

ANDRETTANA

TROPICAL ANDES BIODIVERSITY AND CONSERVATION

Vol. 1

January - March 2025

Ecuador

ISSN 3073-150X



Director:

José Portilla Andrade

Editor general:

Juan Pablo Martínez Moscoso

Coordinador de contenido:

Alex Portilla Delgado

Comité Editorial:

Thomas Croat

Thomas Mirenda

Sandra Tillisch Svoboda

Gary Meyer

Comité Asesor Científico:

Alfonso Doucette

Diseño y Diagramación:

Departamento Multimedia Ecuagenera

Foto de la portada: *Dracula andreettae*Voumen I, No I
enero de 2025**Director:**

José Portilla Andrade

Editor-in-Chief:

Juan Pablo Martínez Moscoso

Content Coordinator:

Alex Portilla Delgado

Editorial Board:

Thomas Croat

Thomas Mirenda

Sandra Tillisch Svoboda

Gary Meyer

Scientific Advisory Board:

Alfonso Doucett

Design and Layout:

Ecuagenera Multimedia Department

Cover Photo: *Dracula andreettae*

Volume: I

Number: 1

January 2025

ANDRETTANA, publicación de la FUNDACION PARA LA INVESTIGACION, CONSERVACION, DE LA BIODIVERSIDAD Y DESARROLLO DE LOS ANDES TROPICALES "ANGEL ANDRETTA" es una revista científica dedicada a la publicación de investigaciones originales sobre la biodiversidad de la región neotropical, con énfasis en los Andes tropicales. La revista recibe trabajos en las áreas de taxonomía (descripción y revisión de especies), biodiversidad, ecología, biogeografía, restauración ecológica, usos culturales de la biodiversidad, así como horticultura de plantas tropicales, haciendo especial énfasis en orquídeas. Los manuscritos que ofrezcan aportes relevantes al conocimiento taxonómico y ecológico, así como a la conservación y el manejo sostenible de la biodiversidad andina, tendrán prioridad.

Se publican tanto estudios empíricos como revisiones, ensayos y comunicaciones breves que presenten nuevos métodos, enfoques conceptuales o aplicaciones prácticas. Se valoran contribuciones que trasciendan casos específicos y planteen soluciones o reflexiones aplicables a otras regiones y contextos.

"ANDRETTANA," a publication of the Foundation for Research, Conservation, and Development of the Tropical Andes "Angel Andreetta," is a scientific journal dedicated to publishing original research on the biodiversity of the Neotropical region, with an emphasis on the Tropical Andes. The journal welcomes submissions in the areas of taxonomy (species description and revision), biodiversity, ecology, biogeography, ecological restoration, cultural uses of biodiversity, as well as the horticulture of tropical plants, with a special focus on orchids. Manuscripts offering relevant contributions to taxonomic and ecological knowledge, as well as to the conservation and sustainable management of Andean biodiversity, will be prioritized.

Both empirical studies and reviews, essays, and short communications presenting new methods, conceptual approaches, or practical applications are published. Contributions that transcend specific cases and propose solutions or reflections applicable to other regions and contexts are valued.

Para mayor información:

Juan Pablo Martínez Moscoso, Editor general
Fundación Angel Andreetta, Gualaceo, Ecuador
editorial@faaec.org - www.faaec.org

For inquiries, please contact:

Juan Pablo Martínez Moscoso, Editor in Chief
Fundación Angel Andreetta, Gualaceo, Ecuador
editorial@faaec.org - www.faaec.org

Andreettana © 2025 by Angel Andreetta Foundation is licensed under Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International

EDITORIAL

Con gran entusiasmo presentamos este, el primer número de Andreettana, una revista científica dedicada a la investigación, conservación y desarrollo sostenible de la biodiversidad en los Andes tropicales. Esta publicación nace del compromiso de la Fundación Ángel Andreetta por fomentar el conocimiento y la protección de uno de los ecosistemas más ricos y diversos del planeta: la región neotropical.

Andreettana se ha concebido como un espacio de difusión para investigaciones originales que aborden temas como taxonomía, ecología, restauración ambiental, biogeografía, y usos culturales de la biodiversidad. Además, damos especial prioridad a estudios relacionados con la horticultura de plantas tropicales, particularmente orquídeas, dada su relevancia ecológica y cultural en los Andes. Nuestro objetivo es trascender los límites académicos al ofrecer reflexiones aplicables a otros contextos y regiones.

En este primer número, inauguramos nuestras páginas con descubrimientos que resaltan la riqueza natural de los Andes. Presentamos la descripción de nuevas especies, como *Pleurothallis marioportillae* y *Porroglossum doucetteanum* (Orchidaceae), además de *Ceratostema kiatana* (Ericaceae), hallazgos que destacan la biodiversidad única de los bosques nublados ecuatorianos. También abordamos temas cruciales como la estabilidad nomenclatural en taxonomía y exploramos la integración de inteligencia artificial en la descripción de nuevas especies, un enfoque innovador que promete transformar la investigación científica.

En nuestra sección de divulgación, celebramos la pasión por las orquídeas con ensayos que reflexionan sobre los desafíos del cultivo de géneros complejos como *Scuticaria* y sobre la fascinante polinización de *Dracula × kareniae*.

Este número marca el inicio de un proyecto editorial que busca inspirar, conectar y promover el conocimiento en torno a la biodiversidad andina. Invitamos a los lectores a unirse a este viaje de descubrimiento y conservación, mientras celebramos juntos los extraordinarios tesoros naturales de nuestra región.

José Portilla Andrade
Director

EDITORIAL

It is with great enthusiasm that we present the inaugural issue of Andreettana, a scientific journal dedicated to the research, conservation, and sustainable development of biodiversity in the tropical Andes. This publication reflects the commitment of the Ángel Andreetta Foundation to fostering knowledge and protecting one of the planet's richest and most diverse ecosystems: the Neotropical region.

Andreettana is conceived as a platform for disseminating original research in fields such as taxonomy, ecology, environmental restoration, biogeography, and the cultural uses of biodiversity. We place special emphasis on studies related to the horticulture of tropical plants, particularly orchids, due to their ecological and cultural significance in the Andes. Our aim is to transcend academic boundaries by offering insights applicable to other contexts and regions.

In this first issue, we open our pages with discoveries that highlight the natural wealth of the Andes. We present the description of new species, such as *Pleurothallis marioportillae* and *Porroglossum doucetteanum* (Orchidaceae), as well as *Ceratostema kiatana* (Ericaceae), emphasizing the unique biodiversity of Ecuador's cloud forests. We also address critical topics such as nomenclatural stability in taxonomy and explore the integration of artificial intelligence in the description of two new species, an innovative approach with transformative potential for scientific research.

Our outreach section celebrates the passion for orchids through essays reflecting on the challenges of cultivating complex genera like *Scuticaria* and the fascinating results of the self-pollination of *Dracula × kareniae*.

This issue marks the beginning of an editorial project that aims to inspire, connect, and promote knowledge about Andean biodiversity. We invite readers to join us on this journey of discovery and conservation, celebrating the extraordinary natural treasures of our region.

José Portilla Andrade
Director

INDICE - CONTENTS

| | |
|---|----|
| Editorial..... | 4 |
| New Pleurothallidinae from Ecuador, Pt. 1..... | 6 |
| Four new species of the <i>Masdevallia</i> genus, Plurothallidinae, Orchidaceae from south of Ecuador..... | 12 |
| Three new taxa of <i>Ceratostema</i> (Ericaceae: Vaccinae)..... | 25 |
| Nomenclature notes on <i>Ceratostema guachisacae</i> (Ericaceae) from Ecuador..... | 33 |
| A new specie of <i>Lepanthes</i> Sw. (Orchidaceae: Pleurothallidinae) described with the aid of generative artificial intelligence..... | 35 |

HORTICULTURA - HORTICULTUREEE

| | |
|--|----|
| LA COLUMNA DE TOM - <i>Scuticaria</i> | 42 |
| Notas sobre la polinización manual de <i>Dracula</i> × <i>kareniae</i> | 44 |
| <i>Notas sobre el cultivo de una miniatura de los bosques nublados andinos (Lepanthes lucifer)</i> | 49 |
| Intructions for authors..... | 52 |
| Instrucciones para Autores..... | 54 |

New Pleurothallidinae from Ecuador, Pt. 1

Alfonso Doucette, Hugo Medina, & Jose Portilla

ABSTRACT Two new species of Pleurothallidinae are reported from Ecuador. The new species *Pleurothallis marioportillae* and *Porroglossum doucetteanum* are described and illustrated for the first time. The new species are compared with the species that are most similar morphologically in the diagnosis. A discussion is provided for each of the new species about the identification process with notes on other similar species. The wild material used for the research presented here was gathered under Rescate, conservación, reproducción y manejo ex situ de la flora del Ecuador," authorization No. 004-2016-IC-FLO-DNB/MA del Ministerio del Ambiente and used in accordance with La Codificación a la ley Forestal y de Conservación de Área Naturales y Vida Silvestre, authorized for Ecuagenera Cia. Ltda.

KEY WORDS: cool growing orchids, discovered by Ecuagenera, Ecuadorian orchids, miniature orchids, ex-situ conservation.

INTRODUCTION: This series is focused on members of the hyper diverse orchid subtribe Pleurothallidinae as part of an ongoing effort to identify and classify orchids in the collection at Ecuagenera. This series proceeds our previous series, *New Lepanthes* Sw. of Ecuador (Doucette et al. 2023a-h; 2024a, b), in which we described 26 new species of *Lepanthes* from the collection at Ecuagenera and provided five reports of *Lepanthes* species not previously reported from Ecuador. Any new species of *Lepanthes* we encounter will be described here. In part one of this series, we describe two new species in the genus *Pleurothallis* R.Br. and *Porroglossum* Schltr. by providing their description and illustration below.

TAXONOMY

Pleurothallis marioportillae A.Doucette, H.Medina & J.Portilla, *sp. nov.*

TYPE: ECUADOR. Zamora Chinchipe: Canton El Pangui, Los Encuentros, community of El Zarza, 3° 51' 45.73" S, 78° 33' 03.42" W, 1450 m, primary cloud forest, flowered in cultivation at Ecuagenera, EG-0413 (Holotype: HA). Figs. 1–3.

DIAGNOSIS: The new species is most similar to *Pleurothallis aguirrei* Luer & R.Escobar but can be distinguished by longer dorsal sepal (37.1 mm long vs. 30.0 mm) that is narrowly ovate (vs. ovate) subacute (vs. acute), the decurved (vs. revolute) apex of the lip with a tubercle present (vs. absent) on the lower surface of the lip, and longer column (2.6 mm vs. 1.5 mm long).



Figure 1. *Pleurothallis marioportillae* flower detail (photo by Hugo Medina).

DESCRIPTION: Plants erect, herbaceous, epiphytes under 300.0 mm tall; roots not seen; stems terete, erect, 206.3 mm long, 2.6 mm in diameter, enveloped by three to four, papery, tubular, sheaths, 26.3–32.3 mm long, 2.6 mm wide; leaf coriaceous, horizontal to nodding, ovate-cordate, acute, 148.0–157.4 mm long, 60.6–79.5 mm wide; inflorescence fasciculate, racemose, producing solitary flowers that rest on the upper surface of the leaf, peduncle terete, 2 mm long, 1.5 mm in diameter, pedicel terete, 14.2 mm long, 1.5 mm wide, enveloped by papery, tubular bracts, 4.6 mm long, 1.5 mm wide; ovary terete, 6.0 mm long, 1.7 mm wide, fruit not seen; flowers without a detectable odor, dorsal sepal yellow, narrowly ovate, subacute, 7-veined, 37.1 mm long, 11.6 mm wide, the lateral sepals rose, fused into an ovate, obtuse synsepal connate for its entire length, 8-veined, 31.2 mm long, 13.3 mm wide, the petals yellow suffused with rose past the reflexed middle, subfalcate, acute, 17.8 mm long, 3.2–3.4 mm wide; the lip yellow, oblong-subquadrate, minutely papillose, with a subacute, decurved, shallowly tri-sulcate apex with a tubercle on the glabrous, lower surface towards the apex, 7.3–8.5 mm long (unexpanded), 5.3–6.4 mm wide, the column elliptical in cross-section, 2.6 mm long, 3.0 mm wide, stigma bilobed stigma, anther apical, anther cap cream colored housing two, yellow, clavate, pollinia.

EPONYMY: The new species name is named for Mario Portilla, owner of Equaflor-A, and brother of Jose Portilla.

DISTRIBUTION: *Pleurothallis marioportillae* is known only from the type locality.

PHENOLOGY: In cultivation the plants have been observed flowering freely throughout the year.

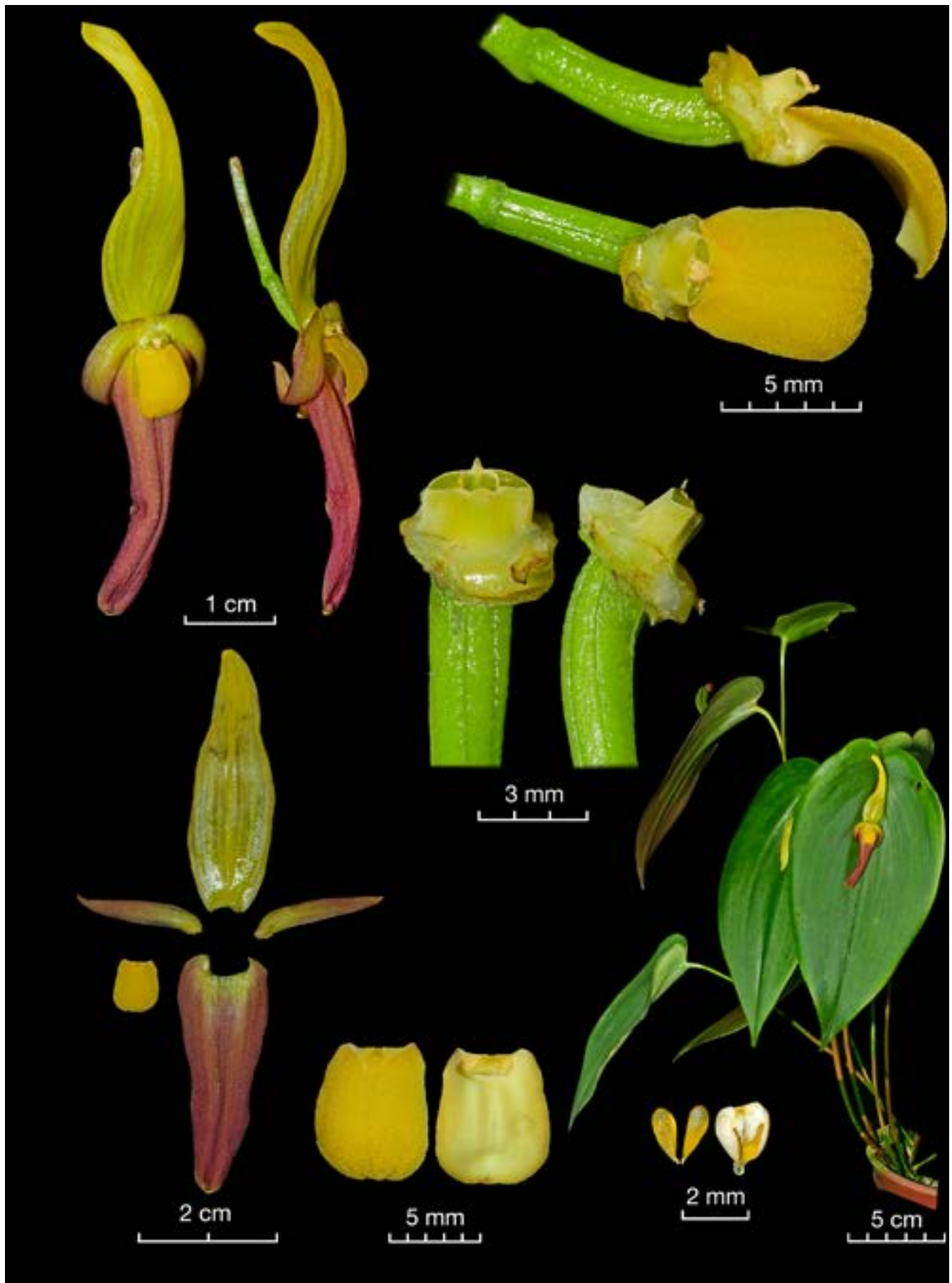


Figure 2. Plate of *Pleurothallis marioportillae* material used to prepare the type specimen. Clockwise: Intact flowers, quarter profile and profile, to 1 cm scale. Lip, profile attached to the column and ovary with petals and sepals removed, profile and upper surface, to 5 mm scale. Plant, to 5 cm scale. Pollinia and anther cap, to 2 mm scale. Lip, upper and lower surface, to 5 mm scale. Sepals, petals, and lip, to 2 cm scale. Column and ovary, to 3 mm scale (center). (photos by Hugo Medina).

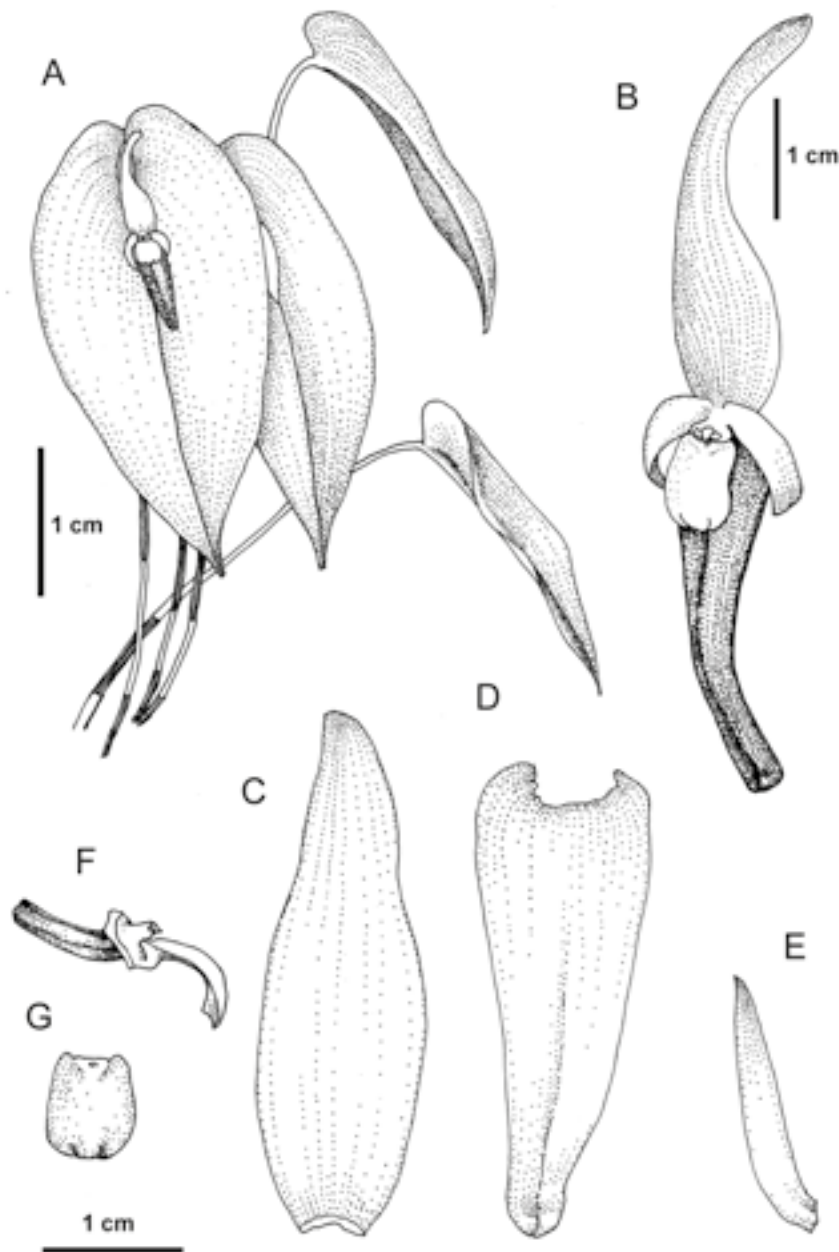


Figure 3. Illustration of *Pleurothallis marioportillae* based on the material used to prepare the type specimen. A. Shoots bearing an inflorescence drawn to 1 cm scale (vertical bar, left). B. Flower drawn to 1 cm scale (vertical bar, right). C–F drawn to 1 cm scale (horizontal bar). C. Dorsal sepal. D. Synsepal. E. Right petal. F. Lip, profile attached to the column and ovary with petals and sepals removed. G. Lip, upper surface. (Illustration by Alfonso Doucette).



Figure 4. *Pleurothallis aguirrei* flower detail (photo by Alfonso Doucette).

DISCUSSION: The new species appears to be most similar to *Pleurothallis aguirrei* (fig. 4) but can be distinguished by the floral morphology; see the diagnosis above for a detailed comparison. In the monograph to *Acronia* sect. *Macrophyllae-Fasciculatae* (Luer) Luer (= *Pleurothallis* subsect. *Macrophyllae-fasciculata* Luer), key "Lot 6 - Dorsal sepal longer than 2 cm" (Luer 2005), the new species keys out to *Pleurothallis batracha* Luer & Hirtz, but can be distinguished by glabrous (vs. microscopically pubescent externally) sepals, the entire (vs. microscopically denticulate) and glabrous (vs. pubescent) petals, and the lip with a tubercle on the lower surface (vs. absent). A review of the 181 names reported by IPNI (2024) published after Luer (2005) did not reveal any similar species.

Porroglossum doucetteanum H.Medina & J.Portilla, *sp. nov.*

TYPE: ECUADOR. Morona-Santiago: Chiguinda, near Bermejos, 3° 15' 17.05" S, 78° 43' 26.13" W, 2000 m, growing in a primary cloud forest, flowered in cultivation at Ecuagenera, Gualaceo, EG-0412 (Holotype: HA). Figs. 5–7.

DIAGNOSIS: The new species is most similar to *Porroglossum porphyreum* G.Merino, A.Doucette & Pupulin, but can be distinguished by the by the entire column (vs. with two short tooth-like processes), the columnfoot suffused with purple (vs. cream), the petals with a low, obtuse angle along the upper margin towards the base (vs. contracted into an acute process in the same position), and a lip with a cleft callus (vs. entire).



Figure 4. *Porroglossum doucetteanum* flower detail (photo by Alfonso Doucette).

DESCRIPTION: Plants herbaceous, caespitose epiphytes under 100 mm tall; roots terete with a green growing tip, 0.8 mm in diameter; stems terete, erect 3.5–8.0 mm long, 1.0 mm wide, enveloped by two to three papery, tubular sheaths, 1.2–2.7 mm long, 1.1–1.7 mm wide; leaf erect, fleshy, coriaceous, smooth to subverrucose, new leaves with a purple reticulate venation, elliptical-spathulate, obtuse to subacute, 24.3–35.0 mm long, 8.0–10.5 mm wide; inflorescence a tightly congested, successively, few-flowered raceme, peduncle terete, 80.4–102.0 mm long, 1.0 mm in diameter, enveloped

by membranous, tubular bracts, 4.3–5.0 mm long, 1.0–1.8 mm wide, pedicel terete 6.7–8.3 mm long, 1.0 mm in diameter; ovary terete, 4.8 mm long, 1.4 mm wide; fruit not seen; flowers rarely with a sweet, spicy fragrance, sepals fused to form a gaping cup, the dorsal sepal purple translucent towards the base, glabrous, ovate, concave, contracted into a terete purple tail, 13.8 mm long, 5.9 mm, the lateral sepals similar in color to the dorsal sepal, transversely ovate, oblique, contracted into a tail similar to that of the dorsal sepal, 13.6 mm long, 8.3 mm wide, the petals translucent, amber colored with a brown midvein, oblong, dialated at the apex, the upper margin with a low obtuse angle towards the base, the lower margin contracted into an acute process, 4.9 mm long, 2.1 mm wide, the lip purple, pubescent, cuneate, with a cream, cleft apex, and a low, cleft callus before the strap-like claw, 4.9 mm long, 3.3 mm wide, the column semiterete, cream, the columnfoot suffused with purple, 2.8 mm long, 1.0 mm wide, the apical anthercap cream, shallowly cucullate, housing two yellow, clavate pollinia.



Figure 6 Comparison of *Porroglossum porphyreum* and *P. doucetteanum*. A. *P. porphyreum* cv. 'Forest's Alfonso' CHM with detail of the entire callus B. *P. doucetteanum* with detail of the cleft callus; note: later boom from the same plant photographed in Fig. 4. (Photos by Alfonso Doucette).

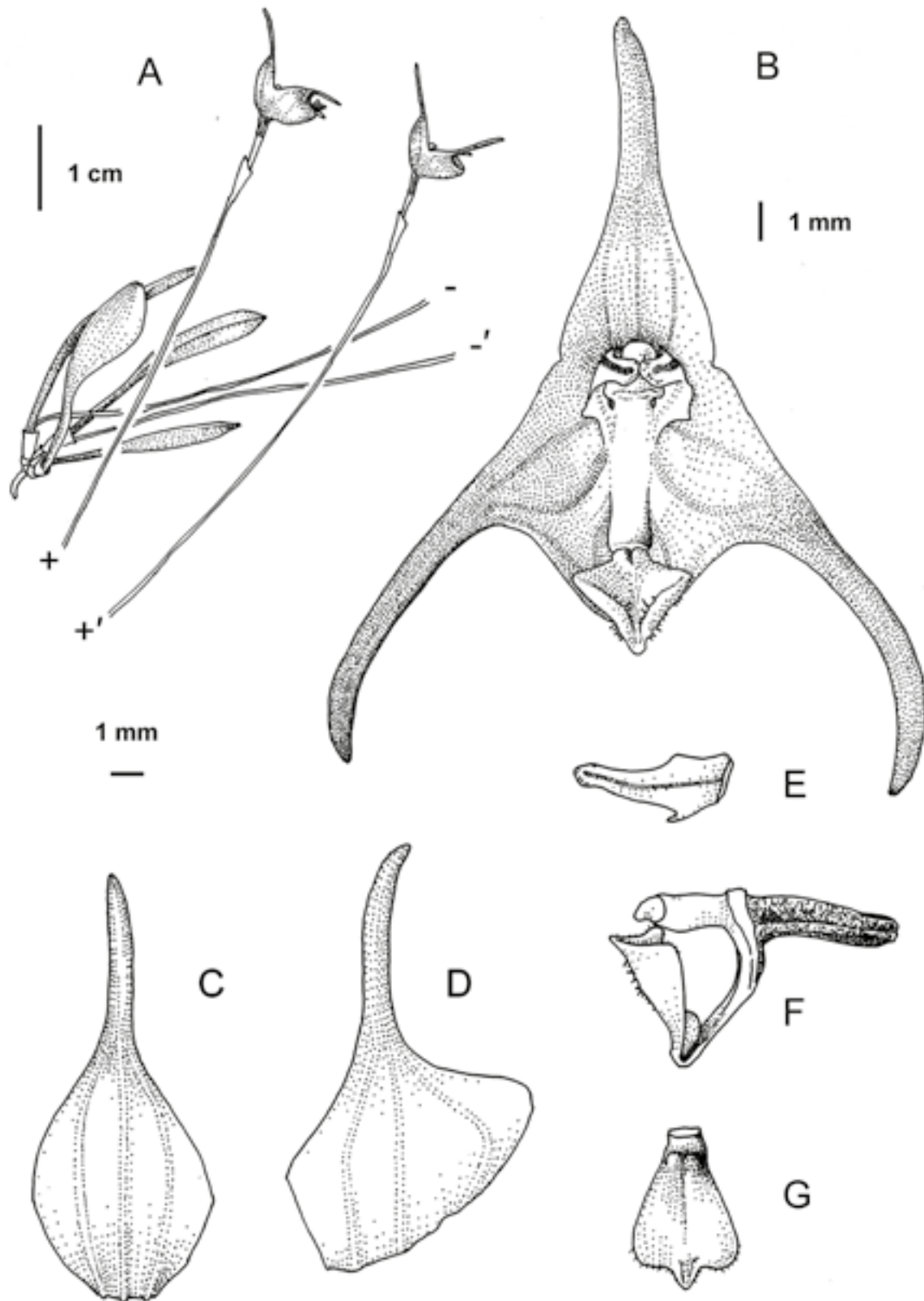


Figure 7. Illustration of *Porroglossum doucetteanum* based on the material used to prepare the type specimen. A. Shoots bearing inflorescences drawn to 1 cm scale. B. Flower drawn to 1 mm scale (vertical bar). C–G drawn to 1 mm scale (horizontal bar). C. Dorsal sepal. D. Lateral sepals. E. Left petal. F. Lip in profile attached to the column and ovary with petals and sepals removed. G. Lip, upper surface. (Illustration by Alfonso Doucette).

EPONYMY: The new species named for Alfonso Doucette, a passionate student of the Pleurothallidinae and respected collaborator on the description and identification of new species from Ecuador.

DISTRIBUTION: *Porroglossum doucetteanum* is known only from the type locality.

PHENOLOGY: In cultivation the plants have been observed flowering freely throughout the year.

DISCUSSION: A review of the 35 species reported by IPNI (2024) published after the monograph to *Porroglossum* (Luer 1987) revealed *Porroglossum porphyreum* (fig. 6) to be the most similar species, but the petal and lip morphology. The diagnosis above provides a more detailed comparison. In the monograph to *Porroglossum* (Luer 1987), the new species is excluded from the key at couplet 22, from line 22 because the stigma lacks acute processes and from line 22' because the callus of the lip is low and longitudinal rather than short and transverse. If couplet 22' is selected the species keys out to *P. meridionale* P.Ortiz, but can be distinguished by the dark purple sepals (vs. light purple, "minutely red-spiculate"), petals with a low, obtuse, angle on the upper margin and an acute angle on the lower margin (vs. entire), the lip with a low, longitudinal, cleft callus (vs. short, transverse), and a purple column foot (vs. cream). The species also bears a superficial resemblance to *P. schramii* Luer, but it can be distinguished by the coloration of the sepals (acute angle vs. entire) on the lower margin of the petals and the longitudinal (vs. transverse) callus.

REFERENCES

- Doucette, A., Medina, H., & Portilla, J. 2023a. New records of *Lepanthes* Sw. from Ecuador. Part 1: Three new species. *Orchids* 92(4): 294-299.
- Doucette, A., Medina, H., & Portilla, J. 2023b. New records of *Lepanthes* Sw. from Ecuador. Part 2: Two new species, two new records and a heterotypic synonym. *Orchids* 92(5): 370-376.
- Doucette, A., Medina, H., & Portilla, J. 2023c. New records of *Lepanthes* Sw. from Ecuador. Part 3: Two new species and a new record for Ecuador. *Orchids* 92(6): 449-454.
- Doucette, A., Medina, H., & Portilla, J. 2023d. New records of *Lepanthes* Sw. from Ecuador. Part 4: *Lepanthes escifera*, *Lepanthes gigiportillae* and *Lepanthes ingapircae*. *Orchids* 92(7): 504-509.
- Doucette, A., Medina, H., & Portilla, J. 2023e. New records of *Lepanthes* Sw. from Ecuador. Part 5: *Lepanthes anchorifera*, *Lepanthes ivanportillae* and *Lepanthes loxensis*. *Orchids* 92(8): 586-591.
- Doucette, A., Medina, H., & Portilla, J. 2023f. New records of *Lepanthes* Sw. from Ecuador. Part 6: *Lepanthes groeninkeana*, *Lepanthes moronasantiagoensis* and *Lepanthes silviocaberoana*. *Orchids* 92(9): 694-699.
- Doucette, A., Medina, H., & Portilla, J. 2023g. New records of *Lepanthes* Sw. from Ecuador. Part 7: *Lepanthes kakabadsae*, *Lepanthes mindoensis* and *Lepanthes panguiensis*. *Orchids* 92(10): 790-796.
- Doucette, A., Medina, H., & Portilla, J. 2023h. New *Lepanthes* Sw. from Ecuador. Part 8: *Lepanthes aguasanta*, *Lepanthes guachisacana* and *Lepanthes saraguensis*. *Orchids* 92(11): 870-876.
- Doucette, A., Medina, H., & Portilla, J. 2024a. New records of *Lepanthes* Sw. from Ecuador. Part 9: *Lepanthes discophylla*, *Lepanthes koritsi* and *Lepanthes nymphaliflora*. *Orchids* 93(1): 66-72.
- Doucette, A., Medina, H., & Portilla, J. 2024b. New records of *Lepanthes* Sw. from Ecuador. Part 10: *Lepanthes cornuta*, *Lepanthes fusca* and *Lepanthes oroana*. *Orchids* 93(2): 120-127.
- Luer, C.A. 1987. Icones Pleurothallidarum IV: Acostaea, *Condylago* and *Porroglossum* (Orchidaceae). *Monographs in Systematic Botany from the Missouri Botanical Garden* 24: 1-91.
- Luer, C.A. 2005. Icones Pleurothallidarum XXVII: *Dryadella* and *Acronia* section *Macrophyllae-Fasciculatae*. *Monographs in Systematic Botany from the Missouri Botanical Garden* 203: 1-311.
- IPNI (2024). International Plant Names Index. Published on the Internet <http://www.ipni.org>, The Royal Botanic Gardens, Kew, Harvard University Herbaria & Libraries and Australian National Herbarium. [Retrieved 8 December 2024].

Four new species of the *Masdevallia* genus, Pleurothallidinae, Orchidaceae from south of Ecuador

Hugo Medina, José Portilla & Iván Portilla

ABSTRACT Four new species of *Masdevallia* (Pleurothallidinae Orchidaceae) are described from material gathered under the research permit "Rescate, conservación, reproducción y manejo ex situ de la flora del Ecuador," No. 004-2016-IC-FLO-DNB/MA, authorized by the Ministerio del Ambiente of Ecuador under Codificación a la ley Forestal y de Conservación de Áreas Naturales y Vida Silvestre, granted to Ecuagenera Cia. Ltda. four new species of *Masdevallia* first collected in the province of Zamora Chinchipe, Ecuador, are described and illustrated: *Masdevallia alexportillae*, *M. ehmigiana*, *M. jorgeportillae* and *M. kiatana*. The new species are compared with *M. cocapatae* Königler, *M. decumana* Lindl, *M. corderoana* F.Lehm. & Kaenzl, and *M. cuprea* F.Lehm. ex Kraenzl. respectively

KEY WORDS: Ecuadorian orchids, new Amazonian species, miniature epiphytes, intermediate growing orchids.

INTRODUCTION: *Masdevallia* is a genus belonging to the subtribe Pleurothallidinae, within the Orchidaceae family. It was first described by Auguste H. Ruiz and J. Pavón in 1794, in honor of José Masdevall Terrades, a medical botanist at the court of Charles III of Spain. The type species of the genus is *Masdevallia uniflora*, native to Peru.

This genus is one of the most diverse among orchids, encompassing more than 1123 records, of which 659 have been recognized as valid species. *Masdevallia* species are distributed primarily in the mountainous regions of tropical America, from Mexico to Brazil, inhabiting cloud forests and humid zones. Its altitudinal range is wide, from 200 to 3800 meters above sea level, with Ecuador, Colombia, and Peru being the countries with the greatest diversity of species. Most *Masdevallias* are epiphytes, although some can grow terrestrially or lithophytically.

The great morphological variability present in the genus *Masdevallia* has led taxonomists to subdivide it into sections, subsections, and subgenera to facilitate its study and classification. (according to Luer, Systematics of Pleurothallidinae, from 1978-2007), where the genus *Masdevallia* is divided into 10 subgenera, 13 sections, and 13 subsections. This includes the subsection *Caudatae*, section *Alaticaulae*, and section subsection *Masdevallia* studied in this article. Throughout the history of orchid taxonomy, many species have been described under different names, which has generated a complex synonymy. In the case of *Masdevallia*, numerous taxonomic studies have led to

the description of new species and the synonymization of others. It is important to highlight that the botanical nomenclature follows a strict set of rules established by the International Code of Nomenclature for algae, fungi, and plants, with the objective of guaranteeing the stability and universality of scientific names, hence the synonymy.

Acinopetala Luer 2006; *Alaticaulia* Luer 2006; *Buccella* Luer 2006; *Byrsella* Luer 2006; *Diodonopsis* Pridgeon & M.W.Chase 2001; *Fissia* (Luer) Luer 2006; *Jostia* Luer 2000; *Luerella* Braas 1979; *Luzama* Luer 2006; *Megema* Luer 2006; *Petalodon* Luer 2006; *Portillia* Königler 1996; *Regalia* Luer 2006; *Reichantha* Luer 2006; *Rodrigoa* Braas 1979; *Spectaculum* Luer 2006; *Spirotantha* Luer 2006; *Streptoura* Luer 2006; *Triotosiphon* Schltr. ex Luer 2006; *Zahleria* Luer 2006

TAXONOMY

Masdevallia alexportillae H.Medina, J.Portilla, I.Portilla, *sp. nov.*

TYPE: ECUADOR. Zamora Chinchipe, Nangaritzta canton, Centro Mariposa sector, 4°23'46.70" S 78°44'16.94" O, ca. 1100 m. It flowered in cultivation at Ecuagenera Gualaceo 2024, EG 0418 (holotipo: HA). Fig. 1-2. Fig. 3 A

DIAGNOSIS: Species nova similis est *Masdevalliae cocapatae* Luer & Teague. Sed differ praecipue coloratione pedunculis floralis, qui maculis brunneis abundanter conspersus est.

Description: Epiphytic plant 18-20 cm long, fleshy caespitose roots 0.1 cm diameter, stout erect ramicaules erect, 2.5-4 cm long, enclosed by 2 slender, tubular spathaceous sheaths 0.9-2 cm long, 0.6-0.8 cm wide; leaf erect, semi-coriaceous, petiolate 10-15 cm long, including petiole 4-5 cm long, blade obovate-falcate, subacute to acute, 1.3-1.8 cm wide, the base gradually narrowing below the petiole; single-flowered inflorescence presenting an aborted floral stipule; stout, semi-horizontal peduncle markedly triquetrous with brown maculae, 5.5-8.5 cm long, 0.15 cm divided with an internode covered by a papyraceous spathe 0.94 cm, long, 0.3 cm wide; floral bracts whitish turning scarcely greenish at apex, tubular, imbricate, inflated, 0.9 cm long, 0.5 cm wide; pedicels 0.9 cm long 0.14 cm wide; ovary cylindrical hexamerous, light green with brown maculae 0.34 cm long 0.15 cm wide; flower with slight unpalatable odor, reddish-brown 1.8-2.94 cm in diameter, sepals fleshy, reddish-brown, glabrous, the dorsal sepal ovate, 2.18 cm long including the tail, 0.58 cm wide, connected to the lateral sepals by 0.57 cm to form a broad sepal tube, the apex subacute, contracted into a thick yellow tail 0.12 cm long, 0.09 cm



Figure 1. *Masdevallia alexportillae* H.Medina et al. A. Habit. B. Three quarter profile of the flower. C. Dissected perianth. D. Detail of the column and lip profile view. E. Colum front and profile view. F. Adaxial, abaxial and profile view of the lip. G. Front view of the right petal. H. macrophotography of a peduncle segment.

thick; the lateral sepals ovate, subacute, 2.09 cm long including the tail, 1.5 cm wide, connate 0.57 cm, the apices subacute, contracted into yellow thick tails 0.76 cm long, 0.09 cm thick; petals white, oblong, 0.74 cm long, 0.2 cm wide, with retuse apex, narrowly inwardly grooved, base truncate; lip 0.64 cm long, 0.24 cm wide, oblong, with a panduriform-spatulate callus 0.06 cm long that tapers markedly toward the hypocotyl and hepiacotyl, decreasing its thickness in these regions, arises from a narrow base that widens slightly towards the hypocylinder, reaching 0.16 cm wide at this point, superficially the lip presents a slight canaliculation, gradually expanding into a bat shape, covering the discal portion, exceeding its maximum width, obtuse apex slightly decurved, with a glandular surface, the base truncate; column narrowly spatulate, white with dark brown inner margin, semiterete, 0.55 cm long 0.17 cm wide, the foot 0.3 cm long, with a short, incurved prolongation; seed not seen.

Etymology: Named after Alexander Portilla of Ecuador, who participate in the collection of the species. Europe manager in Europe and nephew of Jose Portilla founder and executive president of Ecuagenera Cia Ltda.

Distribution: Only known from Ecuador, Zamora Chinchipe province, Nangaritza canton, Centro Mariposa sector.

Phenology: bloom sporadically from August to December.

Habitat and ecology: It grows epiphytic in primary, tropical forests, under the canopy of trees on thin branches among moss and lichens, with high ambient humidity, ca 1100 m a.s.l.

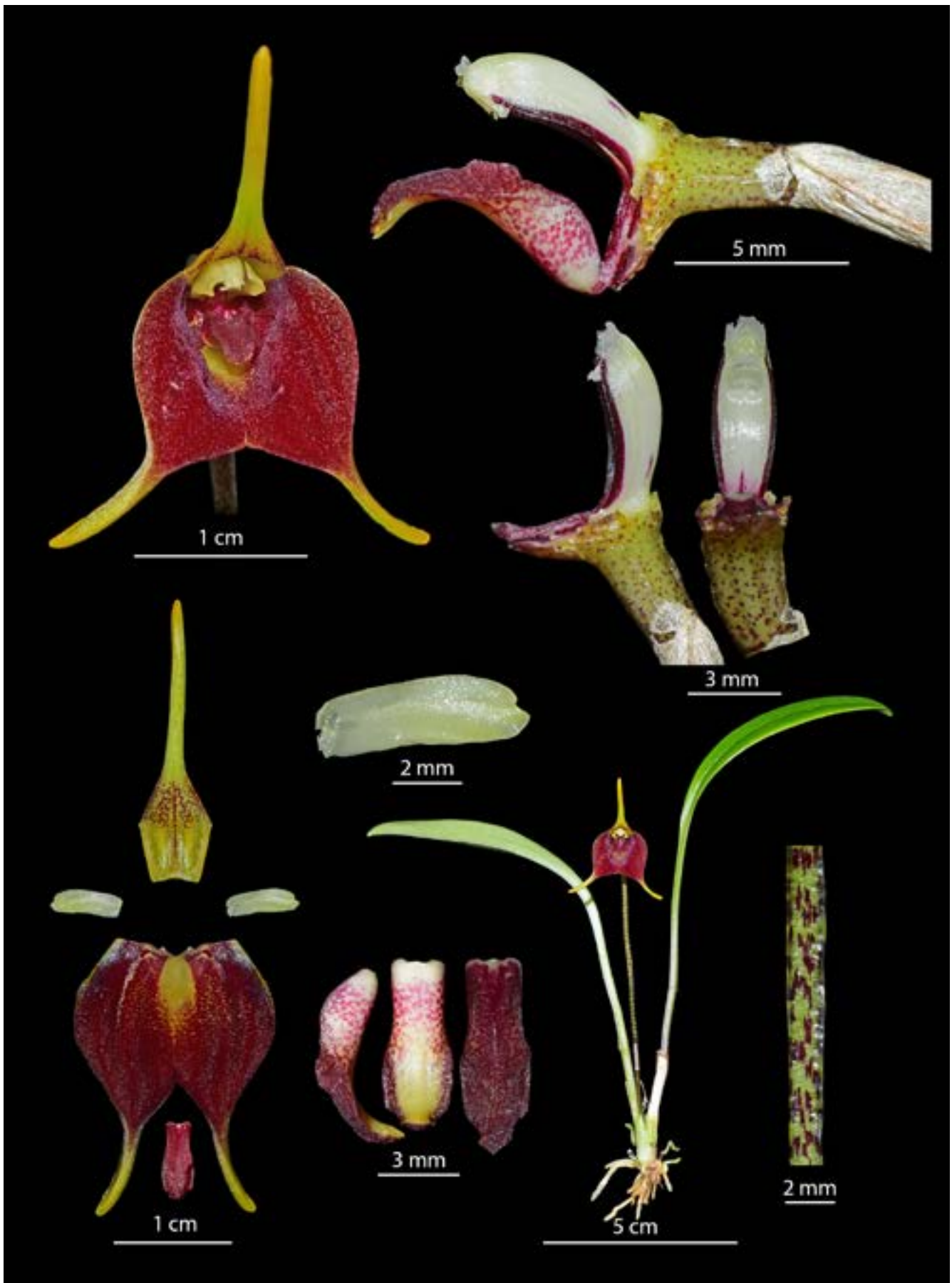


Figure 2. *Masdevallia alexportillae* Medina et al. Prepared sheet of the plant that served as holotype, by Hugo Medina.

Discussion: The new species belongs to subgenus *Polyantha*, section *Alaticaulis*, subsect. *Alaticaulis*. Similar to *M. cocopatae* Luer, Teague & Vasquez, distinguished by yellow floral caudae, peduncle and ovary densely mottled brown, (vs. flowers with yellow-orange caudae, peduncle and ovary unspotted) labellum with panduriform-spatulate callosity, glandular apex (vs. oblong-panduriform lip, glabrous apex).



Figure 3. Comparison of the new species. **A.** *Masdevallia alexportillae*, photographed by H. Medina. **B.** *M. cocopatae* Luer, Teague & Vásquez. Photo obtained from the KEW, courtesy of Eric Hunt.

TAXONOMY

Masdevallia ehmigiana H.Medina, J.Portilla, I.Portilla, *sp. nov.*

TYPE: ECUADOR. Zamora Chinchipe, Nangaritza canton, Centro Mariposa sector, 4°23'46.70" S 78°44'16.94" O, ca. 1100 m. It flowered in cultivation at Ecuagenera Gualaceo 2024, EG 0418 (holotipo: HA). Fig. 4–5. Fig. 6 A.

DIAGNOSIS: *Nova species ad subsectionem caudatae pertinet, similis Masd decumana Luer, floribus translucetibus brunneis distinguitur, petalis hyalinis et apice emarginatis, sepalo dorsali basi anguste et caudis relative brevibus, labelo ovali, apice obtuso cum basi truncato maculis fuchsia pilis imformibus, vs. floribus brunnei, maculis obscure prominentibus, petalis opacis, apice acuminatis, basi lata et cauda conspicue longiore, labio semi-rhomboideo, apice rotundato, basi obtuso, maculis nigris.*

Description: Epiphytic herbaceous plant 4-6 cm long, caespitose roots, fleshy 2.6 long 0.13 cm diameter; ramicaules erect, stout, 0.56-1.18 cm long, 0.13 cm wide, enclosed by 2-3 spatheaceous, papyraceous, tubular sheaths 0.44-0.87 cm long, 0.30-0.44 cm ancho; leaf erect, leathery, ovate, apex retuse-mucronate 3.12-4.5 cm long, including petiole; petiole 0.50-0.74 cm long, blade ovate, obtuse to semi-acute, 2.34-1.33 cm from ancho; single-flowered inflorescence appears on the ramicaule; stout, erect, cylindrical peduncle, 3.5-4 cm long, 0.1 cm wide, divided into an internode covered by a 0.5 cm, long, 0.16 cm papyraceous spathe ancho; greenish, barely whitish, tubular, imbricate, inflated floral bracts, 0.74 cm long, 0.28 cm from ancho; pedicels 1 cm long, 0.14 cm from ancho; ovary cylindrical, hexamerous, whitish 0.57 cm long 0.23 cm from ancho; flower 5-6 cm in diameter including tails, brown with purple macules; dorsal sepal ovate, slightly concave, 4.38 cm long including tail, 1 cm wide, connate to lateral sepals by 0.43 cm, to form a short sepal tube, subacute apex contracted into a thick yellow tail 2 cm long, 0.069 of diameter; subacute lateral sepals 4.41 cm long including tail, 0.94 cm wide, connate 0.43 cm, apices subacute, contracted into yellow thick tails 2.4 cm long 0.72 cm thickness; petals hyaline, oblong, slightly ribbed divided by a protuberance that from apex to base, 0.5 cm long, 0.16 cm wide in the central part, apex bilobed, barely ribbed inward, base truncate retusa; lip ovate 0.42 cm long, 0.23 cm wide, apex mucronate slightly incurved towards ovary, base truncated; column oblong, yellowish with reddish macules, 0.49 cm long, 0.14 cm wide, with ventral filament slightly widened at base, foot 0.39 cm long, with a short, incurved prolongation, with translucent yellowish wings at apex 0.04; seed not seen.

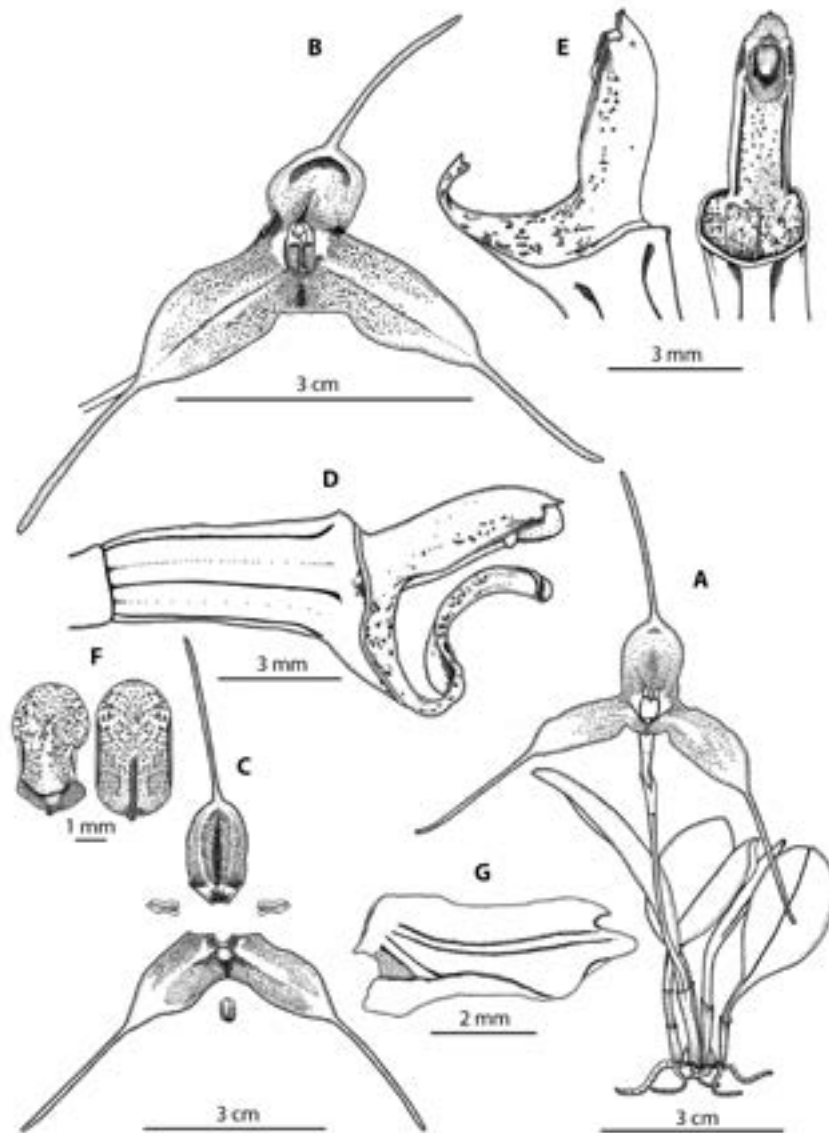


Figure 4. *Masdevallia ehmigiana* H.Medina et al. A. Habit. B. Three quarter view of the flower. C. Dissected perianth. D. Detail of the column and lip profile view. E. Column front and profile view. F. Adaxial and abaxial view of the lip. G. Front view of the right petal.

Etymology: In honor of the Ecuadorian, Magister. Hans Ehmgig Dillon, Expert in Economics and Environmental Law, Master in Political Communication and Strategic Governance by the George Washington University in Washington, United States, currently Superintendent of Economic Competition, Doctor in Jurisprudence and Lawyer of the Courts and Tribunals of the Republic of Ecuador, Bachelor in Public and Social Sciences.

Distribution: *Masdevallia ehmigiana* only known from the Amazonian region of southeastern Ecuador in the province of Zamora Chinchipe, Zamora canton, Jambue Alto community, ca. 1600 m.

Phenology: In cultivation, they have been observed flowering sporadically between January, April and August.

Habitat and ecology: It grows in primary forest under the canopy of trees, on thin branches with high ambient humidity, ca 1600 m.

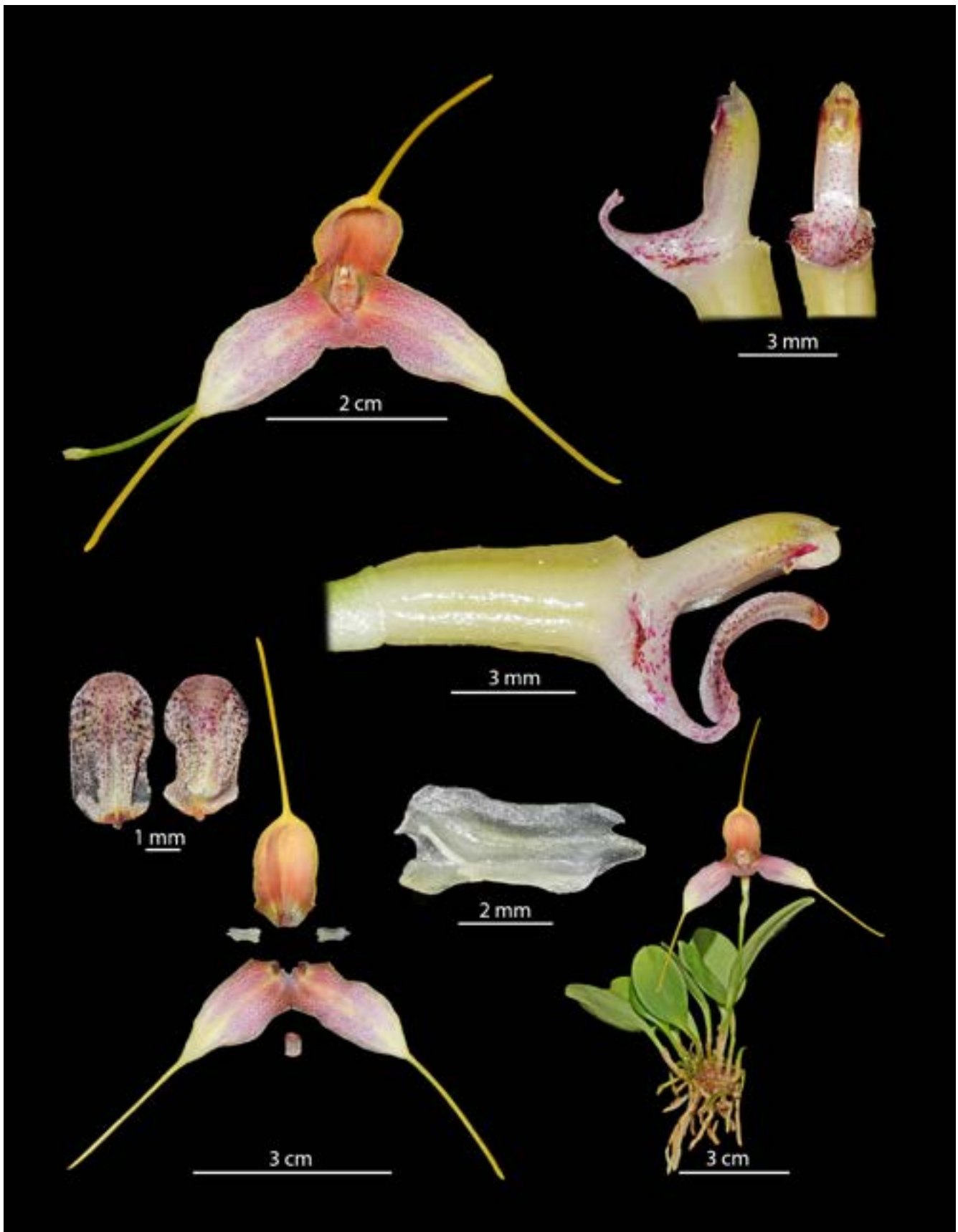
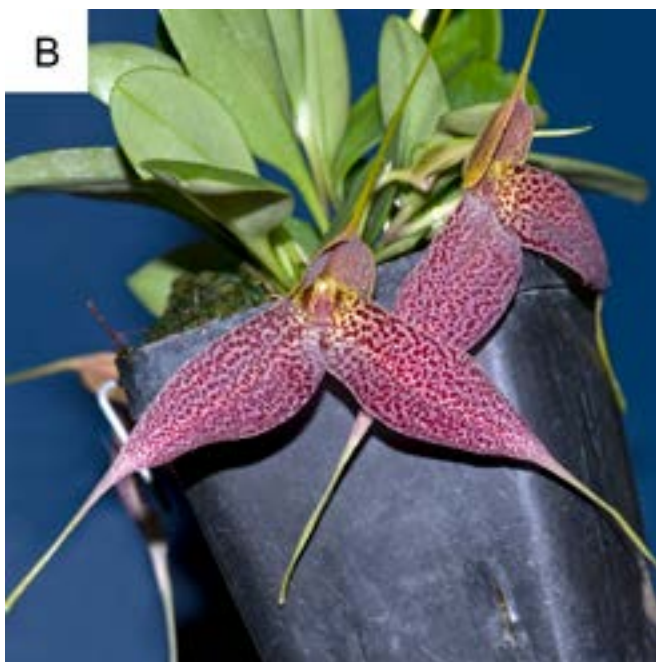


Figure 5. *Masdevallia ehmigiana* Medina et al. Prepared sheet of the plant that served as holotype, by Hugo Medina..

Discussion: The new species belongs to subsection *caudatae*, and consists of 28 species. Similar to *M. decumana* Luer, but can be distinguished by light brown flowers (vs. brown flowers with much darker macules), hyaline petals cleft apex (vs. dull petals, acuminate apex), ovate lip, obtuse apex, truncate base with dark brown hair-like macules (vs. Semi-dromboid lip, rounded apex, obtuse base with prominent dark brown maculae) dorsal sepal narrow base with relatively short cauda (vs. broad base and noticeably longer cauda)



TAXONOMY

Masdevallia jorgeportillana H.Medina, J.Portilla, I.Portilla, *sp. nov.*

TYPE: ECUADOR. Loja, Saraguro canton, Las Antenas sector, 3°40'54.61" S 79°14'24.59" O, ca. 3250 m. flourished in cultivation in Ecuagenera Gualaceo 2024, EG 0417 (holotipo: HA). Fig. 7-8. Fig. 9 A.

DIAGNOSIS: *Nova species similis est Masdevalliae suinii* Luer & Hirtz. *Sed differ floribus colore luteo nervis fuscis diffuses ornatis, caudis brevioribus*

Description: Epiphytic herbaceous plant 12-16 cm long, caespitose roots, fleshy 2.6 long 0.13 cm diameter; ramicaules erect, stout, 2.32 cm long, 0.26 cm wide, enclosed by 2 spathaceous sheaths, papyraceous, tubular 1.12-1.16 cm long, 0.40 cm from wide; leaf erect, underside with black macules, coriaceous, lanceolate, apex acuminate, base attenuate 10.7-14.5 cm long, including petiole; petiole 3.8-8.4 cm long, blade lanceolate obtuse to semi-acute, 5-7 cm long, 1.9-2.19 cm from wide; single-flowered inflorescence appears on the ramicaule, covered by a papyraceous bract 1 cm long, 0.28 cm from wide; stout, semi-horizontal, cylindrical peduncle, 10.34-4 cm long, 0.11 cm wide, divided into an internode covered by a papyraceous spathe, 1.16 cm long, 0.22 cm wide; greenish papyraceous, tubular, inflated floral bracts, 1 cm long, 0.5 cm wide, 0.5 cm wide; pedicels 1.6 cm long, 0.14 cm wide; ovary cylindrical, olive green, 0.74 cm long 0.20 cm wide; flower 3-2.2 cm in diameter including tails, yellowish with purple veins; sepals fleshy, yellowish, pubescent with veins purple; dorsal sepal lanceolate, slightly concave, yellow-orange with 3 brown veins 2.77 cm long including tail, 0.86 cm wide, connate to lateral sepals by 1 cm, to form a sepal tube, subacute apex contracted into a thick tail, 1 cm long, 0.1 cm diameter; subacute, subacute, functioning lateral sepals 2.75 cm long including tail, 1.60 cm wide, connate 1 cm, apices subacute, contracted into thick yellow-orange tails 1 cm long 0.1 cm from thickness; petals translucent yellow, oblong, slightly ribbed, 0.64 cm long, 0.32 cm wide on the winged side, apex crenulate, base truncate cleft; lip cordate 0.71 cm long, 0.39 cm wide, apex acuminate, slightly incurved towards ovary, base cleft; column cylindrical convex, white with purple ventral margin, 0.66 cm long, 0.13 cm wide, foot 0.56 cm long, with a short prolongation 0.19 cm long, incurved towards inside; seed not seen.

Figure 6. Comparison of the new species, taking into account the most similar one. **A.** *Masdevallia ehmigiana* grown in Ecuagenera. **B.** *M. decumana* Koniger, photographed by H.Medina

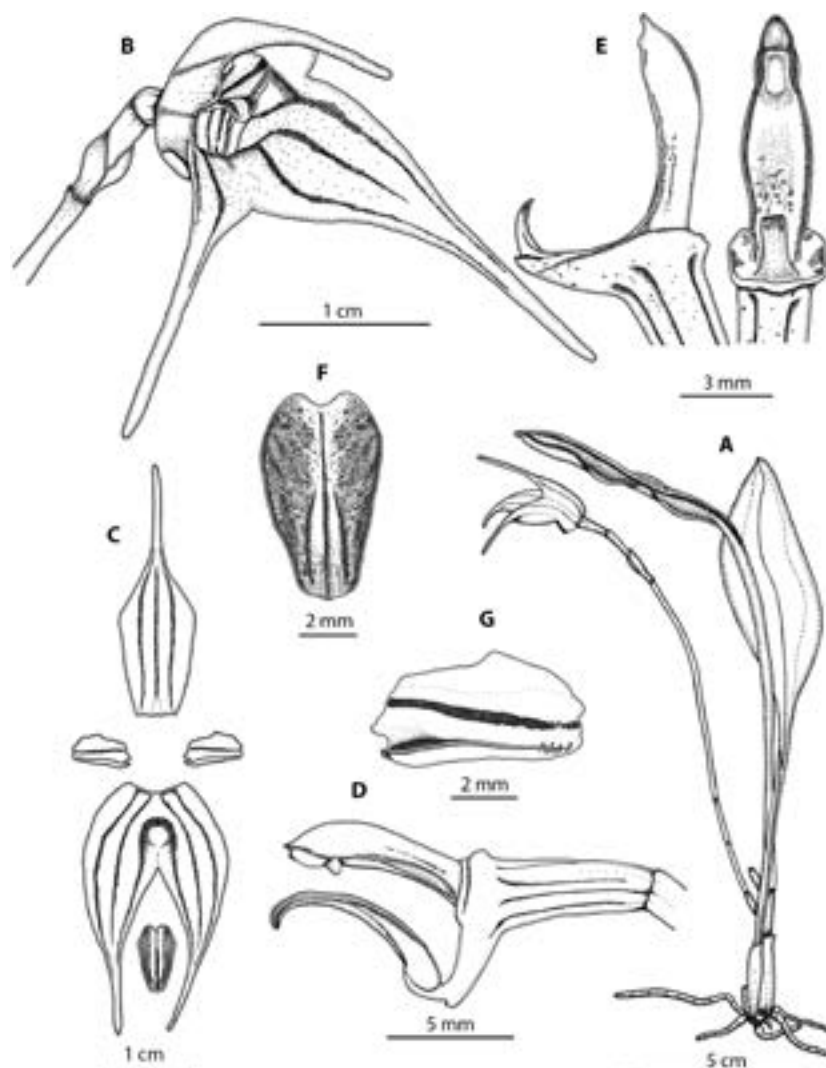


Figure 7. *Masdevallia jorgeportillana* H.Medina et al. A. Habit. B. Three quarter profile of the flower. C. Dissected perianth. D. Detail of the column and lip profile view. E. Colum front and profile view. F. Adaxial view of the lip. G. Front view of the right petal.

Etymology: Named after Jorge Portilla of Ecuador, who participate in the collection of the species. United States sales representative and son of Iván Portilla executive vicepresident of Ecuagenera Cia Ltda.

Distribution: Known in Ecuador, Loja province, Saraguro canton, Las Antenas sector.

Phenology: bloom sporadically from January to July.

Habitat and ecology: It grows epiphytic and terrestrial among abundant moss and lichens, in primary, rainy and cloud forest with high humidity, ca 3250 m a.s.l.

Discussion: The new species belongs to subgenus *Masdevallia*, section *Masdevallia*, subsection *Masdevallia*, Similar to *M. suinii* Luer & Hirtz, distinguished by yellowish flowers, diffuse brown veins, pubescent sepals and short caudae (vs. light brown flowers, glabrous sepals with pronounced dark brown veins and noticeably longer caudae), petals upper marginate margins, apex crenulate, (vs. Petals entire upper margin, apex semi-emarginate), lip lingulate, base cleft, apex slightly backward twisted (vs. lip semi-spatulate, base narrowly cleft, apex winged, backward twisted, slightly mucronate in *M. suinii*).

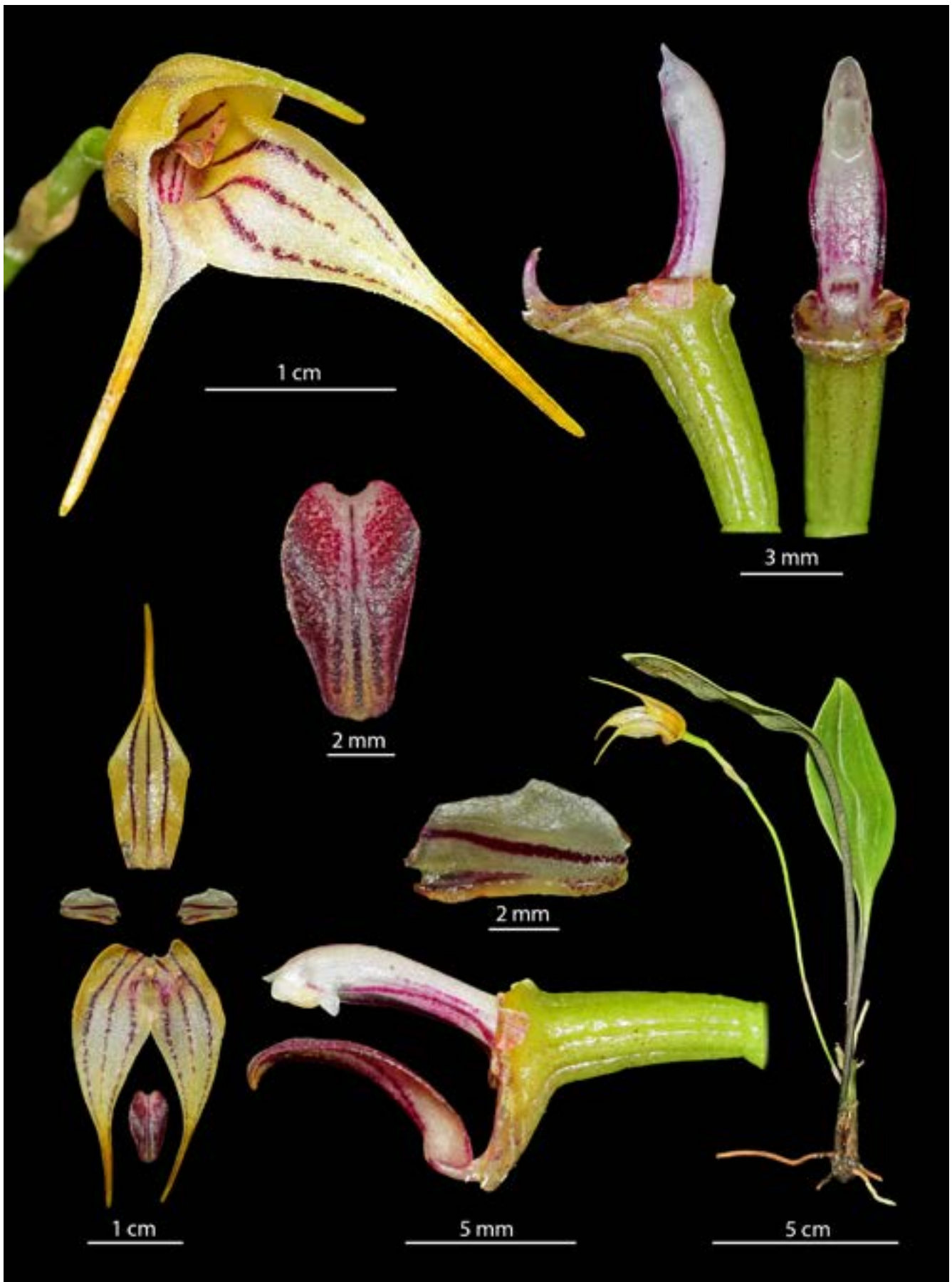


Figure 8. *Masdevallia jorgeportillana* Medina et al. Prepared sheet of the plant that served as holotype, by Hugo Medina.

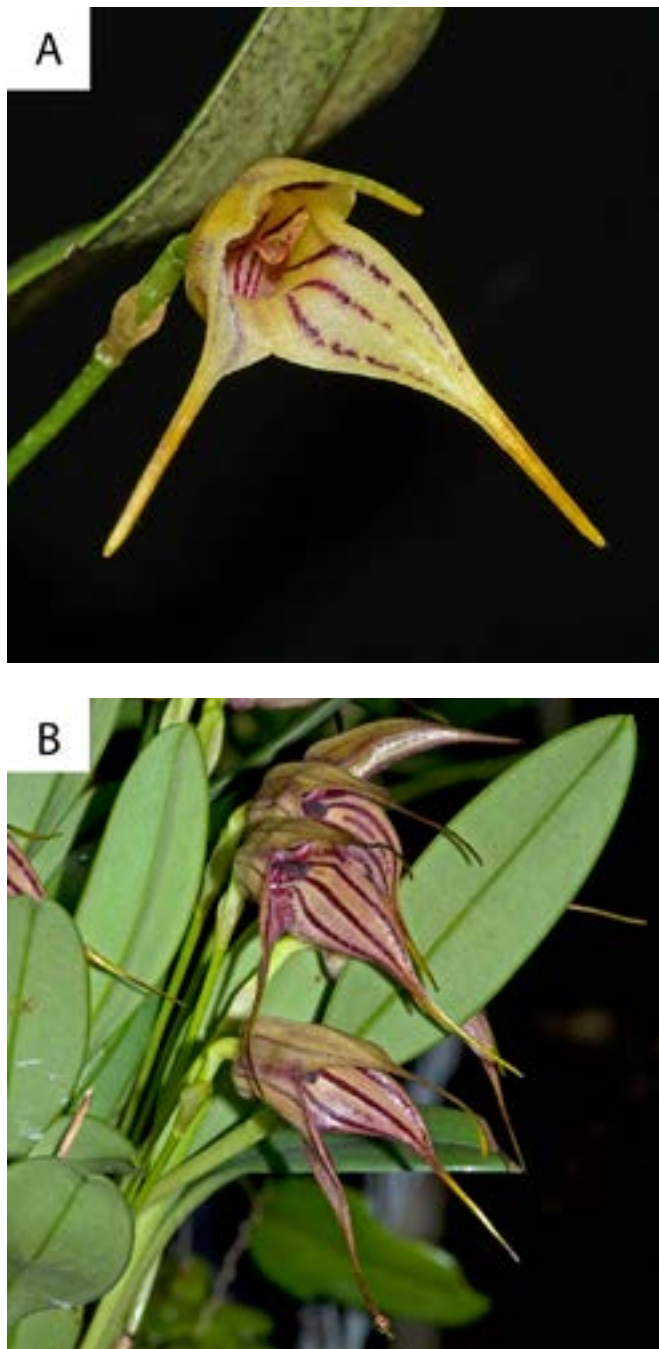


Figure 9. Comparison of the new species vs. the similar species. **A.** *Masdevallia jorgeportillana*
B. *Masdevallia suinii* Luer, Hirtzi, photographed by H.Medina.

TAXONOMY

Masdevallia kiatana H.Medina, J.Portilla, I.Portilla, *sp. nov.*

TYPE: ECUADOR. Zamora Chinchipe, Centinela del Condor canton, El Zarza community, road leading to Rio Blanco, 3°47'67.83" S 78°33'42.60" O, 1400 m. flourished in cultivation in Ecuagenera Gualaceo 2024, EG 0416 (holotipo: HA). Fig. 10–11. Fig. 12 A.

DIAGNOSIS: *Nova species similis est Masdevalliae cuprea Lindl, floribus fuscis, caudis elongatis, et crassis olivae-viridis, et spica florali quae magnitudinem plantae excedit.*

Description: Epiphytic plant 10-13 cm long, including flower spike 23 cm; roots whitish cespitose, fleshy 5.8 long 0.1 cm diameter; ramicaules erect, stout, 0.15-0.18 cm long, enclosed by 1 spathaceous, papyraceous, tubular sheath 1 cm long, 0.15 cm from wide; leaf erect, oblong, semi-coriaceous, apex re-tuse-emarginate 8-10 cm long including petiole; petiole 1.8-3 cm long, blade linear obtuse to semi-acute, 6-8 cm long, 1.13 cm from wide; successive inflorescence appears, covered by a papyraceous bract 1.6 cm long, 0.32 cm from wide; stout, erect, distinctly triquetrous peduncle, 23.5 cm long, 0.15 cm wide, divided into an internode covered by a papyraceous spathe, 1.76 cm long, 0.28 cm wide; papyraceous floral bracts, tubular, 1 cm long, 0.44 cm wide, 0.44 cm wide; pedicels 1.5 cm long, 0.1 cm wide; ovary cylindrical, olive green, barely resupinate, 0.5 cm long 0.15 cm from wide; flower 2.3-0.7 cm in diameter taking into account from dorsal to lateral tails, maroon red with light green tails; sepals fleshy, maroon red, glabrous; dorsal sepal rhomboid, slightly concave, maroon red, 2.14 cm long including tail, 0.54 cm wide, connate to lateral sepals by 0.53 cm, to form a sepal tube, subacute apex contracted into a thick semi-flattened tail, light green, 1.2 cm long, 0.14 cm diameter; subacute functioning lateral sepals 2 cm long including tail, 1.2 cm wide taking into account the two functional, connate 0.53 cm, subacute apices, contracted in thick semi-flattened tails, light green 0.78 cm long 0.16 cm of wide; petals acuminate 0.58 cm long, 0.13 cm wide becoming slightly wider towards the base, greenish with brownish macules more marked at the base, on the winged part, apex crenulate, obtuse base; lip panduriform 0.46 cm long, 0.15 cm wide, obtuse apex slightly incurved towards the ovary, base truncate, conspicuously contracted to 0.1 cm wide inclined towards the apex to form almost a circle 0.18 cm in diameter; column 0.56 cm long 0.11 cm wide, convex cylindrical, light green with ventral margin starting imperceptibly at the base to form a wing covering the anther part, 0.07 cm long, 0.06 cm wide, foot 0.3 cm long, with a short prolongation 0.06 cm long, incurved towards inside; seed not seen.

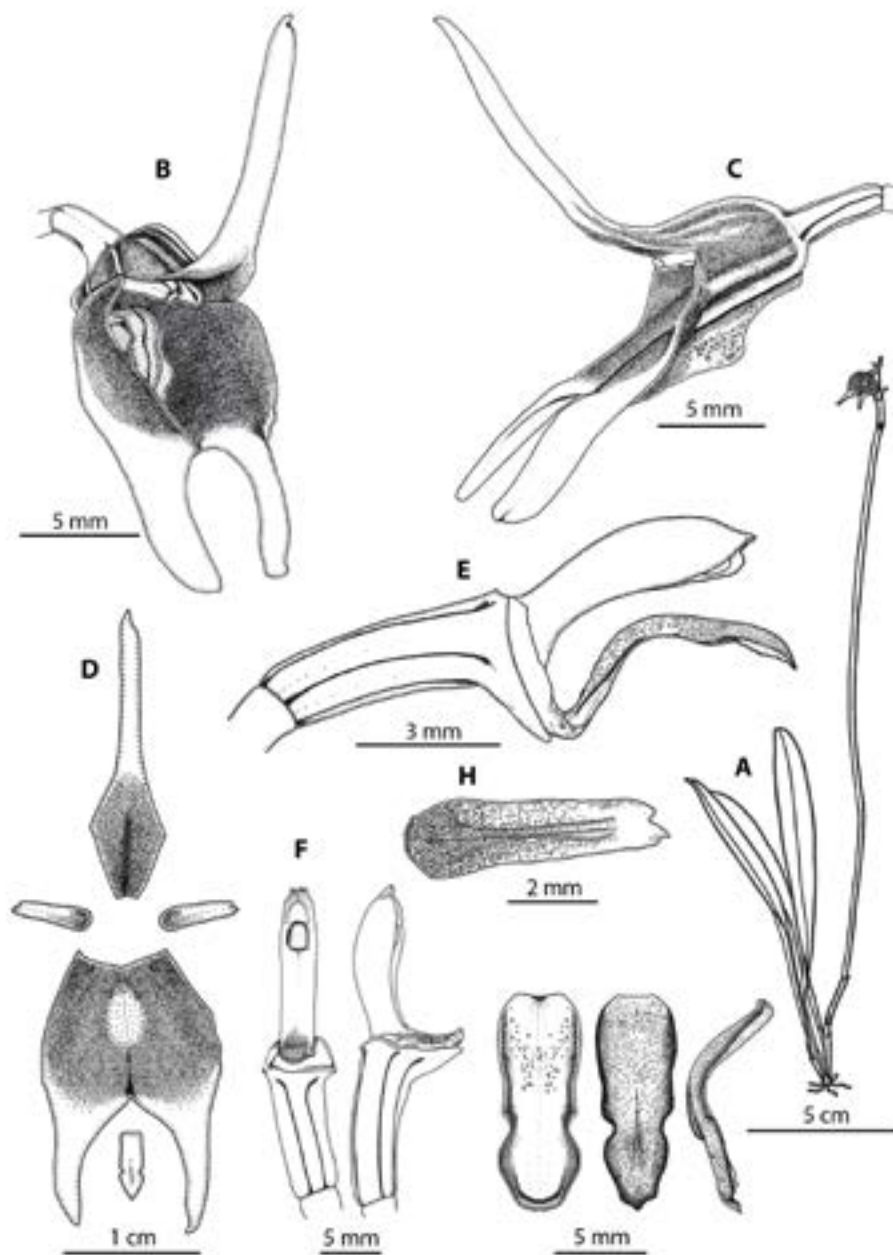


Figure 10. *Masdevallia kiatana* H.Medina et al. A. Habit. B. Three quarter profile of the flower. C. Flower profile view. D. Dissected perianth. E. Detail of the column and lip profile view. F. Column front and profile view. G. Profile, adaxial and abaxial view of lip. H. Front view of the right petal.

Etymology: In honor of Kiat W. Tan (Singapore, 1943-), Ph.D. in Botany/Plant Biology from the University of Miami, joined The Marie Selby Botanical Gardens in Sarasota, where he worked with Calaway H. Dodson and Robert L. Dressler, and then returned to his native country to become Corporate Advisor to the Government of Singapore, The Parks Board and Gardens of the Bay, on matters relating to the creation, development of parks and gardens and green spaces. He is currently Chief Executive Officer of Gardens by the Bay, Singapore.

Distribution: Known only from Ecuador, Zamora Chinchipe province, Centinela del Condor, El Zarza community, road to Rio Blanco.

Phenology: In cultivation, they have been observed flowering sporadically between March to September..

Habitat and ecology: It grows in primary, rainy and cloud forests under the tree canopy, with high humidity, ca 1400 m a.s.l.



Figure 11. *Masdevallia kiatana* Medina et al. Prepared sheet of the plant that served as holotype, by Hugo Medina.

Discussion: The new species belongs to the subgenus *Polyantha*, section *Alaticaulis*, subsection *Alaticaulis*, similar to *M. cuprea* Lindl, but is distinguished by the plant and flower spike noticeably more elongated (vs. short plant and flower spike not exceeding the leaves), petals emarginate apex, sepals with elongated caudae (vs. petals trilobed apex, sepals with short caudae), lip glabrous (vs. lip glandular apex).

References:

Luer, C., 2000. Icones *Pleurothallidinarum* XIX, Systematics of the *Masdevallia* Part One, Harvard Papers in Botany 77: 59.

Luer, C., 2000. Icones *Pleurothallidinarum* XXIII, Systematics of the *Masdevallia* Part Four M. Subgenus *Masdevallia* Section *Masdevallia* Subsection *Caudatae* Subsection *Oscilanthes* Subsection *Saltatrices*, Harvard Papers in Botany 87: 819.

Luer, C., 2000. Icones *Pleurothallidinarum* XXII, Systematics of the *Masdevallia* Part Three M. Subgenus *Masdevallia* Section *Masdevallia* Subsection *Masdevallia* M. Subgenus *Masdevallia* Section *Minutae*, Missouri Botanical Garden 86: 679.

Ruiz, H., & Pavon, J, 1794. *Florae Peruviane, et Chilensis podromus, seve Novorum Generum Plantarum Peruvianarum, et Chilensium Descriptiones, et icons*, 16: 122.

World Checklist of Selected Plant Families (WCSP). Facilitated by the Royal Botanical Gardens, Kew. [wcsp.science.kew.org/](http://www.wcsp.science.kew.org/). Accessed December 29, 2024

WCSP. 2025. World Checklist of Selected Plant Families. Facilitated by the Royal Botanic Gardens, Kew. <https://www.orchidspecies.com/masdevallia.htm> Accessed January 5, 2025.

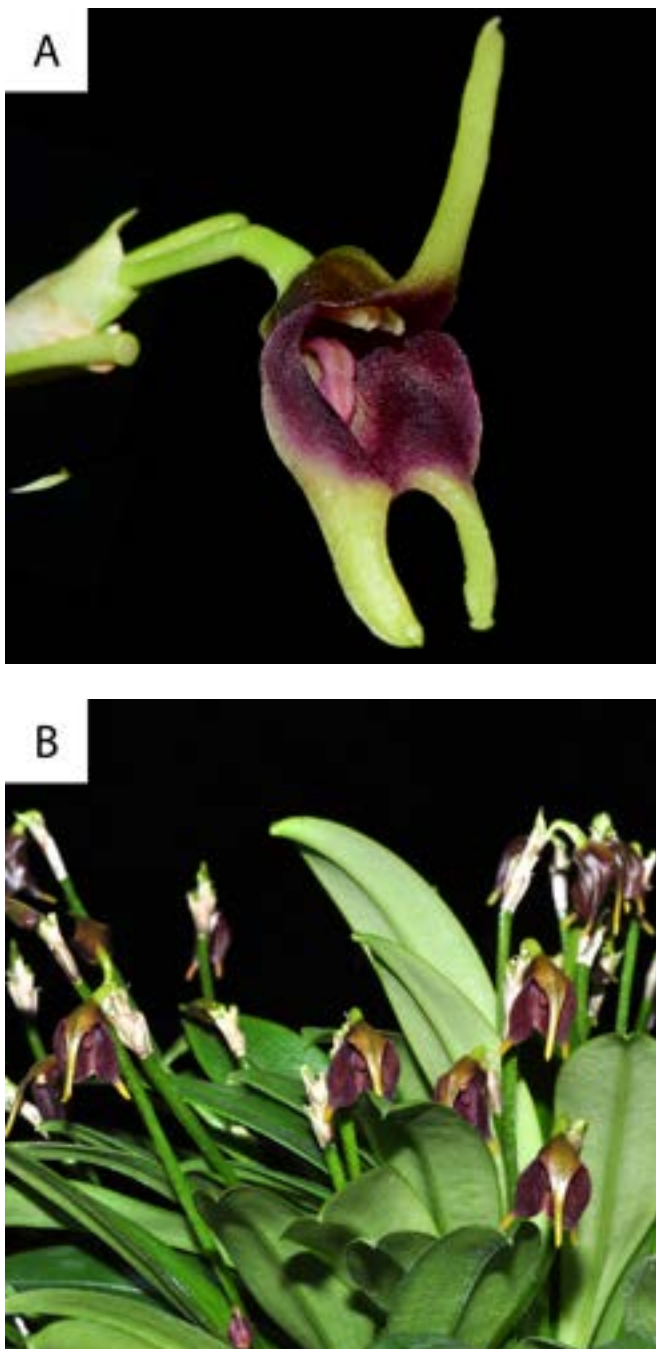


Figure 12. Comparison of the new species, taking into account the most similar one. **A.** *Masdevallia kiatana*
B. *M. decumana* Koniger, photographed by H.Medina

Three new taxa of *Ceratostema* (Ericaceae: Vaccinieae)

Alfonso Doucette, Hugo Medina, & Jose Portilla

ABSTRACT: This study describes two new species and a new variety of *Ceratostema*, based on recent collections by Ecuagenera. *Ceratostema chiaranthum* var. *ecuagenera* is introduced as a new variety, distinguished by its narrower corolla lobes. *Ceratostema kiatana*, a new species, is characterized by its absence of lignotubers, solitary flowers, and fewer stamens compared to its closest relatives. *Ceratostema medinae*, another new species, is differentiated from similar species by its spherical lignotuber, smaller leaves, and larger flowers. The new taxa contribute to the growing diversity of the genus and underscore the rich floristic diversity of the Andean region. Detailed morphological descriptions, diagnostic features, and comparisons with closely related species are provided for each taxon.

KEY WORDS: Andean cloud forests, epiphytic shrubs, neotropical blueberries, discovered by Ecuagenera, cultivated plants

INTRODUCTION: The genus *Ceratostema* Juss. includes over 30 described species well represented in the Andean cloud forests, particularly in Ecuador, which is known for its high biodiversity and endemism (Luteyn 2002). These forests harbor a remarkable diversity of ericaceous species adapted to montane habitats. Despite significant exploration of the Andes in Ecuador over several centuries, new species within *Ceratostema* continue to emerge (Luteyn 2005; Jiménez et al. 2021; Cornejo et al. 2024; Cornejo & Luteyn 2024; Jiménez et al. 2024a, 2024b, 2024c). Here, we describe two new species from Ecuador and a new variety of *Ceratostema chiaranthum* A.C.Smith based on recent collections by Ecuagenera.

TAXONOMY

Ceratostema kiatana A.Doucette, H.Medina & J.Portilla, *sp. nov.*

ETYMOLOGY: Named for Dr. Kiat Tan, past director of the Botanical Garden of Singapur.

TYPE: ECUADOR. Zamora Chinchipe: Canton Zamora, San Carlos de Las Minas along the road to San Carlos to Minas de Nambija, ca. 1550 m, S 4° 05' 39.43", 78° 48' 12.62" the wild plant collected by Ecuagenera, EG-0516 (holotype: HA). Figure 1-3.

DIAGNOSIS: The new species is most similar to *Ceratostema campii* A.C.Smith but can be distinguished vegetatively by the absences of lignotubers (vs. present), solitary flowers (vs.



Figure 1. *Ceratostema kiatana* flower detail (photo:Hugo Medina).

short-racemose inflorescences with 2–4 flowers), weakly carinose corolla (vs. bluntly 5-angled corolla) with narrowly triangular lobes (vs. elongate-deltate), fewer stamens (five vs. 10) and a sparsely pubescent style (vs. glabrous).

DESCRIPTION: Epiphytic shrubs; lignotubers absent, young branches erect; stems terete, glabrate, erect, to 0.5 m long, 0.2–0.5 cm in diam., the bark gray, farinose, and gray and red-brown striate after exfoliation. Leaves spiral, 5-plinerved; petiole pale green, pubescent, 0.2–0.3 long, 0.2 cm in diameter; blades coriaceous, ovate, apex obtuse, base obtuse, margins entire, 2.2–2.8 cm long, 1.2–1.4 cm wide, the upper and lower surface glabrate, darker green and shiny on the upper surface. Inflorescence a solitary, pendent flower; floral bracts reduced, deltoid, brownish, papery, 0.7–1.4 mm long, 0.6–1.0 mm wide; pedicel straight, terete-conical, green pubescent, articulated with calyx, 2.6–2.8 mm long, 1.7–2.1 mm in diameter. Flowers 5-merous, pendent; calyx hypanthium green, pubescent, terete, 6.0 mm long, 3.2–3.5 mm wide; calyx limb, campanulate, truncate, 4.8 mm long, 6.6 mm wide; lobe similar in color and texture to the rest of the limb, triangular, apex acute, sinuses acute, 3.7–4.5 mm long, 1.8–2.0 mm wide; corolla red, microscopically pubescent externally, glabrous internally, tubular, sub-infundibular, 23.5–24.7 mm long (excluding the lobes), 3.8–4.3 mm in diameter at the base and 5.6–6.2 mm at the throat in diameter at the throat; lobes five, red, spreading, recurved, narrowly triangular, apices acute, sinuses acute, margins revolute, 6.5–6.8 mm long, 3.3–3.5 mm wide; stamens five, sometimes unequal with each other, ca. 30.9–31.6 mm long; filaments white, connate into a tubular corona, glabrous,

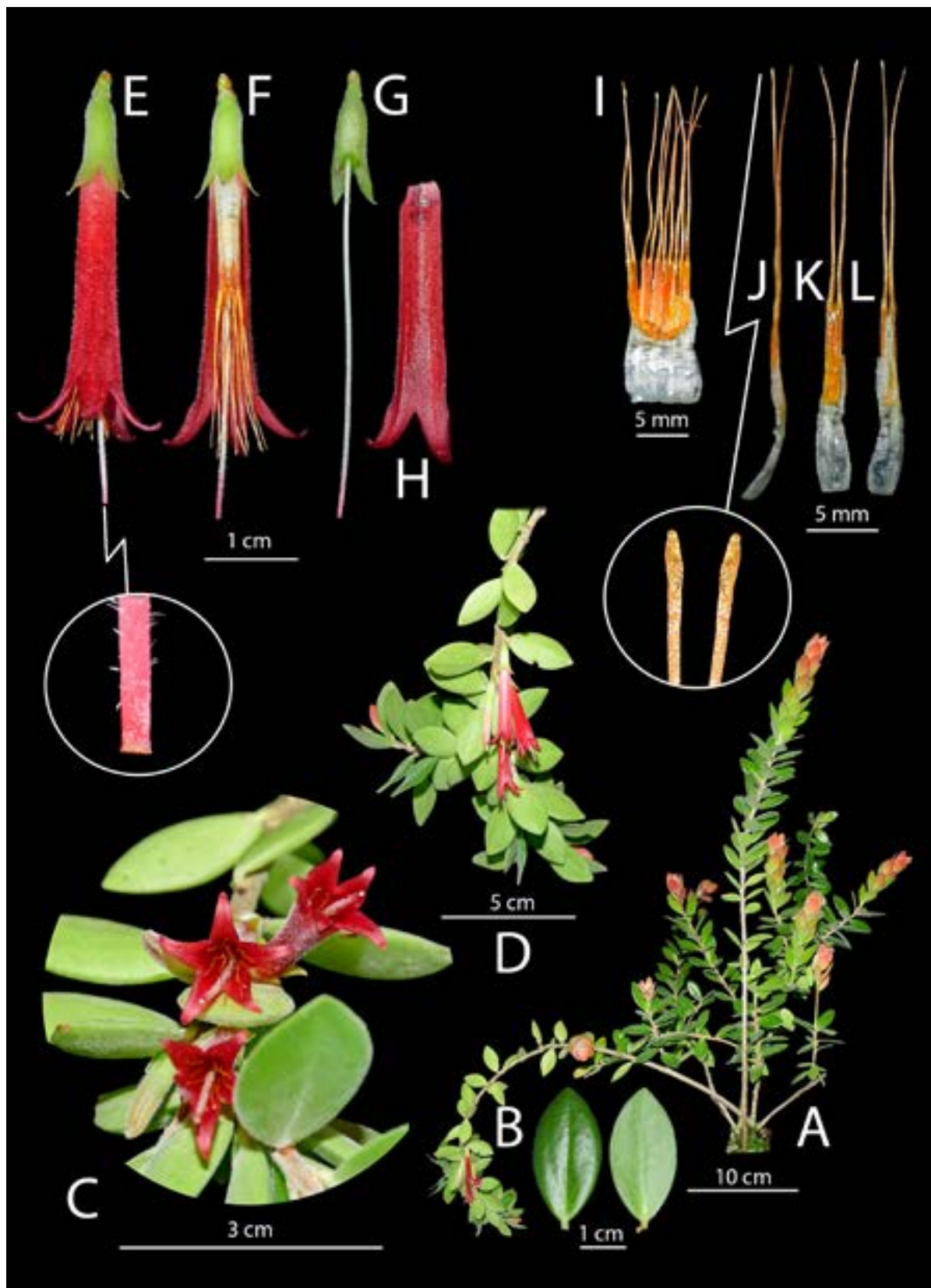


FIGURE 2: Plate illustrating *Ceratostema kiatana*. A. Habit to 10 cm scale. B. Detail of upper and underside of leaf to 1 cm scale. C. Flower detail to 3 cm scale. D. Detail of inflorescence to 5 cm scale. E–H to 1 cm scale. E. Flower in profile with a detail showing a magnified view of the style and the sparse pubescence. F. Flower with a portion of the corolla removed to illustrate the habit of the intact anthers. G. Dissected flower with corolla removed illustrating the hypanthium. H. Detail of the corolla. I. Anthers cut and expanded to 5 mm scale. J–L to 5 mm scale. J. Dissected anther in profile. K. Dissected anther, inner surface. L. Dissected anther, outer surface.

9.5 mm long, ca. 1.3 mm wide; anthers 23.5–25.4 mm in total length, with two orange thecae, 7.0 mm long, 0.5 mm wide, each connate for their length, attenuated into free, straw-colored, filiform tubules, 16.5–18.5 mm long, 0.2–0.4 mm wide, dehiscing by terminal pores; style whitish-green, suffused with rose toward the apex, sparsely and microscopically pubescent, exerted, 247.5 mm long, 0.4 mm in diameter; stigma truncated. Fruits not seen.

DISCUSSION: The new species keys out to *Ceratostema madisonii* Luteyn in a digital key to *Ceratostema* provided by NYBG (Luteyn & Pedraza-Peñalosa 2024). The new species, however, can be distinguished by the stems, which in the new species

are terete (vs. subterete) and glabrate (vs. glabrous), the leaves that are flat (vs. concave to conduplicate), 5-plinerved (vs. venation obscure), with obtuse apices (vs. acuminate), the solitary flowers (vs. racemose) lacking black glands (vs. present) with five stamens (vs. 10), and a sparsely pubescent style (vs. glabrous).



Figure 3. *Ceratostema kiatana* terminal branch (photo by Hugo Medina).

TAXONOMY

Ceratostema medinae A.Doucette, H.Medina & J.Portilla, *sp. nov.*

ETYMOLOGY: Named for Hugo Medina for his invaluable assistance in this study.

TYPE: ECUADOR. Bolivar: Bolivar, San Miguel canton, Balsa-pamba parish, road to nearby farms, ca. 1200 m, S 1° 44' 25.17", 79° 09' 24.92" the wild plant collected by Ecuagenera, EG-0519 (holotype: HA). Figure 5. Figure 4-6.

DIAGNOSIS: *Ceratostema medinae* is most similar to *Ceratostema loranthiflorum* Benthham but can be distinguished by its epiphytic habit with a spherical, scaly lignotuber (vs. terrestrial, often arising from larger lignotubers), and terete, glabrous stems (vs. subterete to complanate, angled, and striate stems). The leaves of *C. medinae* are smaller, thin-coriaceous, ovate, with shortly acuminate to acute apices and obtuse bases (vs. lanceolate to elliptic-lanceolate, with acute to short-acuminate apices and cuneate to broadly obtuse bases), and have a lighter green lower surface (vs. uniformly green). The flowers of *C. medinae* are borne in a tightly congested, few-flowered raceme with red-purple, conical pedicels 19.7 mm long (vs. a short-racemose inflorescence with 7-12 flowers and subterete, stout, ribbed pedicels 8-13 mm long). The corolla of *C. medinae* is larger, pink to red, ventricose, 23.9-26.2 mm long, with narrowly triangular lobes that are entire and acute (vs. cylindric, 16-20 mm long, with wide-spreading, reflexed lobes 6-8 mm long). Additionally, *C. medinae* possesses stamens that are longer (31.5-33.3 mm) with attenuated tubules 17.4-19.2 mm long (vs. stamens 15-18 mm long with shorter tubules 8-9 mm long).

DESCRIPTION: Epiphytic shrub; lignotuber spherical, scaly, grey-brown, 6.6-7.5 cm in diameter. Stems green, terete, glabrous, 0.3-1.2 cm in diam.; bark dark, reddish-brown, peeling and strip-like. Petiole red-purple, straight to incurved, semiterete, glabrous, 0.8-0.9 cm long, 0.3-0.4 mm wide. Leaves lighter green on the lower surface, thin-coriaceous, ovate, apex shortly acuminate, acute, base obtuse, margins entire, weakly involute, glabrous, 8.4-14.6 cm long, 5.0-6.4 cm wide; pinnately veined, midrib purple-red at the base, midrib and lateral nerves slightly raised, inconspicuous beneath. Inflorescence a tightly congested, few-flowered raceme. Pedicel red-purple, terete, conical, slightly curved, glabrous, not articulated with the calyx, 19.7 mm long, 1.8-3.8 mm in diameter. Floral bracts reduced, scale-like. Flowers 5-merous. Hypanthium green, suffused with red-purple, glabrous, terete, 9.3-10.6 mm long. Limb green,



Figure 4. *Ceratostema medinae* terminal branch (photo:Hugo Medina).

suffused with red-purple, shallow, cup-like, 2.6-2.8 mm long, 7.6-8.1 mm wide. Lobes five, green, suffused with red-purple, subquadrate, apiculate, 2.6-2.8 mm long, 4.0 mm wide. Corolla pink to red, tubular, ventricose, glabrous, nitid, with five low and broad keels, fleshy, sinuses acute, 23.9-26.2 mm long, 7.2-10.6 mm in diameter. Lobes narrowly triangular, acute, green suffused with red externally, green internally, entire, 14.1-14.8 mm long, 3.2-3.5 mm wide. Stamens ten, free, 31.5-33.3 mm long. Filaments translucent, whitish, rectangular, membranous, 4.3-4.6 mm long, 0.9-1.3 mm wide. Anthers orange-brown, 27.4-19.2 mm long, the two thecae ca. 10.0 mm long, 1.0-1.2 mm wide, each connate for their length, attenuated into free, light brown, filiform tubules, ca. 17.4-19.2 mm long, 0.4-0.6 mm wide. Style red at the base transitioning to green towards the truncate apex, terete, filiform, glabrous, 39.6 mm long, 0.8 mm in diameter. Fruits not seen.

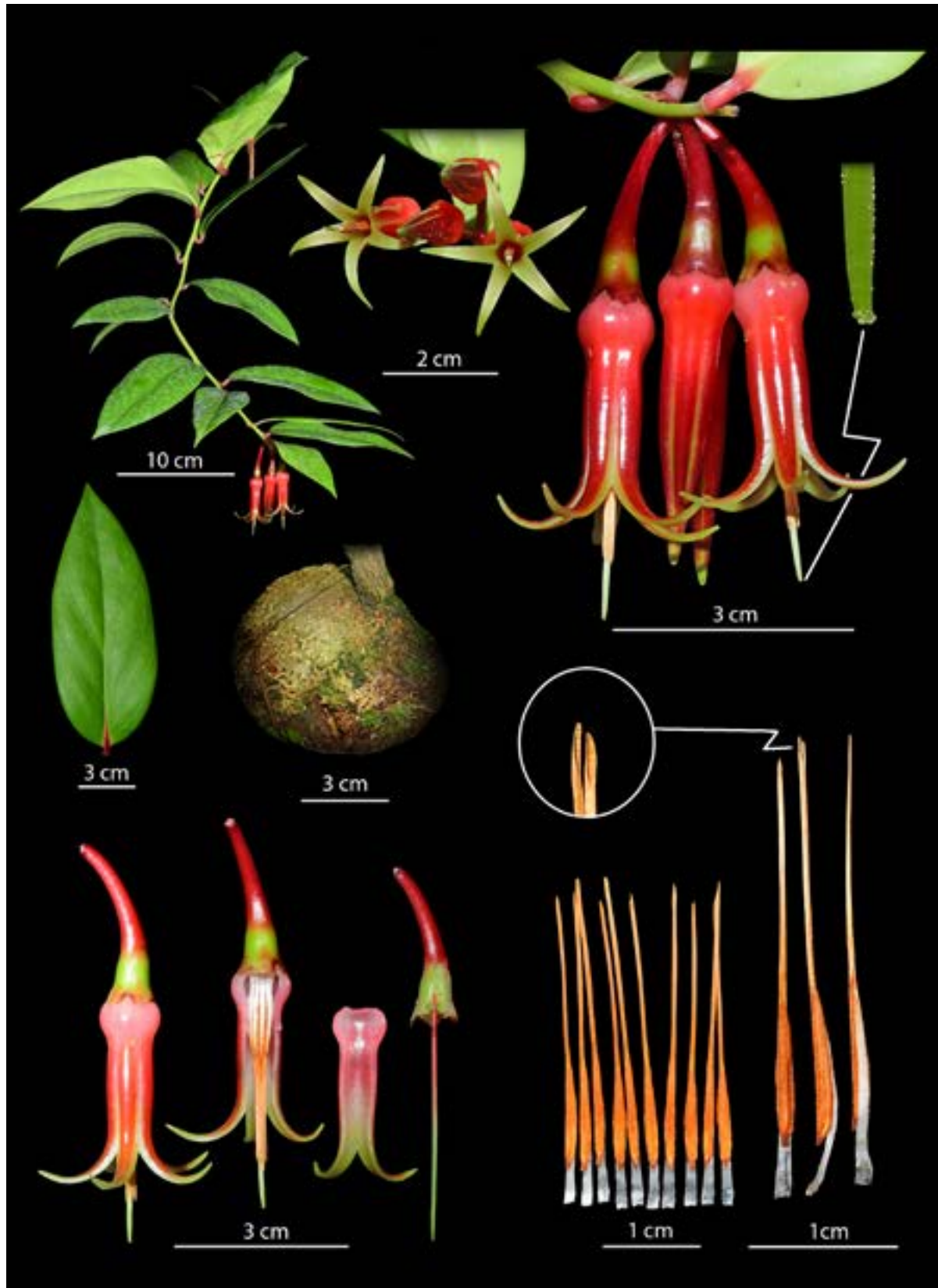


FIGURE 5: Plate illustrating *Ceratostema medinae*. A. shoot with inflorescence to 10 cm scale. B. Upper surface of leaf to 3 cm scale. C. Lignotuber to 3 cm scale. D. Flower detail to 2 cm scale. E. Inflorescence to 3 cm scale. F. Detail of the style and stigmatic surface (not to scale). G–J to 3 cm scale. G. Intact flower. H. Flower with portion of corolla removed to illustrate the inner whorl of stamens. I. Inner portion of corolla. J. Flower with corolla removed and dissection to show morphology of the hypanthium. K. Stamens to 1 cm scale. L. Inner, side, and outer surfaces of the stamens to 1 cm scale. M. Detail of the pore at the tip of the tubule (not to scale).

DISCUSSION: The new species keys out to *Ceratostema loranthiflorum* in a digital key to *Ceratostema* provided by NYBG (Luteyn & Pedraza-Peñalosa 2024), but can be distinguished based on the vegetative and floral morphology. See the diagnosis above for a detailed comparison of the two species.



Figur6. *Ceratostema medinae* terminal branch detail (photo by Hugo Medina).

TAXONOMY

Ceratostema charianthum* var. *ecuagera A.Doucette, H.Medina & J.Portilla, var. nov.

ETYMOLOGY: Named for Ecuagera, the organization responsible for the discovery of the new variety. The new name is formed as a noun in apposition.

TYPE: ECUADOR. Zamora Chinchipe: Cantón Zamora, between the parishes of El Tambo and El Retorno, along a road to Loja, ca. 1600 m, S 30° 57' 27.19", 79° 02' 4.77," the wild plant collected by Ecuagera, EG-0505 (holotype: HA). Figure 1.

DIAGNOSIS: *Ceratostema charianthum* var. *ecuagera* is most similar to *Ceratostema charianthum* var. *charianthum*, but can be distinguished by the narrower corolla lobes (2.7 mm vs. 7.0-8.0 mm broad at base).

DESCRIPTION: Epiphytic shrub; lignotuber poorly developed, cylindrical, ca. 2.5 cm in diameter. Stems olive-green, terete, glabrous, 0.3-0.5 cm in diameter; bark warm-gray, produced by secondary growth, peeling in strip-like patterns. Petiole light green, straight to incurved, semiterete, glabrous, 0.5-0.9 mm long, 0.2 mm in diameter. Leaves lighter green on the lower surface, thin-coriaceous, ovate, apex acuminate, acute, base obtuse, margins entire, weakly involute, glabrous, 3.9-7.2 cm long, 1.6-3.4 cm wide; pinnately veined, midrib raised

on both surfaces, lateral nerves inconspicuous above, slightly raised beneath. Inflorescence a tightly congested, few-flowered raceme. Peduncle green to green-brown, terete, straight, 6.0-6.4 mm long. Pedicel green, sometimes suffused with rose, terete, conical, occasionally bluntly 5-angled near the articulation with the calyx, slightly curved, glabrous, 12.0-14.2 mm long, 1.6-3.6 mm in diameter. Floral bracts reduced, scale-like. Flowers 5-merous. Hypanthium green, lightly suffused with red-purple, glabrous, carinate, campanulate, 8.4 mm long, 7.1 mm wide. Limb green, lightly suffused with red-purple, cup-like, 6.3-7.0 mm long, 6.4 mm wide. Lobes five, green, lightly suffused with red-purple, subquadrate, apiculate, connate for their length, 2.6-2.8 mm long, 4.0 mm wide. Corolla pink, tubular, glabrous, nitid, with five low and broad keels, fleshy, sinuses acute, 34.5 mm long, 6.8 mm in diameter. Lobes narrowly triangular, acute, pink, entire, 15.5-16.3 mm long, ca. 2.7 mm wide. Stamens ten, held tightly around the style, 35.0-38.2 mm long. Filaments translucent, whitish, rectangular, membranous, 3.8 mm long, 0.8 mm wide. Anthers orange-brown, 31.2-33.8 mm long, the two thecae ca. 11.0 mm long, 0.8 mm wide, each connate for their length, attenuated into free, light brown, filiform tubules, ca. 20.2-21.8 mm long, 0.3 mm wide. Style green, terete, filiform, glabrous, truncate, 48.2 mm long, 0.7 mm in diameter. Fruits not seen.

DISCUSSION: The new variety matches the typical variety in its morphology except for the much narrower lobes of the corolla (2.7 mm vs. 7.0-8.0 mm broad at base).

ACKNOWLEDGEMENTS: This article was generated with the assistance of artificial intelligence (AI), specifically to aid in structuring and refining the content. The use of AI was employed to streamline the drafting process and ensure consistency in formatting and language, while maintaining the accuracy and integrity of the taxonomic details provided.

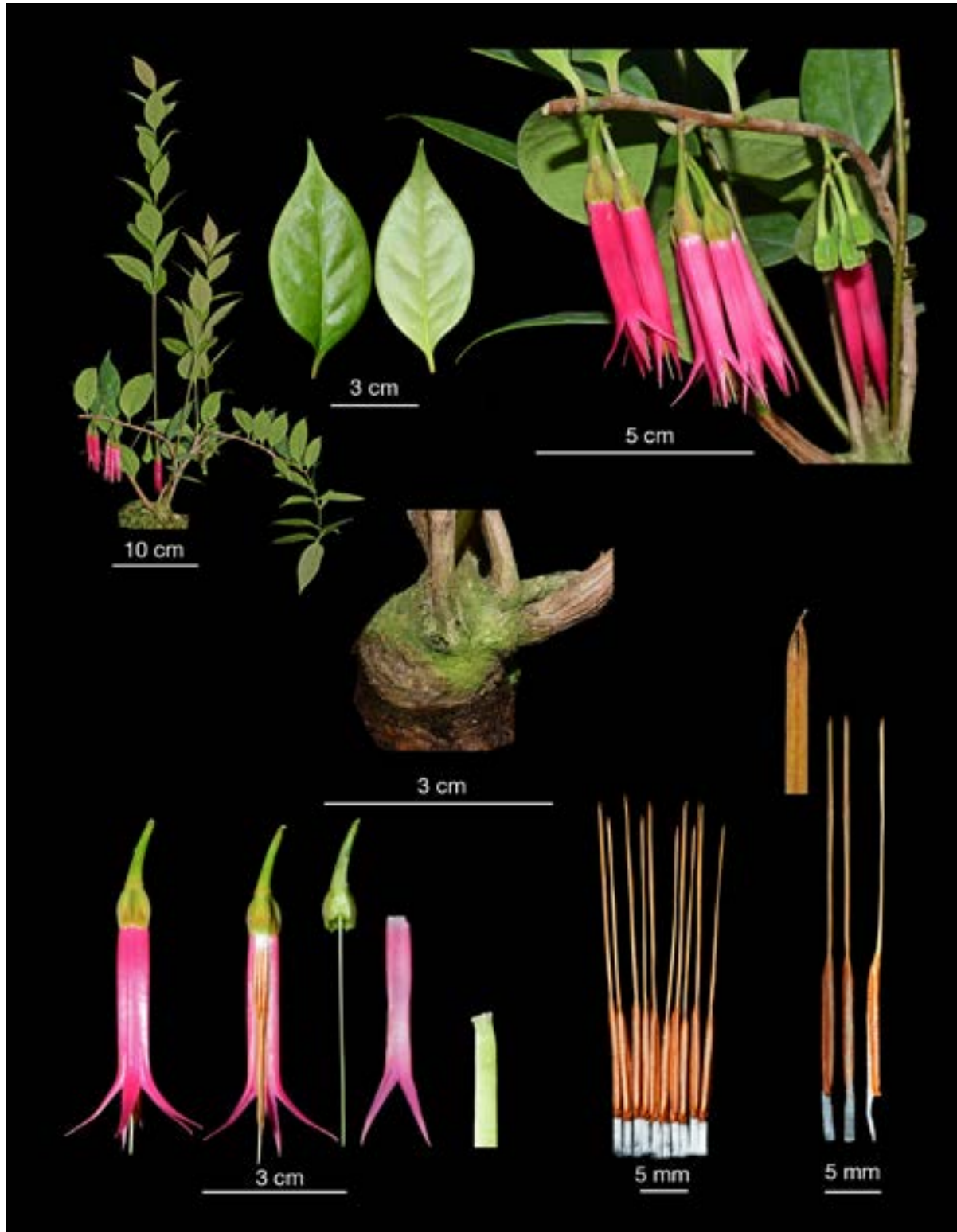


FIGURE 5: Plate illustrating *Ceratostema chiaranthum* var. *Ecuagenera*. A. Habit to 10 cm scale. B. Detail of inflorescence to 5 cm scale. C. Detail of upper and underside of leaf to 3 cm scale. D. Detail of lignotuber to 3 cm scale. E–H to 3 cm scale. E. Intact flower. F. Flower with portion of corolla removed to illustrate the inner whorl of stamens. G. Flower with corolla removed and dissection to show morphology of the hypanthium. H. Inner portion of corolla. I. Detail of the style and stigmatic surface (not to scale). J. Stamens to 5 mm scale. K. Detail of the pore at the tip of the tubule (not to scale). L. Inner, outer, and side views of a stamen to 5 mm scale.

REFERENCES:

Cornejo, X., and Luteyn, J.L. 2024. Three new epiphytic species and a new variety in *Ceratostema* (Ericaceae: Vaccinieae) from Southeastern Ecuador. *Journal of the Botanical Research Institute of Texas* 18(2): 321-332. 2024.

Cornejo, X., Luteyn, J.L., Tello-Hidalgo, G. 2024. *Ceratostema loucianae* and *Disterigma chriscanadayi* (Ericaceae: Vaccinieae) –new epiphytic species from eastern Ecuador. *Journal of the Botanical Research Institute of Texas* 18(1):87-93.

Jiménez, M.M., Iturralde, G.A., Kuethe, J.R., Lapo-González, N., Baquero, L.E., Vélez-Abarca, L., & Garzón-Suárez, H.X. (2024a). *Ceratostema gualaquizensis* (Ericaceae: Vaccinieae), a new species from Ecuador known from previously misidentified specimens and new insights on *Ceratostema loucianae*. *Phytotaxa* 671(2): 113-127.

Jiménez, M.M., Vélez-Abarca, L., Ocupa Horna, L., Jaramillo, N., & Baquero, L.E. (2024b) A new species of *Ceratostema* (Ericaceae: Vaccinieae) from Ecuador. *Phytotaxa* 520(3): 265-272.

Jiménez, M.M., Fierro Minda, A., Vélez-Abarca, L., Iturralde, G.A., & Garzon-Suarez, H.X. (2024c). A new species of *Ceratostema* (Ericaceae: Vaccinieae) from the province of Morona-Santiago, Ecuador. *Phytotaxa* 650(1): 073-082.

Luteyn, J.L. 2002. Diversity, adaptation, and endemism in neotropical Ericaceae: biogeographical patterns in the Vaccinieae. *Botanical Review* 68(1): 55-87.

Luteyn, J.L. 2005. Four new species of Ericaceae (Vaccinieae) From Ecuador. *SIDA* 21 (3): 1269-1282.

Luteyn, J. L., & Pedraza-Peñalosa, P. (n.d.). *Ceratostema*. The New York Botanical Garden. Retrieved December 16, 2024, from <https://www.nybg.org/bsci/res/lut2/ceratostema.html>

Nomenclature notes on *Ceratostema guachisacae* (Ericaceae) from Ecuador

Alfonso Doucette, Hugo Medina, and Pepe Portilla



Figure 1. *Ceratostema ivanportillae*

INTRODUCTION: This article provides a nomenclatural clarification concerning two recently published names in the genus *Ceratostema* (Ericaceae) from Ecuador: *Ceratostema guachizacae* Cornejo & Luteyn and *C. guachisacae* A.Doucette, H.Medina & J.Portilla. Both names, based on different types, were introduced within a narrow time frame in late 2024. However, their orthographic and phonetic similarity poses a risk of confusion under the provisions of the International Code of Nomenclature for algae, fungi, and plants (ICN; Turland et al. 2018). This note examines the application of ICN Articles 11.4 and 53.2 in resolving the priority and legitimacy of these names.

To preserve nomenclatural stability and adhere to the principle of priority, the replacement name *Ceratostema ivanportillae*

A.Doucette, H.Medina & J.Portilla, nom. nov., is proposed for the later-published *C. guachisacae*. This decision underscores the importance of clear, unambiguous naming in botanical taxonomy, particularly when dealing with closely related taxa in the same genus.

TAXONOMY

Ceratostema ivanportillae A.Doucette, H.Medina & J.Portilla, nom. nov.

Basionym: *Ceratostema guachisacae* A.Doucette, H.Medina & J.Portilla, *The Internet Orchid Species Photo Encyclopedia Nomenclature Note* 9(1): 3. 2024.

Type: ECUADOR. Zamora Chinchipe: Barrio Romerillos Alto, near Shaime, ca. 1600m, the wild plant collected by Ecuagenera, EG-508 (holotype: HA).

NOTES: *Ceratostema guachizacae* Cornejo & Luteyn (published 26 November 2024) and *C. guachisacae* A.Doucette, H.Medina & J.Portilla (published 30 November 2024), represent names for taxa in the same genus, based on different types. Based on the provisions of Art. 53.2 and the principle of priority (Art. 11), *C. guachizacae* Cornejo & Luteyn is the valid name, while *C. guachisacae* A.Doucette, H.Medina & J.Portilla is illegitimate due to likely confusion and later publication. To resolve this conflict, the replacement name was provided above in adherence to the ICN's rules and to avoid potential confusion with the earlier name.

Art. 53.2 states that "when two or more names of genera or species based on different types are so similar that they are likely to be confused (because they are applied to related taxa or for any other reason), they are to be treated as homonyms."

In this case, the epithets *guachizacae* and *guachisacae* differ only by the substitution of z for s, which is a minimal orthographic difference. Phonetically, the two names are virtually indistinguishable when spoken. Both names are applied to closely related taxa within the same genus (*Ceratostema*), increasing the risk of confusion in scientific communication. The similarity in spelling, pronunciation, and taxonomic proximity supports the conclusion that these names are likely to be confused, warranting their treatment as homonyms under Art. 53.2.

The ICN encourages the continuation of established practices of treating similar names as homonyms "if it is in the interest of nomenclatural stability." Examples provided in the ICN (e.g., Ex. 8–11) demonstrate that even minor differences in spelling or form (e.g., *ceylanicus* vs. *zeylanicus*, *chinensis* vs. *sinensis*) have

been deemed sufficient for names to be treated as homonyms when confusion is likely. The consistent treatment of such cases in favor of stability further supports the rejection of the later name, *Ceratostema guachisacae*, as a legitimate name.

Given that both names are treated as homonyms, the earlier published name, *Ceratostema guachizacae* Cornejo & Luteyn, has priority under Art. 11.4. The later name, *Ceratostema guachisacae* A.Doucette, H.Medina & J.Portilla, is therefore illegitimate because it was published after a confusable, validly published name.



Figure 2. *Ceratostema ivanportillae*

REFERENCES:

Turland, N.J., Wiersema, J.H., Barrie, F.R., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Kusber, W.-H., Li, D.-Z., Marhold, K., May, T.W., McNeill, J., Monro, A.M., Prado, J., Price, M.J., & Smith, G.F. (eds.) (2018). *International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017*. Regnum Vegetabile 159. Glashütten: Koeltz Botanical Books. <https://doi.org/10.12705/Code.2018>

A new specie of *Lepanthes* Sw. (Orchidaceae: Pleurothallidinae) described with the aid of generative artificial intelligence

Alfonso Doucette

ABSTRACT: A new species of *Lepanthes* is described in this paper, *Lepanthes artificialis*, discovered from cultivated specimens imported from Peru. This species is noteworthy for the distinctive floral and morphological characteristics. A new description and photos of *Lepanthes frigida* are published for the first time. The use of generative artificial intelligence in this study exemplifies an innovative approach to orchid taxonomy, assisting with the drafting, refinement, and synthesis of species descriptions. The incorporation of AI tools facilitates the generation of species names and expedites the process of scientific writing, showcasing the complementary role of technology in modern botanical research. Detailed morphological descriptions, diagnoses, and comparisons with closely related species are provided, highlighting the unique traits that differentiate these two species within their respective taxa.

KEY WORDS: Andean orchids, ChatGPT, computational tools in taxonomy, cultivated orchid species, generative artificial intelligence, plant description methods

INTRODUCTION: The genus *Lepanthes* Sw. (Orchidaceae) is one of the most diverse and taxonomically challenging groups within the subtribe Pleurothallidinae, comprising over 1,000 species distributed across the Neotropics. These diminutive, epiphytic orchids are notable for their intricate floral morphologies and ecological specialization, often exhibiting highly localized distributions in montane cloud forests. The Andes, recognized as one of the world's biodiversity hotspots, harbors an exceptional concentration of *Lepanthes* species, many of which remain undescribed or poorly understood.

Horticultural collections have proven to be a valuable resource for uncovering undescribed species of orchids, particularly from regions where in situ exploration remains limited or logistically challenging. The new specie described below and the new specimen of *Lepanthes frigida* Luer were discovered from cultivated specimens that originated in Peru. These species, maintained under controlled conditions, exhibit distinctive morphological features that not only underscore the diversity within the genus but also highlight the importance of ex situ conservation and study.

This article represents an innovative approach in orchid taxonomy by incorporating generative artificial intelligence (AI) to assist with drafting and refining textual content. By leveraging AI tools, the author was able to generate the title, abstract, and keywords, en-

hance the clarity and precision of descriptions, synthesize comparisons with related taxa, coin new species names, and expedite the drafting process.

METHODS FOR TAXONOMIC DESCRIPTION USING GENERATIVE ARTIFICIAL INTELLIGENCE: The generative AI model used was OpenAI's ChatGPT-4 V2 (OpenAI 2024). To work with ChatGPT, the author first outlined the specific needs of the manuscript, including the key sections requiring assistance, such as the diagnosis, description, and methods. Detailed prompts were provided to ChatGPT, including structured inputs like lists of morphological traits, diagnostic features, and stylistic preferences for scientific writing. Each prompt was carefully tailored to elicit concise and relevant responses. For example, when generating the botanical description, traits such as leaf shape, inflorescence type, and floral morphology were outlined systematically, and ChatGPT was asked to render them in the formal style typical of taxonomic literature. Responses were reviewed for accuracy, clarity, and relevance. Adjustments were made by either refining the input prompts or editing the AI-generated text directly. This iterative process allowed the author to harness ChatGPT's ability to draft and refine content efficiently while ensuring the final text met the rigorous standards of botanical taxonomy.

Following this iterative process, AI assistance was employed in several key stages of the taxonomic description development, as outlined below:

Literature review and contextualization: AI-assisted queries were employed to compare morphological traits with closely related species and ensure consistent terminology within the taxonomic framework. This facilitated a comprehensive understanding of the taxonomic position of the species.

Morphological analysis and description drafting: The AI was instrumental in generating preliminary drafts of morphological descriptions based on input data, including measurements, observed structures, and diagnostic features. Human expertise was applied to validate and refine these drafts, ensuring scientific rigor and compliance with botanical nomenclature standards.

Differential diagnosis and comparative analysis: Generative AI was used to create drafts of comparative analyses, highlighting key morphological differences between the new species and related taxa. The AI synthesized textual summaries, which were subsequently edited and validated to reflect accurate comparisons.

Iterative refinement and collaboration: The AI facilitated iterative revisions by generating suggestions for sentence structure, grammar, and terminology, thereby enhancing clarity and coherence. Collaborative interactions between the author and the AI ensured the final text was scientifically accurate and linguistically polished. Throughout the process, the author maintained strict oversight of

the AI-generated content, ensuring that all data and interpretations adhered to the principles of reproducibility, originality, and taxonomic integrity.

TAXONOMY

Lepanthes artificialis A.Doucette, *sp. nov.*

TYPE: HORTICULTURE. The original material reportedly came from Peru, imported by Tarzane Group, Miami, FL, as "*Lepanthes sp.* Peru 055," flowered in cultivation in Madison, WI, 21 Dec 2024, A.Doucette 263 (Holotype: WIS). Figs. 1-4

ETYMOLOGY: The specific epithet *artificialis* (Latin: "artificial") refers to the novel process by which the name of this species was produced and the article composed, with assistance from artificial intelligence. This name acknowledges the innovative use of technology in modern botanical research, symbolizing a bridge between traditional taxonomy and emerging tools.



Figure 1: Portrait of the *Lepanthes artificialis* flower used to prepare the holotype.



Figure 2: Photo detail of the appendix of the *Lepanthes artificialis* flower used to prepare the holotype.

DIAGNOSIS: *Lepanthes artificialis* is most similar to *L. acarina* Luer, but can be distinguished by the following characteristics: the overall plant size is larger, with stems 30.0–50.0 mm long (vs. 5.0–25.0 mm); it is enveloped by more sheaths, 6–8 (vs. 3–4); the leaves are broader, measuring 5.5–10.5 mm wide (vs. 4.0–5.0 mm wide); the bracts are glabrous (vs. muricate); the dorsal sepal is longer and narrower, 3.9 mm long and 2.3 mm wide (vs. 2.0–2.5 mm long and 2.5 mm wide), with glabrous external carinae (vs. serrulate-ciliate), an entire margin (vs. serrulate-ciliate), and an acuminate tip (vs. subacute); the petals are smaller, 0.5 mm long and 2.8 mm wide (vs. 1.3 mm long and 5.3 mm wide), with a well-developed angle at the apex (vs. reduced), and a narrowly rectangular lower lobe (vs. narrowly oblong, sub-falcate).

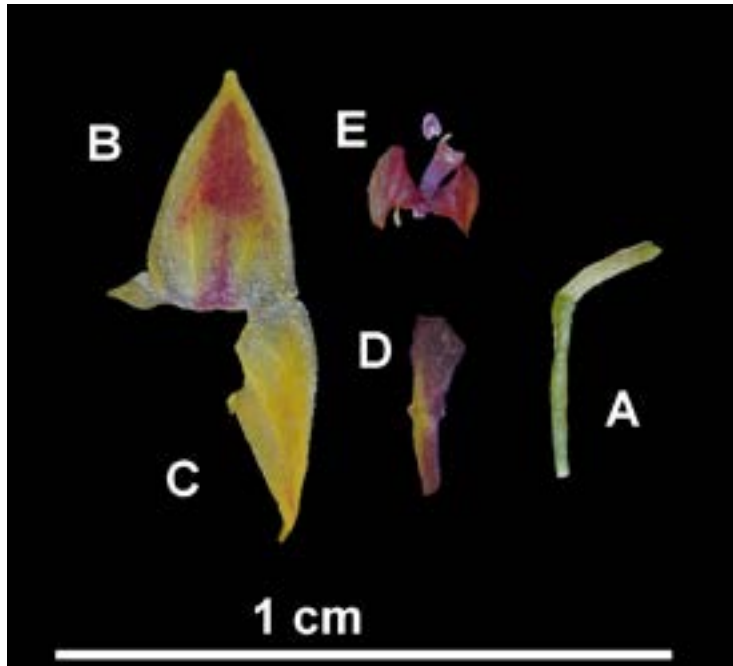


Figure 3: Dissection of the *Lepanthes artificialis* flower used to prepare the holotype and technical description, to 1 cm scale. A. Pedicel and ovary. B. Dorsal sepal. C. Right lateral sepal. D. Left petal. E. Lip expanded with column and pollinia.

DESCRIPTION: Plants herbaceous, erect, epiphytes under 8.0 cm tall; roots filiform, 0.7 mm in diameter; stems erect, terete, enclosed by 6–8 lepanthiform sheaths, 30.0–50.0 mm long, 0.3 mm in diameter, sheaths infundibular, microscopically pubescent along the veins, 4.0–13.0 mm long, 0.3–2.0 mm wide, ostium ovate, microscopically pubescent along the margin; leaf petio- late, coriaceous, elliptical, obtuse, entire, 11.0–25.0 mm long, 5.5–10.5 mm wide; inflorescence racemose, producing solitary flowers in slow succession, peduncle terete, 9.0–23.0 mm long, 0.1 mm in diameter, rachis terete, 0.8–6.0 mm long, 0.3 mm in diameter, glabrous; pedicel terete, 2.9 mm long, 0.4 mm wide; ovary terete, glabrous, 1.6 mm long, 0.3 mm wide; dorsal sepal triangular, yellow suffused with red, entire, contracted into a short blunt tip, 3.9 mm long, 2.3 mm wide, 3-veined; lateral sepals transversely ovate, yellow sometimes suffused with red, sparsely and microscopically denticulate, acuminate, 3.6 mm long, 1.7 mm wide, 2-veined; petals bilobed, purple with yellow along the outer margin, apex with a short blunt tip, upper lobe three-angled, sub-rectangular, lower lobe narrowly rectangular, 0.5 mm long (measured from the center of the petal), 2.8 mm wide; lip bilobed, reddish purple, lobes sub-reniform, meeting on either side of the column to form a disk-like shield, surface glabrous, apex with a short, recurved, terete, pubescent appendix, 0.5 mm long, 1.8 mm wide (expanded); column semiterete, purple, 0.9 mm long, 0.4 mm wide.



Figure 4: Habit of *Lepanthes artificialis*.

DISCUSSION: *Lepanthes artificialis* bears some similarity to *L. alticola* as it keys out to that species in the key to *Lepanthes* subg. *Lepanthes* sect. *Lepanthes* subsect. *Lepanthes* for Bolivia (Luer 2010). However, it can be distinguished by several features. *L. artificialis* has broader leaves, measuring 5.5–10.5 mm wide (vs. 4.0–5.0 mm wide in *L. alticola*). The sepals of *L. artificialis* are distinctly shorter, measuring less than 4.0 mm long (vs. 7.0–7.8 mm long), and are less acuminate. The petals of *L. artificialis* are darker

in color, deep red with yellow suffusion, and more deeply bilobed, with the lobes broader and more rounded (vs. yellow petals with a red suffusion and obliquely triangular lobes in *L. alticola*). Additionally, the lip of *L. artificialis* is more deeply lobed and forms a broader, more distinct body at the center of the lobes (vs. a shallower, poorly defined channel in *L. alticola*) and has a short, recurved, terete, pubescent appendix (vs. apiculate appendix on the undersurface of the column). The column of *L. artificialis* is shorter, measuring 1.5 mm long (vs. 2.0 mm in *L. alticola*).

In the key to subsection *Lepanthes* series *Elongatae* of Ecuador (Luer 1996), *L. artificialis* is excluded at couplet 12 due to the appendix not being “external at the base of the body,” and because the lateral sepals are sparsely and microscopically denticulate, rather than entire as in *L. exogena*. In the key to *Lepanthes* of Colombia (Luer 2010), *L. artificialis* is excluded at couplet 23 due to the lower lobe of the petals being rectangular (vs. long-acuminate, much longer than the upper lobe) and the sepals being less than 5.0 mm long (vs. more than 13 mm long in other species).

Lepanthes frigida Luer

TYPE: HORTICULTURE. The original material reportedly imported from Peru by Tarzane Group, Miami, FL, as "*Lepanthes sp.* Peru 13," flowered in cultivation in Madison, WI, on 21 Dec 2024, A.Doucette 264 (Holotype: WIS). Figs. 5-8.

DESCRIPTION: Plants epiphytic, small, herbs under 15 cm tall; roots filiform, coarse, 2.0 mm in diameter, tips red; stems erect, terete, enclosed by 6-8 lepanthiform sheaths, 50.0-82.0 mm long, 1.0 mm in diameter; sheaths infundibular, glabrous, 6.0-17.0 mm long, 3.0-6.0 mm wide, ostium ovate; leaves ovate, acuminate, sometimes suffused with purple beneath, 35.0-55.0 mm long, 13.0-14.0 mm wide; inflorescence racemose,

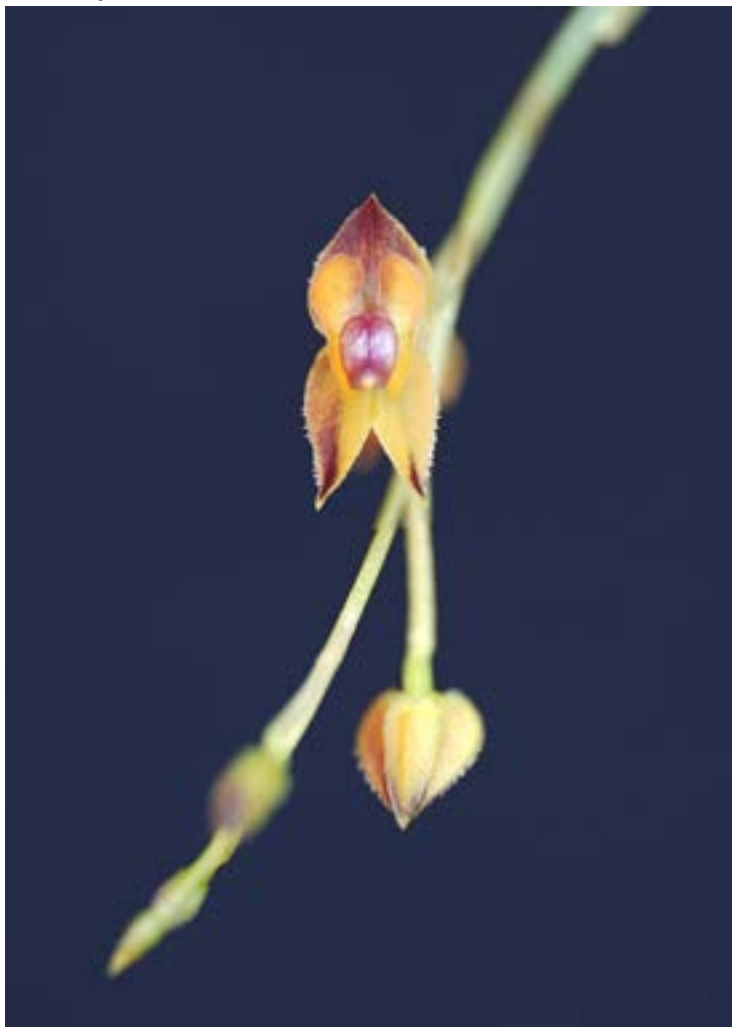


Figure 5: Portrait of the *Lepanthes frigida* flower used to prepare the specimen.

producing solitary flowers in slow succession, peduncle 9.0-15.0 mm long; floral bracts tubular to conical, glabrous, 1.7-2.1 mm long, 0.7-0.9 mm wide; rachis terete, glabrous, 3.7-8.3 mm long, 0.4 mm in diameter; pedicels terete, 3.3 mm long; ovary terete, glabrous, 1.5 mm long, 0.5 mm in diameter; dorsal sepal subdeltoid-ovate, apiculate, yellow suffused with red-brown, sparsely denticulate along the margins, 3.0 mm long, 2.8 mm wide; lateral



Figure 6: Photo detail of the appendix of the *Lepanthes frigida* flower used to prepare the specimen.

sepals ovate, yellow suffused with red-brown, denticulate along the margins, 3.3 mm long, 1.8 mm wide, 1-veined; petals bilobed, yellow suffused with red along the outer margin and purple on the inner upper margin, 2.5 mm long, 0.8 mm wide; lip bilobed with an appendix, purple, lobes hugging the column to form a shield-like structure, face of each lobe oval, glabrous, nitid, appendix minute, nodular, densely pubescent, 0.6 mm long, 1.5 mm wide (expanded); column semiterete, orange-brown, 1.5 mm long, 0.4 mm wide.

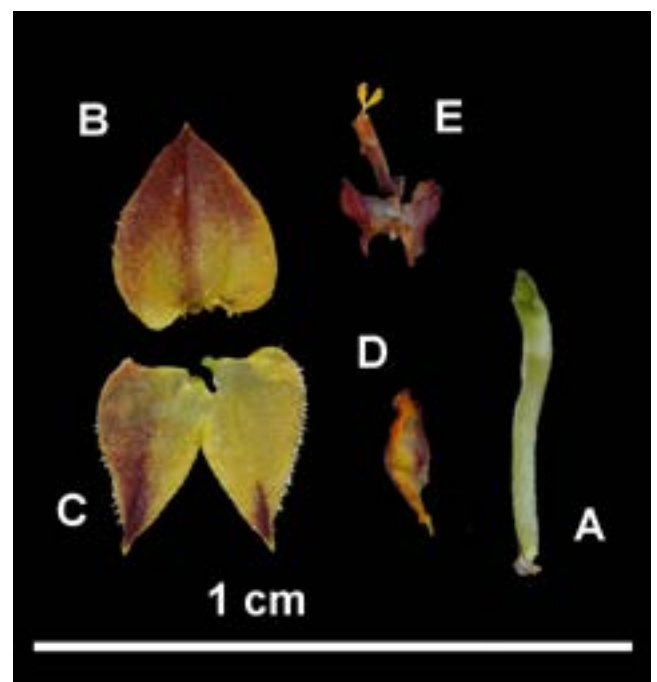


Figure 7: Dissection of the *Lepanthes frigida* flower used to prepare the holotype and technical description, to 1 cm scale. A. Pedicel and ovary. B. Dorsal sepal. C. Lateral sepals. D. Left petal. E. Lip expanded with column and pollinia.



Figure 8: Habit of *Lepanthes frigida*.

DISCUSSION: In the key to *Lepanthes* "Series Breves" of Ecuador (Luer 1996), the specimen of *Lepanthes frigida* described here keys out to *L. grossiradix* Luer & Hirtz when interpreted as having a raceme exceeding the leaf and thick, fleshy roots. However, the specimen can be distinguished from *L. grossiradix* by its longer rachises (up to 8.3 mm vs. up to 2.7 mm, measurements derived from illustrations drawn to scale in Luer 1996) and its nodular, densely pubescent appendix (vs. an oblong appendix cleft down the middle and not densely pubescent). The specimen did not key out to *Lepanthes frigida* because it was not interpreted as having a raceme that "does not usually exceed the leaf" or "slender roots."

Compared to Luer (1996), the specimen described here differs in the following traits: the roots are coarser (2.0 mm in diameter vs. 1.0 mm in diameter [measurements derived from illustrations drawn to scale in Luer 2011]); the rachis of the inflorescence is longer, reaching up to 8.3 mm (vs. up to 3.5 mm in *L. frigida* [measurements derived from illustrations drawn to scale in

Luer 2011]); the dorsal sepal is shorter (3.0 mm vs. 4.0–4.8 mm); the lip is purple (vs. yellow with red margins), glabrous, and nitid with minute trichomes at the lower end of the lobes (vs. microscopically pubescent), with the lobes meeting on either side

to form a shield-like structure and covering the column (vs. not touching and leaving the top of the column exposed); and the appendix is nodular (vs. bifid).

I hypothesize that the differences in root diameter, rachis length, and flower size may be influenced by cultivation conditions. The difference in lip color may represent natural color variation within the species. The interpretation of the lip as glabrous and nitid with minute trichomes at the lower end of the lobes, as opposed to "microscopically pubescent," might simply be a more precise description of the trichome distribution. Finally, the differences in the lobes forming a shield-like structure and the lip lacking a bifid appendix may stem from the quality of the specimen used to create the illustration in Luer (1998).

Luer was known to create his illustrations from rehydrated flowers and flowers preserved in alcohol, and it is possible that the specimen here was damaged in the preservation process, altering the way the lip appeared to close around the column and the appearance of the lip as bifid. I believe it is best to identify the specimen described here as *Lepanthes frigida* unless live material showing a closer match to the original description is discovered and can be demonstrated to differ from the concept described here.

Notably, the specimen originated from Peru and was part of the same lot as *Lepanthes mononoke* A. Doucette & Ocupa, labeled as "*Lepanthes* sp. Peru 13."

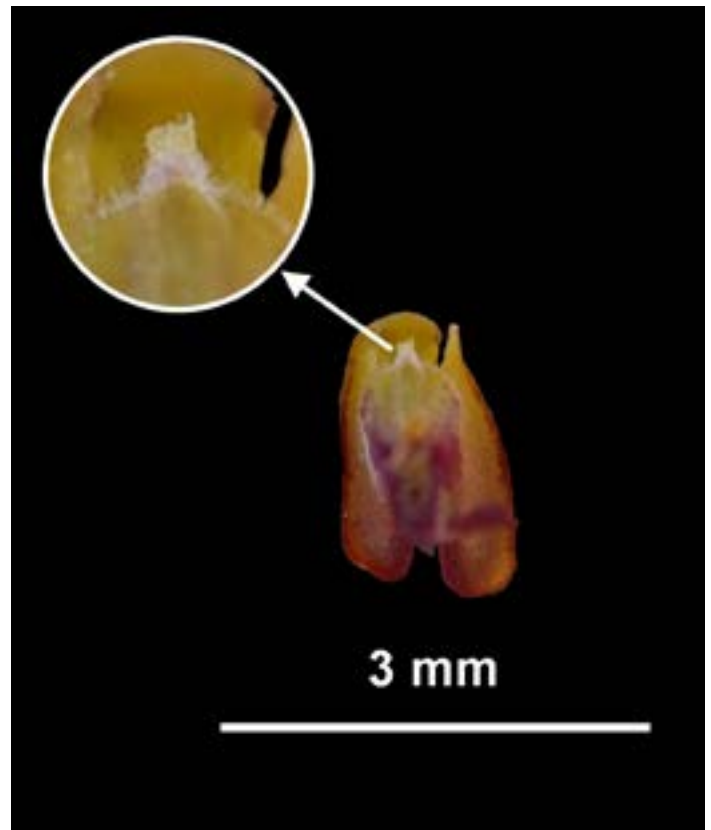


Figura 9: Detail of the *Lepanthes frigida* lip illustrating the nodular appendix.

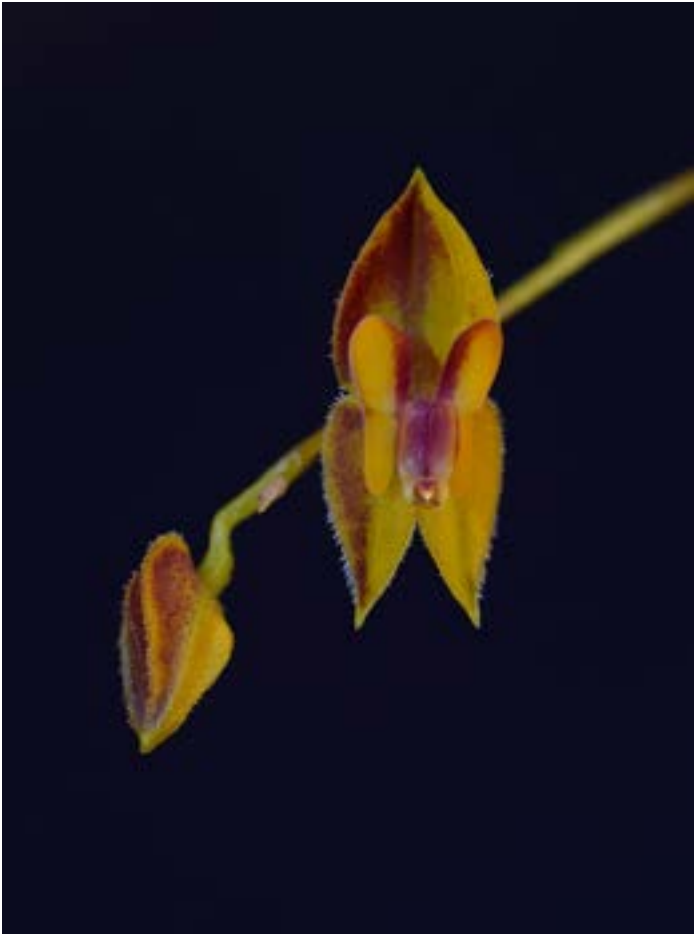


Figura 10: Flower detail of *Lepanthes frigida*

REFERENCES

Luer, C.A. 1996. Icones Pleurothallidarum XIV: Systematics of *Draconanthes*, *Lepanthes* subgenus *Marsipanthes* and *Lepanthes* of Ecuador. Monographs in Systematic Botany from the Missouri Botanical Garden 61: 1-255.

Luer, C.A. 2010. Icones Pleurothallidarum XXXI: *Lepanthes* of Bolivia. Systematics of *Octomeria* species north and west of Brazil. Monographs in Systematic Botany from the Missouri Botanical Garden 120: 1-154.

Luer, C.A. 2011. 1 December 2011 Miscellaneous New Species in the Pleurothallidinae (Orchidaceae) Excluding Species from Brazil. Harvard Papers in Botany 16: 311-360.

Luer, C.A. 2012. Icones Pleurothallidarum XXXII: *Lepanthes* of Colombia (Orchidaceae). Monographs in Systematic Botany from the Missouri Botanical Garden 123: 1-297.

Ocupa-Horna, L., Thoerle, L., Shuiteman, A., and Martel, C. 2023. A revised checklist of *Lepanthes* (Orchidaceae) from Peru, including new country records. Brittonia 20: 1-21.

OpenAI. 2024. ChatGPT, GPT-4. <https://chat.openai.com>.

CONCLUSION: The integration of generative AI into the taxonomic process, as demonstrated in the description of *Lepanthes artificialis* and a new description of *L. frigida*, underscores its potential as a valuable tool for scientific communication. By streamlining language, refining formatting, and enhancing clarity, AI can reduce the time and effort required to produce precise and consistent botanical descriptions. Importantly, its use in this study was carefully controlled to complement, rather than replace, the expertise of the authors, ensuring that scientific integrity and accuracy were maintained.

This hybrid approach represents a promising innovation in taxonomy, offering a method to improve the efficiency of scientific writing without compromising the rigor of empirical research. As generative AI continues to evolve, its role in the documentation and dissemination of biodiversity may become increasingly significant, particularly as the urgency to describe and protect the world's flora and fauna grows.



ANDREETTANA

TROPICAL ANDES BIODIVERSITY AND CONSERVATION



Horticultura

Horticulture

LA COLUMNA DE TOM

Scuticaria

Por Thomas Mirenda

Un Caso de Autoflagelación Personal

En mi deseo de convertir a todo el mundo en amantes de las orquídeas, rara vez elijo presentar géneros extremadamente difíciles de cultivar. Es importante que los cultivadores nuevos experimenten la alegría del éxito con sus orquídeas. Por diversas razones, es igualmente importante exponernos a orquídeas altamente complicadas también, para que podamos comprenderlas mejor, apreciarlas más y colectivamente descubrir mejores técnicas para cultivarlas. Me he azotado a mí mismo por mi falta de éxito con este extraordinario género, y ciertamente no me siento calificado para decirle a nadie cómo cultivar estas plantas. Pero el primer paso hacia el éxito en el cultivo de orquídeas es la conciencia. Así que permítanme presentarles a *Scuticaria*, un género inusual.

Scuticaria contiene 10 especies vistosas, de diversos hábitats en el norte de Sudamérica. La primera especie descrita, *Scuticaria steelei*, publicada por William Jackson Hooker en 1837, fue a partir de una planta cultivada que había sido importada a Inglaterra el año anterior desde Demerara, Guyana. John Lindley había recibido otro material vegetal de la misma especie, que aparentemente se estaba cultivando con cierto éxito en algunas colecciones inglesas. Ninguno de los botánicos había visto nada parecido a esta planta antes y, por lo tanto, les resultó difícil decidir a qué género pertenecía. Probablemente porque las flores mostraban un labio en forma de mandíbula similar a las maxillarias, ambos botánicos la colocaron, con reservas, en ese género, a pesar de que la planta fuera diferente. Reconociendo su singularidad, Lindley trasladó la especie a su propio género en 1843. El nombre se deriva acertadamente del latín "scutica" (generalmente traducido como "flagelo") y se refiere a sus hojas largas y cilíndricas que se asemejan a látigos. Hoy en día, el análisis de ADN ha demostrado que el género está mucho más estrechamente relacionado con *Bifrenaria* que con *Maxillaria*.

Todas las especies tienen flores vistosas de buen tamaño, generalmente una por inflorescencia basal, e interesantemente, a menudo con hojas cilíndricas extraordinariamente largas. Gran parte de la similitud termina ahí. Las especies provienen de al menos cuatro hábitats diferentes con climas divergentes. Parte de la dificultad para cultivarlas es que sus necesidades individuales parecen ser específicas, dejando poco margen para generalidades o errores del cultivador. es una epífita de tierras bajas y

de clima cálido con hojas pendulares excepcionalmente largas, a menudo de 3 a 4 pies (0,9 a 1,2 m) de largo.



Figura 1. *Scuticaria steelei*, el primer miembro del género descrito y cultivado, tiene algunas de las hojas más largas.

En 1851, Lindley publicó la segunda especie descubierta, *Scuticaria hadwenii*, curiosamente, y quizás en retrospectiva, intuitivamente, en el género *Bifrenaria*, aunque el hábito de la planta era similar al de *S. steelei*. Lindley pudo haber pensado que las plantas *S. steelei* de Guyana y *S. hadwenii* del sureste de Brasil estaban demasiado distantes geográficamente como para estar relacionadas, mientras que el hábitat brasileño era el hogar de la mayoría de las bifrenarias conocidas. No obstante, el hábitat dispar es un tema recurrente en la historia de este género.



amente como litófitas y tienden a tener un follaje más corto y erecto, lo que indica que reciben más luz en la naturaleza. Estas especies ocurren en una situación similar a las *Cattleyas* rupícolas y requieren un cultivo, medio, temperaturas y riego similares. Esto significaría un medio poroso de secado rápido con algunas piedras agregadas, temperaturas intermedias a cálidas (24-29 °C) de día y 60-65 °F (16-18 °C) de noche, y más luz de la que sería aceptable para las especies epífitas.

El resto de las especies son todas epífitas, pero provienen de diferentes tipos de bosques y elevaciones. Ninguna de las especies parece ser común en la naturaleza. *Scuticaria itirapinensis*, de la selva atlántica de Brasil, altamente deforestada, puede ya estar extinta a pesar de que solo se describió en 1973. Esta especie de labio amarillo no se ha visto en la naturaleza en unos 25 años. Otras especies notables son la *Scuticaria kautskyi* de flores naranjas de Espíritu Santo en Brasil y dos bellezas epífitas similares de bosques geográficamente aislados: *Scuticaria salesiana* de Ecuador y la espectacular *Scuticaria peruviana*, de Perú.



Al observar estas plantas, encuentro especialmente interesante el follaje terete. Los botánicos ven esta adaptación en otras orquídeas, como en *Trichocentrum* (anteriormente los oncidiums de cola de rata) y las brassavolas. Las orquídeas y otras plantas de hábitats estacionalmente secos a menudo exhiben este tipo de hoja suculenta, estrechamente enrollada con una cutícula engrosada en respuesta a la necesidad de conservar agua y termorregular el área de la superficie de la hoja en hábitats tórridos, pero solo un par de las especies de *Scuticaria* son de tales hábitats de bosque seco. Tal vez las especies que conocemos hoy evolucionaron a partir de un ancestro más común, bien adaptado a las condiciones del bosque seco, que irradió a otros hábitats y se es-

peció debido al aislamiento geográfico y ecológico. Esta también podría ser una razón por la que las plantas son tan difíciles de cultivar. Las especies individuales pueden estar perfectamente adaptadas a un conjunto preciso de condiciones climáticas que serían extremadamente difíciles de replicar perfectamente en cultivo. Las plantas son tan profundamente cautivadoras y exóticas que muchos de nosotros estamos dispuestos a probar con lo que esperamos sean plantas propagadas por semillas en lugar de raras, en peligro de extinción, recolectadas en la naturaleza. Si puede cultivar estas con éxito, produzca semillas para el resto de nosotros y para fines de conservación eventuales.



Figura 2,3,4. La *Scuticaria salesiana* ecuatoriana epífita es físicamente similar a *Scuticaria peruviana*, pero está geográficamente aislada por cordilleras y cientos de millas en lejanos bosques. Su hábito colgante requiere un cultivo en montura o canasta. El ejemplar y la flor que se muestran aquí fueron fotografiados en las tierras bajas de Ecuador en El Pangui. Cultivador: Ecuagenera.

Notas sobre la polinización manual de *Dracula × kareniae*

Hugo Medina

Ecuagenera. Km. 2 1/1 Vía a Cuenca Sector Llampasay, Ecuagenera, Gualaceo, Ecuador

Las draculas, originariamente estuvieron inmersas dentro el género *Masdevallia*, creado por el profesor Reichenbach en 1872, sin embargo, estudios morfológicos realizados en el año 1978 por el Dr. Carlile Luer las transfirió a un nuevo género denominado *Dracula*; el nombre lo baso del latín, que significa 'pequeño dragón' haciendo referencia al extraño aspecto de las flores y la similitud a una cara, si las observamos detenidamente también se asemejan a la cara de un simio, de ahí el nombre común 'Carita de mono'.

El nombre *× kareniae* de la especie fue otorgado por el Dr. Luer & Dalstrom en el 1979 en honor a La Sra. Karen Ferrel, una apasionada coleccionista norteamericana, quien participo de la recolección de la especie.



Dracula x kareniae

Dracula × kareniae fue encontrada creciendo epifita en los bosques lluviosos y nubosos, en los vértices de la región andina al noroeste del Ecuador, a una altitud entre 2000 msnm.

Es una de las pocas especies en las que podemos notar una peculiar característica, en su nombre encontramos una '×', precediendo a la especie, ejemplo (*× kareniae*), esto significa que hablamos de un híbrido natural, es decir fue hibridada en la naturaleza presumiblemente por insectos; los investigadores

notaron la similitud de esta especie con *Dracula erythrocodon* y *Dracula fuliginosa*, que serian sus posibles padres, estos fueron encontrados creciendo juntos, compartiendo el mismo hábitat.

Algunas de las orquídeas usan múltiples mecanismos para atraer a los polinizadores, muchas de ellas llegando a usar hasta el engaño, las Draculas no son la excepción, el mimetismo juega un papel importante al momento de la supervivencia de estas especies, son polinizadas por moscas pequeñas de la familia Drosophilidae, estas visitan un hongo en busca de alimento tales como tejidos o levaduras, pueden aparearse y depositar sus huevos en este y así mantener su población.

El labio de las draculas es muy semejante a este hongo, pero en posición inversa, además emana un olor similar, esto hace que los insectos se sientan tentados a visitarlas, pasando mas de una hora merodeando las flores, manipulando los órganos reproductores hasta tomar y depositar una carga de polen en el estigma, dando origen a la polinización natural. En escasas ocasiones las moscas colectan el polen de una especie y depositan en el estigma de otra, dando origen a un híbrido natural, como el que estamos tratando.



Labio de *Dracula andreettae*, mostrando mimetismo con el hongo del tipo Basidiomycetes

En Ecuagenera nuestro único objetivo es preservar todas las especies de orquídeas, en este caso se procedió a la polinización manual de *Dracula × kareniae*, sin embargo, el resultado obtenido fue una gran variación tanto en colores como en su morfología, confirmando la teoría de los descubridores, en realidad se trataba de un híbrido natural.

Sabiendo que al momento de polinizar un híbrido, ya sea este natural o artificial, el resultado no será el esperado, debido a que existe un retroceso genético, los hijos producto de la semilla no se parecerán al ejemplar original, en este caso a *Dracula × kareniae*, al contrario, mostrarán semejanza a cualquiera de sus padres.

En este caso en particular mediante los especímenes obtenidos de la polinización de *Dracula × kareniae* hemos notado que sus verdaderos padres en la naturaleza son *Dracula sodiroi × Dracula × venefica*. Se puede corroborar esta teoría mediante la polinización antes mencionada, donde se obtuvo como resultado también *Dracula × venefica* entre la gran variación, Así mismo se ha polinizado *Dracula × venefica*, obteniendo especímenes totalmente similares con la misma variación tanto en colores como en morfología a los de la polinización de *Dracula × kareniae*.



A.- Se muestra uno de los resultados obtenido de la polinización de *Dracula × venefica*, donde claramente muestra similitud a uno de sus padres, *Dracula sodiroi*.



B.- Uno de los resultados obtenidos de la polinización de *Dracula × kareniae*. Sin lugar a dudas se trata de *Dracula × venefica*, de esta manera ratificamos nuestra teoría

que *Dracula × venefica* es uno de los padres de *Dracula × kareniae*.

Pautas de cultivo

Según experiencia obtenida en Ecuagenera, el cultivo de esta especie se basa en dos factores indispensables, la luminosidad y humedad.

Como a todas las draculas, las condiciones de sombra idóneas son un 60 %, son sensibles a la luz intensa del sol, cuando están sobreexpuestas reaccionan mostrando manchas negras en las hojas; la humedad debe permanecer entre un 80%, debido a que les gusta mantener húmedo el sistema radicular; el medio de cultivo adecuado es el musgo (Spahgnum), este tiene una duración de 7 meses, debe ser remplazado después de este periodo.

Se observa en las siguientes fotografías, la diversidad obtenida de la polinización de *Dracula × kareniae*, se ha obtenido una amplia gama de colores, tamaños y formas, ninguno de los hijos se asemeja a la madre (*D. × kareniae*), es decir, es casi imposible encontrar más de dos especímenes similares.









Algunas de las variaciones del resultado de la polinización de *Dracula × kareniae*



Notas sobre el cultivo de una miniatura de los bosques nublados andinos (*Lepanthes lucifer*)

Hugo Medina

Ecuagenera. Km. 2 1/1 Vía a Cuenca Sector Llampasay, Ecuagenera, Gualaceo, Ecuador

Lepanthes es un género perteneciente a la familia Orchidaceae, específicamente clasificado dentro de la subtribu Pleurothallidinae. Su nombre tiene origen griego, derivado de "lepis" (escama) y "anthos" (flor), en referencia a las flores en capas o la textura de su labio; son de tamaño diminuto, en algunos casos no superan unos pocos milímetros.

Diversidad y Distribución *Lepanthes* es uno de los géneros más diversos dentro de Pleurothallidinae, con alrededor de 1386 registros según la base de datos (Plants of the world) del Jardín Botánico de Kew, de los cuales 1203 son especies válidamente reconocidas. Estas orquídeas se distribuyen ampliamente desde América Central hasta América del Sur, con una marcada concentración en los Andes de Ecuador, Colombia y países vecinos.

Hábitat y Ecología Las especies de *Lepanthes* habitan en rangos altitudinales que van desde los 100 hasta los 3,800 metros sobre el nivel del mar. Prefieren los bosques nublados y lluviosos, caracterizados por alta humedad relativa. Estas orquídeas crecen de forma epífita sobre ramas de árboles, especialmente en las áreas más bajas y sombreadas del dosel, aunque también se han documentado como epífitas sobre lianas e incluso hojas. En casos menos comunes, algunas especies se desarrollan de manera terrestre en taludes y bordes de caminos.

Características Distintivas Las flores de *Lepanthes* son diminutas y presentan una asombrosa diversidad de formas y colores. Su tamaño, estructura compleja y adaptaciones ecológicas hacen de este género un objeto de fascinación tanto para botánicos como para coleccionistas de orquídeas.

Lepanthes lucifer

Descubierta en 1987 por Carl Luer y Alexander Hirtz, *Lepanthes lucifer* es una especie endémica de los bosques nublados ecuatorianos. Su epíteto específico proviene del latín "que significa satanás, en alusión a los apéndices de su flor que asemejan cuernos, otorgándole el sobrenombre de "orquídea del diablo". Esta especie habita altitudes cercanas a los 800 metros sobre el nivel del mar, creciendo epífita en un ambiente húmedo y sombreado. Las hojas de *L. lucifer* muestran una singular transformación cromática, evolucionando de un tono verde rojizo inicial a una tonalidad oscura con el tiempo.



Lepanthes lucifer, cultivado en Ecuagenera

Cultivo Para los entusiastas de las orquídeas miniatura, *Lepanthes lucifer* es una joya perfecta para la colección. Su pequeño tamaño y requerimientos específicos la hacen ideal para terrarios o microclimas controlados.

Condiciones Ideales

Temperatura: Entre 16 °C y 26 °C, simulando el rango térmico de su hábitat natural.

Humedad: Alta, emulando el ambiente de un bosque tropical.

Luz: Sombra parcial; evita la exposición directa al sol.

Sustrato: Musgo *Sphagnum* o mezclas especializadas para orquídeas.



Lepanthes lucifer, mostrando los pétalos en forma de cuernos

Consejos Prácticos para el Cultivo

Terrarios: Mantén un microclima húmedo integrando musgos, helechos y bromelias.

Riego: Riega regularmente, asegurándote de que el sustrato permanezca ligeramente húmedo, sin saturarse.

Ventilación: Garantiza una buena circulación de aire en el entorno del cultivo

Fertilización: Aplica fertilizantes líquidos de baja concentración.

Medio de Cultivo: Debido al reducido tamaño de sus raíces, *Lepanthes lucifer* se adapta mejor a soportes como corcho, helechos arborescentes o troncos, cubiertos con musgo *Sphagnum* para evitar la deshidratación. Si optas por una maceta, el musgo *Sphagnum* sigue siendo la mejor elección para mantener la humedad adecuada. Sustituye el musgo cada siete meses para evitar la acumulación de sales y descomposición.

Riego: Ajusta la frecuencia según las condiciones climáticas. En climas cálidos, rocía la planta cada dos días. Para aumentar la humedad ambiental, puedes utilizar plantas como las bromelias, que acumulan agua en sus hojas.

Ventilación: Es imprescindible una adecuada circulación de aire para prevenir enfermedades y hongos. .

Sombra: Proporciona un nivel de sombra moderado, similar al de su hábitat natural.

Fertilización: Aplica fertilizantes líquidos de baja concentración, ricos en nitrógeno, fósforo, potasio y micronutrientes, una vez al mes. Aplica el fertilizante en las primeras horas de la mañana, evitando la exposición directa al sol posterior al riego.

Con los cuidados adecuados, *Lepanthes lucifer* transformará cualquier espacio en un pequeño rincón de la selva tropical.



24th WOC



Germany 2026

24th World Orchid Conference
26-29 March 2026 Dresden

<https://www.woc-2026.com/>

Instructions for Authors

Scope of the Journal

"Andreettana" is a scientific journal dedicated to publishing original research on the biodiversity of the Neotropical region, with an emphasis on the Tropical Andes. The journal welcomes submissions in the areas of taxonomy (species description and revision), biodiversity, ecology, biogeography, ecological restoration, cultural uses of biodiversity, and tropical plant horticulture, with a special focus on orchids. Manuscripts offering relevant contributions to taxonomic and ecological knowledge, as well as to the conservation and sustainable management of Andean biodiversity, will be prioritized.

Both empirical studies and reviews, essays, and short communications presenting new methods, conceptual approaches, or practical applications are published. Contributions that transcend specific cases and propose solutions or reflections applicable to other regions and contexts are valued.

"Andreettana"'s primary publication language is English. However, manuscripts in Spanish are also accepted, provided they meet the standards of scientific quality and clarity.

Pre-Submission Inquiries

Authors are encouraged to direct inquiries to the Editorial Committee of "Andreettana" before submitting a manuscript to assess thematic relevance and suitability to the journal's scope.

Free Format in the Initial Submission

The journal adopts a relatively free format for the initial manuscript submission, with some minimum requirements (see "Manuscript Specifications" below). Once the manuscript is accepted with revisions, strict adherence to the final style guidelines will be required.

Authorship

All authors are expected to comply with ethical authorship criteria, which include having contributed substantially to the conception, design, data collection, analysis or interpretation, and/or the drafting or critical revision of the manuscript. All authors must approve the final accepted version before publication. Including as co-authors those who have contributed substantially, including personnel who have collected data, especially if they are from the regions where the research was conducted, is suggested to promote inclusion and local representation.

Article Categories and Word Limits

Word counts include the text from the Abstract to the Acknowledgments, excluding references, table and figure captions, and the table body.

Research Article (7000 words): Original and complete studies on biodiversity, taxonomy, ecology, biogeography, restoration, cultural uses, and tropical horticulture, with emphasis on the Andean-Neotropical context.

Review (8000 words): Comprehensive and critical syntheses of the literature, providing new theoretical or methodological perspectives, or identifying relevant trends at local and global levels.

Essay (5000 words): Conceptual reflections, policy analyses, or novel approaches to biodiversity conservation and management, based on documentary evidence and relevance beyond a local case.

Note (3500 words): Brief reports of preliminary results, specific findings, methodological advances, or horticultural curiosities.

Commentary (1000 words): Critical responses or comments on material previously published in "Andreettana."

Short Communication / Letter (500-1000 words): Short opinions, correspondence, or statements on urgent issues in Andean conservation, diversity, and ecology.

The journal does not have fixed sections for book reviews but may consider their publication at the request of the editorial team.

Submission Requirements

Manuscripts must be submitted via the official "Andreettana" email (editorial@faaec.org). In case of access problems, contact the general editor.

Double-Blind Peer Review: Neither the authors nor the reviewers will know each other's identities. Therefore, any identifying information should be removed from the manuscript (except on a separate cover page).

Suggested Reviewers: Authors are requested to suggest 4-6 potential reviewers with expertise in the subject, without conflicts of interest with the authors, and ensuring geographical, gender, and academic background diversity.

Transparency, Data Access, and Reproducibility

Authors must comply with transparency standards in data analysis and presentation. The use of data repositories and the inclusion of supplementary information (online appendices) to facilitate reproducibility are recommended. A brief statement

on data access, analytical code, and funding sources should be included.

Pre-Publication (Preprints)

Manuscripts previously available as preprints in recognized repositories are accepted. If the work is accepted, the authors must ensure the granting of the corresponding license to the journal. If a preprint was used, it should not be identifiably cited in the text during the double-blind review process. After acceptance, the link between the final version and the preprint can be established.

Policies on Duplicate Publications

Manuscripts that have been published in whole or in part in other media, or that are under simultaneous consideration in another journal, will not be accepted. Authors must declare any prior overlap in the cover letter.

Plagiarism

All manuscripts will be subjected to similarity checks with other sources. Submission implies acceptance of this condition.

Conflict of Interest

Authors must declare any conflict of interest, financial or otherwise, in the manuscript submission process.

ORCID

All authors are required to provide their ORCID identifier (<http://orcid.org/>) at the time of submission, unless there are duly justified reasons against it.

Use of Artificial Intelligence

If artificial intelligence (AI) tools were used for text generation or manuscript analysis, the mode of use must be explicitly declared in the document. Authors are responsible for reviewing the accuracy and absence of bias in AI-generated content.

Manuscript Specifications

Format:

Number all lines of the main text.

Sections are usually ordered as Introduction, Methods, Results, and Discussion for Research Articles. Essays, Commentaries, and Letters may have a more flexible structure.

Include a concise and descriptive title.

Include an Abstract (max. 250 words) in the manuscript's primary language (Spanish or English) and a set of 5-8 keywords. Provide an "Impact Statement" (≤ 140 characters) summarizing the key finding or practical application of the study.

Include a separate cover page (not included in the manuscript) with:

Full title

Impact statement

Keywords

Word count

Affiliations of all authors (with full address and email of the corresponding author)

Acknowledgments

Link to the preprint, if applicable.

Tables and Figures:

Place tables and figures after the references.

Provide brief and clear captions; additional clarifications are placed as footnotes in the tables.

Figures containing maps do not imply endorsement of political or jurisdictional boundaries.

Ensure that images, graphics, or maps comply with ethical standards in data collection (e.g., avoid violating privacy if data have been obtained with drones or camera traps).

Ethics in Research with Humans and Animals

If the study involves humans or biodiversity, specify the ethical regulations and permits (including permit numbers) followed, as well as compliance with local and international codes of conduct.

Review Process

The editor-in-chief will initially evaluate the manuscript. If relevant, it will be assigned to a thematic editor, who will decide whether to send the manuscript for peer review. Authors must respond point by point to the reviewers' comments if revisions are requested. The final decision rests with the editor-in-chief.

Appeals

Appeals to editorial decisions are accepted within 3 months of notification. They should be addressed to the editor-in-chief, who will evaluate the request.

Publication Costs

"Andreettana" is a free academic publication, both for its dissemination and for the acceptance of publications.

Equity, Diversity, and Inclusion

The journal promotes the participation of authors, reviewers, and editors from diverse backgrounds, orientations, and levels of experience, thus fostering inclusion and respect for local knowledge, and promoting interdisciplinary and multicultural dialogue.

Instrucciones para Autores

Alcance de la Revista

Andreettana es una revista científica dedicada a la publicación de investigaciones originales sobre la biodiversidad de la región neotropical, con énfasis en los Andes tropicales. La revista recibe trabajos en las áreas de taxonomía (descripción y revisión de especies), biodiversidad, ecología, biogeografía, restauración ecológica, usos culturales de la biodiversidad, así como horticultura de plantas tropicales, haciendo especial énfasis en orquídeas. Los manuscritos que ofrezcan aportes relevantes al conocimiento taxonómico y ecológico, así como a la conservación y el manejo sostenible de la biodiversidad andina, tendrán prioridad.

Se publican tanto estudios empíricos como revisiones, ensayos y comunicaciones breves que presenten nuevos métodos, enfoques conceptuales o aplicaciones prácticas. Se valoran contribuciones que trasciendan casos específicos y planteen soluciones o reflexiones aplicables a otras regiones y contextos.

Andreettana tiene como idioma principal de publicación el inglés. Sin embargo, se aceptan también manuscritos en español, siempre y cuando cumplan con los estándares de calidad científica y claridad.

Consultas Previas a la Presentación

Los autores pueden dirigir consultas al Comité Editorial de Andreettana antes de someter un manuscrito para evaluar la pertinencia temática y el ajuste al alcance de la revista.

Formato Libre en la Presentación Inicial

La revista adopta un formato relativamente libre en la primera presentación del manuscrito, con algunos requisitos mínimos (ver "Especificaciones del Manuscrito" más adelante). Una vez aceptado el manuscrito con revisiones, se requerirá el ajuste estricto a las normas de estilo finales.

Autoría

Se espera que todos los autores cumplan con criterios éticos de autoría, lo cual incluye haber contribuido de manera sustancial a la concepción, diseño, recolección de datos, análisis o interpretación, y/o a la redacción o revisión crítica del manuscrito. Todos los autores deben aprobar la versión final aceptada antes de su publicación. Se sugiere incluir como coautores a quienes hayan contribuido sustancialmente, incluyendo a personal que haya recolectado datos, especialmente si son originarios de las regiones donde se desarrolló la investigación, de manera que se promueva

la inclusión y la representación local.

Categorías de Artículos y Límites de Palabras

El conteo de palabras incluye el texto desde el Resumen/Abstract hasta los Agradecimientos, sin contar las referencias, ni leyendas de tablas y figuras, ni el cuerpo de tablas.

Artículo de Investigación (7000 palabras): Estudios originales y completos sobre biodiversidad, taxonomía, ecología, biogeografía, restauración, usos culturales y horticultura tropical, con énfasis en el contexto andino-neotropical.

Revisión (8000 palabras): Síntesis amplias y críticas de la literatura, que aporten nuevas perspectivas teóricas o metodológicas, o identifiquen tendencias relevantes a nivel local y global.

Ensayo (5000 palabras): Reflexiones conceptuales, análisis de políticas o enfoques novedosos en conservación y manejo de la biodiversidad, con base en evidencia documental y pertinencia más allá de un caso local.

Nota (3500 palabras): Reportes breves de resultados preliminares, hallazgos puntuales o avances metodológicos o curiosidades de horticultura.

Comentario (1000 palabras): Respuestas críticas o comentarios a material previamente publicado en Andreettana.

Comunicación Breve / Carta (500-1000 palabras): Opiniones cortas, correspondencia o declaraciones sobre temas urgentes en conservación, diversidad y ecología andina.

La revista no contempla secciones fijas para reseñas de libros, pero puede considerar su publicación a solicitud del equipo editorial.

Requisitos de Presentación

Los manuscritos deben enviarse a través del correo electrónico oficial de Andreettana (editorial@faaec.org). En caso de problemas de acceso, contactar al editor general.

Evaluación por pares a doble ciego: Ni los autores ni los revisores conocerán las identidades entre sí. Por ello, se debe eliminar cualquier información identificatoria del manuscrito (excepto en la página de portada separada).

Propuesta de Revisores: Se solicita sugerir 4-6 posibles revisores con experiencia en el tema, sin conflictos de interés con los autores, y procurando diversidad geográfica, de género y de trayectoria académica.

Transparencia, Acceso a Datos y Reproducibilidad

Los autores deben cumplir con estándares de transparencia en el análisis y la presentación de datos. Se recomienda el uso de repositorios de datos y la inclusión de información complementaria (apéndices en línea) que faciliten la reproducibilidad. Se deberá incluir una breve declaración sobre el acceso a datos, código analítico y fuentes de financiamiento.

Prepublicación (Preprints)

Se aceptan manuscritos previamente disponibles como preprints en repositorios reconocidos. De ser aceptado el trabajo, los autores deberán asegurar el otorgamiento de la licencia correspondiente a la revista. Si se utilizó un preprint, no debe citarse en el texto de manera identificable durante el proceso de evaluación a doble ciego. Luego de la aceptación, se podrá establecer el enlace entre la versión final y el preprint.

Políticas sobre Publicaciones Duplicadas

No se aceptan manuscritos que hayan sido publicados total o parcialmente en otros medios, o que estén bajo consideración simultánea en otra revista. Los autores deberán declarar cualquier solapamiento previo en la carta de presentación.

Plagio

Todos los manuscritos se someterán a revisión de similitud con otras fuentes. El envío implica la aceptación de esta condición.

Conflicto de Intereses

Los autores deben declarar cualquier conflicto de interés, financiero o de otro tipo, en el proceso de envío del manuscrito.

ORCID

Se requiere que todos los autores proporcionen su identificador ORCID (<http://orcid.org/>) al momento de la sumisión, a menos que existan motivos en contra debidamente justificados.

Uso de Inteligencia Artificial

Si se emplearon herramientas de inteligencia artificial (IA) para la generación del texto o análisis del manuscrito, se deberá declarar explícitamente el modo de uso en el documento. Los autores son responsables de revisar la exactitud y la ausencia de sesgos en el contenido generado con IA.

Especificaciones del Manuscrito

Formato:

Numerar todas las líneas del texto principal.

Las secciones suelen ordenarse en Introducción, Métodos, Resultados y Discusión para Artículos de Investigación. Ensayos, Comentarios y Cartas pueden tener una estructura más flexible.

Incluir un título conciso y descriptivo.

Incluya un Resumen (máx. 250 palabras) en el idioma principal del manuscrito (español o inglés) y un conjunto de 5-8 palabras clave.

Proporcionar una "Frase de Impacto" (≤ 140 caracteres) que resume el hallazgo clave o la aplicación práctica del estudio.

Incluir una página de portada separada (no incluida en el manuscrito) con:

Título completo

Frase de impacto

Palabras clave

Conteo de palabras

Afiliaciones de todos los autores (con dirección completa y correo electrónico del autor de correspondencia)

Agradecimientos

Enlace al preprint si corresponde.

Tablas y Figuras:

Colocar tablas y figuras después de las referencias.

Leyendas breves y claras; las aclaraciones adicionales se colocan como notas al pie en las tablas.

Las figuras que contengan mapas no implican respaldo sobre límites políticos o jurisdiccionales.

Asegurar que las imágenes, gráficos o mapas cumplan estándares éticos en la recolección de datos (ej. evitar violar privacidad si se han obtenido datos con drones o cámaras trampa).

Ética en la Investigación con Seres Humanos y Animales

Si el estudio involucra seres humanos o biodiversidad, especificar las normativas éticas y permisos (incluyendo números de permisos) seguidos, así como el cumplimiento con códigos de conducta locales e internacionales.

Proceso de Revisión

El editor en jefe evaluará inicialmente el manuscrito. Si es pertinente, se asignará a un editor temático, quien a su vez decidirá si enviar el manuscrito a revisión por pares. Los autores deberán responder punto por punto a los comentarios de los revisores en

caso de solicitarse revisiones. La decisión final corresponde al editor en jefe.

Apelaciones

Las apelaciones a las decisiones editoriales se aceptan dentro de los 3 meses posteriores a la notificación. Deben dirigirse al editor en jefe, quien evaluará la solicitud.

Costos de Publicación

Andreettana es una publicación académica gratuita, tanto para su difusión como para la aceptación de publicaciones

Equidad, Diversidad e Inclusión

La revista promueve la participación de autores, revisores y editores de diversas procedencias, orientaciones y niveles de experiencia, fomentando así la inclusión y el respeto al conocimiento local, y favoreciendo el diálogo interdisciplinario y multicultural.

VIII

Ecuador 2025

SCIENTIFIC CONFERENCE ON ANDEAN ORCHIDS

OCTOBER 21 TO 25, 2025

Inauguration - October 21
Conference - October 22 & 24
Tour - October 25

Location
Uzhupud Garden

Information
ccoa@ecuagenera.com

Website
www.ccoa8.com

Phragmipedium besseae





ISSN 3073-150X

<https://faaec.org/andreettana/>