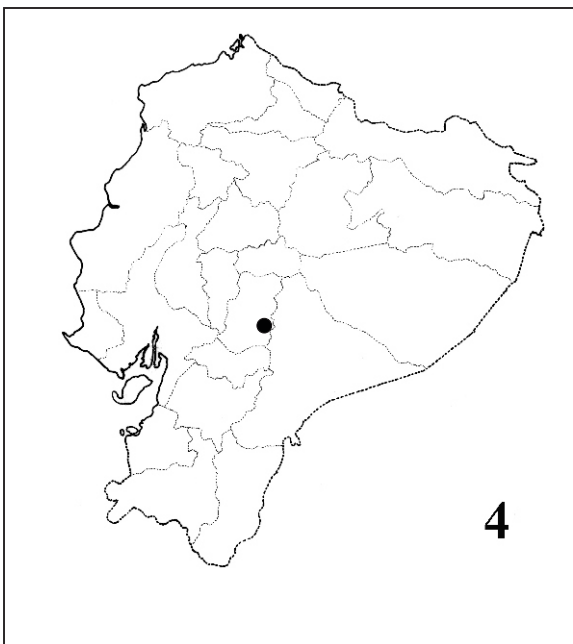
DISTRIBUTION AND ECOLOGY: Known presently from a single collection of the upper western slope of the Cordillera Oriental de Los Andes in central Ecuador, epiphytic growing on the underside a moss-covered branch of *Escallonia myrtilloides* L.f., at 3417 m altitude, in cloud forest below paramo.

RECOGNITION: *Epidendrum sisnanense* belongs to the Incomptum Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, roots generally only from the base of the primordial stem, and apical inflorescence with fleshy, yellow to green to violet-green to black flowers with short ovaries, the lip entire to 3-lobed. The new species is recognized by the pendent plants with short stems, produced from sub-apical internode of the previous stem, grass-like leaves 1.8-6.7 x 0.4-0.8 cm, pendent, narrowly lanceolate, acuminate, inflorescence 5.5-12.5 cm long, laxly few-flowered, with 5-10 yellowish brown flowers, the lip and column yellow, petals 11 x 1 mm, deflexed, linear-ob lanceolate, apex rounded, and lip widely cordiform, its margin denticulate, and ovary inflated along the apical 2/3, ventrally. It is reminiscent of a very delicate version of *Epidendrum erosum* which has sturdy erect plants, leaves 3.5-6.2 x 0.85-1.4 cm, sub-coriaceous, elliptic-lanceolate, obtuse to acute, inflorescence 4.5 cm long, up to 12 flowered, but the flowers densely aggregate on the rachis, flowers greenish yellow to green, the lip and apex of the column marked with purple-black, and petals 11.5 x 2.5-3.0 mm, spreading, cuneate-spatulate, the lip reniform. *Epidendrum sarcotalix* Rchb.f. also has erect, more vigorous plants, leaves sub-coriaceous, ovate-elliptic, 3.5-5.5 x 2.0-2.5 cm, apex rounded, inflorescence 6 cm long, with 12 flowers, sepals 15-17 mm long, petals oblanceolate-spatulate, 14 x 3.5 mm and lip with margin entire.

CONSERVATION STATUS: DD. Data deficient. Presently known from a single collection.

ETYMOLOGY: In reference to the locality where it was collected, the Sisñan path that leads to Sisñan Lake, below Laguna Altillo, in the Parque Nacional Sangay.

REFERENCES: Santiago, E. & E. Hágsater, 2007, *Epidendrum erosum* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: t. 933. Santiago, E. & E. Hágsater, 2009, *Epidendrum sarcotalix* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1289.



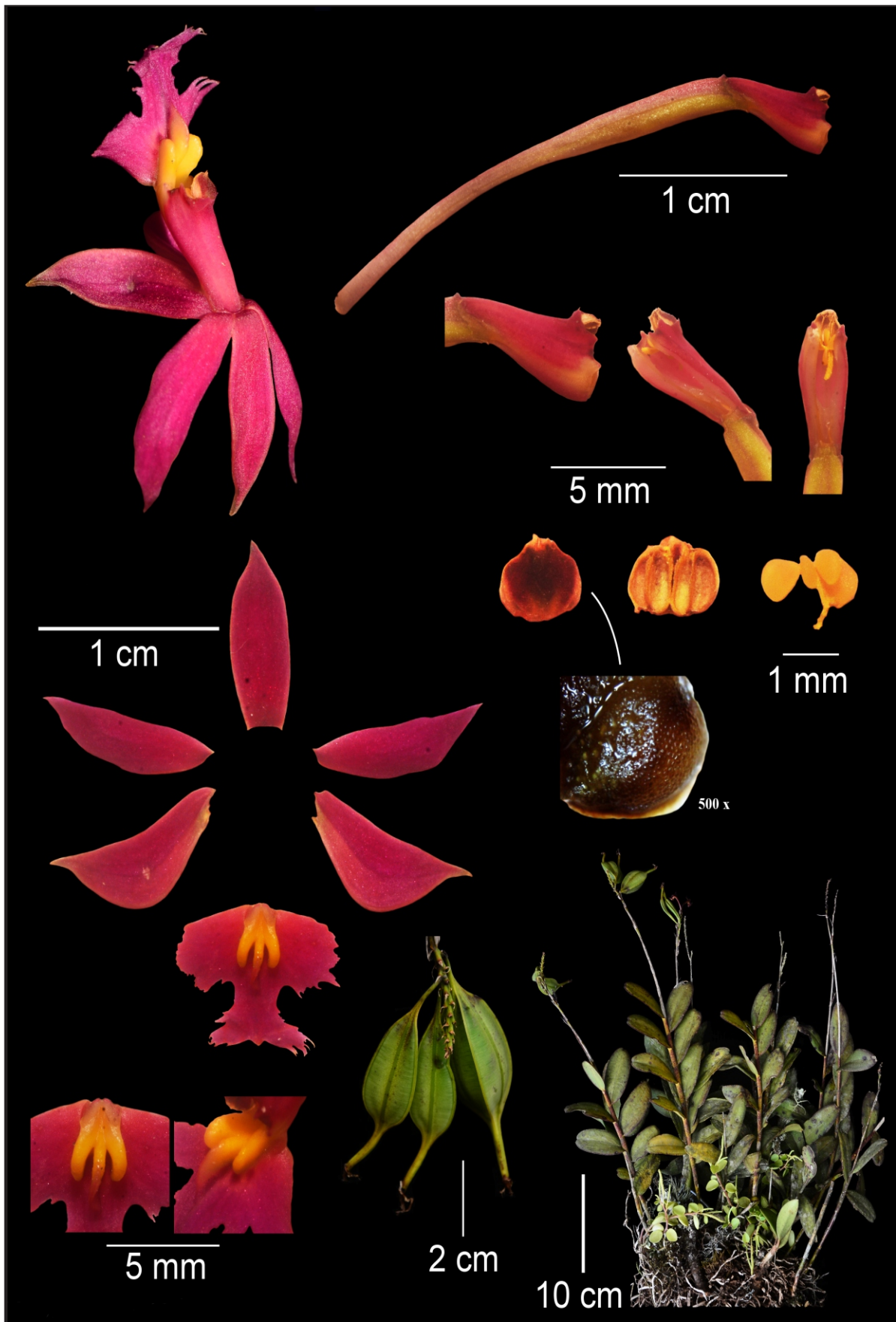
Authors: E. Hágsater & E. Santiago Illustrator: R. Jiménez M.

Photo: E. Hágsater Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1658



EPIDENDRUM SONIA-JUNIORUM Zambrano & Hágsater

Plate 1659

EPIDENDRUM SONIA-JUANIORUM Zambrano et Hágsater, sp. nov.

Type: ECUADOR: Prov. El Oro, Cantón: Piñas, sector la Cruz, 1300 m, 23 Agosto 2007, **Bosco Javier Zambrano Romero 152**. Holotype: QCNE! Isotype: Herb. J. Zambrano! Photographs of Pretype, Herb. J. Zambrano and AMO! (LCDP and photo vouchers).

Similar to *Epidendrum thermophilum* Hágsater & Dodson but the plants are epiphytic, flowers fuchsia colored, calli and base of mid-rib yellow (vs. reddish purple, calli and apical teeth of the column yellow), lip cuneate at base (vs. basal margins straight and somewhat retrorse), lateral lobes of the lip oblique, sub-rectangular, posterior margin straight, apical margin lacinate (vs. lip obscurely 3-lobed, lateral lobes obtuse with the distal margin deeply fimbriate, mid-lobe sub-quadrate, margins deeply fimbriate).

Epiphytic, sympodial, caespitose **herb**, 35-70 cm tall. **Roots** 1.5-2.5 mm in diameter, fleshy, flexuous, whitish, from the base of the stems. **Stems** 18-42 x 0.5-0.7 cm, simple, cane-like, terete, straight to slightly curved, the basal part covered by several non-foliar sheaths, chartaceous, grayish, imbricated, tubular. **Leaves** numerous, distributed along the apical half of the stem; sheaths 2-4 x 0.5-0.7 cm, tubular, thin, smooth to slightly striated, green, sometimes with purple spots; blade 5.0-9.5 x 2.0-3.0 cm, oblong-elliptic, apex emarginate, coriaceous, green, margin of the upper side and the lower side sometimes purple. **Inflorescence** 17-27 cm long, apical from the mature stem, simple to pluri-racemose, erect, producing 1-2 new racemes from the upper nodes of the peduncle; peduncle 13 cm long, elongate, terete, straight to slightly curved, covered by 5-6 tubular bracts, chartaceous, grayish, imbricated, acuminate. **Floral bracts** 4-11 mm, much shorter than the ovary, triangular, chartaceous, acuminate. **Ovary** 25-45 x 1.5-2.0 mm, green, sometimes reddish green, thin, terete, not inflated. **Flowers** successive, ca. 6-8 open at a time, with floral buds in various stages of development, non-resupinate, fuchsia, apex of the column and anther darker fuchsia, calli and base of the mid-rib yellow; fragrance none. **Sepals** somewhat concave, acute, margin entire, without dorsal keel; dorsal sepal 9.2-11 x 3.2-3.8 mm, reflexed, elliptic, 5-7-veined; lateral sepals 9.8-12 x 3.5-3.8 mm, partly spreading, obovate-elliptic, oblique, falcate, 7-veined. **Petals** 9.8-10 x 2.7-3.3 mm, spreading, elliptic, falcate, acute, 5-veined, with the lateral veins branching. **Lip** 9-10 x 9-10 mm, united to the column, 3-lobed, base cuneate; bicallose, the calli laminar, hemi-elliptic, divergent, with a prominent mid-rib, laminar, progressively narrower towards the apex which reaches the base of the isthmus; lateral lobes 3.7-3.8 x 3.0-4.0 mm, oblique, sub-quadrate, posterior margin entire, apical margin lacinate; mid-lobe 3.0 x 3.7 mm, formed by a narrow isthmus in the basal half, rectangular, apical half bilobed, the lobes divergent, with a mucro in the apical sinus. **Column** 6-7 x 3.0-3.5 mm, slightly curved towards the base, with a tooth on each side at the apex. **Clinandrium-hood** obsolete, margin erose. **Anther** 1.3 x 1.2 mm, sub-spherical, papillose, apex acute, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles, elongate; viscidium transparent. **Rostellum** apical, slit. **Capsule** 50-60 x 18-20 mm, pedicel 10 mm long, body 30-35 x 18-20 mm, apical neck 18 mm long, thin.

OTHER SPECIMENS: ECUADOR: El Oro: Cantón Piñas, sector San Jacinto, 1400 m, 8 VIII 2016, *Zambrano B-1793*, QCNE! Cantón Piñas, sector San Jacinto, 1400 m, 12 VIII 2016, *Zambrano B-1794*, QCNE!

DISTRIBUTION AND ECOLOGY: Known presently only from Ecuador, in the southwestern province of El Oro, on the western slopes of the Andes, at 1300-1400 m altitude. Plants growing epiphytically on *Mauria* sp. and *Clusia* sp. with scarce moss in semi-deciduous montane forest. Flowering in August.

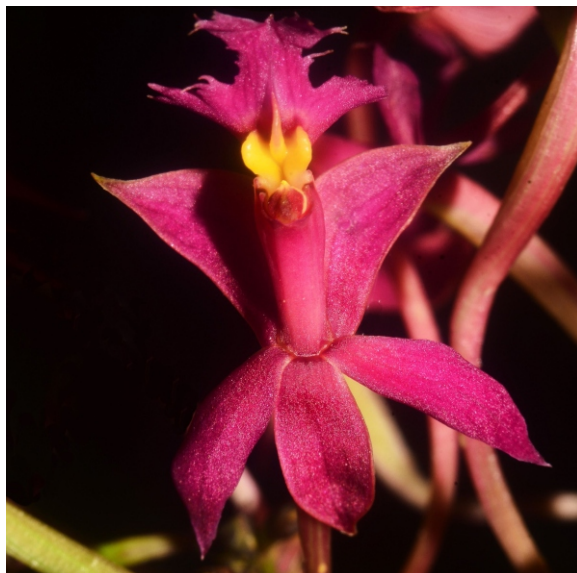
RECOGNITION: *Epidendrum sonia-juaniorum* belongs to the Carinata Subgroup of the Amphiglottis Group which is characterized by the caespitose habit, simple, terete, stems, numerous, oblong-elliptic, leaves, mostly elongate inflorescence, with a raceme of successive flowers, the lip with two calli and a prominent, flexuous keel. The species is recognized by the fuchsia colored flowers, calli and mid-rib yellow, sepals 11-12 mm long, column 6-7 mm long, and the habit which appears to be exclusively epiphytic. It is similar to *Epidendrum thermophilum* Hágsater and Dodson which also has non-resupinate, flowers but the color reddish-purple, lip obscurely 3-lobed, basal margins straight and somewhat retrorse, lateral lobes obtuse with the distal margin deeply fimbriate, mid-lobe sub-quadrate, margins deeply fimbriate, and is found terrestrial in northern Ecuador. *Epidendrum ibaguense* Kunth, which has resupinate flowers about the same size, sepals being 12-13 mm long, column 8 mm long, orange-red, the lip orange with some dots on the disc, column orange-red, sometimes orange towards the apex; this species is found exclusively terrestrial in the highlands of northern Colombia on the Cordillera Central and Cordillera Oriental of Colombia. *Epidendrum mimopsis* Hágsater & Dodson, from Zumba, on the southern tip of Ecuador and on the Amazon side of the Andes, has somewhat similar flowers, but these are purple, with yellow calli and mid-rib, sepals 14-15 mm long. *Epidendrum aromoense* Cornejo & Hágsater, has red flowers with a complex yellow callus, and is also found epiphytic in known from the seasonally foggy very dry coastal forests of El Aromo and Montecristi, located ca. 20 km apart from each other in the Province of Manabí in western Ecuador, at ca. 200 m altitude.

CONSERVATION STATUS: DD. Data deficient. As presently known the species is restricted to two known populations, in very disturbed forest remnants, due to anthropogenic activity. Trees present 1-3 plants per perophyte. Due to the fragmentation of the habitat, the known populations (La Cruz and San Jacinto) are isolated, disconnected, and outside protected areas. No other specimens have been detected in similar forests in the region. It should be considered in some risk category, and efforts to reproduce it cultivation should be made.

ETYMOLOGY: In honor of Sonia Romero, Juan Zambrano and Juan Pablo Zambrano, parents and brother of the first author, who have contributed substantially in his research of the Orchidaceae family.

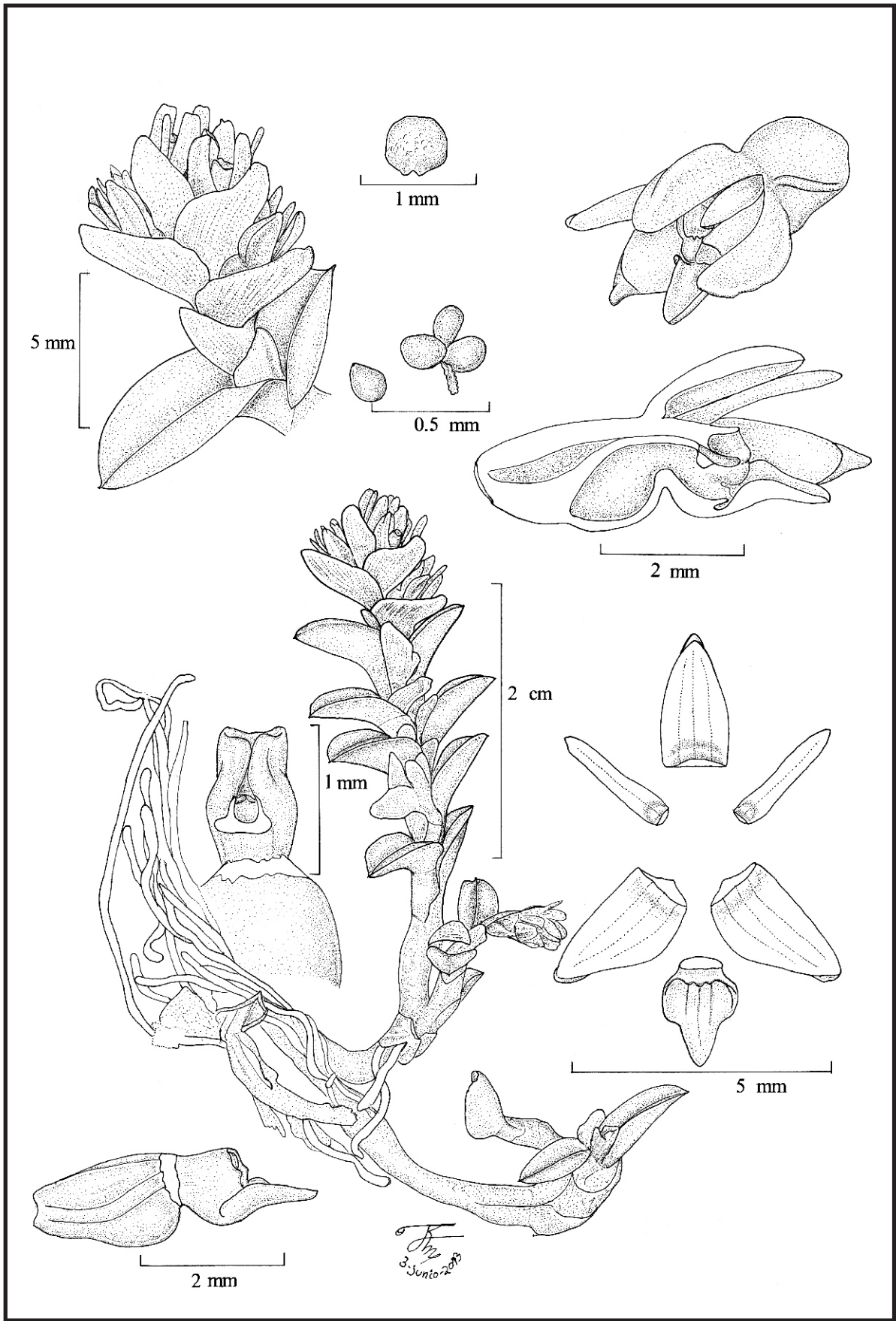
COLLECTING PERMIT: Zambrano, B., 2016. Diversidad y Distribución geográfica de la Familia Orchidaceae del cantón Piñas, Provincia de El Oro. Proyecto Orquiecuador & Gloxinias. Permiso: N.006-IC-FLO-DPAEO-MAE.

REFERENCIAS: Cornejo, X., & E. Hágsater, 2014, *Epidendrum aromoense* (Orchidaceae, Laeliinae), a new species from the coastal dry forests in western Ecuador, *Harvard Pap. Bot.* 19(2): 185-188, figs. 1-3. Hágsater, E., & C. H. Dodson, 1993, *Epidendrum thermophilum* in E. Hágsater & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, *Icon. Orchid.* 2: t. 193. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum mimopsis* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, *Icon. Orchid.* 7: t. 761.



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Photo: B. Zambrano Editors: E. Hágsater & E. Santiago
ICONES ORCHIDACEARUM 16(1). 2018. Plate 1659



EPIDENDRUM STROBILOIDES Garay & Dunsterv.

Plate 1660

EPIDENDRUM STROBILOIDES Garay & Dunsterv., Venez. Orchid. III. 4: 104. 1966.

Type: VENEZUELA: Edo. Bolívar: Cerro Los Barrancos, 25 km al Este del Cerro Bolívar, vertiente noreste, por debajo de la cumbre, [drawn May 1965], J. C. Ruckmick sub Galfrid Clement Keyworth Dunsterville 707. Holotype: AMES!*

Epiphytic, repent or pendent, monopodial, branching herb, 2-7 cm long. **Roots** up to 1 mm thick, basal, only from the primary stem, thin, flexuous. **Stems** 1.5-2.8 x 0.1-0.2 cm, short, the new stems produced from the base of the inflorescence of the previous stem, thus appearing to be much longer, terete at base, laterally compressed towards the apex, fractiflex, the branches generally smaller than those from which they are produced, but also can be of the same size, rarely longer. **Leaves** 2-4[8] per stem, (7-8 on primary stem, 2-5 on the successive branches), spreading, distributed throughout the stem, articulate, carinate, deciduous, succulent, distichous; sheath 1.5-4.5 mm long, tubular, rugose; blade 0.5-1.0 x 0.3-0.5 cm, carinate, ovate-elliptic when spread, apex acute, mucronate, margin entire, surface minutely rugose. **Spathes** absent. **Inflorescence** 0.8-1.0 cm long, apical, simple, distichous; peduncle 1-2 mm long, covered by 1, or rarely 2 bracts, similar to the floral bracts. **Floral bracts** 3.4-4.5 mm long, longer than the ovary, slightly imbricated, o oblong-ovate, obtuse, scarious. **Flowers** 3-4, opening in succession but eventually all open at one time, pale green to creamy green, apparently without fragrance. **Ovary** 2.0-2.5 x 1.3-1.5 mm, ventrally inflated along the apical half, forming a prominent vesicle, unornamented. **Sepals** 1.8-2.5 x 1.0-1.3 mm, partly spreading, ovate-lanceolate, narrowly rounded, coriaceous, succulent, with a prominent dorsal keel, 3-veined, margin entire, spreading; lateral sepals 1.5 mm wide, oblique. **Petals** 2.0-2.5 x 0.4-0.5 mm, partly spreading, linear, obtuse, 1-veined, margin entire, spreading. **Lip** 2.0-1.4 mm, united to the column, entire to shallowly 3-lobed, base cuneate; callus a transverse platform, fleshy, apical margin sinuate, with 4 small cavities underneath, separated by 3 low veins, the central one nearly reaching the apex of the lip; if entire ovate, if 3-lobed lateral lobes semi-orbicular; mid-lobe triangular, apex narrowly rounded. **Column** 1.1 mm long, straight, short, widened towards the apex. **Clinandrium** short, margin entire. **Anther** obovate, 4-celled, unornamented. **Pollinia** 4, obovoid, sub-equal, laterally compressed; caudicles soft and granulose, nearly as long as the pollinia. **Rostellum** sub-apical, slit. **Nectary** ½ as long as the ovary, prominently inflated behind the perianth, unornamented. **Lateral lobes of the stigma** short, 1/3 the length of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: VENEZUELA: Bolívar: Gran Sabana, Parque Nacional Canaima, La Escalera 107-118 km al S de El Dorado, 600 m, 2 IV 1985, *Holst* 2087, MO! Piar, Parque Nacional Canaima, Amaruay-tepui, summit on W edge E of Auyán-tepui, W of Aparaman-tepui, 1030 m, 27 V 1986, *Holst* 2962, MO! Gran Sabana, Parque Nacional Canaima, Roscio, La Escalera km 125 N von El Dorado, 1000 m, 19 III 1959, *O. Renz* 9409, RENZ! **Miranda:** Acevedo, zwischen Santa Teresa und Altagracia de Orituco, Umgehung von Los Alpes, 1200 m, 14 VIII 1956, *O. Renz* 8704, RENZ! **Amazonas:** Sierra Parima, Alto Orinoco, a lo largo de la frontera Venezolana-Brasilera, a unos 45 km al Noroeste de las cabeceras del Río Orinoco, 1300 m, 18 V 1972, *Steyermark* 105929, AMES! NY! **FRENCH GUIANA:** Trace Galbao-Sud, Saül, 26 VII 1979, *Determann* 117, CAY! Mont Galbao, Secteur Sud, 600 m, 27 I 1986, *Granville* 9011, CAY! Montagne de Kaw, km 38-44, 280-300 m, 12 V 1986, *Luer* 12234, MO! **ECUADOR: Napo:** Baeza, Cordillera de Guacamayo on eastern slope on road from Baeza to Tena, km 45-50 Archidona-Baeza, 1850 m, 22 VI 1987, *Dodson* 17217, AMO! K (sketch), by Szlachetko, AMO! MO! QCNE!

OTHER RECORDS: VENEZUELA: Bolívar: Cerro Los Barrancos, 25 km ESE of Cerro Bolívar, NE side of hill, VI 1962, *Dunsterville* 707, K! (illustration, 1962, description, flowers in spirit, K 41862 000). Gran Sabana, Parque Nacional Canaima, km 809.5 Puerto Ordaz-Santa Elena de Uairén, al N de Río Kamoirán, entre carretera y mina de arenisca, 2a curva al S de Uruyguaray, 1160 m, 22 I 2013, *Hágsater* 14465, AMO! (illustration voucher, digital photos AMO!)

DISTRIBUTION AND ECOLOGY: From the Guyana Shield, Venezuela to the French Guyana, in montane forests and on isolated trees in arbustal tepuyano in the Gran Sabana (Venezuela) (*Clusia* sp.) on branches with lichens, under stressed, windy conditions, at 280-1850 m altitude, the eastern end of the Cordillera Costanera (Miranda, Venezuela), and from a single collection on the eastern slope of the Cordillera Oriental de los Andes in central Ecuador. Flowering in April-July.

***NOTE:** There are two specimens *Dunsterville* 707, one at AMES, dated 1965, which corresponds to the plant segment on the upper right-hand corner of the illustration published with the original description. We consider this one to be the holotype. There is a second specimen, flowers in spirit, together with an earlier illustration and the original typewriter description by Dunsterville, and which corresponds to a collection made in May 1962, and is word for word the published original description. Gustavo Romero has commented (personal comm., 2013) that Dunsterville used the same number sometimes for different plants of the same species, a practice which was common at the time.

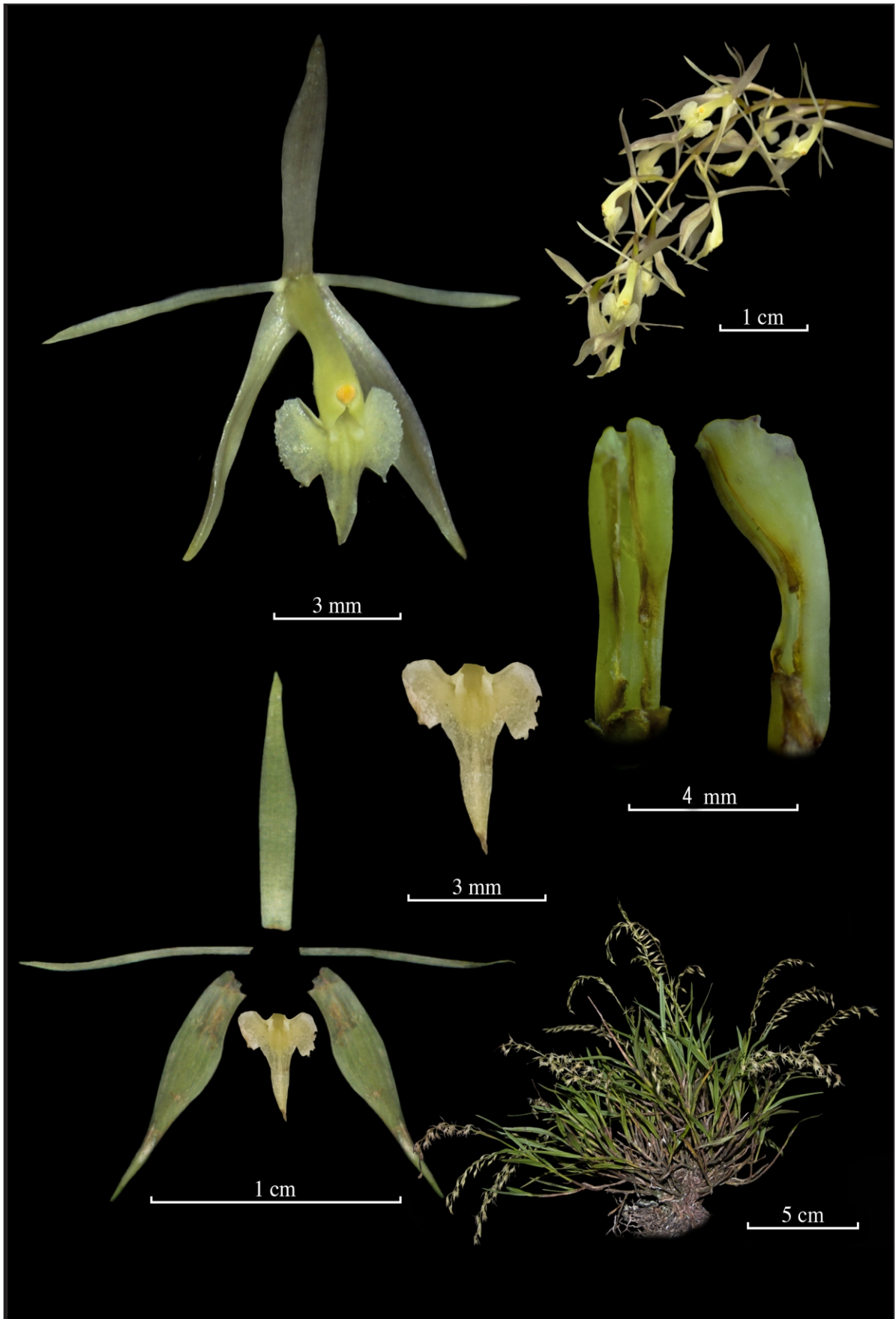
RECOGNITION: *Epidendrum strobiloides* belongs to the Ramosum Group which is characterized by the sub-monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Flexicaule Subgroup which has a straggling plant habit, where the main stem is not very evident, and the sepals have a dorsal keel which is generally prominent. The species is recognized by the very small plants, stems short and produced from the apex of the previous stem, sometimes branching, plants very compact, distichous inflorescence with up to 4 pale green to creamy green, small flowers; sepals 1.8-2.5 mm long, 3-veined, ovary 2.0-2.5 mm long, ventrally prominently inflated, forming a vesicle, lip narrowly triangular-cordiform, with a single transverse, sinuate callus covering 4 small cavities which are separated by the 3 low veins of the disc, the central vein nearly reaching the apex of the lip. Similar to *Epidendrum strobiliferum* Rchb.f., widely distributed throughout the neotropics, and forming large plants (20-30 cm long), larger flowers, sepals 3.4-4.3 mm long, ovary 4.6-6.0 mm long, lip with a "Y" shaped callus, and the column with an apical acute process on each side. *Epidendrum cornanthera* F.Lehm. & Kraenzl. grows along the Atlantic slope of Panama and the Pacific slope of Colombia and Ecuador, below 650 m altitude, has larger, pendent plants, larger flowers, (sepals 5-6 mm long, ovary 5-7 mm long), sepals lanceolate, lip triangular, callus of the lip a plate over two cavities; column with an apical, incurved tooth on each side. *Epidendrum luckei* Bock is found along the Pacific slope from the Darién in Panama to Ecuador below 550 m, has plants up to 60 cm long, with a main stem, and short branches, larger flowers (sepals 5-6.2 mm long), pale green somewhat suffused with brown, the anther and apex of the column purple, lip triangular, callus 3-dentate, with the mid-tooth somewhat longer, and the anther ending in a pair of elongate, laminar horns.

CONSERVATION STATUS: (DD). Data deficient. Photographed recently in the Parque Nacional Canaima.

ETYMOLOGY: In reference to the similarity to *Epidendrum strobiliferum*, and that name from the Greek στροβίλος, a spinning top or pine-cone, in that due to the similarity of the inflorescence in fruit, with the capsules half-covered by scale-like bracts as are pine-cones.

REFERENCES: Hágsater, E., 1999, *Epidendrum brachyrepens*, in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.), The Genus *Epidendrum*, Part 2, *Icon. Orchid.* 3: pl. 315. Sánchez S., L. & E. Hágsater 2007, *Epidendrum cornanthera*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, *Icon. Orchid.* 9: pl. 923. Sánchez S., L. & C. H. Dodson 2007, *Epidendrum luckei*, in Hágsater, E. & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, *Icon. Orchid.* 9: pl. 953. Sánchez S., L. & E. Hágsater, 2008, *Epidendrum repens*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, *Icon. Orchid.* 11: pl. 1169. Sánchez S., L., & E. Hágsater, 2010, *Epidendrum strobiliferum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 13: pl. 1390.





EPIDENDRUM TRILOBOLEPTOPHYTUM Hágsater, Naranjo & A.E.Mend.

Plate 1661

EPIDENDRUM TRILOBOLEPTOPHYTUM Hágsater, Naranjo et. A.E.Mend., *sp. nov.*

Type: ECUADOR: Loja: Parque Nacional Podocarpus, zona de Amortiguamiento, sector El Madrigal, 2443 m, 2 December 2011, **Alberto E. Mendoza Castillo & Carlos James Naranjo Franco AM-046**, Holotype: HUTPL! (LDGP and photo voucher). Topotype: *ibid*, 19 March 2010, HUTPL!

Similar to *Epidendrum leptophyllum* Hágsater but the lip clearly 3-lobed, the lateral lobes dolabriform, rounded, margin erose. Epiphytic, caespitose, straggling, arching, fine, delicate **herb**, to 25 cm tall including the inflorescence. **Roots** 0.7-1.8 mm in diameter, fleshy, thin, produced from the lower stems only. **Stems** 4-8 x 0.12-0.26 cm, cane-like, terete at the base to laterally compressed at the apex, progressively slightly arching, the new stem produced from a middle internode of the previous stem. **Leaves** 2-7 per stem, distributed along the apical half of the stems, distichous, partly spreading, articulate, grass-like; **sheaths** 1.2-1.6 x 0.17-0.28 cm, laterally compressed, ancipitose, minutely striated and rugose when dry; **blade** 2.5-6.8 x 0.4-0.6 cm, linear, acuminate, minutely apiculate, margin crenulate, slightly revolute. **Spathes** 1.5-3.0 x 0.14-0.30 cm, single, tubular, ancipitose, apex cuspidate, closely appressed to the peduncle. **Inflorescence** 7-13 cm long, racemose, laxly, few-flowered, arching; peduncle 1.8-3 cm long, laterally compressed, straight, nearly totally covered by the spathe; rachis 4.5-9.5 cm long, terete, very thin, without being filiform. **Floral bracts** 3-6.3 mm long, shorter than the ovary (except for the basal flower), linear, acuminate, 1-veined, papiraceous, embracing, gradually smaller towards the apex of the rachis. **Flowers** 18-25, simultaneous, resupinate, delicate, pale yellow; fragrance none observed. **Ovary** 3.8-4.8 x 0.1 mm, terete, thin, slightly arching. **Sepals** 9-9.6 x 1.2-1.9 mm, spreading, linear-elliptic, acuminate, dorsal sepal 3-veined, lateral sepals 5-veined, margin entire, spreading. **Petals** 8.5 x 0.2 mm, spreading, free, linear, acuminate, slightly sinuous, 1-veined, margin entire. **Lip** 4.4 x 3.0 mm, united to the column, deeply 3-lobed, base cordate; bicallose, calli elongate, short, parallel, fleshy, prolonged into a short string of knobs, with a low mid-rib which runs down the middle of the lip; lateral lobes 1.2 x 1.8 mm, dolabriform, slightly oblique, narrower distally, the corners rounded, distal margin erose; mid-lobe 6 x 1.6 mm, narrowly triangular, acuminate. **Column** 5.5 mm long, thin, slightly arched near the middle, somewhat dilated towards the apex. **Clinandrium hood** short, entire. **Anther** 4-celled; ovoid-cuneate, with a wide sinus at the base, apex emarginate. **Pollinia** 4, the inner pair laterally compressed, the outer pair ovoid. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, occupying 1/3 the length of the stigmatic cavity. **Nectary** short, without penetrating the ovary, penetrating 1/2 of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

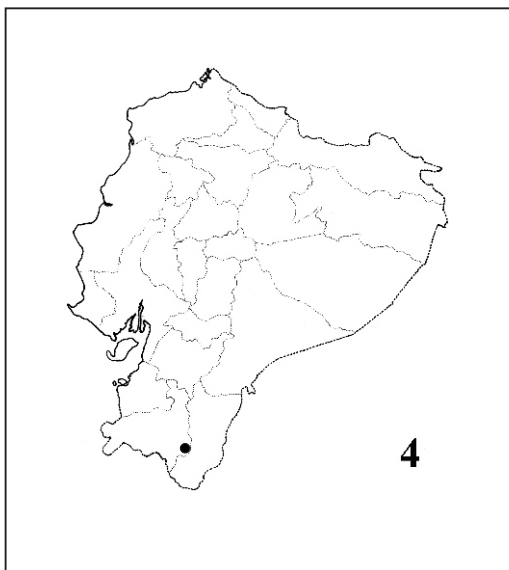
DISTRIBUTION AND ECOLOGY: Known presently from a single collection from the upper slope of the Cordillera Oriental of the Andes in the province of Loja, epiphytic. Flowering in February.

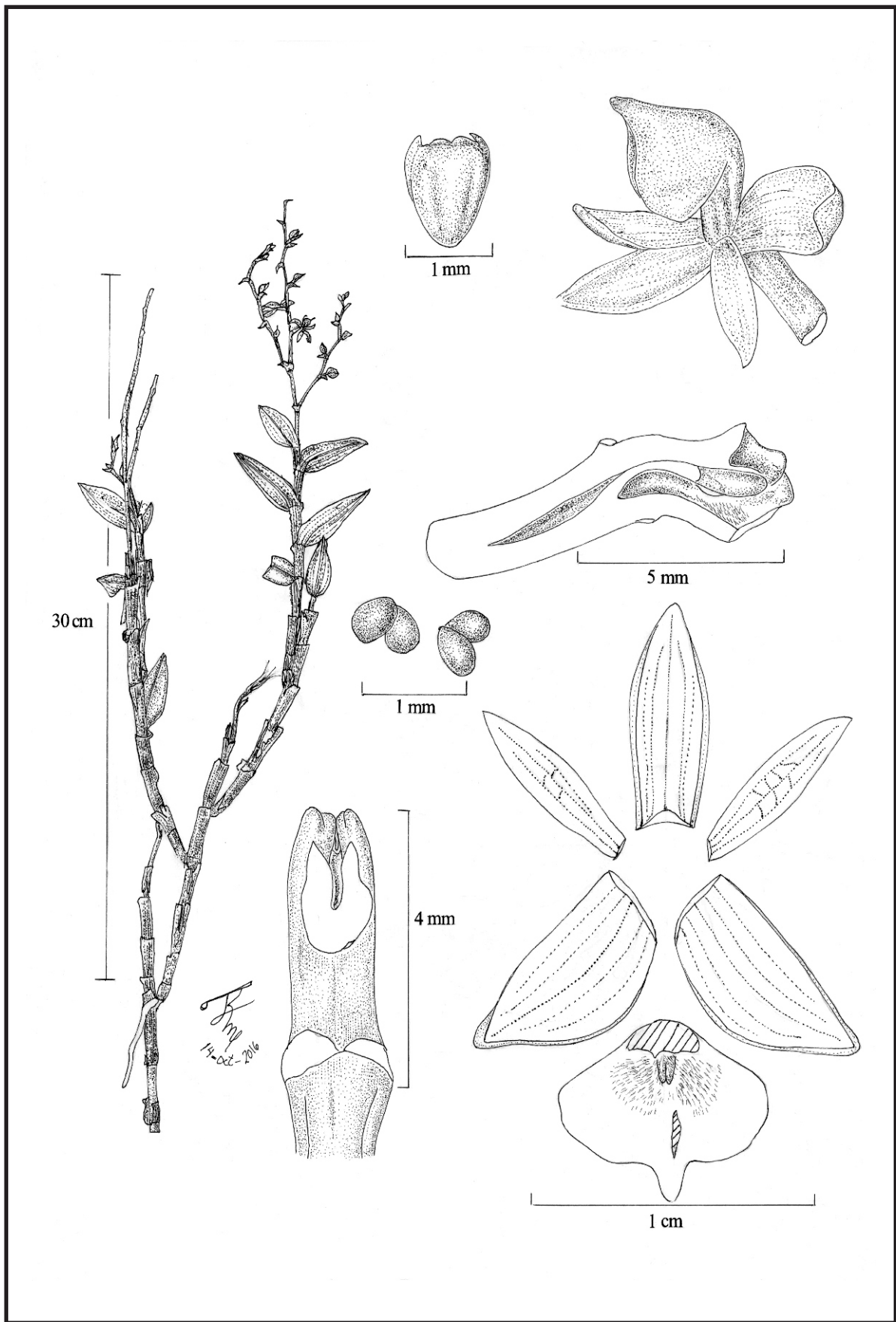
RECOGNITION: *Epidendrum triloboleptophyllum* belongs to the Leptophyllum Group which is characterized by the straggling vegetative habit forming compact plants, delicate, grass-like, linear leaves, inflorescence racemose, subtended by a narrow, conduplicate spathe, flowers pale yellow, delicate, lip entire or 3-lobed, bicallose, calli elongate, parallel, fleshy, blending into a low mid-rib which runs down the middle of the lip. The species is recognized by the deeply 3-lobed lip, lateral lobes dolabriform, mid-lobe narrowly triangular, acuminate. *Epidendrum leptophyllum* Hágsater, has the lip triangular-rhomboid in outline; bicallose, calli elongate, parallel, fleshy, blending into a low mid-rib which runs down the middle of the lip; lip overall triangular with the lateral margins denticulate towards the base, entire towards the apex, basal corners rounded, the base abruptly narrowed, cuneate, fleshy, provided with a pair of basal, very small, retrorse appendages, nearly parallel to the column.

CONSERVATION STATUS: DD. Data deficient. Inadequate information to make a direct, or indirect, assessment of its risk of extinction. Data based on abundance and/or distribution are lacking.

ETYMOLOGY: from the Greek τρις, three, λοβος, lobes of the ear, λεπτος fine, thin, slender, and φυτον, plant, in reference to the very delicate plant and flowers which distinguish this species.

REFERENCE: Hágsater, E., 2018, *Epidendrum leptophyllum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1635.





EPIDENDRUM TUNDAYMENSE Hágsater, E.Santiago & Tobar

Plate 1662

EPIDENDRUM TUNDAYMENSE Hágsater, E.Santiago et Tobar, *sp. nov.*

Type: ECUADOR: Zamora-Chinchipe: [Cantón El Pangui:] In the vicinity of the mining camp at the Rio Tundayme, along road from mining camp to military base El Condor, 1700 m, 30 October 2004, **Henk van der Werff, Bruce Gray, J. C. Ronquillo & Wilson Quizhpe 19061**. Holotype: QCNE! (illustration voucher).

Similar a *Epidendrum durum* Lindl. but flowers ochre colored (vs. greenish white), floral segments spreading (vs. partly spreading), petals oblong-elliptic (vs. linear-elliptic), lateral lobes of the lip hemi-elliptic, bicallose, calli thin and parallel, adjacent, forming a "W" (vs. lateral lobes of the lip sub-quadrate, and has a single, "V" shaped).

Terrestrial, monopodial, erect **herb**, 80 cm tall. **Roots** 1.1 mm thick, basal, fleshy, thin, white. **Stems** cane-like, branching, terete, erect; branches 6.5-13 x 0.2-0.4 cm. **Leaves** of the main stem not seen, 4-7 on the branches, distributed throughout, articulate, distichous, coriaceous, rigid, spreading; sheath 0.4-2.0 x 0.2-0.4 cm, tubular, rugose, blade 2.0-3.6 x 1.0-1.6 cm, narrowly ovate-lanceolate, apex acute, margin entire. **Spathes** lacking. **Inflorescence** 11.5-13.0 cm long, apical, flowering only once, paniculate, with 1 or 3 racemes in addition to the main raceme, all erect, the racemes 5.0-5.9 cm long, laxly few-flowered; peduncle 1.7-4.1 cm long, terete, thin, straight. **Floral bracts** 2.0-4.0 x 2.0-3.0 mm, slightly longer than the ovary, triangular-ovate, cucullate, acute, embracing at a right angle in relation to the rachis. **Flowers** 19-35, non-resupinate, successive, 3-5 open at any time per raceme, fleshy, ochre; without fragrance. **Ovary** 3.1-4.8 mm long, short, terete, thin, not inflated, minutely striated. **Sepals** spreading, free, 5-veined, margin entire, spreading; dorsal sepal 7.5 x 2.8 mm, elliptic, acute; lateral sepals 7.7 x 3.6 mm, ovate-elliptic, sub-acute. **Petals** 6.8 x 1.6 mm, spreading, oblong-elliptic, acute, 3-veined, margin entire, spreading. **Lip** 5.9 x 7.2 mm, united to the column, 3-lobed, fleshy thickened, base truncate, embracing the apex of the column in natural position, tears when spreading it, margin entire; bicallose, the calli thin and parallel, adjacent, forming a "W"; disc pubescent, without ribs; lateral lobes 3.6 x 3.7 mm, hemi-elliptic; mid-lobe small, 1.2 x 1.2 mm, short oblong, somewhat cuneate, apex rounded. **Column** 4 mm long, thick, white apex turned upwards. **Clinandrium-hood** short, margin entire **Anther** 4-celled, ovoid. **Pollinia** 4, obovoid, in tow pairs, caudicles not seen. **Rostrum** apical, slit. **Lateral lobes of the stigma** small, occupying 1/3 of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity, reclining backwards. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Zamora-Chinchipe: Cantón El Pangui, Parroquia Tundayme, via al destacamento militar de Cónдор Mirador, 1664 m, *Tobar 2211* QCNE! QCA! HPUCESI! (digital photo, AMO! photo voucher). Cantón El Pangui, Parroquia Tundayme, via al destacamento militar de Condor Mirador, 1664 m, *Tobar sub Hágsater 15186*, 10 IV 2017, AMO! QCNE! (digital images, AMO!).

DISTRIBUTION AND ECOLOGY: Known presently from the upper slope leading to the Andean Tepui above Tundayme, a part of the Cordillera del Cónдор, terrestrial at 1664-1700 m altitude in wet tropical forest. Flowering from October through April.

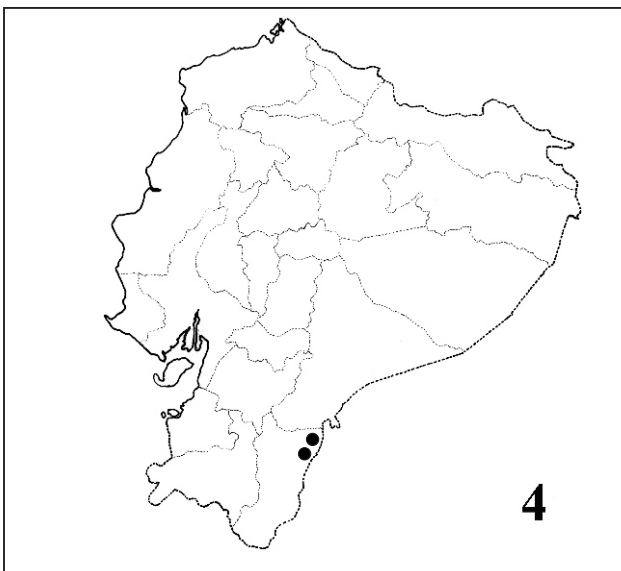
RECOGNITION: *Epidendrum tundaymense* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pillose. The new species is recognized by the small plants, leaves 2.0-3.6 x 1.0-1.6 cm, narrowly ovate-lanceolate, acute, the paniculate inflorescence with all the branches erect, laxly few-flowered, flowers ochre, floral segments spreading, sepals 7.5-7.7 mm long, petals 6.8 x 1.6 mm, oblong-elliptic, bicallose, calli adjacent, parallel, forming a "W". *Epidendrum durum* is vegetatively similar, but the flowers are greenish white, sepals and petals partly spreading, of similar size, petals linear-elliptic and oblique, lateral lobes of the lip sub-quadrate, and has a single "V" shaped callus. *Epidendrum alsum* Ridl. has leaves 2.5-4.3 x 1.4-1.8 cm, ovate, apex obtuse and margin revolute, inflorescence paniculate but deflexed, floral segments partly spreading. *Epidendrum ulei* Schltr. has leaves 2.5-9.5 x 1-2 cm, oblong-lanceolate, apex obtuse, inflorescence arching with flowers greenish yellow, sepals 7-10 x 2.5-4.5 mm, floral bracts very prominent, 5-12 mm long.

CONSERVATION STATUS: DD. Data deficient. Though the species is presently known from a single locality, the general area has been scarcely studied. The future extent of the mining project may destroy the presently known locality.

ETYMOLOGY: In reference to the locality of San Marcos de Tundayme, in the Shuar indigenous nation, at the foot of this part of the Cordillera del Cónдор Mirador, where a huge copper mining project is underway, by ECSA, Ecuacorriente, S.A.

ACKNOWLEDGMENTS: Collection of material by *Tobar* was made under permit 018-2016ICFLO-FAU-DPAZCH-UPN-VS/MA granted to Ecuacorriente S.A. (ECSA). *Hágsater 15186* was made under agreement N° MAE-DNB-CM-2016-0045. between INABIO, Instituto Nacional de Biodiversidad, Quito, Ecuador, and the IBUNAM, Instituto de Biología, Universidad Nacional Autónoma de México, with participation of Herbario AMO.

REFERENCES: Santiago, E., & E. Hágsater, 2018, *Epidendrum alsum* in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1602. Santiago, E., & E. Hágsater, 2018, *Epidendrum ulei* in The Genus *Epidendrum* part 12, in E. Hágsater & E. Santiago (eds.), **Icon. Orchid.** 16(1): t. 1663.



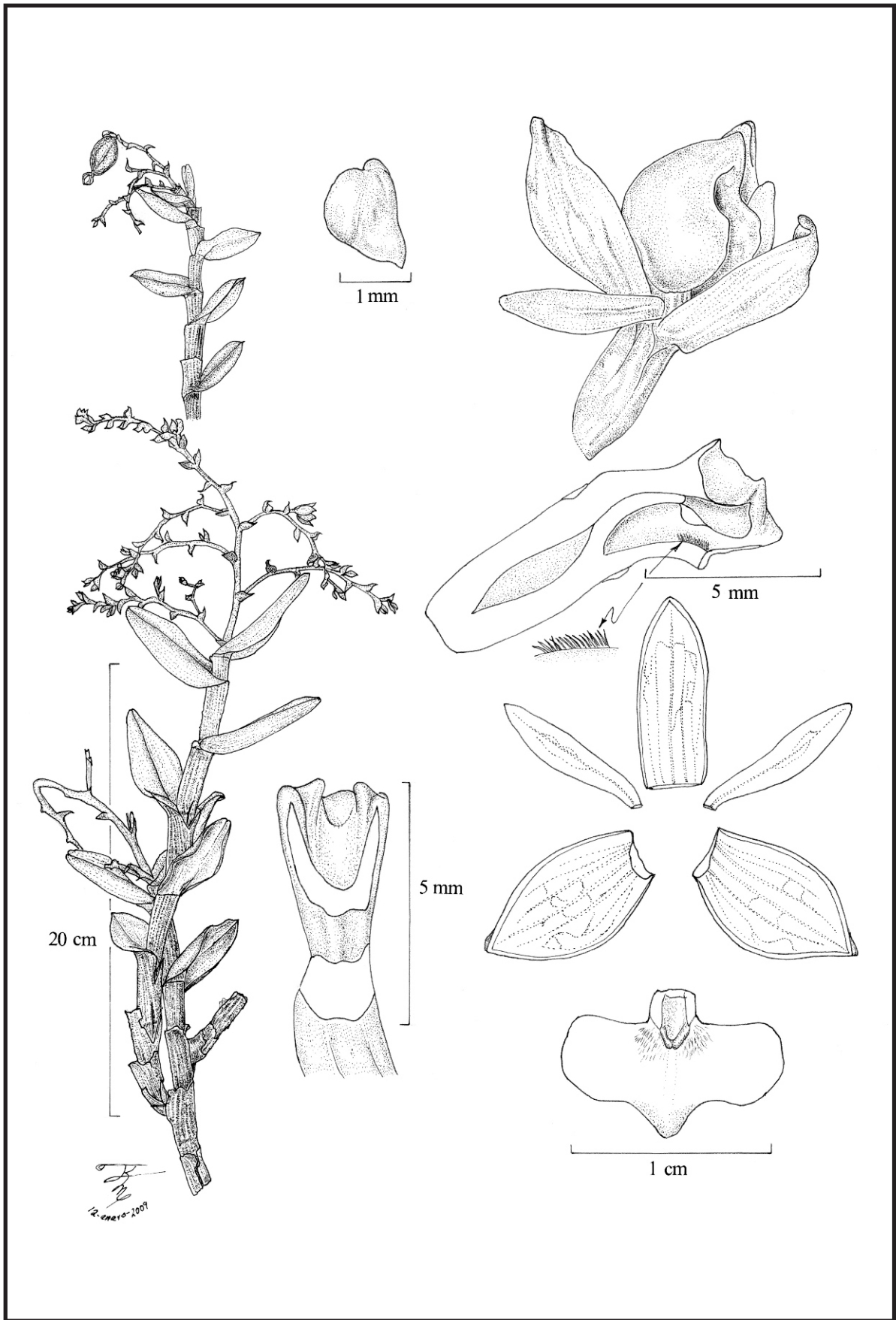
Authors: E. Hágsater, E. Santiago & F. Tobar Illustrator: R. Jiménez M.

Photo: F. Tobar Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

ICONES ORCHIDACEARUM 16(1). 2018. Plate 1662



EPIDENDRUM ULEI Schltr.

EPIDENDRUM ULEI Schltr., Notizbl. Königl. Bot. Gart. Berlin 6: 124. 1914.

Type: GUYANA: Auf Felsen im unteren Walde des Roraima-Gebirges, ca. 2100 m, blühend im Januar 1910, *Ernst Heinrich Georg Ule 8598*. Holotype: B, destroyed. Flower from holotype in glycerin collection, AMES bar code 82253. (digital image, AMO)

Terrestrial or lithophytic, monopodial, erect **herb**, 45-80 [160] cm tall. **Roots** 1-2 mm in diameter, basal, fleshy, white. **Stems** cane-like, branching, terete, erect, straight; primary stem 32-66 [160] x 0.6-1.2 cm, the branches 4.0-37.5 x 0.3-0.5 cm, sub-apical, themselves branching. **Leaves** 20 on the primary stem, 5-7 on the branches, distributed along the apical 2/3 of the stems, articulate, distichous, fleshy-coriaceous, spreading, green above, grayish green on the underside; sheath 1.0-2.0 x 0.5-0.7 cm, tubular, rugose, striated; blade of the primary stem 3.0-7.0 x 1.2-2.5 cm; on the branches 2.5-4.5 x 0.9-1.5 cm, oblong, rounded, coriaceous, margin entire, revolute. **Spathes** lacking. **Inflorescence** 10-14 cm long on the main stem, 6.4-7.0 cm long on the branches, apical flowering only once, erect, paniculate, racemes 4.5-7.0 cm long, recurved, laxly few-flowered; peduncle 0.7-0.9 cm long, terete, thin; rachis straight. **Floral bracts** 5-7 x 4-6 mm, prominent, as long as the ovary to slightly longer, widely triangular, acute, rigid, forming a right angle with the rachis. **Ovary** 3.0-4.5 mm long, short, thin, not inflated, unornamented. **Flowers** 15-50, small, non-resupinate, opening simultaneously, greenish yellow to ochre; fragrance not registered. **Sepals** 9-10 x 3.4-5.0 mm, spreading, free, concave, margin entire; dorsal sepal oblong, obtuse, 5-veined; lateral sepals elliptic, acute, with a low dorsal keel. **Petals** 8-9.0 x 1.7-3.0 mm, spreading, linear-oblong, acute, spreading, free, oblong-oblong, oblique, 1-veined, margin entire, spreading. **Lip** 5-6 x 8-11 mm, united to the column, 3-lobed, base truncate, margin entire, spreading; disc pubescent, bicallose, the calli thin, converging at the apex; lateral lobes 4.0 x 5.5 mm, quadrate (they can be spreading without tearing), embracing the column in natural position, completely covering the apex of the column; mid-lobe 1.7 x 3.6 mm, widely triangular, apex rounded. **Column** 5 mm long, thick, apex slightly arching upwards. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex acute; 4-celled. **Pollinia** 4, obovoid; caudicles short, granulose. **Rostrum** sub-apical, slit. **Lateral lobes of the stigma** 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, wide, pubescent in front of the stigmatic cavity, the pubescence reclining backwards. **Capsule** not seen.

OTHER SPECIMENS: GUYANA: **Cuyuni-Mazaruni:** Mt. Ayanganna easternmost peak, 1350-1380 m, 11 III 1987, *Pipoly 11131*, COL! K! MO! N. ridge of Mt. Roraima, from ca 0.5-1.5 miles N of the "prow" of Roraima, 4300-6100 ft, 26 III 1978, *Warrington 115*, K! **VENEZUELA: Amazonas:** [Cerro de la] Neblina and Massif NW Plateau (Arm) 13.5 km ENE of Cerro de la Neblina Base Camp, 1750-1850 m, 16-18 II 1984, *Liesner 15996*, MO! VEN! Cerro de Marahuaca above Salto Los Monos 2555 m, 27 II 1985, *Liesner 18038*, MO! VEN! Plateau of Huachamacari, 1720 m, 1 III 1985, *Liesner 18096*, MO! VEN! Cerro Sipapo (Paráque), 2000 m, 14 I 1949, *Maguire 28343*, AMES! NY! (illustration, AMO) VEN! Cerro Marahuaca, 2685 m, *Maguire 65621*, VEN! Cerro de la Neblina, Camp II, 2.5-3.5 km NE of Pico Phelps (=Neblina), 2100 m, 29 I 1985, *Nee 30603*, VEN! Cerro de la Neblina, ca. 3 km ENE of Pico Zuloaga, ca. 1900-2000 m, 17 IV 1984, *Stein 1604A*, VEN! Serranía Sipapo, cumbre, sección septentrional, 1500 m, 17 II 1981, *Steyermark 124552*, VEN! Cerro Marahuaca-Atuhua-Shiho. 2450-2480 m, 9-10 II 1982, *Steyermark 126371*, NY! (illustration, AMO) VEN! Cerro Marahuaca-Atuhua-Shiho, 2450 m, 9 II 1982, *Steyermark 126336*, MO! VEN! Macizo del Chimantá. Amurí-tepui (sector W del Acopán-tepui), 2170 m, 6 II 1983, *Steyermark 128766*, MO! VEN! Cerro Marahuaca: 2580-2600 m, 30 III 1983, *Steyermark 129194*, VEN! Cerro Huachamacari: cumbre, al norte de la comunidad de Culebra, 1800 m, 30 III 1983, *Steyermark 129400*, VEN! Cerro Marahuaca, afluente del Río Negro, 2560 m, 10-12 X 1983, *Steyermark 129605*, VEN! Cerro de la Neblina, 1880 m, 7-8 II 1984, *Steyermark 129817*, F! MO! U! VEN! Summit of Mount Duida, 4,400 ft, 1 VIII 1928, *Tate 735*, AMES! NY! (illustration, AMO!) **Bolívar:** Cerro Apacará, Río Caroní, 2100 m, 8 VII 1946, *Cardona 1542*, VEN! Murisipan-tepui, 2400-2500 m, 25 III 1987, *Delascio 13091*, VEN! Kamarkaibaray-tepui, al este del Auyán-tepui, 2400-2500 m, 25-26 III 1987, *Delascio 13104*, MO! VEN! Macizo Chimantá, Churi-tepui, Cuenca del río Tirika, a 800 m al SW de la Cueva, 2200 m, 29 III 2004, *Delascio 19447*, VEN! Macizo Chimantá, Churi-tepui, Cima de la Cueva de Charles Brewer Carías, 2252-2300 m, 7 II 2005, *Delascio 19815*, VEN! Auyán-tepui, 1900 m, IV 1956, *Foldats 2623*, AMES! VEN! Ptari-tepui, 2300 m, 26 III 1987, *Holst 3581*, MO! VEN! Chimantá-tepui, 2450 m, 23 II 1978, *Huber 7163*, NY! (illustration voucher) U! VEN! Auyán-tepui, 1650 m, 13 XI 1984, *Huber 9714*, MO! VEN! Cumbre del Ptari-tepui, 2400 m, 19 XI 1984, *Huber 9817*, CAS! MO! VEN! Serranía Guanay, 1700 m, 28 IX 1985, *Huber 10974*, NY! VEN! Cerro Guaquinima, Río Paragua, 1800 m, 29 XII 1951, *Maguire 32809*, AMES! Chimantá Massif, Central Section. Rocky edge of escarpment Middle Falls of Río Tirica, 1925 m, 5 II 1955, *Steyermark 459*, AMES! VEN! Ptari-tepui, 2200 m, 2 XI 1944, *Steyermark 59783*, AMES! Auyán-tepui, 1660-1800 m, 11 V 1964, *Steyermark 93699*, AMES! VEN! Meseta del Jaua: Cerro Jaua, 1922-2100 m, 22-27 III 1967, *Steyermark 97937*, VEN! headwaters of Cañón Grande, 1900 m, 16-17 IX 1970, *Steyermark 103943*, AMES! U! VEN! Cumbre del Ptari-tepui, 2360-2420 m, 23 II 1978, *Steyermark 115714*, MO! VEN! Macizo del Chimantá. Altiplanicie en la base meridional de los farallones superiores del Apacará-tepui, sector Norte del Macizo, 2200 m, 30 I 1983, *Steyermark 128424*, MO! Macizo de Chimantá, 2450m, 7-9 II 1983, *Steyermark 128859*, MO! VEN! Macizo del Chimantá, sector SSE. Acopán-tepui, cabeceras del río Arauac, 1920 m, 14-16 II 1984, *Steyermark 129939*, MO! NY! VEN! Auyán-tepui, 2000 m, IV 1956, *Vareschi 4932*, VEN!

OTHER RECORDS: VENEZUELA: **Bolívar:** Summit of Auyán-tepui, ca. 7000 ft, *Dunsterville 862*, illustration, AMES! Gran Sabana, 1 km al N de Luepa, puesto militar, 1370 m, 23 I 2013, *Hågsater 14468*, spirit, AMO! *Ibid.* 1306 m, *Hågsater 14478*, spirit, AMO! digital image, AMO!

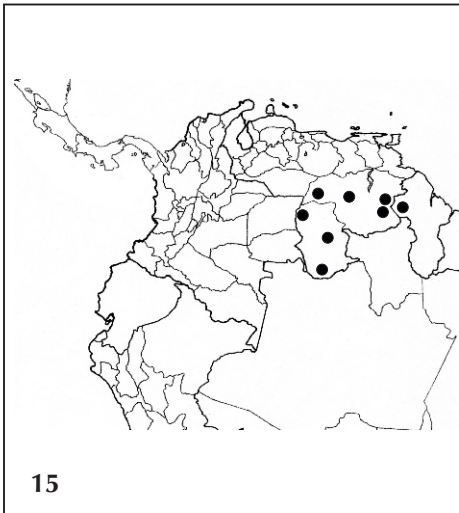
DISTRIBUTION AND ECOLOGY: Widely distributed in Venezuela along the Guayana shield from Mt. Ayanganna (Guyana) and Roraima west to Cerro Sipapo and south to the Pico de la Neblina marking the border between Venezuela and Brazil; atop tepuis as well as on the Gran Sabana, terrestrial at 1300-2600 m altitude. Flowering from January to April.

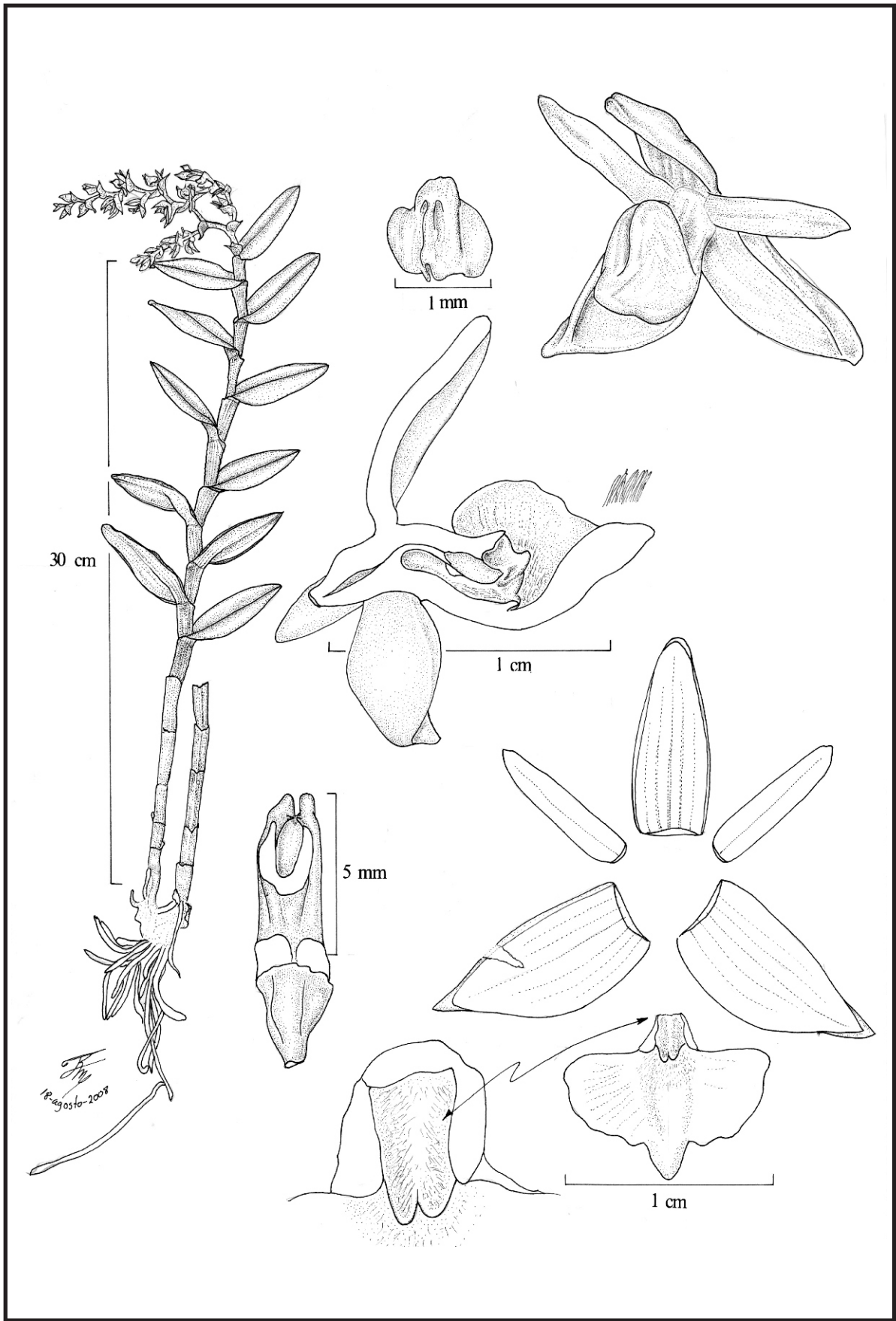
RECOGNITION: *Epidendrum ulei* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect to arching-nutant inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the erect, paniculate inflorescence 10-14 cm long, the racemes spreading, flowers greenish yellow to ochre, sepals 9-10 mm long, leaves oblong, apex rounded, 2.5-7.0 x 0.9-2.1 cm, base of lip truncate, disc bicallose, the calli convergent. Vegetatively similar to *Epidendrum alsum* Ridl. but the inflorescence of the species is shorter, 3-6.5 cm long, arching-nutant, flowers yellow, sepals 8-9 mm long, leaves ovate, apex obtuse, slightly bilobed, 2.5-4.3 x 1.4-1.8 cm, base of lip cuneate. *Epidendrum carnosum* Lindl. has an erect, generally paniculate inflorescence, the racemes all sub-parallel, flowers yellow, sepals 9-10 mm long, leaves lanceolate, apex acute, 4-8.6 x 0.6-1.3 cm, base of lip cuneate, disc with a single callus. *Epidendrum pseudavicula* Kraenzl. has shorter inflorescences, 3.5-7 cm long, racemose, sometimes with a short branch, flowers are yellowish green, sepals 5.6-6 mm long, leaves narrowly ovate to oblong-lanceolate, apex rounded, base of the lip cuneate, disc bicallose the calli small, thin, parallel. *Epidendrum durum* Rchb.f. has racemose to paniculate inflorescences, flowers creamy white, smaller, sepals 6.5-7 mm long, leaves lanceolate to ovate-lanceolate, apex acute, 2.0-5.5 x 0.5-1.4 cm.

CONSERVATION STATUS: NT. Not threatened, the species is widespread and common in areas which are protected.

ETYMOLOGY: In honor of Ernst Heinrich Georg Ule (1854-1915), German botanist who emigrated to Brazil in 1883, served as a *naturalist viajante* for the National Museum (Rio de Janeiro), later became the museum's botanical department. Returned to Germany working as an assistant at the Berlin-Dahlem Botanical Garden and Museum (1913-1914). He collected the type.

REFERENCES: Carnevali, G., & I. Ramírez, *Epidendrum*, in P. E. Berry, K. Yatskievych & B. K. Holst (eds.) *Flora of the Venezuelan Guyana* 7: 325-352. Santiago, E., & E. Hågsater, 2018, *Epidendrum alsum* in The Genus *Epidendrum* part 12, in E. Hågsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1602. Santiago, E., & E. Hågsater, 2018, *Epidendrum carnosum* in The Genus *Epidendrum* part 12, in E. Hågsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1608. Santiago, E., & E. Hågsater, 2018, *Epidendrum pseudavicula* in The Genus *Epidendrum* part 12, in E. Hågsater & E. Santiago (eds.), *Icon. Orchid.* 16(1): t. 1650.





EPIDENDRUM URBANIANUM Cogn.

EPIDENDRUM URBANIANUM Cogn., Urb. Symb. Antill. 6: 531, 1910.

Type: GUADELOUPE: inter sphagna ad "Savane aux Ananas", 900-1000 m, **Père Duss 3359**. Lectotype (designated by Garay & Sweet, 1974): BR 6573386! (fragment, 3 leaves, part of inflorescence and 4 flowers, original description and sketch with measures). Isolectotypes: F! G! NY! US! Epiphytic, erect, monopodial, branching herb, ca. 40-60 cm tall. **Roots** 1.5-3 mm in diameter, basal, fleshy, white. **Stems** branching, cane-like, terete, erect, slightly sinuous; main stem 35-51 x 0.6-0.9 cm; branches 7.5-17.5 x 0.4-0.7 cm; covered by sheaths 6-35 mm long, non-foliar, tubular, scarious and becoming fibrous with age. **Leaves** numerous on the main stem, distributed throughout, up to 6 on the branches, alternate, articulate, spreading, coriaceous; sheath 15-43 x 0.5-0.9 cm, tubular, striated, rugose; blade 2.5-9.5 x [0.7] 1.0-2.1 cm, oblong-lanceolate, rounded, margin entire. **Spathe** lacking. **Inflorescence** 4-10 cm long, apical, short, flowering only once, racemose to paniculate, arching, laxly few-flowered; peduncle very short, rachis sinuous. **Floral bracts** 5.0-12 x 7.0-10 mm, prominent, somewhat recurved, as long as the flower or slightly shorter, widely ovate-triangular, cymbiform, apex acute, spaced one from the other, distichous. **Ovary** 2.5-3.0 mm long, totally hidden within the floral bract, geniculate and forming a 90° angle with respect to the column. **Flowers** 8-17, non-resupinate, distichous, fleshy, green or yellow-green; fragrance not registered. **Sepals** 7.0-10 x 2.5-4.5 mm, free, partly spreading, very fleshy, concave, with a dorsal keel, margin entire; dorsal sepals lanceolate, acute, 5-veined; lateral sepals obliquely ovate, 6-veined, short acuminate. **Petals** 5.5-7.0 x 1.0-1.5 mm, free, spreading, linear, acute, 1-veined, margin entire, spreading. **Lip** 5.0-6.0 x 8.0-10 mm, cymbiform in natural position, embracing the apex of the column and covering it totally; 3-lobed, with a single, small callus, the apex bilobed, pubescent, disc pubescent; lateral lobes 3-5 x 3.5-4.2 mm; sub-quadrate; mid-lobe 1.5-2 x 2 mm; small, triangular, rounded. **Column** 4-5 mm long, geniculate with respect to the ovary, straight, thick, with a prominent apical tooth on either side. **Clinandrium** reduced, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** shallow, not reaching the ovary. **Anther** spherical, prolonged into a short, upturned, fleshy hood at the apex of the anther; 4-celled. **Pollinia** not seen. **Capsule** not seen.

OTHER SPECIMENS: GUADELOUPE: Without locality data, *Bena 890*, P! Savane à Mulets, IV 1936, *Quentin 1097*, P! Massif Central, 1000 m, *Questel 1623*, P x2! US! Soufrière, 1100 m, 29 VIII 1939, *Questel 1659*, P! US! Savane à Mulets, 7 IV 1938, *Rodriguez 4528*, P! Savane aux Ananas, 25 IV 1838, *Rodriguez 4827*, P! Basse-Terre: Massif de La Soufrière, partie NW, trace Victor Hugues, Savane aux Ananas, 1000 m, 5 V 1974, *Sastré 2861*, AMES! MO! Savanes de hauteurs, 1100-1250 m, 15 VI 1935, *Stehlé 222*, P! US! Savane, près cône, Soufrière, 1150 m, 16 II 1936, *Stehlé 361*, NY! P! Savane aux Ananas, 1100 m, 25 IV 1936, *Stehlé 1315*, AMES! Citerne, Lac Flammarion, 1150 m, 8 II 1937, *Stehlé 1373*, NY! Bains Jaunes, *Stehlé 6473*, P! Citerne au bord du Lac Flammarion, 1150 m, 17 VI 1973, *Stehlé 1680*, AMES! NY! Savane à Mulet près Soufrière, 1180 m, 30 V 1937, *Stehlé 1741*, NY! P! Grande Citerne (Lac Flammarion), 1100 m, 2 XI 1938, *Stehlé 2463*, NY! Savane aux Ananas, 17-27 IV 1979, *Howard 19513*, AMES! NY! (illustration voucher). **MARTINIQUE:** Montagne Pelée, 900-1000 m, 1880, *Duss 374*, NY x2! **ST. KITTS-NEVIS-ANGUILLA:** Mt. Misery, 3600 ft, 31 VII 1932, *Box 309*, US! (illustration, AMO!) Summit of Mt. Misery [now Mt. Liamuiga], IX-X 1901, *Britton 527*, AMES! NY! US!

OTHER RECORDS: GUADELOUPE: Photo prise en Guadeloupe par Mr. Beauduceau, *Marcel Lecouffe s.n.*, slide, AMO x2! **MARTINIQUE:** Photo published as *Epidendrum dendrobioides* in *Orchidées de la Martinique*, 2015, p. 85 (photo voucher), *P. Courtinard*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known from the windward lesser Antilles; terrestrial or lithophytic, growing at 1080-2150 m altitude. Flowering from April to July.

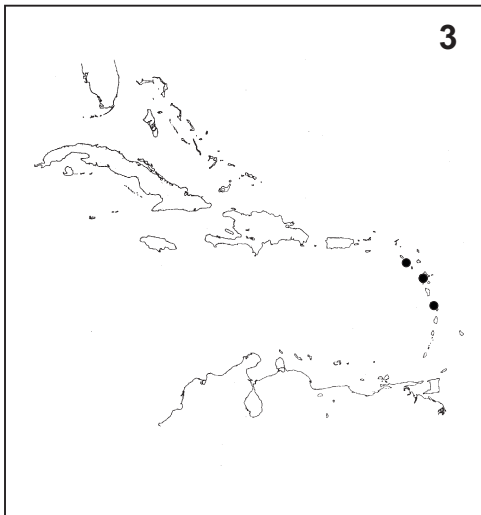
RECOGNITION: *Epidendrum urbanianum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the sinuous rachis and the floral bracts nearly as long as the flower (5.0-12 x 7.0-10 mm), oblong-lanceolate leaves 2.5-9.5 x [0.7] 1.0-2.0 cm; sepals 7.0-10 x 2.5-4.5 mm long, petals linear, 5.5-7.0 x 1.0-1.5 mm, and the column geniculate with respect to the ovary, forming an angle of 90°, and lip with a single, small callus, the apex bilobed. *Epidendrum reclinatum* Carnevali & I. Ramírez has lanceolate leaves 3.5-5.0 x 0.8-1.1 cm, the inflorescence erect to slightly arching, the rachis straight, floral bracts prominent but never as long as the flower, 6.0-7.0 x 3.0-5.0 mm, sepals 7.0-8.0 mm long, petals narrowly spatulate, 6.5-8.0 x 2.1-2.6 mm. *Epidendrum alsium* Ridl. has very fleshy leaves, ovate, 2.5-4.3 x 1.4-1.8 cm, a deflexed inflorescence, rachis straight to slightly sinuous, floral bracts slightly longer than the ovary, but shorter than the flower, 5.0-6.0 x 4.0-5.0 mm; sepals 8.0-9.0 mm long, petals narrowly oblanceolate 7.0-9.0 x 1.9-2.1 mm. *Epidendrum montigena* Ridl. has oblong leaves, 2.0-3.5 x 0.4-0.6 [1.0] cm, a nutant inflorescence, rachis straight, and pink colored flowers, floral bracts 4.0-6.0 x 3.5-4.0 mm, sepals 6.5-9.0 mm, petals de 6-8 x 2-2.5 mm, oblong-elliptic with the margin (along apical half) dentate. *Epidendrum carnosum* Lindl. has an erect inflorescence and a straight rachis, small floral bracts, never longer than the ovary, 4-5 mm long, and lanceolate leaves with the apex acute. *Epidendrum dendrobioides* Thunb. has an erect inflorescence, rachis slightly sinuous (in dry specimens), floral bracts always shorter than the flowers, 4-7 x 3-5 mm; leaves linear-lanceolate, 3.5-6.0 x 6.0-1.3 mm, and lip bicallose, the calli thin convergent towards the apex, forming a "Y" with a narrow mid rib in between the calli.

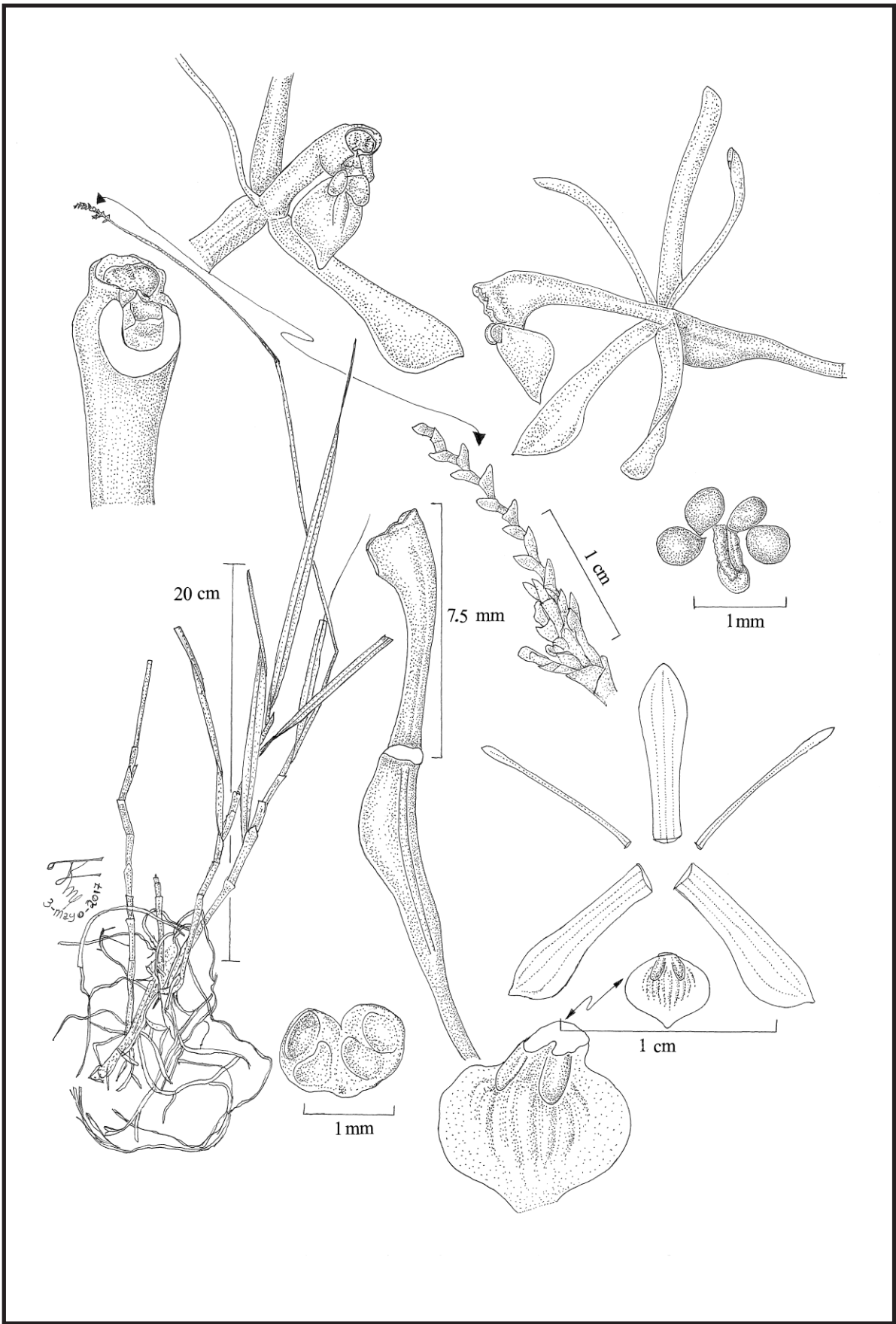
NOTE: Though Cogniaux described the species as bicallose, we see a single apically bilobed callus. Collection *Smith 1153*, cited as a syntype from St. Vincent clearly has a "Y" shaped callus and thus corresponds to a different species and is thus excluded here.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Ignatz Urban (1848-1931), German botanist, contributed greatly to the flora of the Caribbean and Brazil. He was the curator of the Berlin Botanic Garden and supervised its move to Dahlem. His herbarium, estimated at 80,000 sheets, was destroyed when the Berlin Herbarium was bombed on 1943.

REFERENCES: Courtinard, P., 2015, *Orchidées de la Martinique*, Éditions PCP, Martinique, p. 85. Garay, L. A., & H. Sweet, 1974, *Orchidaceae* in Howard, *Flora of the Lesser Antilles*, p. 133. Santiago, E., & E. Hágsater, 2018, *Epidendrum alsium* in Hágsater, E. & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1602. Santiago, E., & E. Hágsater, 2018, *Epidendrum carnosum* in Hágsater, E., & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1608. Santiago, E., & E. Hágsater, 2018, *Epidendrum dendrobioides* in Hágsater, E., & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1614. Santiago, E., & E. Hágsater, 2018, *Epidendrum montigena* in Hágsater, E., & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1644. Santiago, E., & E. Hágsater, 2018, *Epidendrum reclinatum* in Hágsater, E., & E. Santiago (eds.), *The Genus Epidendrum*, Part 12, *Icon. Orchid.* 16(1): t. 1652.





EPIDENDRUM VILLANUEVAE Rinc.-González, O.Melo, Hágsater & E.Santiago

EPIDENDRUM VILLANUEVAE Rinc.-González, O.Melo, Hágsater et E.Santiago, *sp. nov.*

Type: COLOMBIA: [Valle del Cauca]: Municipio de Buenaventura, Bajo Calima, 80-200 m, 28 mayo 2015, **Milton Rincón González 580**. Holotype: TOLI! (illustration and photo voucher).

Similar to *Epidendrum macrophysum* Hágsater, O.Pérez & E.Santiago but the floral bracts smaller (1-2 mm long vs. 4.0-4.6 mm), widely triangular, apex sub-acute, not imbricated, spaced along the rachis (vs. elliptic, apex rounded, aggregate and imbricated on a short rachis totally hidden by the bracts), peduncle of the inflorescence longer (23-30 cm long, vs 19 cm), flowers pale pink with the apex of the sepals marked with magenta and the lip cream (vs. flowers green, concolor), and the margin of the sepals spreading (vs. strongly revolute).

Epiphytic, caespitose, sympodial, 37-40 cm tall. **Roots** basal fleshy. **Stems** 10-14.5 x 0.1-0.25 cm, cane-like, simple, straight, thin, basal half terete, ancipitose towards the apex. **Leaves** 4-7, distributed along the apical half of the stem, the basal one smaller, green, concolor; sheaths 1.8-2.5 x 0.2-0.35 cm, tubular, ancipitose, striated; blade 3-12 x 0.6-1.0 cm; linear-lanceolate, long acuminate, with a central vein and a pair of evident secondary veins on the upper face, margin entire. **Spathes** 0.8-1.3 cm long, single, at the apex of the peduncle of the inflorescence, narrowly elliptic, obtuse, conduplicate. **Inflorescence** 24-32.5 cm long, apical, pluri-racemose, arching pendant, producing 4 or more racemes from the apex of the peduncle, within the spathe; peduncle 23-30 cm long, thin, ancipitose, two-winged, progressively narrower, thin, the apex with a single spathe; racemes ca. 1.0-1.5 cm long, short, densely few-flowered, rachis not totally hidden by the floral bracts, flexuous. **Floral bracts** 1-2 x 1.5-2.0 mm, shorter than the ovary, not imbricated, but neither loosely spaced, infundibuliform, widely triangular, oblique, dorsally carinate, distichous, apex sub-acute, persistent on the rachis after flowering, pale green. **Flowers** successive, 1 at a time per raceme at a time, resupinate, pale pink, with the apex of the sepals slightly marked with magenta, translucent, column and lip greenish cream, ovary greenish cream colored tinged with rose. **Ovary** 10-13 mm long, terete, thin, strongly inflated at the apex, forming a prominent ventral vesicle, curved to the base. **Sepals** spreading, free, oblanceolate-spatulate, apex sub-acute, 3-veined, the lateral veins branching and thus appearing 5-veined, margin entire, spreading; the dorsal sepal 8 x 2.5 mm; the lateral sepals 8.5 x 2.5 mm, oblique, apex minutely apiculate. **Petals** 8.6 x 0.2 mm, free, spreading, the apical half slightly arched forward, linear-filiform, apex rounded, slightly widened, 1-veined, margin spreading, entire. **Lip** 3 x 3.5 mm, united to the column, entire, convex, forming a 90° angle with respect to the column, widely ovate, base widely cuneate, apex obtuse; bicallose, the calli prominent, fleshy, laterally compressed, slightly divergent; disc with 5 thin, parallel ribs, the lateral pair very short, the central ribs elongate, reaching the middle of the lip. **Column** 7.5 mm long, thin along the ½ basal, gradually widened towards the apex, arched downwards along the apical half. **Clinandrium-hood** prominent, though without surpassing the body of the column, margin entire. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, covering half the stigmatic cavity. **Nectary** penetrating ca. 1/3 of the ovary, inflated. **Anther** ca. 1 mm wide, 4-celled, transversely elliptic. **Pollinia** 4, slightly laterally compressed, sub-lenticular. **Capsule** no seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

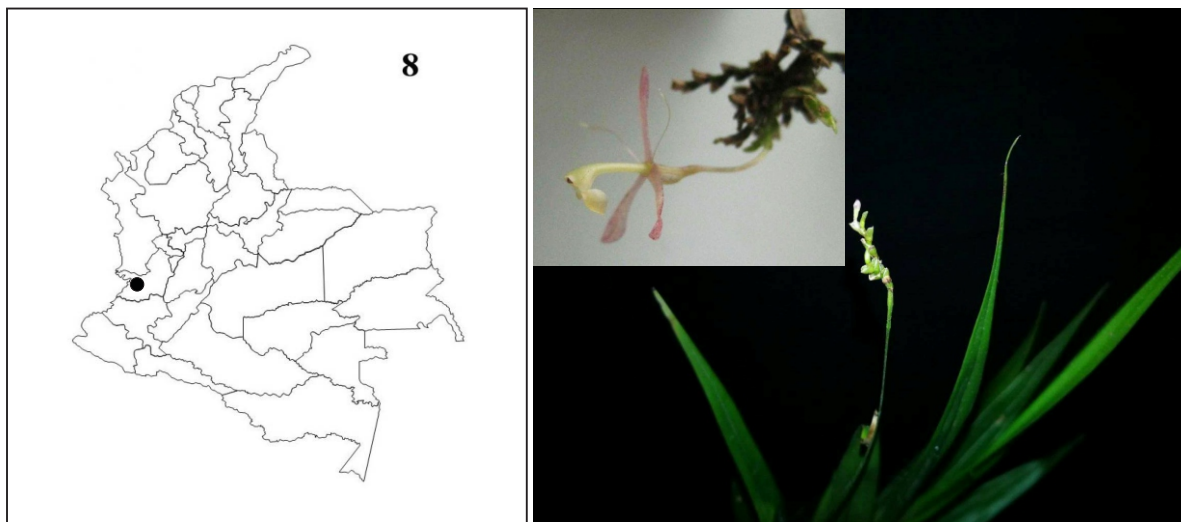
DISTRIBUTION AND ECOLOGY: Known only from the pacific coastal plain of Colombia, department of Valle del Cauca, municipality of Buenaventura. Grows as an epiphyte in rain forests at 80-200 m, where the populations are reduced. Flowering between May and June. Seen only in young dark forests with trees of medium height.

RECOGNITION: *Epidendrum villanuevae* belongs to the Albertii Group which is characterized by the sympodial habit, laterally compressed to ancipitose or somewhat fusiform-thickened stems, the apical or apical and lateral racemose, distichous inflorescence more or less with imbricated bracts on the peduncle, producing one flower at a time, and the Allenii Subgroup which is characterized by the stems with numerous leaves, the inflorescence apical (rarely lateral), peduncle elongated, bare, non-bract bearing, two-winged, the rachis short, covered by rounded, usually imbricated bracts. The species is recognized by the thin, elongate, two-winged peduncle of the inflorescence (that occupies 2/3 of the total length of the plant), the small floral bracts, 1-2 mm long, distributed along the rachis, infundibuliform, widely triangular, oblique, apex sub-acute, dorsally carinate, not imbricated, which are reminiscent of the floral glumes of some *Fimbristylis* species (Cyperaceae) and other sedges, the translucent pink flowers with the column and lip cream colored (tinged pale green on the dorsal surface of the column), the lip convex, widely cordiform with the apex truncate forming a 90° angle with the column in natural position, and the disc with 5 ribs that disappear towards the center of the lip. *Epidendrum macrophysum* Hágsater, O.Pérez & E.Santiago has 4.0-4.6 mm long floral bracts, densely aggregate and imbricated on a short rachis, flowers pale green, concolor, the margin of the sepals strongly revolute, and the lip is 3-ribbed, the ribs unequal in size. *Epidendrum jefeallenii* Hágsater & García-Cruz from Panama, which has more ancipitose peduncles, two-winged, the wings prominent; the inflorescence with larger racemes with 5-10 successive flowers; ovary slightly inflated in the apical third and a cordiform lip with emarginate apex, 4-5 x 5-6 mm, with a single rib spreading from the base to the half of the lip. It is also similar to *Epidendrum adnatum* Ames & C.Schweinf., from Costa Rica and Panama, which has shorter inflorescences with ancipitose peduncles, two-winged, the wings prominent towards the base; an ovary dilated just behind the perianth; oblanceolate, sub-acute, mucronate, sepals; and a ovate, sub-acute, apiculate lip with the margin slightly erose. *Epidendrum timbiquense* Hágsater & E.Santiago has an ancipitose peduncle, floral bracts are 2-4 mm long, elliptic, apex rounded, imbricated, flowers are whitish, the white lip somewhat tinged with greenish brown, rounded with base cordate, disc 3-ribbed.

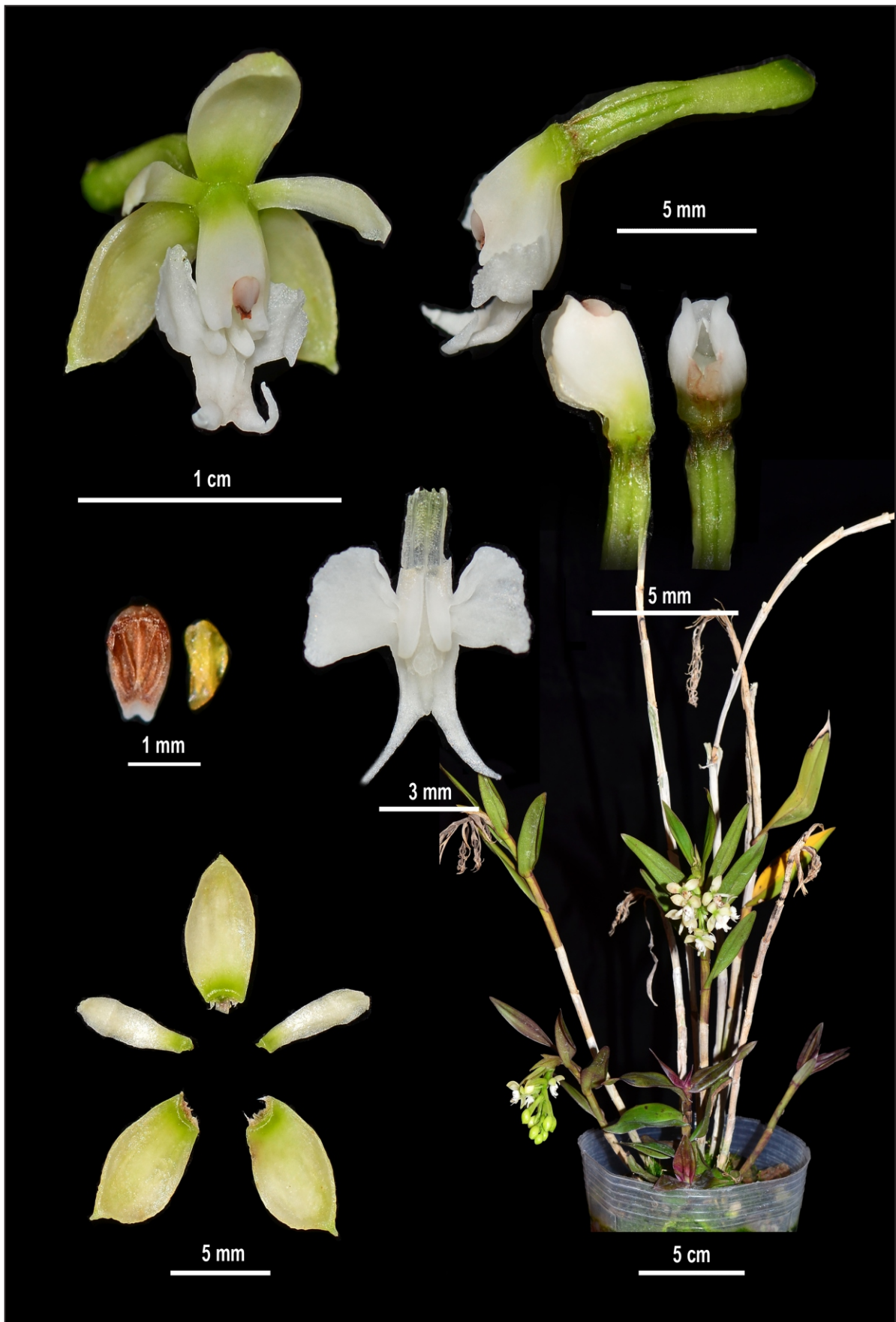
CONSERVATION STATUS: DD. Data deficient. Known presently from a single collection.

ETYMOLOGY: In honor of Boris Estefan Villanueva Tamayo, (1981-), a forestry engineer at the Dendrology Laboratory of the Universidad del Tolima, Colombia, and highly knowledgeable in the Flora of Colombia. He also participated in the collection of the type.

REFERENCES: Santiago, E., & E. Hágsater, 2007, *Epidendrum adnatum* in E. Hágsater & L. Sánchez S. (eds.) *The Genus Epidendrum*, Part 6, **Icon. Orchid.** 9: 901. Hágsater, E., & J. García-Cruz, 1999, *Epidendrum jefeallenii* in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.) *The Genus Epidendrum*, Part 2, **Icon. Orchid.** 3: 339. Hágsater, E., O. Pérez & E. Santiago, 2013, *Epidendrum macrophysum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: 1453. Hágsater, E., & E. Santiago, 2013, *Epidendrum timbiquense* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: 1489.



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EPIDENDRUM XELIDONOURUM Hágsater & H.Medina

Plate 1666

EPIDENDRUM XELIDONOURUM Hágsater et H. Medina, *sp. nov.*

Type: ECUADOR: Zamora-Chinchipec, El Pangui, ca. 1000 m, flowered in cultivation in the collection of Ecuagenera at Gualaceo, 15 December 2016, **Iván Portilla 98**, Holotype: QCNE! (LCDP voucher).

Similar to *Epidendrum brachyblastum* Hágsater & Dodson but the lateral lobes of the lip $\frac{1}{4}$ circle (vs. hemi-ovate, sub-acute), the apical lobes curved, linear-triangular, not ciliate, and sepals and petals a very pale green to pale ochre, lip and column white, the base of the sepal, petals and column green (vs. deep green flowers with the lip and apical half of the column snow white).

Epiphytic, sympodial, caespitose **herb**, 10-29 cm tall. **Roots** 3-4 mm in diameter, basal, fleshy, thick. **Stems** 6.2-29.0 x 0.4 cm, cane-like, terete, thin. **Leaves** 5-7, distributed along the apical half of the stem, sub-erect, fleshy; sheath 10-14 x 2.5-4.0 mm tubular, somewhat striated when dry, green, purple tinged; blade 3.3-6.8 x 1.0-1.5 cm oblong-elliptic, acuminate, smooth, margin entire, deep green, somewhat tinged purple. **Inflorescence** apical, pluri-racemose, with new racemes over several years from the same inflorescence, arching, dense, many-flowered; peduncle terete, thin, short, nearly totally hidden by 3 basal bracts, ca. 15 mm long, widely ovate, acuminate, embracing; rachis ca. 23 mm long, terete, thin, short. **Floral bracts** 4-12 x 1.5-2.4 mm, somewhat shorter than the ovary, triangular-lanceolate, acuminate, gradually shorter. **Flowers** up to 12, opening in succession, resupinate, very attractive, very pale greenish white to pale ochre, the base of the sepals, petals and column green, column and lip white; lacking any fragrance. **Ovary** 9-14 mm long, terete, thin, smooth. **Sepals** 6.4-7.0 x 3.5-3.8 spreading, free, fleshy, glabrous, concave, 5-veined, margin entire, the dorsal elliptic, acute; lateral sepals obovate, slightly oblique, apiculate. **Petals** 6.1 x 1.6 mm, spreading, free, spatulate, obtuse, margin entire. **Lip** 6.4 x 7.0 mm, united to the column, 3-lobed, base deeply cordate; bicallose, calli thin, long reaching the isthmus of the mid-lobe, disc with three, low, parallel keels, the central one thickened slightly beyond the calli, and reaching the apical sinus; lateral lobes 2.5-2.8 x 2.7-3.0 mm, forming a $\frac{1}{4}$ circle, rounded, apical margin erose; mid-lobe 3.7 x 4.5 mm, basal half sub-rectangular, slightly slimmer at the middle, the apical half bilobed, lobes linear triangular, acuminate, arching-divaricate. **Column** 8 mm long including the lateral teeth, nearly straight, base thin and immediately thickened ventrally, and narrowed towards the apex which ends in a obtuse tooth on each side. **Clinandrium-hood** much reduced, entire. **Rostellum** apical, slit. **Anther** obovoid, 4-celled. **Pollinia** 4, narrowly semi-ovate, elongate, strongly laterally flattened, the inside pair smaller, caudicles soft and granular, shorter than the outer pollinia; viscidium semi-liquid. **Lateral lobes of the stigma** short, wide. **Nectary** not penetrating the ovary, smooth. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: ECUADOR: Zamora-Chinchipec: El Pangui, flowered at Ecuagenera, Gualaceo, flowered 23 X 2016, Hágsater 14808, digital images of pretype, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: Presently known only from around El Pangui, Morona-Santiago, Ecuador, at 1000 m. Flowering in September-October.

RECOGNITION: *Epidendrum xelidonourum* belongs to the Bicerthatum Group, a small group of species which has appeared recently and is characterized by the caespitose habit, simple, leafy, short stems, compact, nodding inflorescence, conspicuous bracts about as long as the ovary, numerous fleshy, green and/or white flowers, with the mid-lobe deeply bilobulate, the lobules sometimes ciliate; the pollinia are thin, and unequal, the inner pair smaller, without being of the bird-wing-type. The new species is recognized by very pale greenish white flowers, base of the sepals (6.4-7.0 mm long), petals and column green, column and lip white, lateral lobes of the lip $\frac{1}{4}$ circle, mid-lobe basal half sub-rectangular, slightly slimmer at the middle, apical half bilobed, lobes linear triangular, acuminate, arching-divaricate, reminiscent of the tail of barn swallows. *Epidendrum brachyblastum* has narrower, hemi-ovate lateral lobes of lip, and deep green flowers with lip and apical half of column snow white. *Epidendrum hugomedinae* Hágsater has snow-white flowers with keels of lip tinged violet and obtusely mid-lobe formed by two, rounded, somewhat divergent, lobes. *Epidendrum bicirrhatum* D.E. Benn. & Christenson from northern Peru has pale cream-orange flowers with base of the sepals and petals green, tips of keels of the lip lavender, flowers are smaller, sepals being 4.6-5.2 mm long, and lip has denticulate margins on sub-orbicular lateral lobes, and ciliate lobules on mid-lobe. The Bolivian *E. ophidion* Dodson & R. Vásquez is quite similar to latter, but has successive, yellow flowers with three purple lines on the disc, pustulate sepals 6-8 mm long, and dolabriform lateral lobes with a crenulate margin. *Epidendrum tiwinzaense* Hágsater & Dodson species has green flowers with a white lip and apical half of column, and sepals some 7 mm long, lip terminating in a pair of ciliate lobes. *Epidendrum enantilobum* Hágsater has green to cream-colored flowers, lip and column white, sepals 4-5 mm long sepals, lateral lobes falcate-oblong, mid-lobe forming two opposite narrow ciliate lobes.

CONSERVATION STATUS: DD. Data deficient. This attractive species will hopefully be propagated by Ecuagenera in Cuenca, Ecuador.

ETYMOLOGY: From the Greek $\chi\epsilon\lambda\iota\delta\omicron\nu$, a swallow, and $\omicron\upsilon\rho\alpha$, tail, in reference to the resemblance between the mid-lobe of the lip (when spread) to the tail of the Barn Swallow, *Hirundo rustica*, a deeply forked tail formed by two divergent, linear-triangular lobes.

REFERENCES: Bennet, Jr., D. E., & E. A. Christenson, 1998, *Epidendrum bicirrhatum* D.E. Benn. & Christenson, in *Orchids of Peru*, **Icon. Orchid. Peruvianum** t. 453. Dodson, C. H., & R. Vásquez, 1989, *Epidendrum ophidion* in *Orchids of Bolivia*, **Icon. Pl. Trop.** ser 2, 4: pl. 331. Hágsater, E., 2018, *Epidendrum enantilobum*, in E. Hágsater & E. Santiago (eds.), *The Genus Epidendrum*, Part 13, **Icon. Orchid.** 16: t. 1616. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum brachyblastum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 713. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum tiwinzaense*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 795.



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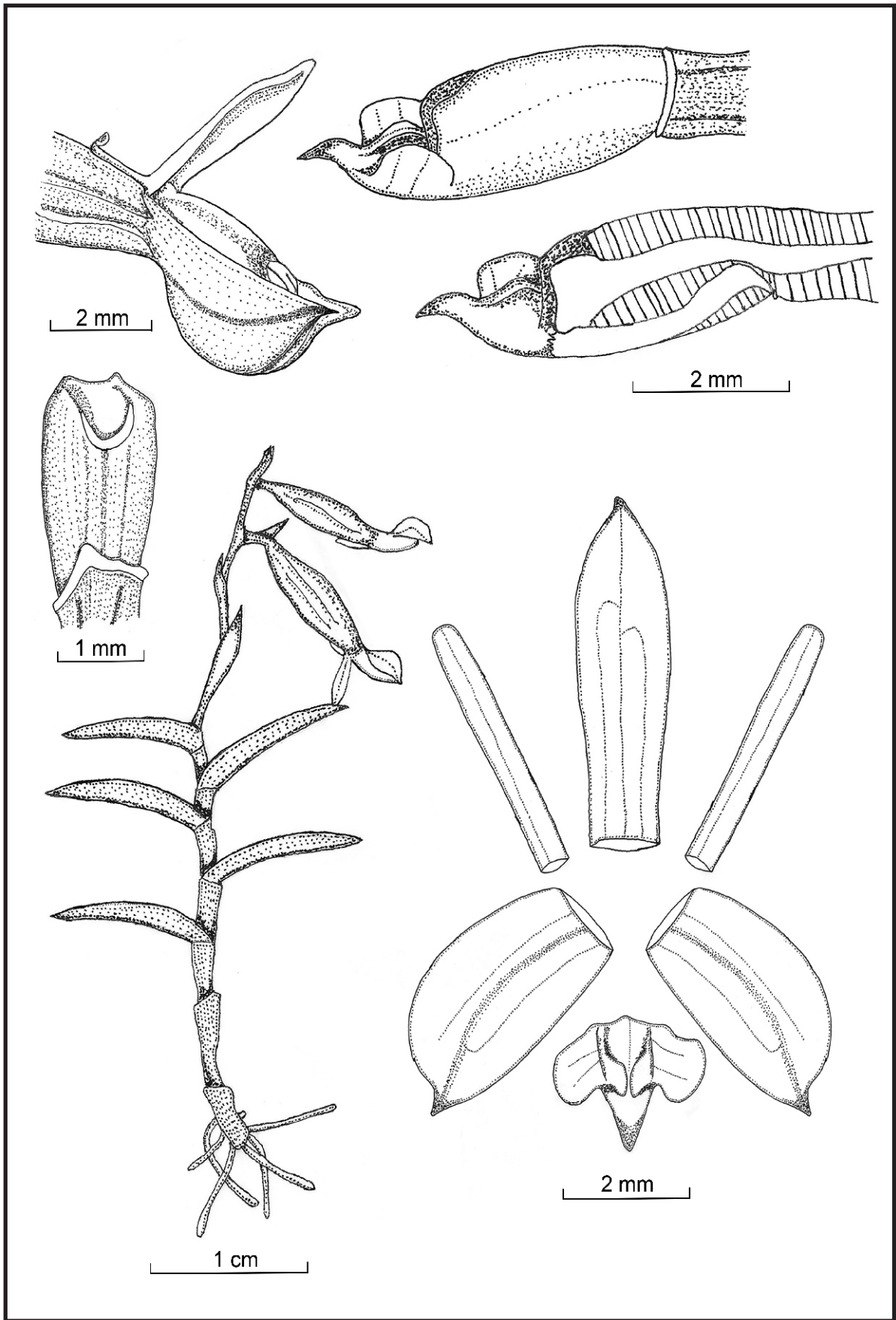
Editors: E. Hágsater & E. Santiago

Herbario AMO

Ciudad de México, MÉXICO

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Plate 1666



EPIDENDRUM YANATILENSE Damián & Hágsater

Plate 1667

EPIDENDRUM YANATILENSE Damián & Hágsater, Phytotaxa 246(4): 288. 2016.

Type: PERU: Cusco: Province: Calca; District: Yanatile; 4 km from Santiago valley, 12°34'31.74"S, 72°25'24.05"W, 2,450 m, 27 May 2015, **Alexander Damian & Uriel Huaycho 0300**. Holotype MOLI! (Illustration voucher), ADP-spirit 3027. (photo voucher)

Epiphytic, erect, sympodial, caespitose, **herb** to ca. 5 cm tall. **Roots** basal, fleshy, thin. **Stems** 2.5 cm long, simple, cane like, ancipitose. **Leaves** 5, equally distributed throughout the stem, distichous, alternate, articulate, generally erect-spreading, embracing; sheaths tubular infundibuliform, laterally compressed; blade 7-9 x 1 mm, ovate to oblong-ovate, obtuse, acuminate, coriaceous, margin entire. **Spathe** 1, ca. 11 x 1 mm, nearly parallel-sided, acute, covering half the peduncle, margin papillose. **Inflorescence** 1.8 cm long, apical, racemose, sub-erect, lax-flowered, with 2 flowers; peduncle 1.2 cm long, rachis 0.6 cm long. **Floral bracts** 3 x 1 mm, shorter than the ovary, acuminate. **Ovary** 6 mm long (in fruiting stage), terete. **Flowers** simultaneous, non-resupinate, color greenish brown, fragrance not registered. **Sepals** partly spreading, ovate, acute to acuminate, thickened towards the apex, 3-veined, the mid-vein prominent; **dorsal sepal** 4 x 1.5 mm, oblong-obovate, obtuse, with a mucro at the apex; **lateral sepals** 3.5 x 1.4 mm, oblong-elliptic, oblique, aristate, with a prominent dorsal keel. **Petals** 3.5 x 0.3 mm, reflexed, linear, apex rounded, 1-veined. **Lip** 2.0 x 2.5 mm, united to the column, 3-lobed, spreading, forward; bicallose, calli prominent, laterally compressed, laminar, rhomboid, leaning inwards and nearly touching each other; lateral lobes 0.8 x 1.0 mm, prominent, semi-orbicular-quadrate, projecting at a 45° angle, margin entire; mid-lobe 1.4 x 1.0 mm, triangular, acute. **Column** 2.5 mm long, short, thick, straight. **Clinandrium-hood** reduced, margin entire. **Nectary** narrow, without penetrating the ovary. **Anther** not seen. **Pollinia** not seen. **Capsule** not seen.

OTHER SPECIMENS AND RECORDS: None seen.

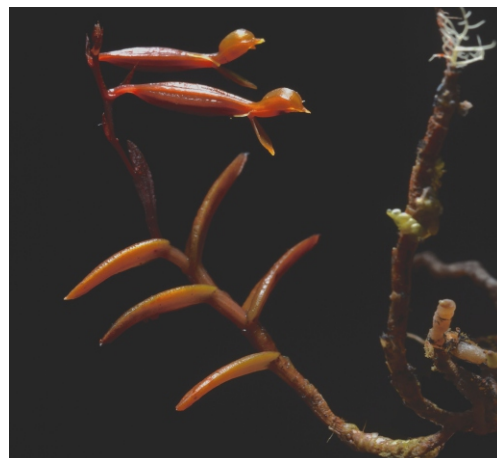
DISTRIBUTION AND ECOLOGY: Known only from the type collection in the province of Calca, Cusco department, southern Peru at 2,400 m. Epiphyte on a *Weinmannia* Linnaeus tree, growing together with *Trichosalpinx teaguei* Luer, *Trichosalpinx cedralensis* Ames, and *Barbosella cucullata* Lindley, in a cloud forest dominated by *Cyathea* Smith, *Eleocharis* Presl. and *Lycopodium* Linnaeus species, and codominated by Ericaceae shrubs. Canopy is up to 15 m high, represented by *Podocarpus* L'Héritier ex Persoon trees. Flower in May.

RECOGNITION: *Epidendrum yanatilensense* belongs to the *Alpicolum* group which is characterized by the simple, cane-like stems, long, narrow 1-2 spatheaceous bracts, fox-tail-like inflorescence and numerous flowers with fleshy lip, triangular mid-lobe and roundish lateral lobes. The new species is recognized by the very small plant, to ca. 5 cm tall, flowers are non-resupinate, small, dorsal sepal 4 mm long, and the lip is 3-lobed, with rounded lateral lobes and a triangular mid-lobe; calli two, large, laminar, rhomboid, leaning inwards so as to form a cuniculus in front of the entrance to the nectary. *Epidendrum pucunoense* Hágsater & Dodson has larger plants, 17-32 cm tall, and numerous flowers on a raceme, the flowers are yellow-brown, the lip yellow, the calli are laminar, rounded, erect, with a short, thickened mid-rib in the middle; clinandrium is prominent, funnel-shaped, emarginate. Moreover, the calli of the new species are leaning inwards, laminar and it does not appear to have a thickened short mid-rib in between the calli, as is usual in all species of the *Epidendrum alpicolum* group, including *Epidendrum pucunoense*. Among Peruvian species of *Epidendrum*, *E. yanatilensense* is distantly similar to *Epidendrum inamoenum* Kraenzl. However, the latter resembles a different group (Scabrum group), which is characterized by a branching stem with infundibuliform, rugose, leaf sheaths and carrying acute, aristate, lanceolate leaves blooming on a short, thin, capitate inflorescence and flowers with a bicallose lip. Although the calli of the new species is reminiscent of *E. inamoenum*, with two laminar calli so as to form a canal in front of the entrance to the nectary; it has a monopodial plant habit, branching above, lacks any spathe, and is in every way much larger, stems to 50 cm tall. Moreover, small epidendrums, as *E. yanatilensense* (<10 cm tall) are not uncommon within the genus. For example, *Epidendrum miserrimum* Rchb.f. is quite frequent and has a wide distribution range. In addition, among the 12 *Epidendrum* species reported for Calca-Cusco (Tropicos, 2016), where *E. yanatilensense* is here reported, *Epidendrum physopus* Kraenzl. and *Epidendrum repens* Cogn. have reported small sizes (12 cm long). Nonetheless, none of them shares the distinct set attributes of *E. yanatilensense*, i.e. small plant (5 cm tall); 3-lobed lip; and two, laminar, rhomboid, leaning inwards calli.

CONSERVATION STATUS: The species is threatened by its restricted known distribution (known from only one locality). Moreover, its habitat is severely affected by the establishment of a coffee plantation. According to the IUCN Red List Categories and Criteria (2010) *E. yanatilensense* would qualify as Critically Endangered CR (criteria B1a, B1b(i)). However, further field studies are required to attain an objective assessment of its conservation status.

ETYMOLOGY: In reference to the district where the type was collected, Yanatile, Calca province, Cusco department.

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Plate 1667