ISSN 0188-4018

ICONES ORCHIDACEARUM

Fascicle 18(1)
THE GENUS EPIDENDRUM
Part 14
"Species New & Old in Epidendrum"

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ICONES ORCHIDACEARUM

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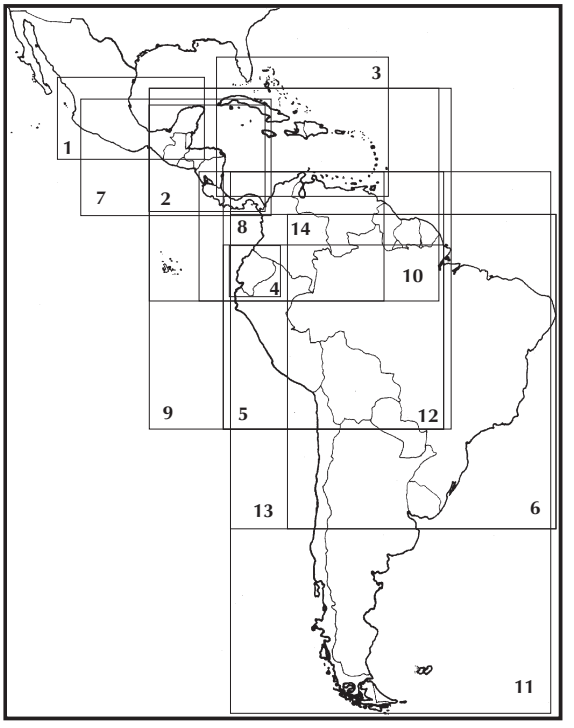
THE GENUS EPIDENDRUM
Part 14

"Species New & Old in Epidendrum"

Reference Map

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



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FOREWORD

It has been a sad year as we have seen the passing of three great orchid taxonomists leave us: Robert L. Dressler, Carlyle A. Luer and Calaway H. Dodson; all good friends since the early 1970's and with whom I had the fortune of their friendship and guidance, and the sharing very many field trips throughout tropical America.

The latest to leave us has been Calaway H. Dodson, to whom we dedicate this issue of Icones Orchidacearum. It was Cal who started the idea and produced the first of his series Icones Plantarum Tropicarum in 1980; the issue dedicated to the Orchids of Ecuador and published by The Marie Selby Botanical Gardens, which he directed and had founded a few years earlier. The idea was that there were a series of unpublished illustrations available but they could not be published in peer reviewed papers because the taxonomy was not well known and having them widely available would help amateurs and botanists alike. He produced 22 volumes in all, 16 in the first series and a further 6 under the Missouri Botanical Garden, dedicated to the Orchids of Ecuador Peru and Bolivia.

Here at AMO we used the same idea but decided to publish what would in fact be a short monograph of each species, with extensive specimen citation, the relevant nomenclature and recognition of each species. This is our 18th volume, with 4 having dealt with Orchids of Mexico, and this 14th dedicated to The Genus *Epidendrum* throughout tropical America.

There have been two other Icones series: 8 volumes of Bennett and Christenson's Icones Orchidacearum Peruviarum, between 1993 and 2001, and two volume published by Vitorino Paiva Castro Neto, Icones Orchidacearum Brasiliensis under the Coordenadoria das Associações Orquidófilas do Brasil between 2004 and 2006.

Several of Cal's students and his wife Piedad Marmol de Dodson have contributed short papers in his memory and are appended to this issue.

In this issue we present 48 species of *Epidendrum*, 29 are new to science; several of them with collections from more than one country. For Peru, we present 12 new species and 10 old ones; Colombia 10 new ones and 7 old; Ecuador 9 plus 7; Bolivia 1 plus 3; Brazil 2 plus 1, and Venezuela 1 plus 1. Guyana is mentioned in 1 old species, and from the Greater and Lesser Antilles one very old species, which has been confused, *Epidendrum umbelliferum* J.F.Gmel.

Three "old" species have been published this year in peer reviewed papers: *Epidendrum katarum-yariku*, *E. machinense* and *E. scrotiforme*. We provide new information for the second two. What happens is that once a species is published and illustrated in color, more information becomes immediately available through our network of amateurs and botanists.

The team work involved shows when we see that 23 authors have participated, and 12 illustrators have participated, some with traditional botanical line drawing, but increasingly with LCDP (Lancaster Composite Digital Plates) through macrophotography and editing technology which gives us a view of the plant in flower and floral details from live specimens. For this effort we have had the collaboration of 38 photographers throughout the region.

These plates have opened up a whole new world to us, as far as conveying information. With new cameras producing very high-resolution photography, the use of Photoshop, enables edition, and digital publication has permitted these to be shared freely with all those interested. The idea started by Cal has taken a huge step forward. The University of Costa Rica, through the Lankester Botanical Garden, spearheaded the new technology with its series Species Orchidacearum: Icones Colombianae in November 2017, edited by Adam Karremans and Sebastián Vieira Uribe. The plates had been in use in the journal Lankesteriana for some time.

During this time of COVID-19 we have been forced to work from home, but fortunately increasing internet access and speed, as well as new ways to use virtual meetings through Zoom, has permitted us to continue producing and sharing new information, thus enhancing collaborative work throughout tropical America.

We hope you enjoy the material presented in this issue.

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The search for Epidendrum with Calaway H. Dodson

by Eric Hágsater

I do not recall when or how I met Cal Dodson, but it was probably through our mutual friend Robert L. Dressler. He invited me to the inauguration of the Selby Botanical Gardens on July 7, 1975 where I also met some of his students. At the time I was already engaged in the study of the genus *Epidendrum* and was then collecting in Mexico and Central America with Bob Dressler. No one at that time would have predicted the impact Cal Dodson would make to me, the orchid world and the country of Ecuador.

From my field notebook it appears that the first time I visited him in Ecuador was in June 1983, when, with my wife Erika, we visited Piedad and Cal at the Rio Palenque Science Center, near Santo Domingo de los Colorado (today Santo Domingo de los Tsáchilas). We stayed a couple of days there, before joining Beatrice and William R. Thurston and Larry Latta, at the time from the Denver Botanical Garden, for a field trip collecting orchid material with the proper permits.

At that time, roads in Ecuador were for the most part unpaved, with several new roads under construction crossing the Andes at different places. Orchid collecting was not very common. In many places, walking along a road cut was like shopping for orchids in a supermarket. Depending on the age of the roadcut, the first colonizers were *Pleurothallis, Epidendrum* and *Maxillaria* species. As the road cut aged other shrubs and ferns would eventually over grow the original orchids; the exception being where the rock face was too steep and never covered with soil. We also found that old guayaba and cacao plantations were especially rich in twig epiphytes. Orchid hunting was not that hard in those days.

Five years later, November 1988, Cal and I travelled with Norris Williams, Mark Whitten and Fred Thompson in Morona-Santiago and Azuay. That trip was especially meaningful because of the visit to the Salesian Father Angel M. Andreetta, at the hacienda Paute Yumacay Salesiana, where he kept an interesting collection of orchids. One evening Dodson and I had a long discussion with Father Andreetta's orchid collaborator, Mario Portilla, about the convenience of setting up a nursery to propagate native Ecuadorean orchids to ensure their ex-situ conservation world-wide. At the time I was the Chairman of the Orchid Specialist Group, Species Survival Commission, International Union for the Conservation of Nature (IUCN), and it was clear to me that with development in tropical countries, large swathes of forests would be turned into agricultural and cattle grazing and many orchid habitats would be destroyed and species lost. Keeping as many species as possible in botanic gardens, nurseries and private collections would help to ensure their survival, aside from the protection of areas of high biodiversity. The idea caught Portilla's imagination, and with the encouragement of Father Andreetta, he founded his nursery, and was later joined by his brother Pepe, who established Ecuagenera in February 1992. Today Ecuagenera has hundreds of species under propagation and has gained world-wide recognition as pioneers in the ex-situ conservation of orchid species. Many new orchid species have been described from Ecuagenera's collection of wild collected species through the years.

Dodson and I crisscrossed the Andes several times over the years; covering the whole country from Tulcán to Valladolid. Each trip produced for us a wealth of new species. Cal collected many different genera, while I always focused on *Epidendrum*. It was difficult to make correct identification of most of the species collected, as there was no comprehensive work or key to the *Epidendrum* species of Ecuador. The only available work was Dunsterville and Garay's Venezuelan Orchids Illustrated, but that was only useful for species more to the north. Charles Schweinfurth's publications on the Orchids of Peru were limited in scope with few illustrations. Cal had published 13 species of *Epidendrum* between 1977 and1984 in Selbyana and Icones Plantarum Tropicarum, the two serial publications he founded. It was clear that this void required attention, more study and clearly many species were undescribed.

It took a long time before Cal and I started to publish new species together. Our first publication was in his series Icones Plantarum Tropicarum ser 2, 5(1989) where we published 5 species new to science (*E. lueri, E. moronense, E. nanopsis, E. tandapianum & E. werffii*). Cal also published with Roberto Vásquez 10 new *Epidendrum* species from Bolivia, in 1989, in the same series of his Icones.

Then, in 1993, came the first part of The Genus *Epidendrum,* entitled "A Century of New Species in Epidendrum", published in Icones Orchidacearum volume 2, including 54 new species for Ecuador which Cal and I authored jointly.

It would not be until 1999, with Dodson as second author, that another batch of 21 new species were published in A Second Century of New Species in *Epidendrum*, Icones volume 3. Another 77 species followed in 2001 in volume 4, of Icones Orchidacearum. More would follow until volume 14 in 2013.

In all Dodson published 264 new species or new combinations in *Epidendrum* with Hágsater,(225 + 7), with Bennett (3), and R. Vásquez (10) (Dodson & Vásquez, 1898) Dodson & Garay (1), and Dodson alone (12), the last in 2013 (Hágsater & Sánchez, 2013). Together Cal Dodson and I more than doubled the number of known species from Ecuador, from 1993 to 2013. His list, published in the Missouri Botanical Garden monographs in 1999, has been greatly enhanced. The relevant manuscript for the Flora of Ecuador, which would include all the *Epidendrum* known to Ecuador, has been in the works for years. Continued additions through recent publications constantly increasing the number of *Epidendrum* species reported for Ecuador, therefore, leaves the manuscript not ready. Many of the species described for Ecuador are now being found in both Colombia and Peru, so the number of *Epidendrum* endemic to Ecuador may decrease, but the overall number of species continues to grow.

My last visit to Ecuador with Cal and Piedad was in 1999. Since 2016, I have returned several times to collaborate with the herbarium which Cal founded in Quito, the QCNE, which today is part of the Museo Ecuatoriano de Ciencas Naturales del Instituto Nacional de Biodiversidad. Together with a team of local botanists and collaborators from the AMO Herbarium and the Instituto de Biología at UNAM in Mexico City, we continue the work that was started by Cal, his friends and students.

Photo by Rolando Jiménez

Dodson with Hágsater at the Herbario AMO in Mexico City, 17 October 1999.

Today Ecuador has numerous well paved highways, there has been a lot of change of land use and urbanization, so the places where Cal and I collected have fever orchids. However, there are still many places where orchids are still found on the same hedge rows and road banks. Many new unexplored areas are now accessible and thus many novelties could be out there ready for discovery. Sometimes you do not even need to get your feet dirty as new species are also often found in the greenhouses of Ecuagenera.

The *Epidendrum* of Ecuador has been a lifetime of learning and discovery, made even more rewarding by sharing our findings with teamwork, something that Cal always promoted. Today there is a group of Ecuadorean botanists who continue to study the rich orchid flora of that country. The number of species continues to increase, especially with many local botanists building on the knowledge accumulated in the last 50 years; the legacy of Calaway H. Dodson.

Photo by Elizabeth Santiago

Hágsater with Dodson at the Dodson's house in Sarasota, Florida, 14 February 2020.

REFERENCES:

Dodson, C.H., 1977, New Orchids from Western Ecuador. **Selbyana** (2(1): 48-56. Dodson, C.H., 1994, New Orchid Species and Combinations from Ecuador – 2. **Orquideología** 19(2): 123-149. Dodson, C.H., 1999, Orchidaceae in Joergensen, P.M., & S. León-Yáñez, Catalogue of Vascular Plants of Ecuador, **Monographs in systematic botany from the Missouri Botanical Garden** 75: 650-775. Dodson, C.H., & P.M.Dodson, 1989, Orchids of Ecuador, **Icon. Pl. Trop. ser 2**, 5: pl. 401-500. Dodson, C.H., & R. Vásquez, 1989, Orchids of Bolivia, **Icon. Pl. Trop. ser 2**, 3: pl. 301-400. Dodson, C.H., & D.E. Bennett, 1989, Orchids of Peru, **Icon. Pl. Trop. ser 2**, 1: pl 1-100. Dunsterville, G.C.K., & L.A. Garay, 1959-1976, **Venez. Orchid. Ill. [Dunsterville & Garay]** 1-6. Andre Deutsch, London, England & Cambridge, MA. U.S.A. Hágsater, E., 1992, New combinations in *Epidendrum*. **Orquídea (Mexico City)** 12: 29. Hágsater, E., 1993, New combinations in *Encyclia* and *Epidendrum***. Orquídea (Mexico City)** 13(1-2): 215-218. Hágsater, E., J. García-Cruz & L. Sánchez S. (eds.) 1993 The Genus *Epidendrum*, Part 1, **Icon. Orchid** 2: pl. 101-200. Hágsater, E., & L. Sánchez S., (eds.) The Genus *Epidendrum*, Species New & Old in *Epidendrum,* Part 10, **Icon. Orchid.** 14: pl. 1401-1500. Schweinfurth, C.,

Cal and I

by Piedad Marmol de Dodson

"I will help Cal navigate in a world that was foreign to him. Cal was a Botanist and I was Ecuadorian"

It is rather difficult for me to describe the experiences and adventures that we shared during more than sixty years that I had the fortune to share my life with Cal. I learned a lot with him. He was a very patient educator and incredibly generous when it came to share his knowledge. I sat in many of his classes and one of my favorite ones was Plant Taxonomy, why do plants have names. Like humans, plants also deserve a first and a last name.

So many anecdotes to tell… My favorite: when he used my Diorissimo perfume bottle to attract *Euglossine* bees. I will narrate this story.

Like the majority of scientists, Cal was absorbed by his research, so much that for our honeymoon he took me to the field to collect orchids along with his students. We went to an old cacao plantation where we found plants of *Stanhopea tricornis* with numerous flower buds ready to open. We took the plants to our hotel and placed the them in the students' rooms. We waited until the flowers started blooming and placed the plants where the potential pollinators, bees of the genus *Eulaema*, could find them.

The next day, Cal started his day early and went to wake his students up. When he entered the students' rooms, he detected a strong fragrance similar to the perfume I use. The *Stanhopea* flowers had opened. He quickly came back to our room and asked me for my bottle of perfume. I witnessed with horror how Cal started to pour my expensive perfume on blotting paper. We immediately returned to field and placed pieces of the blotting paper permeated with my perfume throughout the forest.

It was incredibly interesting to witness how the majority of bees preferred to visit the fragrant blotting papers instead of the orchid flowers. I observed how Cal used up all my perfume bottle while simultaneously, Cal and his students will collect bees with the nets. I was of course happy with the discoveries and results.

Using gas chromatography, Cal determined that cineole-acetate, a compound also found in eucalyptus leaves and Vick's VapoRub, is a component of some orchid fragrances. This experiment was a breakthrough discovery and the beginning of Cal's research in the pollination of the orchid family.

Throughout his career, Cal received many tributes and honors. To list some, the Presidential Medal of National Merit presented to him by the President of Ecuador. Gustavo Noboa Bejarano, and the Medal of Scientific Merit "Dr. Vicente Rocafuerte" presented by the National Congress of Ecuador that recognized his scientific contributions and stewardship for nature and conservation. He was an honorary member of the Faculty of Natural Sciences, Ecuadorian Orchid Association, AOS Fellows, Friends of the Orchids, Curator Emeritus of the Missouri Botanical Garden, and Associate Scientist of Marie Selby Botanical Garden.

Photo by Jim Blair

Piedad and Cal Dodson at Río Palenque, Ecuador.

IN MEMORIAM
CALAWAY HOMER DODSON (1928–2020)
EXPLORER, SCHOLAR, ORCHIDOLOGIST*

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*Originally published in: Endara L (2020) In memoriam: Calaway Homer Dodson (1928-2020) explorer, scholar, orchidologist. Lankesteriana 20: i-vii.

Neotropical plant biology was saddened by the passing of Dr. Calaway (Cal) H. Dodson on August 9th, 2020. He was born in the San Joaquin Valley, Selma, California the 17th of December 1928, to Homer and Leona Dodson. At eighteen, he enlisted in the US Army in 1947 and served as a paratrooper in the Korean war. Upon his return, he started his undergraduate education in Fresno State College (now university), where he received his bachelor's degree in Botany in 1954. He continued with his graduate education in Claremont College where he worked under the direction of Lee W. Lenz and obtained his masters and doctoral degrees in 1956 and 1959, respectively.

As part of his dissertation research "Natural hybridization in some tropical orchids in the Andes", he conducted fieldwork in Cuenca, Ecuador. After the completion of his Ph.D., he returned to Ecuador as a professor at the University of Guayaquil. Dodson taught Ecology, Botany, and Evolution, all in Spanish. In Ecuador, Dodson raised awareness of the importance of botanical knowledge, and he was instrumental in the foundation of the Institute of Botany and the Herbarium of Guayaquil (GUAY), which became part of the University of Guayaquil's Faculty of Natural Sciences.

In 1960, Dodson married Piedad Mármol Dodson and relocated with his family to Saint Louis, Missouri, where he was Taxonomist and Curator of Living Plants of the Missouri Botanical Garden and a contributor to the *Flora of Panama* project. During this period, he started his long-time collaboration with Robert L. Dressler, to whom he dedicated the orchid genus *Dressleria* in 1975.

Cal became Assistant Professor and Curator of the University of Miami in Coral Gables in 1964. Funded by a Fulbright grant, he moved with his growing family to Peru, where he conducted botanical surveys in Iquitos. After returning to the United States, Dodson continued to develop a dynamic research program focused on orchid evolution and fragrances, and he received tenure and was promoted to Full Professor in 1970. Through his program he mentored numerous students, including Ralph M. Adams, Sister John Karen Frei, Katharine B. Gregg, Harold G. Hills, Kiat W. Tan, Hans J. Whieler, and Norris H. Williams, who have since devoted their careers to the study of orchids and other tropical plant groups.

A visionary of the importance of research, education, and conservation in the Neotropics, Dodson purchased, together with Earl R. Rich, Leonard J. Greenfield and John R. Harrison, colleagues at University of Miami, ca. 200 hectares of remnant forests of coastal Ecuador, in an area that was being rapidly deforested due to the establishment of banana plantations. This land became the Río Palenque Science Center, a flagship for the conservation of forests in the coast of Ecuador, and a unique natural laboratory where many generations of students were trained.

While on his sabbatical in Río Palenque in 1973, Dodson was visited by Dr. Carlyle A. Luer, who would become one of his most valued collaborators. Luer invited Cal to take part in the establishment of a botanical garden located in Sarasota, Florida, that would specialize on epiphytic plants. Dodson left the University of Miami and joined the Marie Selby Botanical Gardens from 1973 to 1983. He was appointed founding director of the gardens and had an active role planning the physical infrastructure of the gardens and building a strong research program through the recruitment of investigators specializing in epiphytic plants. He was the founder of the Orchid Identification Center, and also started and frequently contributed to *Selbyana,* a journal devoted to epiphytic plants published by Selby Gardens.

Always an avid botanical explorer, Cal visited forests in all the Andean and Central American countries, accompanied by colleagues, orchid enthusiasts, members of orchid societies, students, and family. During his lifetime, he collected over 14,000 herbarium specimens that are deposited in the herbaria in which he worked (primarily MO, GUAY, QCA, QCNE, SEL, RPSC). His collections are among his most important scientific legacies, providing evidence of forests that no longer exist and the foundation of his monographic treatments and *florulae*.

In 1983, the Missouri Botanical Garden re-hired Cal as Senior Curator through the New World Tropical Research program, which sought to strengthen the Missouri Botanical Gardens' research initiatives in North-Western South America. He had an important role in the creation and organization of the National Herbarium of Ecuador (QCNE). During this period of his prolific career, Cal and his colleagues Alwyn H. Gentry and Flor M. Valverde published floristic inventories, monographic treatments, and manuscripts that have become classics in Neotropical plant ecology.

Dodson also led the compilation of the orchid checklist for the *Catalogue of Vascular Plants of Ecuador*, published in 1999. This monumental work collected nomenclatural, habitat and distribution information of 4100 species and raised the awareness that one out of every five species of vascular plants in Ecuador is an orchid. This stunning statistic, revealed through Cal's lifetime work, changed the way in which Ecuadorians perceived and valued their plant diversity and paved the way for conservation and research projects as well as national campaigns to value, protect, and promote orchids and their habitats.

For his contributions to the scientific advancement of Ecuador, in 2001 Cal became the first non-Ecuadorean honored with the Presidential Medal of National Merit. In 2005, he received the Medal of Scientific Merit of the National Congress of Ecuador and was recognized as Honorary Member of the Ecuadorian Orchid Society.

During his later life, Cal continued to publish orchid monographic treatments for the *Flora of Ecuador*. Parallel to this effort, in collaboration with Alexander Hirtz he also produced the series *Native Ecuadorean Orchids*, a pictorial guide with introductory compendia to each genus that was directed for a wider audience.

Throughout his life, Cal remained an active supporter of numerous conservation initiatives in Ecuador. He was part of the conservation status assessment of ca. 1000 species of orchids for the Red List of Endemic Plants of Ecuador, for which he provided detailed accounts of their populations and threats. In 2006, he supported the formation of EcoMinga, an Ecuadorian foundation devoted to the conservation of the unique ecosystems of the Andes. Cal was a member of EcoMinga's directory until 2016, and he remained an honorary director of this organization thereafter.

Cal received the award for 'Extraordinary Achievement' from his *Alma Mater* in 2005 and remained Curator Emeritus of the Missouri Botanical Garden, Senior Research Associate of Marie Selby Gardens, and honorary life member of the American Orchid Society and the Ecuadorian Orchid Association.

Photo by Stig Dalström

Calaway H. Dodson, Ecuador.

Scientific legacy. Dr. Dodson's career interests focused on the evolution of Neotropical orchids and their pollination mechanisms. As pioneer in the research of Neotropical euglossine bees and orchid fragrances, his work transcended plant systematics and Orchidology, and influenced the fields of bee taxonomy and behavior, biochemistry, biodiversity, and conservation.

Due to his inspiring career his colleagues dedicated one genus (i.e. *Dodsonia* Ackermann) and 74 plant species to honor him in the families Acanthaceae (2 species), Amaryllidaceae (1), Apocynaceae (1), Araceae (4), Aristolochiaceae (1), Asteraceae (4), Begoniaceae (1), Bromeliaceae (7), Cactaceae (4) , Chrysobalanaceae (2), Ericaceae (2), Gesnericeae (6), Lecythidaceae (1), Maranthaceae (2), Melastomataceae (1), Moraceae (1), Myrsinaceae (2), Orchidaceae (26), Piperaceae (1), Rubiaceae (1), Sapindaceae (1), Thelypteridaceae (2), and Viscaceae (1).

1950

Dodson, C. H. 1957. *Oncidium pusillum* and its allies. American Orchid Society Bulletin. 26: 170-172.

Dodson, C. H 1957. *Oncidium papilio* and its allies. American Orchid Society Bulletin. 26: 240-244.

Dodson, C. H. 1957. Chromosome numbers in *Oncidium* and allied genera. American Orchid Society Bulletin. 26: 323-330.

Dodson, C. H. 1958. Cytogenetics in *Oncidium*. Proceedings of the Second World Orchid Conference. Pp 135-139.

1960

Anderson, E., Dodson, C.H. 1960. 1960. Introgressive hybridization in *Oncidium*. American Orchid Society Bulletin. 29(10): 733-736

Dressler, R.L., Dodson, C.H. 1960. Classification and Phylogeny in the Orchidaceae. Annals of the Missouri Botanical Garden 47(1): 25–68.

Dodson, C.H. 1961. Natural pollination of orchids. Missouri Botanical Garden Bulletin 49: 133–152.

Dodson, C.H. 1962. The importance of pollination in the evolution of the orchids of tropical America. American Orchid Society Bulletin 31: 731–735.

Dodson, C.H. 1962. Pollination and Variation in the Subtribe Catasetinae (Orchidaceae). Annals of the Missouri Botanical Garden 49(1/2): 35–56.

Dodson, C.H., and Robyns, A. 1965. Flora of Panama. Part VI. Family 104. Hippocrateaceae. Annals of the Missouri Botanical Garden 52(1): 81–98.

Dodson, C.H. 1966. Ethology of Some Bees of the Tribe Euglossini (Hymenoptera: Apidae). Journal of the Kansas Entomological Society 39(4): 607–629.

Pijl, L.V.D., and Dodson, C.H. 1966. Orchid Flowers: Their Pollination and Evolution. In 1st Edition. Univ of Miami Press.

Dodson, C. H. & Hills, H. G., 1966. Gas chromatography of orchid fragrances. American Orchid Society Bulletin, 35: 720–5.

Woodson, R.E., Schery, R.W., Blackwell, W.H., and Dodson, C.H. 1967. Flora of Panama. Part VI. Family 101. Anacardiaceae. Annals of the Missouri Botanical Garden 54(3): 351–379.

Roberts, R.B., and Dodson, C.H. 1967. Nesting Biology of Two Communal Bees, *Euglossa imperialis* and *Euglossa ignita* (Hymenoptera: Apidae), including Description of Larvae. Ann Entomol Soc Am 60(5): 1007–1014.

Dodson, C.H. 1967. El género *Stanhopea* en Colombia. Orquideologia 2: 7–72.

Dodson, C.H., and Gillespie, Robert J. 1967. The biology of the orchids. In First Edition. Mid-America Orchid Congress.

Dodson, C.H., Dressler, R.L., Hills, H.G., Adams, R.M., and Williams, N.H. 1969. Biologically Active Compounds in Orchid Fragrances. Science 164(3885): 1243–1249.

1970

Williams, N.H., and Dodson, C.H. 1972. Selective Attraction of Male Euglossine Bees to Orchid Floral Fragrances and Its Importance in Long Distance Pollen Flow. Evolution 26(1): 84–95.

Frei, J.K., P., O., and Dodson, C.H. 1972. The Chemical Effect of Certain Bark Substrates on the Germination and Early Growth of Epiphytic Orchids. Bulletin of the Torrey Botanical Club 99(6): 301–307.

Hills, H.G., Williams, N.H., and Dodson, C.H. 1972. Floral Fragrances and Isolating Mechanisms in the Genus *Catasetum* (Orchidaceae). Biotropica 4(2): 61–76.

Dodson, C.H. 1975. Clarification of some nomenclature in the genus *Stanohpea* (Orchidaceae). Selbyana 1(1): 46–55.

Dodson, C.H. 1975. Orchids of Ecuador: *Stanhopea*. Selbyana 1(2): 114–129.

Dodson, C.H. 1975. *Dressleria* and *Clowesia*: A new genus and an old one reviewed in the Catasetinae (Orchidaceae). Selbyana 1(2): 130–137.

Dodson, C.H. 1977. New Orchids from Western Ecuador. Selbyana 2(1): 49–56.

Dodson, C.H., and Gentry, A.H. 1977. New Species in the Urtricaceae and Sapindaceae from the Rio Palenque Science Center, Ecuador. Selbyana 2(1): 65–66.

Dodson, C.H. 1978. The Catasetums (Orchidaceae) of Tapakuma, Guyana. Selbyana 2(2/3): 159–168. .

Dodson, C.H., and Gentry, A.H. 1978. Flora of the Río Palenque Science Center: Los Rios Province Ecuador. Selbyana 4(1/6): I–628.

1980

Dodson, C.H. 1980. Icones Plantarum Tropicarum: Plates 201-300. Marie Selby Botanical Gardens.

Murrell, J.T., Williams, N.H., Pridgeon, A.M., and Dodson, C.H. 1981. Floral fragrances in *Angraecum* (Orchidaceae). Selbyana 5(3/4): 286–290.

Williams, N.H., Atwood, J.T., and Dodson, C.H. 1981. Floral fragrance analysis in *Anguloa*, *Lycaste* and *Mendocella* (Orchidaceae). Selbyana 5(3/4): 291–295.

Williams, N.H., Whitten, W.M., and Dodson, C.H. 1984. Preliminary analyses of the floral fragrances of species of *Acineta*, *Houlettia*, *Luddemannia*, *Lycomormium*, *Paphinia* and *Sievekingia* (Orchidaceae). Selbyana 7(2/4): 315– 317.

Dodson, C.H., Gentry, A.H., and Valverde, F.M. 1985. Flora of Jauneche (including the Pedro Franco Davila Biological Station), Los Rios, Ecuador. Banco Central del Ecuador.

Gentry, A.H., and Dodson, C. 1987. Contribution of Nontrees to Species Richness of a Tropical Rain Forest. Biotropica 19(2): 149–156.

1990

Dodson, C.H. 1993. Native Ecuadorian Orchids. Volume I. *Aa - Dracula*. Editorial Colina, Medellín.

Ortiz, P., Dodson, C., Escobar, R., Luer, C., and Jenny, R. 1994. Native Colombian Orchids Volume 5: Supplement. Compañía Litográfica Nacional S.A., Medellín.

Dodson, C.H. 1998. A New Species of *Zamia* (Zamiaceae) from Ecuador. Novon 8(1): 12–14.

Dodson, C.H. 1999. Orchidaceae. Pp. 630-775. In: P.M. Jørgensen & S. León-Yánez (eds.). Catalogue of the vascular plants of Ecuador. Monogr. Syst. Bot. Missouri Bot. Gard. 75.

2000

Higgins, W.E., and Dodson, C.H. 2001. *Prosthechea pulchra*: A New Name for an Andean Orchid. Selbyana 22(2): 128–130.

Dodson, C.H. 2001. Native Ecuadorian Orchids. Volume II. *Dresslerella* - *Lepanthopsis*. Dodson Trust, Sarasota, FL.

Dodson, C.H. 2002. Native Ecuadorian Orchids. Volume III. *Lepanthospsis* - *Oliveriana*. Dodson Trust, Sarasota, FL.

Dodson, C.H. 2003. Native Ecuadorian Orchids. Volume IV: *Oncidium* - *Restrepiopsis*. Dodson Trust, Sarasota, FL.

Dodson, C.H. 2004. Native Ecuadorian Orchids, Volume V, *Rodriguezia* - *Zygosepalum*. Dodson Publishing, Sarasota, FL.

Dodson, C.H., and Luer, C.A. 2005. Orchidaceae: genera *Aa – Cyrtidiorchis*. In: G. Harling and L. Andersson (eds). Flora of Ecuador, No. 76. 225(2). Department of Plant and Environmental Sciences, University of Gothenburg.

Dodson, C.H., and Luer, C.A. 2009. Orchidaceae: *Masdevallia* and affiliates. In: G. Harling, C. Persson (eds). Flora of Ecuador, No. 84. 225 (9). Department of Plant and Environmental Sciences, University of Gothenburg.

2010

Dodson, C.H., and Luer, C.A. 2010. Orchidaceae: Genera *Cyrtochiloides-Epibator*. In: G. Harling, C. Persson (eds). Flora of Ecuador, No. 87. 225(3). Department of Plant and Environmental Sciences, University of Gothenburg.

Dodson, C.H., and Luer, C.A. 2011. Orchidaceae: *Lepanthes* and affiliates. In: C. Persson, B. Stahl (eds). Flora of Ecuador, No. 88. 225(7). Department of Plant and Environmental Sciences, University of Gothenburg.

Cornejo, X., and Dodson, C.H. 2011. *Sobralia rhizophorae*: A New Species of Orchidaceae from the Mangroves in Northwestern Ecuador. Harvard Papers in Botany 16(1): 53–56.

AKNOWLEDGMENTS: For the testimonials contributed for this article the author would like to acknowledge Piedad Dodson, Peter H. Raven, Andrew Colligan, Katharine B. Gregg, Lou Jost, Harold G. Hills, Alexander Hirtz, Bruce Holst, George Luer, Mónica Navarro, Marie Rose Posa, Carmen Ulloa Ulloa, Renato Valencia, Norris H. Williams and Rosemarie Zelenko.

What Hath He Wrought: Dodson the Divergent

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"… it is not surprising that [he] should have become interested in creative and scholarly pursuits or that the mental energy, the independence of thought [would be brought to bear] …" – D.F. Jones (1944)

These words could have been referring to **Calaway "Cal" Homer Dodson** (1928-2020), but they were not. They were written in a biographical memoir of **Edward Murray East** (1879-1938), renowned Harvard plant geneticist, and Cal's academic great grandfather. The geneticist lineage continued, as one of East's students, **Edgar Anderson** (1897-1969) took on the study of self-incompatibility in *Nicotiana* for his PhD but became most revered for his work on plant variation and speciation, especially introgressive hybridization (Stebbins 1978). While at Washington University in Saint Louis, Anderson was particularly devoted to his graduate students, and one of them, **Lee Lenz** (1916-), armed with a Ph.D., marched off to California where he joined the faculty at Claremont University College and was instrumental in developing Rancho Santa Ana Botanical Garden into a dynamic research institution. Lee's background in the importance of hybridization in speciation processes, and his interests in cytology and systematics laid the foundation for Cal's dissertation studies on "Natural hybridization in some tropical orchids in the Andes," part of which was published with Edgar Anderson (Anderson & Dodson 1958). The chromosome work that Cal did was one of the most extensive for the Oncidiinae at the time (Dodson 1957, Tanaka & Kamemoto 1974), but Edward's lineage of plant geneticists through Cal started to crumble. Instead, Cal's creative and scholarly pursuits, mental energy and independence of thought gave rise to a new clade: the ***Orchidologist***.

Cal left California in 1959 with a PhD in hand and returned to Ecuador where he founded and became the first director of the Institute of Botany at the Universidad de Guayaquil. A year later he headed to Saint Louis to work at the Missouri Botanical Garden, where Edgar Anderson still stood tall in the neighborhood. It was at Missouri where Cal crossed paths with **Robert "Bob" Dressler**, also a relatively recent PhD, whose dissertation was a monograph of *Pedilanthus* (Euphorbiaceae). Away from constraints at Harvard, Bob gravitated to orchids, his original interest. It was a perfect storm.

The first public indication that something was brewing in Saint Louis besides Budweiser, was the publication of "Classification and phylogeny in the Orchidaceae" (Dressler & Dodson 1960), the first major attempt at Orchid classification since Rudolf Schlechter (1926). This was followed by a series of publications on orchid pollination by Cal (often with G.P. Frymire), mostly from observations in Ecuador. Bob was very much interested in orchid pollination as well, primarily in Panama. In an email to Lorena Endara, Peter Raven observed that both Cal and Bob were frustrated with Missouri Botanical Garden because "they were not being given enough support to build and maintain an important representative collection of living orchids, … which is what they had expected to do when they were hired." So, both of them bailed out of St. Louis. Bob landed a job at the newly established Smithsonian Tropical Research Institute as their first hire, while Cal took a position at the University of Miami, which is where his academic legacy began.

"Orchid flowers: their pollination and evolution" (van der Pijl & Dodson 1966) can be viewed as a 100-year update of Darwin's "Various contrivances by which orchids are fertilized by insects". Cal met up with the renowned pollination biologist, L. van der Pijl, co-author of "Principles of pollination ecology" (Faegri & van der Pijl 1966) and discussed mutual interest in writing a book on orchid pollination. According to Cal, van der Pijl insisted that he had a tremendous amount of data and had already written much on the subject, so he should be first author. Cal agreed, but regretted it later when he ended up doing most of the book. If it had been any consolation for Cal, most people on this side of the Atlantic view it as primarily his work. Regardless of the order of authorship, the book was a success and remains highly influential globally.

While the publications continued to pour out of Cal's typewriter, both he and Bob gravitated to androeuglossophilous orchids – orchids pollinated by male euglossine bees – an interaction that was both mysterious and fascinating. They looked at it from both the bee's perspective, and the plants they pollinated. The sixties were very exciting times in Cal's lab, with a group of his students spending considerable time in Panama with Bob. Early publications by Cal and his students Ralph Adams and Hal Hills (Adams 1966; Hills et al. 1968) hinted at the importance of their discoveries, which culminated in a pivotal paper in the prestigious journal *Science*, "Biologically active compounds in orchid fragrances" (Dodson et al. 1969). This was followed by important papers on the interaction by Norris Williams (Williams & Dodson 1972), and Hal (Hills et al. 1972), and of course, Cal (Dodson 1975). Ironically, Norris is well known for his career-long studies on orchid-euglossine bee biology (e.g., Williams & Whitten 1983), but his dissertation was on orchid systematics: the genus *Ada,* a close relative of *Brassia* (Williams 1971).

Meanwhile, Cal had other graduate students working on different themes, most of which involved orchids, and all involved epiphytes. Katharine Gregg studied sex expression in dioecious *Cycnoches* and *Catasetum*, two genera pollinated by euglossines (Gregg 1975, 1983); Hans Wiehler (1930-2003) was deep into the taxonomy of Neotropical Gesneriaceae (mostly epiphytes, some pollinated by euglossines) (Wiehler 1983); Kiat Tan worked on the systematics of *Arachnis* and related genera (Tan 1975); and Sister John Karen Frei (1936-2012) studied phorophyte-orchid interactions in Mexico (Frei & Dodson 1972).

Dodson's relatively brief venture in the professorial ranks ended in 1973 when he was offered the executive directorship of the fledgling Marie Selby Botanical Gardens. Most of his students graduated and dispersed. Ralph Adams was at Florida Atlantic University, Norris Williams was beginning at Florida State University. Katharine Gregg went up to West Virginia Wesleyan College where she taught for over 40 years, introducing the intrigue of orchids at every opportunity. While teaching only undergraduates, she developed a research program on demography and reproductive biology of temperate North American orchids. Sister John Karen Frei was on the faculty of Barry College in Miami and later serving in various high-level administrative capacities. Hal Hills played a significant role in the heady early days of DNA sequencing both in Norris's lab and also with Mark Chase at the University of North Carolina. He then entered the field of medical genetics and eventually became Director of the DNA sequencing lab at UMass Medical School.

Cal's vision for Selby was to make it a tropical garden with a research arm specializing in epiphytes, which was accepted by the Board of Directors. He hired Kiat Tan to run the herbarium and orchid identification center at Selby, and Hans Wiehler came to work on Gesneriaceae and finish his dissertation. Mike Madison also joined the group bringing his expertise in Araceae. Carlyle Luer (1922-2019), one of the original board members and the man who played a pivotal role in bringing Cal to Selby, took on the pleurothallids, which became a lifelong obsession. Soon an inhouse scientific journal was begun, Selbyana. The scientific output from the Garden accelerated, attracting prominent tropical biologists such as bromeliad specialist David Benzing to publish in the journal as well. The result was a journal covering a broad spectrum of subjects in taxonomy and ecology of epiphytes. It was an exciting time.

The good times in Sarasota eventually came to an end. The Garden came under severe financial strain and was forced to downsize its research scope. Kiat went to Singapore and became a prominent figure at the Singapore Botanical Garden and later became significantly involved in the establishment and development of Singapore's phenomenal Gardens-by-the-Bay. Hans also left the garden but stayed in Sarasota and established the Gesneriad Research Foundation. And Cal returned to Ecuador, where his love of orchids had originally solidified. Peter Raven, whom Cal revered, appointed him a Senior Curator at Missouri Botanical Garden. This allowed Cal to remain in Ecuador and continue his research focusing on floristics and taxonomy of Andean orchids, and to serve as director of the Río Palenque Field Station. Cal's mentorship and collaborations with Ecuadoreans, coupled with a prodigious scientific output, culminated in becoming the first non-Ecuadorean to be honored with the Presidential Medal of National Merit, and later the Medal of Scientific Merit of the National Congress of Ecuador (Endara 2020).

While the impact Cal had on the taxonomy and floristics (not just orchids!) of the Andean region has been huge, there were two papers that had an influence outside his usual sphere of science. He collaborated on two papers published in 1987 with Alwyn (Al) Gentry (1945-1993) entitled, "Diversity and biogeography of Neotropical vascular epiphytes" (cited 1047 times) and "Contribution of nontrees to species richness of a tropical rain forest" (cited 699 times). Al spent his career focused on tropical woody plants for which he had encyclopedic knowledge, but his long friendship with Cal had opened his eyes to non-woody plants, especially epiphytes and their role in tropical forests. And those two papers put orchids and epiphytes squarely into the conversation on tropical forest ecology and conservation.

Embedded in the Neotropical vascular epiphyte paper, and largely overlooked, was Cal's opinion that speciation in orchids may be very rapid. His contention that it could happen as fast as a couple of decades puts in mind "creative mental energy and independence of thought"! Nevertheless, nearly two decades later we were seriously talking about the plausibility of rapid bursts of evolutionary change in the orchid family (Tremblay et al. 2005).

The result of this mid-career shift away from graduate student factories was that Cal no longer had graduate students of his own. Unfortunately, most of his students had no graduate students of their own either due to career shifts, research positions, or working at undergraduate institutions. Ralph Adams had only two MSc students who had worked on orchids: Ruben Sauleda and Gary Goss. But under Norris' tutelage, Cal's legacy was about to flourish. After a couple of years at Florida State University, Norris got his first graduate students: Karen Fritze, Gil Newton, John Atwood, and Jim Ackerman. The next year, Alec Pridgeon joined the lab followed by Mark Whitten (1954-2019) about two years later. After getting nearly everybody graduated in 1981, Norris left for a position at the University of Florida, taking Mark with him to finish his degree. Of this cohort, only Jim ended up in a position where he had graduate students. Nevertheless, Alec, John and Mark continued to make major scientific contributions and informally advise students on life, liberty and the pursuit of orchidaceous knowledge. Most of Jim's students worked on orchids, and a few continue the tradition and have students of their own: Elvia Meléndez-Ackerman and Raymond Tremblay in Puerto Rico, and Tupac Otero in Colombia.

After Mark Whitten earned his PhD at the University of Florida he stayed on as a Researcher, running Norris' lab. It took about 12 years before anybody else graduated from Norris' lab, but it was this next cohort which began to have a distinct Latin flavor. Katia Silvera (Panamá), Iwan Molgo (Suriname), Kurt Neubig (USA), Mario Blanco (Costa Rica) and Lorena Endara (Ecuador) all worked on some aspect of orchids, often involving molecular systematics. Everyone has graduated, and now they have academic jobs. In due course they will likely have their own swarm of graduate student progeny, and Cal's academic lineage will continue to grow. The outlook is certainly bright as Kurt Neubig, Elvia Meléndez-Ackerman, Tupac Otero, Mario Blanco and Jim Ackerman have more "orchidologists of the future" in the graduate student pipeline.

Acknowledgements

We thank Mario Blanco, Lorena Endara, Gary Goss, Kathy Gregg, Hal Hills, Elvia Meléndez, Iwan Molgo, Kurt Neubig, Tupac Otero, Alec Pridgeon, Ruben Sauleda, Kiat Tan, and Jorge Trejo for suffering our inquiries and pleas to help resurrect tattered memories. We captured additional information from Lorena's piece on Cal, Carlos Ossenbach's obituary on Bob, and Norris' lab group tribute on Mark Whitten (Endara 2020; Ossenbach 2019; Blanco et al. 2019).

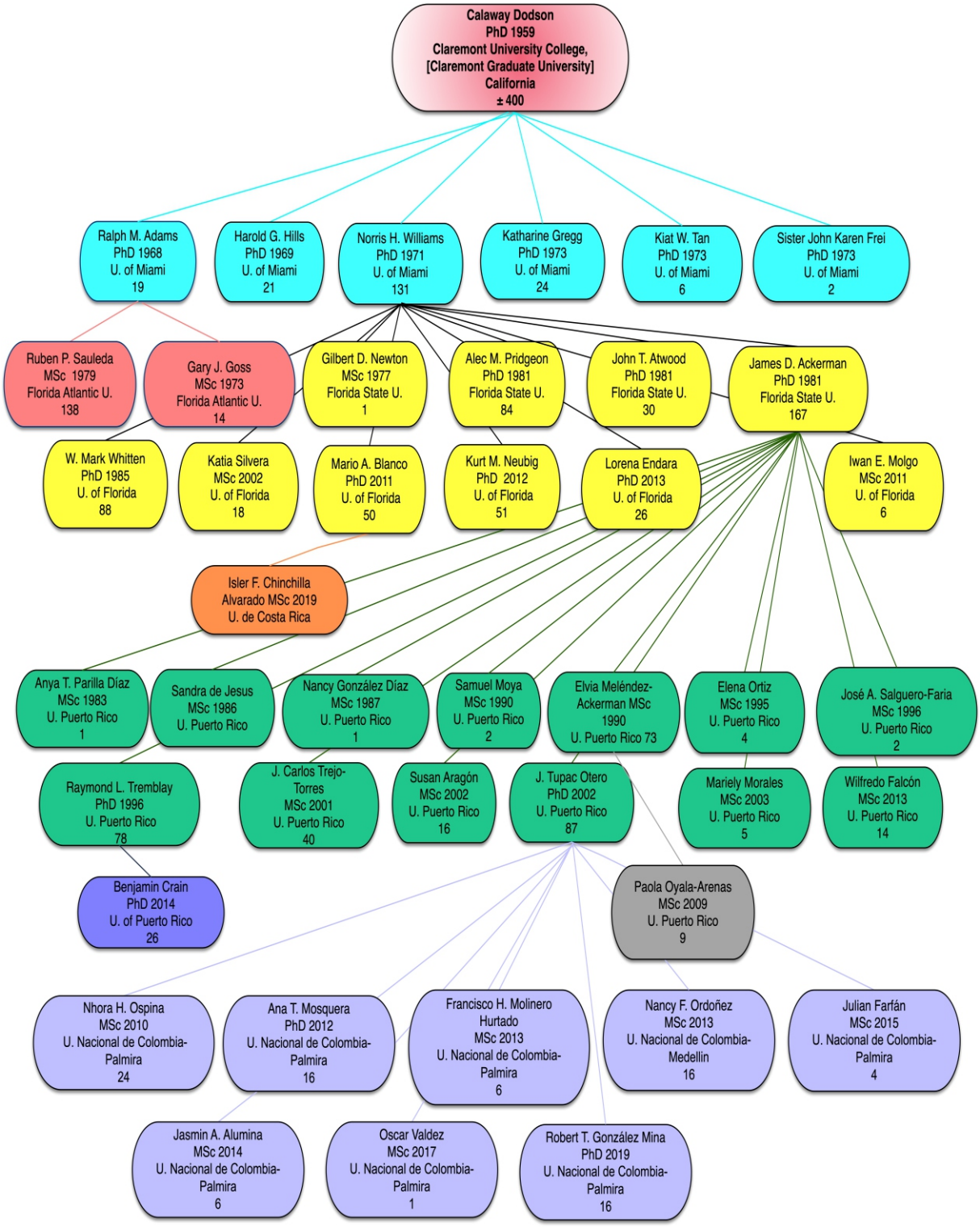
Table 1. Calaway H. Dodson's academic progeny. Listed are only those who had worked on orchids. Mentor abbreviations: CHD = Calaway H. Dodson, EJM = Elvia J. Meléndez-Ackerman, JDA = James D. Ackerman, JTO = J. Tupac Otero, MAB = Mario A. Blanco, NHW = Norris H. Williams, RLT = Raymond L. Tremblay, RMA = Ralph M. Adams.

Student	Generation	Masters Institution, Yr, Mentor	Doctorate Institution, Yr, Mentor	Academic institution employed
Ralph Adams (deceased)	1		U Miami, 1968, CHD	Florida Atlantic U
Harold Hills (career shift)	1		U Miami, 1969, CHD	U North Carolina, U Florida
Norris Williams (retired)	1	U Alabama, 1966	U Miami, 1971, CHD	Florida State U, U Florida
Katherine Gregg (retired)	1		U Miami, 1973, CHD	Weslyan College, Georgia
Kiat Tan (retired)	1		U Miami, 1973, CHD	Marie Selby Botanical Garden, Singapore Botanical Garden
Sister John Karen Frei (deceased)	1		U Miami, 1973, CHD	Barry College, Florida
Ruben Sauleda	2	Florida Atlantic U, 1979, RMA	U South Florida, 1983, Donovan Correll	Self employed
Gary Goss	2	Florida Atlantic U, 1973, RMA	U Miami, 1977, Thomas Pliske	Palm Beach Atlantic U, Florida
Gilbert Newton (retired)	2	Florida State U, 1977, NHW		Sandwich STEM Academy, Massachusetts
Alec Pridgeon (retired)	2		Florida State U, 1981, NHW	Royal Botanic Gardens, Kew
John Atwood (career shift)	2	Michigan State U, 1976, John Beaman	Florida State U, 1981, NHW	Selby Botanical Gardens, Florida
James Ackerman	2	Humboldt State U, California, 1976, Dennis Anderson	Florida State U, 1981, NHW	U Puerto Rico, Río Piedras
Mark Whitten (deceased)	2	U Tennessee 1979, Ed Clebsch	U Florida, 1985, NHW	U Florida
Katia Silvera	2	U Florida, 2002, NHW	U Nevada, Reno, 2010, John Cushman	U California, Riverside/Smithsonian Tropical Research Institute, Panama
Iwan Molgo	2	U Florida, 2002, NHW	U Florida, 2011, Douglas & Pamela Soltis	Anton de Kom, U Suriname
Kurt Neubig	2		U Florida, 2005, NHW	Southern Illinois U
Mario Blanco,	2		U Florida, 2011, NHW	U Costa Rica
Lorena Endara	2		U Florida, 2013, NHW	U Florida

Isler Fabán Chinchilla	3	U Costa Rica, 2019, MAB		
Anya Parrilla	3	U Puerto Rico, Río Piedras, 1983, JDA		U Puerto Rico, Carolina
Sandra de Jesus (retired)	3	U Puerto Rico, Río Piedras, 1986, JDA		U Puerto Rico, Bayamón
Nancy González	3	U Puerto Rico, Río Piedras, 1987, JDA		
Samuel Moya (retired)	3	U Puerto Rico, Río Piedras, 1990, JDA		International Institute of Tropical Forestry, Puerto Rico
Elvia Meléndez-Ackerman	3	U Puerto Rico, Río Piedras, 1990, JDA	U California, Irvine, 1995, Diane Campbell	U Puerto Rico, Rio Piedras
Elena Ortiz	3	U Puerto Rico, Río Piedras, 1996, JDA	Arizona State U, 2005, Juliet Stromberg	Phoenix College, Arizona
José Salguero-Faría	3	U Puerto Rico, Río Piedras, 1996, JDA		
Raymond Tremblay	3		U Puerto Rico, Río Piedras, 1996, JDA	U Puerto Rico, Humacao and Río Piedras
Carlos Trejo-Torres	3	U Puerto Rico, Río Piedras, 2001, JDA	Centro de Investigación Científica de Yucatan, 2013, Germán Carnevali	Institute for Regional Conservation, Florida
Susan Aragón	3	U Puerto Rico, Río Piedras, 2002, JDA	Clark U, Massachusetts, 2012, Dianne Rocheleau	U Federal do Oeste do Pará, Brasil
Tupac Otero	3		U Puerto Rico, Río Piedras, 2002, JDA	U Nacional de Colombia, Palmira
Mariely Morales-Vargas	3	U Puerto Rico, Río Piedras, 2013, JDA		Pasos Libres Homeschool, Puerto Rico
Wilfredo Falcón	3	U Puerto Rico, Río Piedras, 2013, JDA	U Zurich, 2018, Dennis Hansen	
Benjamin Crain	4		U Puerto Rico, Río Piedras, 2014, RLT	Smithsonian Environmental Research Center, Maryland
Nhora Ospina	4	U Nacional de Colombia, Palmira, 2010, JTO	U del Valle, 2020, Nicola Flanagan	U del Quindio, Colombia
Ana Teresa Mosquera	4		U Nacional de Colombia, Palmira, 2012, JTO	Pontificia Universidad Javeriana, Cali, Colombia

Francisco Hernando Molinero	4	U Nacional de Colombia, Palmira, 2013, JTO		Instituto Colombiano Agropecuario ICA, Buenventura
Jazmin A. Alomina	4	U Nacional de Colombia, Palmira, 2014, JTO	U los Andes, 2020, Pablo Stevens	
Oscar Valdez	4	U Nacional de Colombia, Palmira, 2017, JTO		Gimnasio Campestre La Fontana, Villavicencio, Colombia
Julián Farfan	4	U Nacional de Colombia, Palmira, 2015, JTO		
Roberto Tulio González	4		U Nacional de Colombia, Palmira, 2017, JTO	
Paola Oyala	4	U Puerto Rico, Río Piedras, 2009, EMA		
Nancy Fiorela Ordoñez	4	U Nacional de Colombia, Medellin, 2013, JTO		

Figure 1. Genealogy of Calaway H. Dodson's academic progeny. Only those who had worked on orchids and/or euglossine bees during their graduate school days are included. The numbers refer to the quantity of publications as indicated by curriculum vitae provided, Google Scholar, Researchgate.net, and/or Academia.edu and should be considered as approximate counts. The academic level, MSc or PhD, refers to that acquired under the tutelage of a Cal's progeny. See Table 1 for other degrees.



Literature Cited

Adams RM (1966) Attraction of bees to orchids. Fairchild Tropical Garden Bulletin 21(4): 6-7.

Anderson E, Dodson CH (1958) Introgressive hybridization in *Oncidium*. In: Proceedings of the Second World Orchid Conference, pp. 209-213. (reprinted: American Orchid Society Bulletin 29[1960]: 733-736)

Blanco MA, Neubig KM, Endara L, Silvera K, Molgo IE, Carlsward BS (2019) Obituary: William Mark Whitten (1954-2019). Lankesteriana 19(2): i-ix.

Darwin C (1877) The various contrivances by which orchids are fertilised by insects. 2nd edition. John Murray & Sons, London.

Dodson CH (1957) Chromosome numbers in *Oncidium* and allied genera. American Orchid Society Bulletin 26: 323-330.

Dodson CH (1975) Coevolution of orchids and bees. In L Gilbert & PH Raven (eds.), Coevolution of animals and plants: 91-99. University of Texas Press, Austin, Texas.

Dodson CH, Dressler RL, Hills HG, Adams RM, Williams NH (1969) Biologically active compounds in orchid fragrances. Science 164: 1243-1249.

Dressler RL, Dodson CH (1960) Classification and phylogeny in the Orchidaceae. Annals of the Missouri Botanical Garden 47: 25-68.

Endara L (2020) In memoriam: Calaway Homer Dodson (1928-2020) explorer, scholar, orchidologist. Lankesteriana 20: i-vii.

Faegri K, van der Pijl L (1966) The principles of pollination ecology. Pergamon Press, Oxford.

Frei JK, Dodson CH (1972) The chemical effect of certain bark substrates on the germination and early growth of epiphytic orchids. Bulletin of the Torrey Botanical Club 99: 301-307.

Gentry AH, Dodson CH (1987a) Diversity and biogeography of Neotropical vascular epiphytes. Annals of the Missouri Botanical Garden 74: 205-233.

Gentry AH, Dodson CH (1987b) Contribution of nontrees to species richness of a tropical rain forest. Biotropica 19: 149-156.

Gregg KB (1975) The effect of light intensity on sex expression in species of *Cycnoches* and *Catasetum* (Orchidaceae). Selbyana 1: 101-113.

Gregg KB (1983) Variation in floral fragrances and morphology: incipient speciation in Cycnoches? Botanical Gazette 144: 566-576.

Hills HG, Williams NH, Dodson CH (1968) Identification of some orchid fragrance components. American Orchid Society Bulletin 37: 967-971.

Hills HG, Williams NH, Dodson CH (1972) Floral fragrances and isolating mechanisms in the genus *Catasetum* (Orchidaceae). Biotropica 4: 61-76.

Jones DF (1944) Biographical memoir of Edward Murray East 1879-1938. National Academy of Sciences of the United States of America. Biographical Memoirs 23: ninth memoir, 215-242.

Ossenbach C (2019) Obituary: Robert Louis Dressler (1927-2019) – a botanist for all seasons. Lankesteriana 19(3): i-viii.

Pijl L van der, Dodson CH (1966) Orchid flowers: their pollination and evolution. University of Miami Press, Coral Gables.

Schlechter R (1927) Die Orchideen. P Parey, Berlin.

Stebbins GL (1978) Edgar Anderson 1897-1969, a biographical memoir. National Academy of Sciences Biographical Memoir.

Tan KW (1975) Taxonomy of *Arachnis, Armordorum, Esmeralda* and *Dimorphorchis*, (Orchidaceae). Part 1. Selbyana 1: 1-15.

Tanaka R, Kamemoto H (1974) List of chromosome numbers in species of the Orchidaceae. In C Withner (ed.), The orchids: scientific studies: 411-483. John Wiley, New York.

Tremblay RL, Ackerman JD, Zimmerman JK, Calvo RC (2005) Variation in sexual reproduction in orchids and its evolutionary consequences: a spasmodic journey to diversification. Biological Journal of the Linnean Society 84: 1-54.

Wiehler H (1983) A synopsis of the Neotropical Gesneriaceae. Selbyana 6: 1-219.

Williams NH (1971) A reconsideration of *Ada* and the glumaceous brassias (Orchidaceae). Brittonia 24: 93-110.

Williams NH, Dodson CH (1972) Selective attraction of male euglossine bees to orchid floral fragrances and its importance in long distance pollen flow. Evolution 26: 84-95.

Williams NH, Whitten WM (1983) Orchid floral fragrances and male euglossine bees: methods and advances in the last sesquidecade. Biological Bulletin 164: 355-395.

The Marie Selby Botanical Gardens

By Kiat Tan

Singapore

I was a graduate student of Prof John H Beaman. Since I chose to work with orchids, he sent me to Dr. Calaway H Dodson at the University of Miami, Florida. I was to stay with Cal for my PhD and was starting my teaching career when he asked me to go with him to Sarasota to help him develop a Botanic Garden devoted to the elucidation of the Orchidaceae. The Marie Selby Botanical Gardens was this established at 800 South Palm Avenue on the former estate of Marie Selby. Later, the Payne House as well as properties across Palm Avenue were included, and the Marie Selby Botanical Garden was established. The core of the Gardens was a large Display Gas's House, subtended by three growing houses. Together with Carl Luer, Cal Dodson went about securing funds to develop the Gardens. I was tasked with securing landscape material and donations to establish the outdoor gardens and grounds, and led a team of horticultural assistants with the planting works. Cal's supporters included Norman Reasoner and John Blaser, plant nursery proprietors who were extremely generous with plant and landscape material. A landscape Masterplan was donated by the dean of Landscape Architecture from FSU, and this was founded the Marie Selby Botanical Gardens. Cal and Piedad Dodson and their Twitter boys came to live with him. Orchid Expeditions to tropical and subtropical regions round the globe in search of orchids ensued. Hans Wiehler joined the staff, and brought with him a wonderful Gesneriad Collection. Cal's friends donated their orchid and Bromeliad collections to broaden the scope of the Gardens remit as the leading Botanic Gardens dedicated to the study, elucidation and display of Epiphytic Flora. Calaway Homer Dodson was the Founding Director, and I was his Assistant Director. I was in charge of the Plant Acquisitions and the Selby Volunteers and Associates. I was also in charge of establishing the Selby Gardens Museum and Arts Gallery. This was set up in The Payne House. The property across the property was acquired and served as the Research and Administration Office, our HQ.

Species and Genus dedicated to Calaway H. Dodson

(including changes in genus and invalid names Plants of the World Online/Kew Science, accessed September 11, 2020)

Genus

Dodsonia Ackerman, Selbyana 5: 118 (1979).
Dodsonia falcata Ackerman, Selbyana 5: 118 (-119), fig (1979).
Dodsonia saccata (Garay) Ackerman, Selbyana 5: 119 (1979).

Species

91, including synonyms

Acianthera dodsonii (Luer) Karremans & Rinc.-González, Phytotaxa 238(2): 178 (2015).
× *Ackersteinia dodsonii* Neudecker, Orquideología 19(2): 25-26 (-28) fig (1994), nom. inval.
Allophylus dodsonii A.H.Gentry, Ann. Missouri Bot. Gard. 75(4): 1438 (1989).
Alloplectus dodsonii Wiehler, Selbyana 2(1): 67 (-70), pl. 19A (1977).
Aloysia dodsoniorum Moldenke, Phytologia 50: 308 (1982).
Amauropelta dodsonii (A.R.Sm.) Salino & T.E.Almeida, PhytoKeys 57: 21 (2015).
Anomalluma dodsoniana (Lavranos) Plowes, Cact. Succ. J. (Los Angeles) 65(4): 167 (1993).
Anthurium caldodsonii Croat, Willdenowia 40(2): 332 (-333, 335; fig. 1) (2010).
Aphelandra dodsonii Wassh., Phytologia 25: 486, fig. 5D,E (1973).
Apoda-prorepentia dodsonii (Luer) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 95: 255 (2004).
Ardisia dodsonii Lundell, Wrightia 6: 102 (1980).
Aristolochia dodsonii Pfeifer, Bull. Torrey Bot. Club 93: 173, fig. 1 (1966).
Astroloba dodsoniana Uitewaal, Desert Pl. Life xxii. 29 (1950).
Auriculardisia dodsonii (Lundell) Lundell, Phytologia 49: 343 (1981).
Begonia dodsonii L.B.Sm. & Wassh., Phytologia 44: 241, fig (1979).
× *Bensteinia dodsonii* (Neudecker) Christenson, Orchid Rev. Suppl., 118(1290): 41 (2010), nom. inval.
Blakea dodsoniorum (Wurdack) Penneys & Almeda, PhytoKeys 20: 25 (2013).
Brachionidium dodsonii Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 57: 38, fig (1995).
Caladiopsis dodsonii G.S.Bunting, Ann. Missouri Bot. Gard. 50: 28, fig (1964).
Calathea dodsonii H.Kenn., Selbyana 2(1): 46, pl. 13A (1977).
Caralluma dodsoniana Lavranos, Cact. Succ. J. (Los Angeles) 43(2): 60 (1971).
Catasetum dodsonianum (E.Aguirre) P.F.Hunt, Orchid Rev. 106(1220): 126 (1998): (1998).
Caucaea dodsoniana Szlach. & Kolan., Polish Bot. J. 60(2): 130 (2015).
Cavendishia dodsonii Luteyn, Brittonia 29: 181 (-182) (1977).
Ceropegia dodsoniana (Lavranos) Bruyns, S. African J. Bot. 112: 414 (2017).
Chlorospatha dodsonii (G.S.Bunting) Madison, Selbyana 5: 352 (1981).
Clowesia dodsoniana E.Aguirre, Orquídea (Mexico City) 10(1): 192 (1986).
Columnea dodsonii Wiehler, Selbyana 2(1): 70, pl. 20A (1977).
Crossoglossa dodsonii R.Vásquez, in Rev. Soc. Boliv. Bot. 2(2): 155 (1999).
Cryptocentrum dodsonii Carnevali, Harvard Pap. Bot. 5(2): 474 (-477; figs. 2-3) (2001).
Cryptophoranthus dodsonii Luer, Selbyana 5: 145 (1979).
Dendrophorbium dodsonii (H.Rob. & Cuatrec.) B.Nord., Compositae Newslett. 29: 48 (1996).
Dendrophthora dodsonii Kuijt, Acta Bot. Neerl. 12: 522, fig. 2 (1963).
Dicliptera dodsonii Wassh., Selbyana 2(1): 16, pl. 3A-C (1977).
Dracula dodsonii (Luer) Luer, Selbyana 2: 194 (1978).
Dressleria dodsoniana H.G.Hills, Orquideología 24(2): 133 (-140; photogr.; plate) (2006).
Dryadella dodsonii Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 76: 161 (-162) (1999).
Drymonia dodsonii (Wiehler) J.L.Clark, Selbyana 25(2): 201 (2005).
Epidendrum dodsonii Hágsater & E.Santiago, Icon. Orchid. 7: t. 732 (2005).
Eucrosia dodsonii Meerow & Dehgan, Brittonia 37: 47 (-49), fig (1985).
Ficus dodsonii C.C.Berg, Fl. Ecuador 85: 93 (-94; fig. 16) (2009).
Fleischmannia dodsonii H.Rob., Proc. Biol. Soc. Washington 114(2): 535 (537-539; fig. 5) (2001).
Gloxinia dodsonii Wiehler, Selbyana 2(1): 80, pl. 24D (1977).
Goeppertia dodsonii (H.Kenn.) Borchs. & S.Suárez, Syst. Bot. 37(3): 630 (2012).

Gonzalagunia dodsonii Dwyer, Selbyana 2(1): 58 (-59), pl. 16B (1977).
Gustavia dodsonii S.A.Mori, Selbyana 2(1): 37, pl. 11 (1977).
Haworthia dodsoniana (Uitewaal) Parr, Bull. Afr. Succ. Pl. Soc. 6(4): 148 (Oct. 1971), without basionym ref.; Bull. Afr. Succ. Pl. Soc., 6(5): 195 (Dec. 1971).
Hirtzia dodsoniana Szlach. & Kolan., Ann. Bot. Fenn. 52(3-4): 251 (2015).
Lemeltonia dodsonii (L.B.Sm.) Barfuss & W.Till, Phytotaxa 279(1): 42 (2016).
Lepanthes dodsonii Luer, Phytologia 54: 340 (1983).
Licania dodsonii Prance, Fl. Neotrop. Monogr. 9(suppl.): 27, fig (1989).
Macleania dodsonii Luteyn, Fl. Ecuador 54: 138 (138, 140) (1996).
Mammillaria dodsonii Bravo, Cact. Suc. Mex. 15: 3 (figs.) (1970).
Mandevilla dodsonii A.H.Gentry, Ann. Missouri Bot. Gard. 68: 117 (-118) (1981).
Masdevallia dodsonii Luer, Selbyana 3: 18 (-20), fig (1976).
Maxillaria dodsonii (Carnevali) Molinari, Richardiana 15: 294 (2015).
Miconia dodsonii Wurdack, Mem. New York Bot. Gard. 16: 23 (1967).
Mikania dodsonii H.Rob. & W.C.Holmes, Proc. Biol. Soc. Washington 115(4): 882 (2002) (2002).
Moquilea dodsonii (Prance) Sothers & Prance, Kew Bull. 71(4)-58: 34 (2016).
Mormolyca dodsonii Carnevali & Arévalo, Syst. Bot. 40(3): 696 (2015).
Nomopyle dodsonii (Wiehler) Roalson & Boggan, Selbyana 25(2): 232 (2005).
Ornithocephalus dodsonii R.Vásquez & T.Krömer, in Rev. Soc. Boliv. Bot. 3(1-2): 27 (2001).
Palicourea dodsoniana C.M.Taylor, Novon 25(1): 88 (2016).
Pentacalia dodsonii H.Rob. & Cuatrec., Novon 3: 285 (1993).
Philodendron dodsonii Croat & Grayum, Ann. Missouri Bot. Gard. 84: 430, fig. (1997).
Piper dodsonii Yunck., Ann. Missouri Bot. Gard. 53: 379 (1966).
Pitcairnia dodsonii H.Luther, Selbyana 7(1): 90 (1982).
Platystele dodsonii Luer, Selbyana 5: 155 (1979).
Pleurothallis dodsonii Luer,Selbyana 3(1/2): 96, fig. 151 (1976).
Pseudocymbidium dodsonii Szlach. & Lipi ska, Wulfenia 22: 235 (2015).
Pseudolithos dodsonianus (Lavranos) Bruyns & Meve, Edinburgh J. Bot. 52(2): 202 (1995).
Puya dodsonii Manzan. & W.Till, Jewels of the Jungle: Bromeliac. Ecuador II, Pitcairnioid. 324 (289, 325-326; fig. 8, photos) (2005).
Restrepia dodsonii Luer, Phytologia 46: 382 (-383) (1980).
Rodriguezia dodsoniana H.Medina, Orchids (West Palm Beach) 88(3): 229 (2019).
Scaphosepalum dodsonii Luer, Phytologia 54: 390 (1982).
Selenipedium dodsonii P.J.Cribb, Lankesteriana 15(3): 181 (2015).
Stanhopea dodsoniana Salazar & Soto Arenas, Lindleyana 16(3): 144 (-148; figs. 1-2) (2001).
Stelis caldodsonii Luer & R.Escobar, Harvard Pap. Bot. 21(1): 62 (2016).
Stelis dodsonii Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 42 (-43; fig. 50) (2002).
Stenia dodsoniana Pupulin, Harvard Pap. Bot. 12(1): 8 (7-13; figs. 1-2) (2007).
Syngonium dodsonianum Croat, Ann. Missouri Bot. Gard. 68(4): 592 (1982).
Telipogon dodsonii Braas, Orchidee (Hamburg) 36(2): 77 (1985).
Teuscheria dodsonii Dressler, Orquideología 7: 3, fig (1972).
Thelypteris dodsonii A.R.Sm., Fl. Ecuador 18: 41, fig. (1984).
Tillandsia dodsonii L.B.Sm., Phytologia 28: 32, pl. 2F, G (1974).
Topobea dodsoniorum Wurdack, Phytologia 38(4): 304 (-305) (1978).
Trichantha dodsonii Wiehler,Selbyana 7: 338(-339), fig (1984).
Vriesea dodsonii L.B.Sm., Phytologia 16: 80 (1968).
Werauhia dodsonii (L.B.Sm.) J.R.Grant, Phytologia 79(3): 255 (1996).
Xanthosoma dodsonii Croat, Aroideana 40(2): 168 (2017).
Zootrophion dodsonii (Luer) Luer, Selbyana 7: 82 (1982).

APPENDIX 1: Corrections to earlier volumes of Icones Orchidacearum:

Eric Hágsater

Epidendrum aristoloides Hágsater & Dodson, Icon. Orchid. 4: pl. 413. 2001. In the description, lip measurements indicate 8.6 x 1.2 mm, the correct measurements are 8.6 x 12.0 mm

Epidendrum diosanense Hágsater, Edquén & E.Santiago, Icon. Orchid. 16(2): pl. 1671. 2018**.** Type indicated is *Edquen 892*, the correct number is *Edquén 982*, both numbers correspond to this species. Add to other specimens: PERU: Amazonas: Chachapoyas: Granada, Comunidad campesina anexo de Diosán, 3232 m, 1 V 2018, *Edquén 892*, HURP!

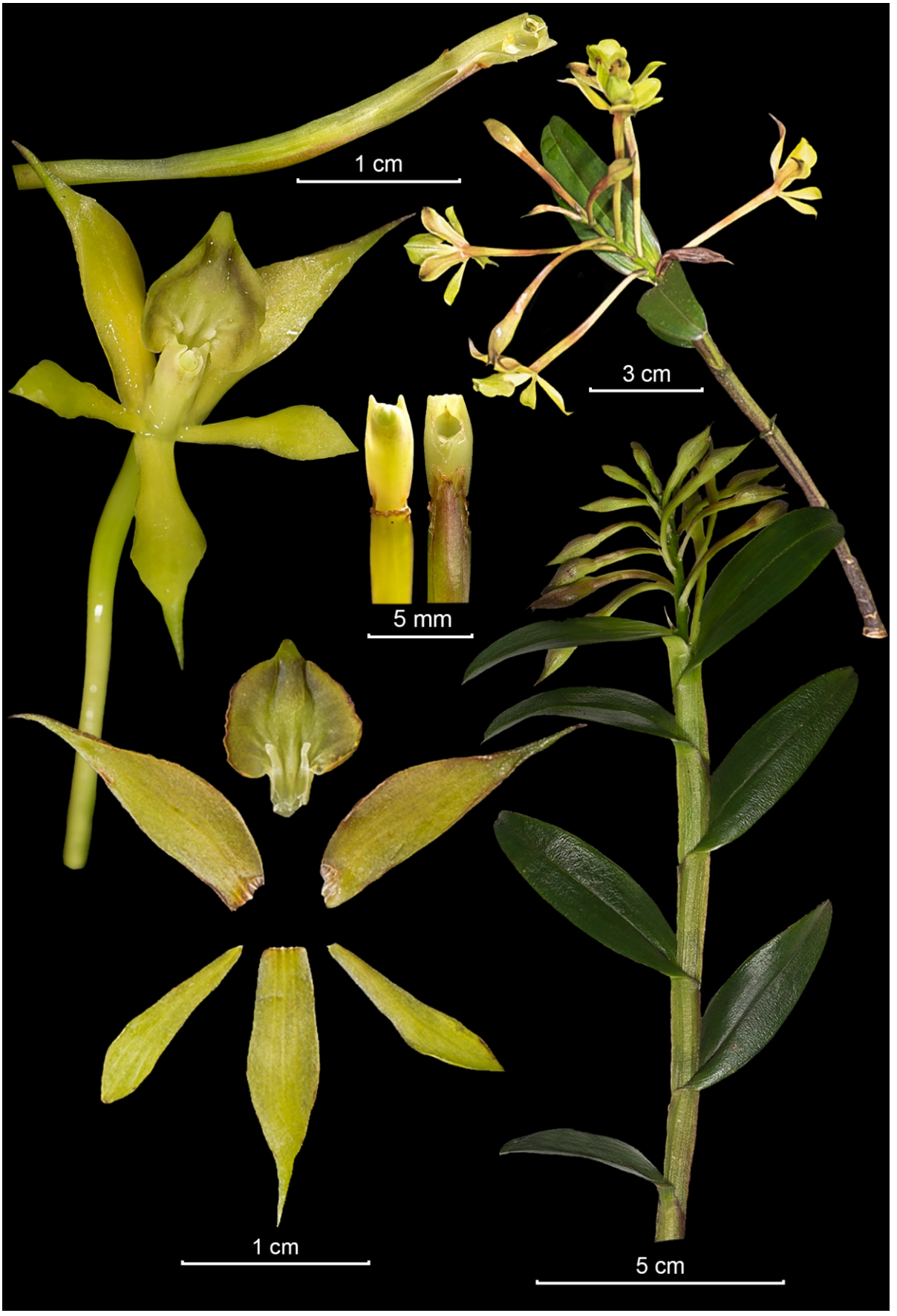
Epidendrum jaramilloi Hágsater & Dodson, Icon. Orchid. 2: pl. 149. 1993. In other specimens, there is a Note indicating that the specimen Dodson, Dodson, Jaramillo & Barahona indicates S. Jaramillo, and it should be J. Jaramillo, and therefore the species is dedicated to Professor Jaime Jaramillo. The note is in error, as the collector was indeed Susana Jaramillo. In any case, the dedication stands and the species is dedicated to Jaime Jaramillo.

Epidendrum mytigastropodium Hágsater & E.Santiago, Icon. Orchid. 7: pl. 765. 2004. In Recognition we mention *Epidendrum nubigenum* Rchb.f., the correct author is Schltr. We also mention *Epidendrum eugenii* Schltr. In a later issue, *Epidendrum eugenii* Schltr. Icon. Orchid: 9: pl. 935. 2007. we reduce *E. nubigenum* Schltr to a synonym of the former.

Epidendrum porquerense F.Lehm. & Kraenzl., Icon. Orchid. 17(2): 2020. was compared with *E.brassavolae* Rchb.f., the comparison should be with *Epidendrum brassavolaeforme* F.Lehm. & Kraenzl.

Publication dates:

Volume 1 was published on 26 February 1990
Volume 2 was published on 11 October 1993
Volume 3 was published on 25 March 1999
Volume 4 was published on 8 August 2001
Volume 5-6 was published on 9 June 2003
Volume 7 was published on 13 January 2005
Volume 8 was published on 1 June 2006
Volume 9 was published on 18 May 2007
Volume 10 was published on 11 June 2008
Volume 11 was published on 3 December 2008
Volume 12 was published on 16 December 2009
Volume 13 was published on 10 December 2010
Volume 14 was published on 31 May 2013
Volume 15(1) part 11 was published on 26 May 2015
Volume 15(2) part 11 was published on 19 July 2016
Volume 16(1) part 12 was published on 24 January 2018
Volume 16(2) part 12 was published on 30 November 2018
Volume 17(1) part 13 was published on 21 October 2019
Volume 17(2) part 13 was published on 11 May 2020
Volume 18(1) part 14 is published on 8 December 2020



EPIDENDRUM ACUMINATISEPALUM Hágsater, E.Santiago & Gal.-Tar. **Plate 1801**

EPIDENDRUM ACUMINATISEPALUM Hágsater, E.Santiago *et* Gal.-Tar., *sp. nov.*

Type: COLOMBIA: Cauca: Mun. El Tambo: Parque Nacional Natural Munchique, Sector La Romelia, via cerro Santana, sítio La Cortina, a 9.5 km aproximados de la cabaña La Romelia, 2750 m, 16 abril 2020, ***Robinson Galindo Tarazona, Claudia Acevedo, Huber Pino & Diego Grajales 1466***. Holotype: CUVC 72720! (LCDP and photo voucher).

Similar to *Epidendrum deorsus* Hágsater & E.Santiago but the flowers yellow tinged red (vs. flowers green turning ochre-yellow), sepals 15.0-17.5 mm long, apex long acuminate (vs. sepals 21 mm long, apex minutely apiculate), petals oblique, acute (vs. petals straight, apex rounded), and the lip sub-orbicular with radiating thickened veins (vs. cordiform with veins not thickened).

Terrestrial, monopodial branching **herb**, to ca. 50 cm tall. **Roots** thick, basal, fleshy. **Stems** cane-like, thin, terete, erect, straight; primary stem 45 x 0.6-0.7 cm, secondary flowering branches 3.0-7.0 x 0.5 cm, produced from the upper internodes of the primary stem. **Leaves** numerous on the primary stem, 4-8 on the branches aggregate towards the apex, spreading, alternate, coriaceous, green, concolor; sheaths 0.7-2.7 x 0.5-0.7 cm, somewhat ancipitose, striated, slightly verrucose, green; blade 3.6-5.3 x 1.2-1.5 cm, narrowly elliptic, apex obtuse, margin entire, spreading. **Spathe** lacking. **Inflorescence** 4 cm long, apical erect, sub-corymbose, sub-dense, the flowers distributed in a helicoid; peduncle sessile, rachis 4 cm long, terete, thin, straight, green. **Floral bracts** 5.0-7.0 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 28-39 mm long, terete, thin, slightly dilated behind the perianth, minutely furrowed. **Flowers** ca. 17, successive, several being open at a time, non-resupinate, spreading, the lip facing downwards, yellow tinged red dorsally on the dorsal sepal, disc of the lip and ovary; fragrance not registered. **Sepals** slightly fleshy, the apex long acuminate, 3-veined, margin entire, spreading; dorsal sepal 15 x 4.0 mm, spreading, free, oblanceolate; lateral sepals 15.0-16.7 x 4.3 mm, partly spreading, obliquely united to the base of the column, narrowly elliptic, oblique. **Petals** 11.5 x 3.0 mm, partly spreading, free, narrowly oblanceolate, oblique, apex acute, 1-veined, margin denticulate, spreading. **Lip** 8.0 x 7.8 mm, united to the column, entire, slightly concave, sub-orbicular, base cordate, apex apiculate, margin entire; bicallose, the calli laminar, slightly divaricate, cream colored, disc with radiating thickened veins and a prominent, fleshy mid-rib reaching the apex of the lip. **Column** 5.8-6.5 mm long, thin, with a thin rounded wing at the base of the apex. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Lateral lobes of the stigma** prominent, ½ as long as the stigmatic cavity. **Nectary** shallow, penetrating the ovary just behind the perianth, slightly inflated. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

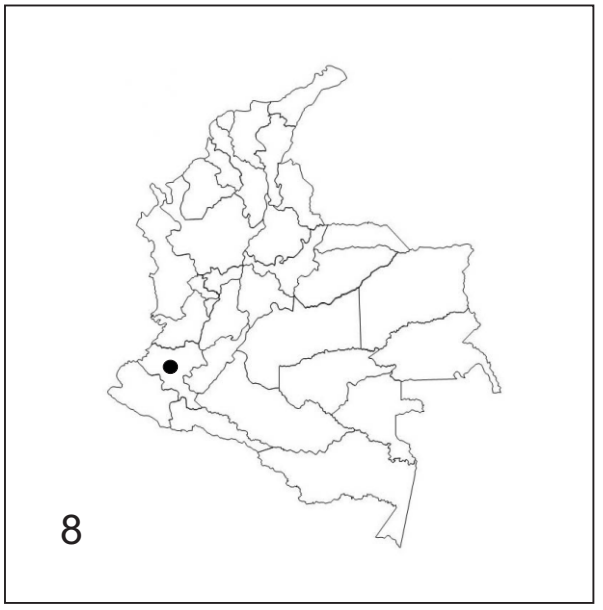
DISTRIBUTION AND ECOLOGY: Presently known from a single collection from the western upper Pacific slope of the Cordillera Occidental in the basin of the Río San Juan del Micay in southwestern Colombia in the department of Cauca, municipality of El Tambo; sector La Romelia; terrestrial in wet evergreen montane cloud forest at 2815 m altitude, near the summit. The altitudinal range of the species in high altitude sub-*páramo* Andean forest, as a rainfall of >2000 mm <3000 mm and temperatures del 12°C. the vegetation according to Holdrige (1987) corresponds to *Bosque muy húmedo montano bajo* **Bmh-Mb** or *subpáramo* according to Cuatrecasas (1958). Flowering in June.

RECOGNITION: *Epidendrum acuminatisepalum* belongs to the Andean Group, Vernixium Subgroup which is characterized by the monopodial habit with sub-apical branching, erect inflorescences, laxly non-resupinate, spreading flowers, and the lip entire to 3-lobed and facing downwards. The new species is recognized by the leaves 3.6-5.3 x 1.2-1.5 cm, narrowly elliptic, flowers yellow tinged red, ovary 28-39 mm long, sepals 15.0-16.7 mm long, long acuminate, the lip 8.0 x 7.8 mm, entire, sub-orbicular with laminar calli and radiating thickened veins on the disc, and a fleshy thickened mid-rib. *Epidendrum deorsus* Hágsater & E.Santiago is endemic to central Peru and has leaves 2.6-13 x 2.0-3.0 cm, oblong-elliptic, the flowers green turning ochre-yellow, the ovary 40 mm long, sepals 21 mm long, minutely apiculate, and the lip 10 x 10 mm, cordiform with the calli sub-globose. *Epidendrum decuriflorum* Schltr. has leaves 3.0-5.5 x 1.0-1.2 mm, lanceolate, flowers yellow, concolor, sepals 13-16 mm long with a low dorsal keel, and the lip 6-8 x 6-10 mm, 3-lobed and lacking any thickened veins. *Epidendrum scytocladium* Schltr. has leaves 1.0-8.0 x 1.0-1.8 cm, narrowly oblong to oblong-lanceolate, flowers yellow or greenish yellow with the lip marked with an intensely purple band around the disc, the ovary 30-42 mm long, sepals 12-14 mm long, and the lip somewhat 3-lobed with the base deeply cordate and the margin crenulate.

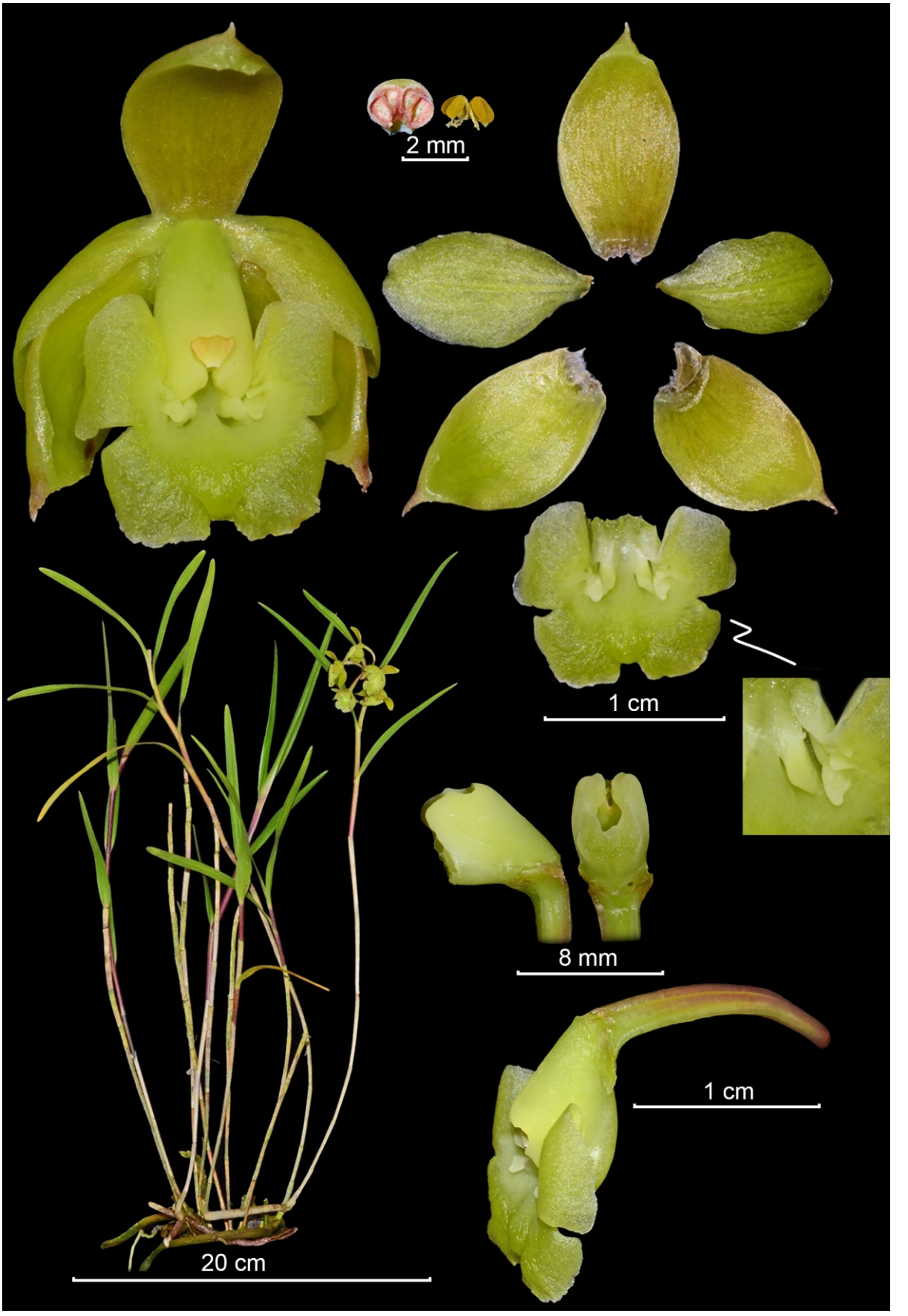
CONSERVATION STATUS: CR B1ab(i-iii) IUCN version 3.1 (2012). Known presently from a single collection. At that altitude there is little human activity and there is a military nearby. However, the area is subject to deforestation due to illegal crops. The area is estimated at 82 km. Climate change is another threat due to the "extinctions of mountain summits" as the thermic niche is lost under present climatic conditions (Colwell *et al.* 2008; Lenoir *et al.* 2008). Given that only one population is known, it falls in the category **CR C1ab(i-iii)**

ETYMOLOGY: From the Latin *acuminatus*, tapering into a long point, and *sepalum*, in reference to the long acuminate sepals which immediately separates this species from close relatives in the same group.

REFERENCES: Colwell, R.K., *et al.* 2008, Global Warming, Elevational Range Shifts, and Lowland Biotic Attrition in the Wet Tropics, **Science** 322: 258. doi: 10.1126/science.1162547. Cuatrecasas, J, 1958, **Aspectos de la vegetación natural de Colombia**, Bogotá, Editorial Voluntad. Hágsater, E., & E. Santiago, 2019, *Epidendrum deorsus* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1718. Lenoir, J., *et al.* 2008, A Significant Upward Shift in Plant Species Optimum Elevation During the 20th Century, **Science** 320(5884): 1768-71. doi: 10.1126/science.1156831. Santiago, E., & E. Hágsater, 2009, *Epidendrum decuriflorum* in E. Hágsater & L. Sanchez S. (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: pl. 1237. Santiago, E., & E. Hágsater, 2009, *Epidendrum scytocladium* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: pl. 1292. IUCN, 2012, **Red List Categories and Criteria:** Version 3.1. Second edition. iv + 32 pp. Gland, Switzerland and Cambridge, UK.



Authors: E. Hágsater, E. Santiago & R. Galindo T. **LCDP: R. Galindo T. & A. Cisneros** **Photo: R. Galindo T.** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM AMPLEXIPETALUM Hágsater & H.Medina **Plate 1802**

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

Type: ECUADOR: Loja: Cantón Espíndola: Arriba de Jimbura, Parque Nacional Yacuri antes de pasar la cima de la Cordillera Occidental, ca. 3000 m, colectado 1994, cultivado en Ecuagenera, prensado agosto 2020, ***Ecuagenera Epidendrum* sp#1**. (LCDP voucher). Holotype: HA!

Similar to *Epidendrum aristoloides* Hágsater & Dodson but with apical flowers opening first (vs. basal flowers opening first), flowers bright green turning yellow with age, sometimes tinged red (vs. pale pink flowers, with the lip cream colored), petals obovate with margin somewhat undulate (vs. petals ovate-rhombic, margin entire); lip 10 x 15 mm (vs. lip 8.6 x 12.0 mm), bicallose, on the outer side of each callus there are 3 small thickened blades, decreasing in size, laminar, shark fin shaped (vs. without these appendages), the apical lobes dolabriform (vs. sub-orbicular), column longer, 8 mm long (vs. column 6.5 mm long), clinandrium short, margin sinuous (vs. clinandrium reduced, margin entire).

Epiphytic, sympodial, caespitose, erect **herb** 25-40 cm tall. **Roots** 2.7 mm in diameter, basal, fleshy, thick, white. **Stems** 17-33 x 0.3 cm, simple, cane-like, terete, covered by tubular, non-foliar sheaths, imbricated, papyraceous, striated when dry. **Leaves** 2-4, distributed along the apical 1/4-1/2 of the stem, alternate, articulate, sub-erect, sub-coriaceous; sheath tubular, 2.0-3.0 x 0.2-0.3 cm, smooth; blade 6.7-11.9 x 0.6-0.8 cm, linear-oblong, sub-obtuse to acute, margin entire, smooth, green. **Spathe** lacking. **Inflorescence** ca. 3.3 cm long, apical, from the mature stem, racemose, arching-nutant, compact, few-flowered; peduncle very short. **Floral bracts** much shorter than the ovary, triangular, embracing. **Flowers** 4-12, successive, opening from the apex of the raceme first, the basal buds still immature, resupinate, bright green turning yellow with age, sometimes tinged red, the column and base of lip somewhat paler green, anther creamy yellow; fragrance not registered. **Ovary** 13 mm long, terete, not inflated, slightly thickened at the apex, furrowed, unornamented. **Sepals** 13.0 x 6.7-7.2 mm, partly spreading, free, ovate-elliptic, obtuse, aristate, 5-veined, glabrous, fleshy, concave, margin entire, spreading. **Petals** 11.0-11.7 x 5.5-6.3 mm, embracing the base of the lateral sepals in natural position, thus behind them, free, obovate, base cuneate, apex rounded, 5-veined, glabrous, fleshy, margin entire, spreading. **Lip** 10.0 x 12.0 mm, united to the column, sub-quadrate in general form, base deeply cordate, 3-lobed, fleshy; lateral lobes 5.0-6.5 x 4.2-5.0 mm, dolabriform, fleshy, margin sub-crenulate, lateral margin somewhat revolute; the mid-lobe itself bilobed, lobes 2.6 x 5.8 mm, dolabriform, separated distally by a broad sinus, mucronate; bicallose, calli laminar, prominent, nearly parallel, reclining inwards, the disc with a very low, wide mid-rib that terminates in the apical mucro, on the outer side of each callus there are 3 small thickened blades, decreasing in size, laminar, shark fin shaped. **Column** 8 mm long, thick, straight, but forming a wide angle with the ovary. **Clinandrium-hood** short, margin sinuous. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles in two pairs, granulose, about as long as the pollinia; viscidium semi-liquid. **Rostellum** apical slit. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Amazonas: Chachapoyas: Jalca Grande Peasant Community, 2850 m, 6 V 2017, *Salas s.n.*, digital images, AMO! (Photo voucher).

DISTRIBUTION AND ECOLOGY: Known presently from two collections, one on the border of Ecuador and Peru, in the Parque Nacional Yacuri, and in the other province of Chachapoyas in the Amazonas region of Peru, epiphytic at 2850-3000 m altitude. Flowering from August to December.

RECOGNITION: *Epidendrum amplexipetalum* belongs to the Coronatum Group, Aristisepalum Subgroup which is characterized by the caespitose habit, simple stems, narrow, sub-coriaceous leaves, a racemose inflorescence without spathes and the sepals prominently aristate. The new species is recognized by the apical flowers opening first, and progressively towards the base of the raceme, flowers bright green turning yellow with age, sometimes tinged red, the obovate petals, apically rounded, 11.0-11.7 mm long, and the lip about 10 mm long, sub-quadrate in general form, 3-lobed, the mid-lobe itself divided into two lobes, lobes dolabriform, bicallose, calli laminar, prominent, nearly parallel, reclining inwards, on the outer side of each callus there are 3 small thickened blades, decreasing in size, laminar, shark fin shaped. *Epidendrum aristoloides* Hágsater & Dodson has pale pink flowers, petals shorter (9.7 mm long), obovate-rhombic petals and a shorter lip (8.6 mm long), the basal lobes semi-orbicular, bicallose, calli semi-orbicular, without any other appendages. *Epidendrum tetralobum* Hágsater & E.Santiago has lanceolate leaves, an erect inflorescence, smaller, greenish-pink flowers, petals about 8 mm long, and a lip 6 mm long, 3-lobed, ecallose.

CONSERVATION STATUS: DD. Data deficient. Known presently from two collections from the Parque Nacional Yacuri on the border of Ecuador and La Jalca Grande, Chachapoyas, Amazonas, Peru, in *Polylepis* Ruiz & Pav. forests.

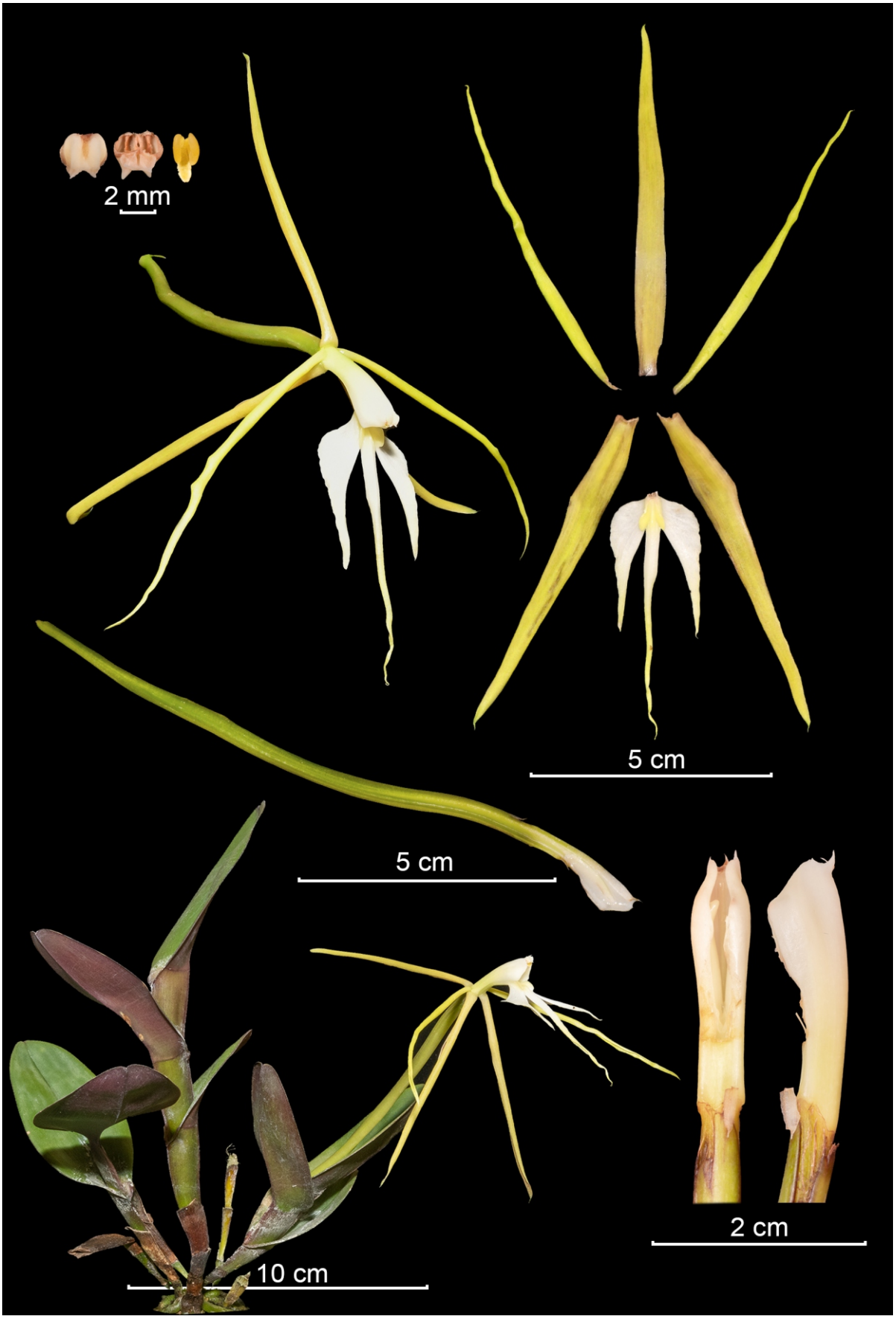
ETYMOLOGY: From the Latin, *amplexus*, surrounding, embracing, and *petalis*, the petals, which embrace the lateral sepals, a quite unusual feature in the genus *Epidendrum*. The plant photographed in Jalca Grande does not show the petals embracing the sepals, perhaps because the flowers are just opening.

ACKNOWLEDGMENT: Plant originally collected in Ecuador in 1994 is covered by the annual permit: Patente de Manejo de Vida Silvestre MAE-DPAA-2020-0028.

REFERENCES: Hágsater, E., & C.H. Dodson, 2001, *Epidendrum aristoloides* in E. Hágsater & L. Sánchez S. (eds.), **Icon. Orchid.** 4: pl. 413. Hágsater, E., & E. Santiago, 2013, *Epidendrum tetralobum* in E. Hágsater & L. Sánchez S. (eds.), **Icon. Orchid.** 14: pl. 1488.

Authors: E. Hágsater & H. A. Medina **LCDP: H. A. Medina & A. Cisneros** **Photo: M. Salas G.** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1802**



EPIDENDRUM ANCIPITINOCTURNUM Hágsater & J.M.P.Cordeiro **Plate 1803**

EPIDENDRUM ANCIPITINOCTURNUM Hágsater *et* J.M.P.Cordeiro, *sp. nov.*

Type: BRAZIL: Amazonas: Mun. Novo Airão: passando Manacapuru, rama do Mineiro km 33, 93 m, epífita em Campinha alta em arena branca, col. 26 fevereiro 2017, prensado em cultivo 22 outubro 2020, ***Eric Hágsater, Leonardo Pessoa Felix, Joel Maciel Pereira Cordeiro, Erton Mendonça de Almeida 15079***. Holotype: INPA! (LCDP voucher).

Similar to *Epidendrum spruceanum* Lindl. but the ovary much longer, 90-115 mm long, clearly longer than the sepals (vs. ovaries 37-45 mm long, clearly about half as long as the sepals), sepals somewhat longer, 67-84 mm long (vs. 65-66 mm long), column longer 23-26 mm long (vs. 17 mm long).

Epiphytic and lithophytic, sympodial, caespitose, **herb**, 11-21[33]* cm tall excluding the flowers. **Roots** 2-3 mm in diameter, basal, fleshy. **Stems** 6-15 x 0.7-1.4 cm, simple, cane-like, strongly ancipitose except for the base which is terete, straight, dark green tinged purple. **Leaves** 3, distributed along the apical half of the stem, ascendent, coriaceous, with the largest leaf at the apex; foliar sheaths 1.6-3.3 x 1.0-1.4 cm, laterally compressed, strongly ancipitose, minutely striated longitudinally; blades 4.6-14.0 x 2.5-4.8 cm, length:width 2-3:1, elliptic, apex bilobed, dark green on both sides, the underside slightly tinged purple. **Spathe** lacking. **Inflorescence** apical, racemose, producing one flower at a time, blooms for several years from the same inflorescence becoming pluri-racemose; peduncle and rachis hidden within the base of the leaf. **Floral bracts** 11 x 6 mm, much shorter than the ovary, usually hidden within the base of the apical leaf, triangular, acuminate. **Ovary** [75]90-115 x 3.5-4.5 mm, longer than the sepals, not inflated, unornamented, furrowed **Flowers** successive, resupinate, sepals pale brown to pale yellow green, petals pale yellow-green, lip white, column creamy white, green towards the base, calli white to pale yellow; fragrance diurnally of fresh cucumbers; sometimes autogamous. **Sepals** 67-84 x 4-9 mm, slightly reflexed, linear-lanceolate, acuminate, 9-veined, with additional secondary veins, margin entire, revolute so as to become tubular. **Petals** 65-74 x 1.7-3.0 mm, spreading, linear-lanceolate, acuminate, 5-6 veined, margin entire, somewhat revolute. **Lip** 50-53 x 17-19 mm, united to the column, 3-lobed, base truncate to widely cuneate, margin entire, spreading; bicallose, the calli laminar 5 x 1 mm, rounded, prominent, somewhat divergent, with a low mid-rib reaching the middle of the mid-lobe; lateral lobes 21-28 x 6-8 mm, hemi-ovate, apically acuminate, surface smooth, separated from the mid-lobe by deep, narrow sinus, mid-lobe 44-45 x 2.0-2.5 mm, linear-triangular, acuminate. **Column** 23-26 x 6.5-8.0 mm, slightly arched, dilated towards the oblique apex. **Clinandrium-hood** slightly surpassing the body of the column, margin 3-dentate **Anther** sub-quadrate, the sides convex, the top and bottom sinuate. **Pollinia** 4, triangular, the outer corner rounded, the others acute, strongly laterally compressed; caudicles soft and granulose, in two pairs, longer than the pollinia, viscarium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** reduced. **Nectary** 100 mm long from the apex of the column, deep, penetrating 4/5 the length of the ovary, unornamented. **Capsule** 116 x 17 mm, ellipsoid; pedicel 50 x 3.5-6.0 mm, body of the capsule 46 x 17 mm (not fully developed), the body displaced somewhat beyond the middle, with a short apical neck 20 x 4 mm long.

***OTHER SPECIMENS: BRAZIL: AMAZONAS:** Mun. Novo Airão: passando Manacapuru, ramal do Mineiro km 33, Campinha alta em arena branca, col. 26 II 2017, flowered in cultivation 28 VII 2020, *Hágsater 15108*, autogamous, flower card, AMO! Digital images AMO! (Photo voucher). Ibid. pressed in fruit, 22 X 2020, *Hágsater 15108*, AMO! Japurá: [ilha do] Inambú, 17 XI 1952, *Romero Castañeda 3590*, COAH! [measurements slightly different].

OTHER RECORDS: BRAZIL: AMAZONAS: Mun. Novo Airão: passando Manacapuru, ramal do Mineiro km 33, Campinha alta em arena branca, col. 26 II 2017, flowered in cultivation 2020, *Cordeiro 1118*, flower card, digital images AMO! floreio em Paraíba, Brazil, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Brazil in Amazonas, Novo Airão near Manaus, and from the border with Colombia along the Rio Japurá/Caquetá. Epiphytic in high campinha (shrub-land with sparsely spaced trees about 8 m tall) on white sand, with *Prosthechea fragrans* (Sw.) W.E.Higgins, *Epidendrum strobiliferum* Rchb.f., *Cattleya eldorado* Linden, *Sobralia macrophylla* Rchb.f., *Encyclia tarumana* Schltr. and *Vanilla* sp.; at ca. 100 m altitude. Flowering from February to November.

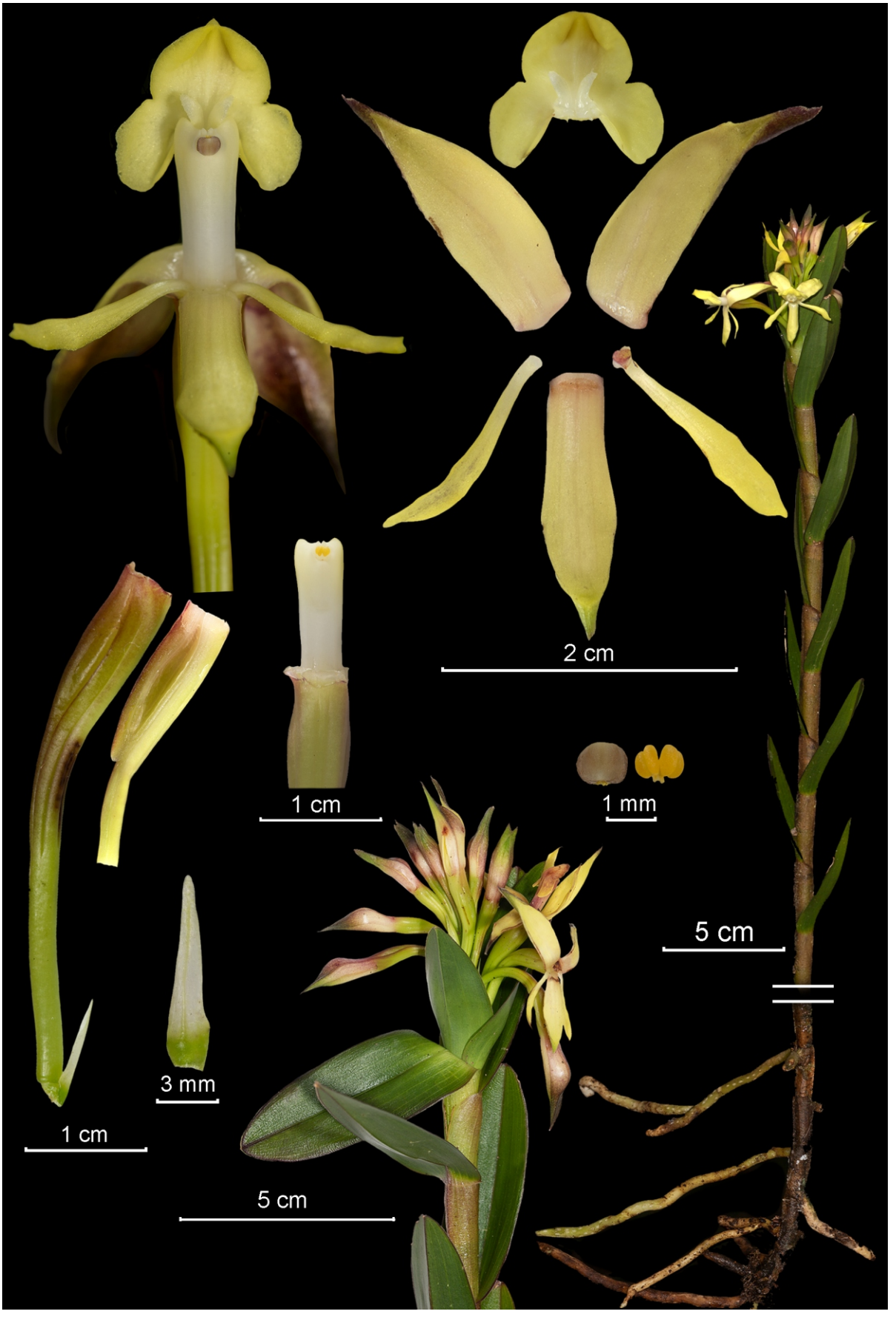
RECOGNITION: *Epidendrum ancipitinocturnum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like stems, short, racemose or pluri-racemose inflorescence without a spathe, and large star-shaped, successive flowers with similar sepals and petals. The new species is recognized by the dark green plants, to 11-21[33] cm tall, the stems and underside of the leaves tinged purple, the upper side of leaves dark green, stems laterally compressed, ancipitose, leaves 4.6-14.0 x 2.5-4.8 cm, ascendent, coriaceous, elliptic, apex bilobed, the ovary 90-115 mm, flowers large for the group, sepals pale brown to pale yellow green, petals pale green, lip white, column creamy white, green towards the base, calli white to pale yellow, sepals 67-84 x 4-9 mm, margin revolute so as to become tubular, and the lip 50-53 x 17-19; lateral lobes 21-28 x 6-8 mm. *Epidendrum carpophorum* Barb.Rodr. from Rio de Janeiro state has shorter terete stems, 30 cm tall, dark green leaves, smaller flowers, sepals 40-41 mm long, and a lip 36 x 21 mm, the lateral lobes semi-ovate, apex acute. *Epidendrum spruceanum* Lindl. described from the same locality, "Barra do Rio Negro", Amazonas, occurs in the Amazon basin of Brazil and Peru below 200 m altitude; it is recognized by its relatively longer and narrower leaves, 8.0-17.5 x 2.0-4.5 cm, shorter ovaries, 37-45 mm long, sepals [30]48-70 mm long, lateral lobes of the lip hemi-ovate, apex narrowly rounded, and the body of the capsule centered (we have used here only measurements of the type specimens: *R. Spruce 1666*). The new species has been confused with *Epidendrum angustilobum* Fawc. & Rendle (syn. *Epidendrum latifolium* (Lindl.) Garay & Sweet) which is widely distributed in the Antilles, Colombia, Venezuela and the Guianas, and occurs as a rare species in Costa Rica and Panama, in wet forests from 500 to 2000 m altitude; that species exhibits much taller plants, to 64 cm tall, leaves 8-12 x 2-7 cm, dark green, sepals 42-65 mm long, and the lateral lobes of the lip hemi-ovate, acuminate, and yellow calli. *Epidendrum trapeziinocturnum* Bar.-Colm. & Hágsater from Leticia, Colombia, also at Amazonian low altitude, also has large flowers, medium large plants up to 50 cm tall, the flattened stems, strongly ancipitose above the middle, with large medium green leaves 13.5-15.0 x 2.5-6.0 cm, oblong, the ovary 120-122 mm long, the large flowers bright green with lip and calli white, and column, creamy white, sepals 96-97 x 5-6 mm, lip deeply 3-lobed, lateral lobes of the lip narrowly semi-ovate, with the apex long acuminate, mid-lobe of the lip linear-triangular, 68-81 mm long, and the capsule with the body displaced towards the apical half. The Mesoamerican *Epidendrum mesocarpum* Hágsater is very similar in that the plant has ancipitose stems, ascendant, dark green and purple leaves 2.5-10 x 2-5 cm, longer ovary 140-160 mm long, but somewhat smaller flowers, sepals 60-75 mm long, and the lip 45 x 25 mm, with the lateral lobes 22 x 8 mm.

ETYMOLOGY: From the Latin, *ancipitius*, two-edged, in reference to the ancipitose stems, which is common to some species but differentiates this species from *Epidendrum carpophorum* with which it has been confused and which has terete stems.

NOTE: The range of distribution would appear to be restricted to the Amazonian plains at 100 m altitude around Manaus to the Colombian border along the Río Japurá/Caquetá. After studying all the material of the Nocturnum Group from Amazonas, we are surprised to have found so little herbarium material referable to this group. A similar plant was illustrated by Toscano de Brito from the Chapada Diamantina but it is found at much higher altitude and requires further study. In this Nocturnum Group, the relative length of the ovary to the length of the sepals is a distinguishing feature, as is the overall size of flowers and relative length/width of the leaves and the position of the body of the capsule relative to the entire length of the ovary, usually centered, but sometimes displaced towards the apex or towards the base; the shape of the lip is nearly always similar, so general floral morphology is useless. *Epidendrum spruceanum* described from the same area, has much shorter ovaries, somewhat smaller flowers, and the body of the capsule is centered instead of displaced towards the apex of the pedicellate ovary. The type of *Epidendrum carpophorum* Barb.Rodr. was collected inland from Rio de Janeiro, though that collection seems to have taller stems, and the ovary is described as twice as long as the sepals which are 30-41 mm long (type illustration), which are much shorter than the species here described. In a previous publication, Sánchez & Hágsater (2010) described *E. carpophorum* based on specimens from various species which are now being reevaluated. The list of specimens there include a wide range of species including the west coast of Colombia and northern Venezuela, ranging from sea level to 2500 m altitude, those specimens require scrutiny to identify each.

CONSERVATION STATUS: DD. Data Deficient. The species as known presently from two localities of several specimens from an area near Manaus, and along the Río Japurá/Caquetá on the border with Colombia.

REFERENCES: Barona-Colmenares, A.A. & E. Hágsater, 2020, *Epidendrum trapeziinocturnum* in: E. Hágsater & E. Santiago (eds). The Genus *Epidendrum* Part 14, **Icon. Orchid.** 18(1): pl. 1840. Brito, A.L.V. Toscano de, 2005, **Orquídeas da Chapada Diamantina**, Rio de Janeiro, Nova Fronteira, 399 pp. Carnevali, G., & G.A. Romero, 1996, Orchidaceae Dunstervillorum VII: The *Epidendrum* Alliance in the Venezuelan Guayana and the Guianas, **Lindleyana** 11(4): 239-249. Hágsater, E., 1999, *Epidendrum mesocarpum* in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.) The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: pl. 355. Sánchez S., L., & E. Hágsater, 2008, *Epidendrum angustilobum* in: E. Hágsater & L. Sánchez-Saldaña (eds.) The Genus *Epidendrum* Part 7, **Icon. Orchid.** 11: pl. 1102. Sánchez S., L., & E. Hágsater, 2010, *Epidendrum carpophorum* in: E. Hágsater & L. Sánchez-Saldaña (eds.) The Genus *Epidendrum* Part 9, **Icon. Orchid.** 13: pl. 1313. Sánchez S., L., & E. Hágsater, 2015, *Epidendrum spruceanum* in: E. Hágsater & L. Sánchez-Saldaña (eds.) The Genus *Epidendrum* Part 11, **Icon. Orchid.** 15(1): pl. 1561.



EPIDENDRUM AURIMURINUS Hágsater, E.Santiago & Gal.-Tar. **Plate 1804**

EPIDENDRUM AURIMURINUS Hágsater, E.Santiago *et* Gal.-Tar., *sp. nov.*

Type: COLOMBIA: Valle del Cauca: Mun. Cali: Parque Nacional Natural Farallones de Cali, Minas del Socorro, camino entre el campamento base de Parques Nacionales y la mina de Patequeso, 3200 m, 2 julio 2020, ***Robinson Galindo-Tarazona, Álvaro Fierro, Gustavo Rodríguez, Martha Espitia y Geovanny Marín 1467.*** Holotype: CUVC 72737! (LCDP voucher).

Similar to *Epidendrum decurviflorum* Schltr. but the leaves wider, 5.0-6.0 x 1.2-2.1 cm, parallel to the stem, narrowly elliptic to ovate elliptic (vs. leaves 3-5.5 x 1.0-1.2 cm, spreading, lanceolate), lateral sepals 21 mm long (vs. lateral sepals 16 mm long), petals 16 mm long, acute, margin entire (vs. petals 11-12 mm long, obtuse, margins irregularly crenate), and lip 10.5 x 12 mm, deeply 3-lobed, lateral lobes large, obliquely semi-orbicular (vs. lip 6.0-8.0 x 6-10 mm, incipiently 3-lobed, lateral lobes small, semi-quadrate, oblong).

Epiphytic and terrestrial, monopodial, erect **herb**, ca. 42 cm tall. **Roots** 2-4 mm in diameter, basal, fleshy. **Stems** 36 x 0.65-0.9 cm, cane-like, thin, laterally compressed, erect, straight. **Leaves** 12 or more, distributed throughout the stem, erect, parallel to the stem, the basally amplexicaul, partly imbricating, alternate, articulate, coriaceous, green with the margin blackish brown; sheaths 23-32 x 6.5-10 mm, somewhat ancipitose, minutely striated, rugose, reddish brown; blade 4.8-6.0 x 1.2-2.1 cm, narrowly elliptic to ovate-elliptic, obtuse, apical margin denticulate, spreading. **Spathe** lacking. **Inflorescence** 5.5-6.7 cm, apical, sub-sessile, erect, racemose, dense, the flowered arranged in a helicoid; peduncle abbreviated, rachis 5.0 cm long, terete, thin, straight. **Floral bracts** 9.0 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 41 mm long, terete, thin at base, slightly inflated ventrally along the apical 1/3, furrowed. **Flowers** 9-12, opening in succession until all open at the same time, non-resupinate to spreading and facing downwards, yellow, the sepals sometimes tinged wine-red dorsally, column and calli white; fragrance not registered. **Sepals** free, slightly fleshy, apex acuminate, prominently mucronate, 5-veined, margin entire; dorsal sepals 18 x 5.0 mm, slightly reflexed, oblanceolate, margin revolute along the basal half; lateral sepals 20-21 x 6.5 mm, strongly reflexed, narrowly elliptic, oblique. **Petals** 16 x 3.0 mm, slightly reflexed, free, narrowly oblanceolate, oblique, acute, 1-veined, margin entire, slightly revolute along the lower 2/3. **Lip** 10.5 x 12 mm, united to the column, deeply 3-lobed, base deeply cordate, apex rounded, margin entire; bicallose, the calli thin, divaricate, creamy white; disc with a fleshy mid-rib reaching the apex of the lip; lateral lobes 5.0 x 6.0 mm, retrorse, obliquely semi-orbicular, the inner margin upturned and reclining against the apex of the column; mid-lobe, 5.0 x 8.0 mm, semi-orbicular, apex rounded to sometimes with a triangular apiculus. **Column** 11 mm long, straight, thin. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, nearly as long as the pollinia; viscarium semi-liquid. **Lateral lobes of the stigma** not seen. **Nectary** penetrating 1/3 of the ovary, narrow, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Mun. Cali: Vía que conduce de Pichindé a Peñas Blancas. Tramo entre del mirador PNN y la Cima, 2922 m, 4 VII 2017, *Reina-Rodríguez 2328*, CUVC!

OTHER RECORDS: COLOMBIA: Valle del Cauca: Mun. Cali: Farallones de Cali, Sector Peñas Blancas, Sendero Camino al Cielo, ca. 2880 m, VI 2017, *Haelterman s.n.*, digital images, AMO! (Photo voucher).

DISTRIBUTION AND ECOLOGY: Known presently from the Parque Nacional Natural Farallones de Cali, at 2800-3200 m altitude. Terrestrial or epiphytic in Andean montane forest and sub-paramo.

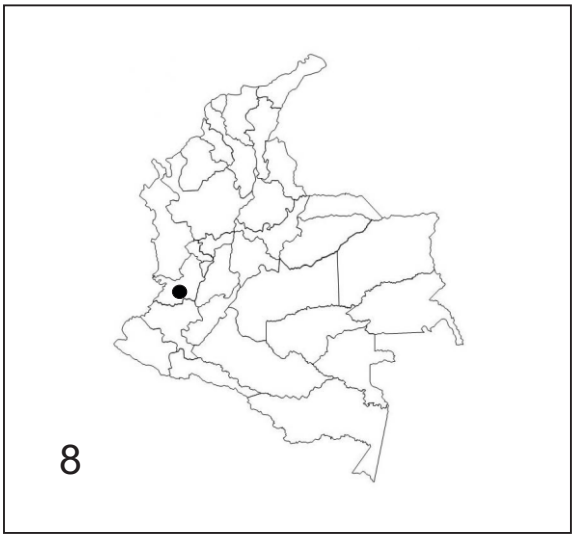
RECOGNITION: *Epidendrum aurimurinus* belongs to the Andean Group, Vernixium Subgroup which is characterized by the monopodial sub-apical branching habit, erect inflorescences, lax, non-resupinate flowers, and the lip entire to 3-lobed. The species is recognized by the leaves nearly parallel to the stem and 1.2-2.1 cm wide, narrowly elliptic to ovate-elliptic, the ovary 41 mm long, lateral sepals 21 x 6.5 mm, reflexed, and the lip 10.5 x 12 mm, clearly 3-lobed, the lateral lobes 5.0 x 6.0 mm, retrorse, obliquely semi-orbicular and the mid-lobe also semi-orbicular. *Epidendrum decurviflorum* Schltr. has narrower leaves 1.0-1.2 cm wide, lanceolate and spreading, the ovary 20-25 mm long, the lateral sepals 16 mm long, and the lip 6.0-8.0 x 6.0-10 mm, shallowly 3-lobed, the lateral lobes semi-quadrate-oblong. *Epidendrum scytocladium* Schltr. has leaves 1.0-1.8 cm wide, narrowly oblong to oblong-lanceolate, spreading, the ovary 30-42 mm long, flowers yellow or greenish yellow with the lip marked with a semi-circular purple ring around the disc, sepals 12-14 mm long, and the lip incipiently 3-lobed, deeply cordate and the margin crenulate. *Epidendrum acuminatisepalum* Hágsater, E.Santiago & Gal.-Tar. has narrowly elliptic leaves 1.2-1.5 cm wide, spreading, the ovary 22-25 mm long, the lateral sepals 17.5 mm long, partly spreading, and the lip 8.0 x 7.5 mm, entire, sub-orbicular with radiating thickened veins.

CONSERVATION STATUS: The extension of occurrence of the subparamo and low paramo area in PNN Farallones de Cali is 148 km^2 between the levels 2700-3300 m, therefore, it would enter the category EN B1 ab (iii) (Version 3.1). However, till now there are not reports north or south of the PNN Farallones de Cali, such as the PNN Tatamá, PNR El Duende, DRMI Serranía de los Paraguas, PNN Munchique or Cerro del Torrá (Chocó), hence the species is presumably endemic to PNN Farallones in accordance with the thesis of (Calderón 1995) in the sense that this mountain behaves like a biogeographic island. For this reason, together with the effect of climate change in high mountains (mountaintop extinctions) (Colwell *et al.* 2008; Lenoir *et al.* 2008), and real man-made effects like illegal mining, we conclude it should be considered Critically Endangered CR B1b (ii) c (iv) + C2a (i); D.

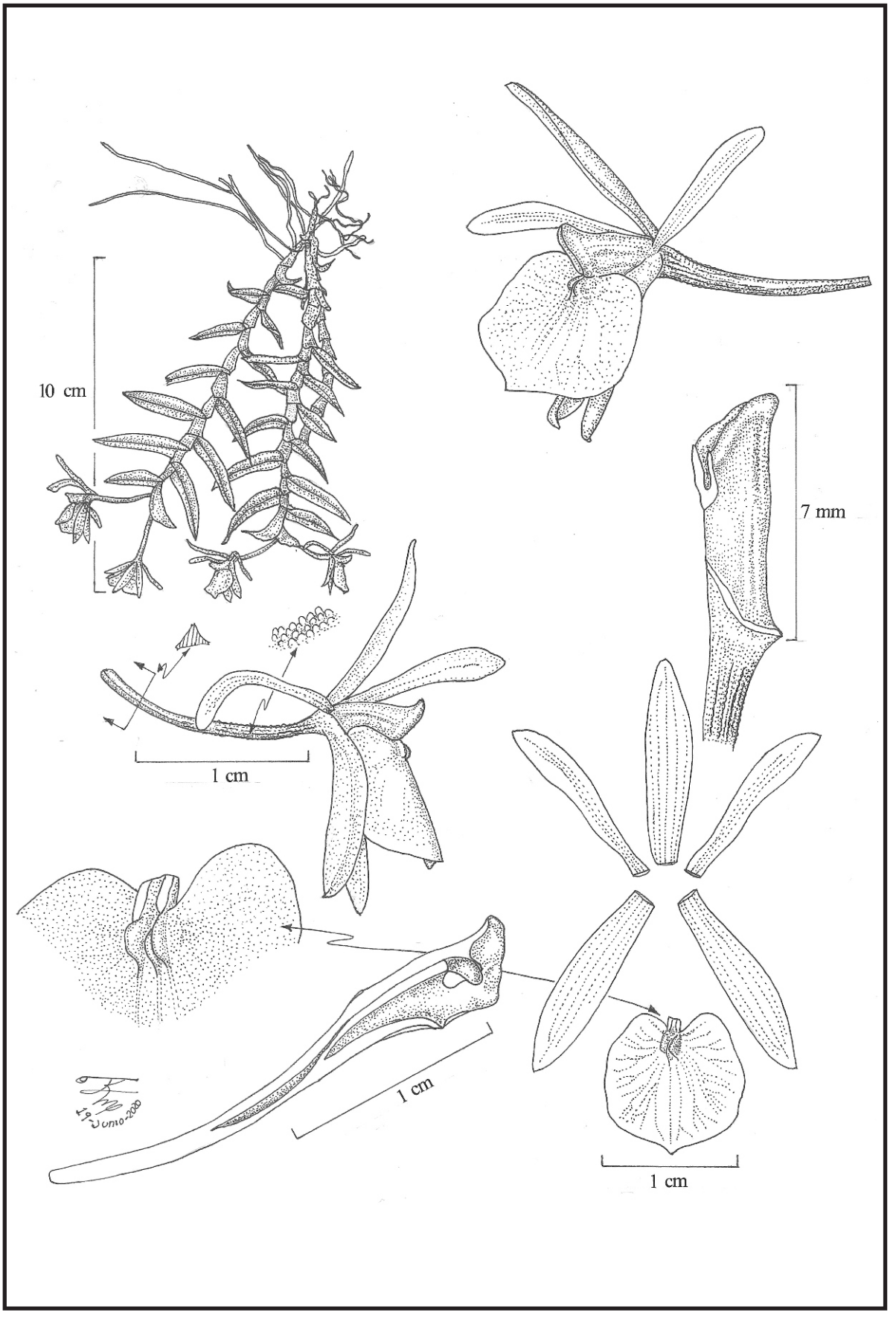
ETYMOLOGY: From the Latin *mus*, mouse, the genitive form is *murinus,* and *aures*, ears, in reference to the lip which is reminiscent of a mouse with the large rounded, spreading lateral lobes as the ears.

ACKNOWLEDGMENT: Robinson Galindo Tarazona thanks Parques Nacionales Naturales de Colombia, especially Claudia Acevedo, Jaime Millán and Eider Montaño, officers of the Parque Nacional Natural Farallones de Cali and the Batallón de Alta Montaña Rodrigo Lloreda for accompanying him during the field trip where the type was collected. The authors wish to thank Guillermo Reina-Rodriguez for his insight into the conservation status. We also thank Carl Lenhart, Latin/Greek Teacher in Boston for his help in the correct specific epithet, and Kanchi Gandhi of Harvard for his help.

REFERENCES: Calderón, E., 1995, Flora de plantas vasculares de alta montaña en los Farallones de Cali y sus relaciones biogeográficas, **Cespedesia** 20(66): 9-35. Colwell, R.K., G. Brehm, C.L. Cardelús, A.C. Gilman & J.T. Longino, 2008, Global warming, elevational range shifts, and lowland biotic attrition in the wet tropics, **Science** 322: 258-261. Lenoir, J., J. Gegout, P. Marquet, P. de Ruffray & H. Brisse, 2008, A significant upward shift in plant species optimum elevation during the 20th century, **Science** 320: 1768-1771. Hágsater, E., E. Santiago & R. Galindo T., 2020, *Epidendrum acuminatisepalum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1801. Schlechter, F.R.R., 1920, *Epidendrum decurviflorum* in **Repert. Spec. Nov. Regni Veg. Beih.** 7: 130. Santiago, E., & E. Hágsater, 2009, *Epidendrum decurviflorum* in E. Hágsater & L. Sanchez S. (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: pl. 1237. Santiago, E., & E. Hágsater, 2009, *Epidendrum scytocladium* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: pl. 1292.



Authors: E. Hágsater, E. Santiago & R. Galindo T. **LCDP: R. Galindo T. & A. Cisneros** **Photo: D. Haelterman** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM CHAPARENSE Dodson & R.Vásquez **Plate 1805**

EPIDENDRUM CHAPARENSE Dodson & R.Vásquez, Icon. Pl. Trop. ser 2, 4: pl. 327.

Type: BOLIVIA: Cochabamba: Prov. Chaparé: km 100 entre Cochabamba y Villa Tunari, 1880 m, febrero 1978, ***Roberto Vásquez Chávez 4***, Holotype: LBP. Isotypes: MO. SEL 31713! (Illustration voucher). SEL 53393! SEL 36080!

Epiphytic, sympodial, caespitose, pendent **herb**, 10-20 cm tall. **Roots** ca. 0.8-1.0 mm in diameter, basal, thin. **Stems** 8.7-10.2 x 0.25-0.4 cm, terete at base and laterally compressed above, pendent. **Leaves** 11-14, distributed throughout the stems, fleshy, pale green, alternate, partly spreading, the basal leaves deciduous; sheaths 6-8 x 2.5-3.5 mm, infundibuliform, minutely striated; blade 1.4-3.5 x 0.3-0.8 cm, narrowly lanceolate, oblique, acuminate, margin entire, spreading. **Spathes** 1-2, 7.5-20 x 3.5-9.0 mm, ovate when spread, conduplicate, sub-acute. **Inflorescence** 3.6 cm long including the flowers, apical, 2-flowered; peduncle and rachis totally hidden within the spathes. **Floral bracts** 4-5 mm long, widely triangular, acute, embracing. **Flowers** 2, simultaneous, resupinate, pale greenish white; fragrance not recorded. **Ovary** 15-17 mm long, terete, slightly dilated behind the perianth, minutely papillose, triquetrous towards the base. **Sepals** acute, margin entire, spreading; dorsal sepal 13-18 x 3-4 mm, free, 5-veined spreading, oblanceolate; lateral sepals 13-14 x 3.5-6.0 mm, 3-veined, obliquely united to the column, partly spreading, narrowly ovate, oblique. **Petals** 12.5-17.0 x 2.0-2.5 mm, free, spreading, linear-oblanceolate, obtuse, 3-veined, the lateral veins short branched, margin entire, spreading. **Lip** 10 x 11 mm, united to the column, entire, sub-orbicular, the base deeply cordate, apex rounded, minutely apiculate, margins entire, the sides and apex somewhat revolute; bicallose, the calli orbicular, prominent, parallel and adjacent. **Column** 7 mm long, thick, arching, the apex thickened and arching upwards at the clinandrium-hood. **Clinandrium-hood** prominent, fleshy-thickened, slightly surpassing the oblique apex of the column, margin entire, fleshy. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating the ovary just behind the perianth, slightly inflated. **Capsule** not seen.

OTHER SPECIMENS: BOLIVIA: Cochabamba: Chaparé: Villa Tunari, 2650 m, 9 II 1980, *Luer 5188*, SEL! **La Paz:** 30 km N of (below) dam at Lago Zongo, trail up to Río Jachcha Cruz, 2200 m, 5 III 1983, *Solomon 9738*, MO! SEL! **PERU: Cusco:** Pillcopata a Pillahuata, a 40 km de Pillcopata, 1745 m, 27 III 2005, *Fernández 107*, AMO! (illustration AMO!) USM! (Vásquez & Ibisch (2004) cite numerous other specimens deposited mainly in BOLV, LPB and USZ which have not been seen by the authors.)

OTHER RECORDS: BOLIVIA: La Paz: Nor Yungas: Parque Nacional Cotapata y alrededores, *Jiménez et. al.* image 43: (Jiménez 2015: Fig. 43). PN-ANMI Cotapata, carretera Cotapata-Santa Barbara, Siñari, km 64, 2360 m, 24 I 2007, *Jiménez 4374*, digital image, AMO! **Sud Yungas:** Yanacachi, ladera arriba de las plantaciones de la milpa mina Chojlla, 2400-2500 m, 6 XI 2015, *Jiménez s.n.*, digital image, AMO! (Photo voucher)

DISTRIBUTION AND ECOLOGY: Presently known from Cuzco, Peru, to Chaparé, Bolivia, along the eastern slope of the Andes, epiphytic at 1700-2650 m altitude. Flowering from November to March.

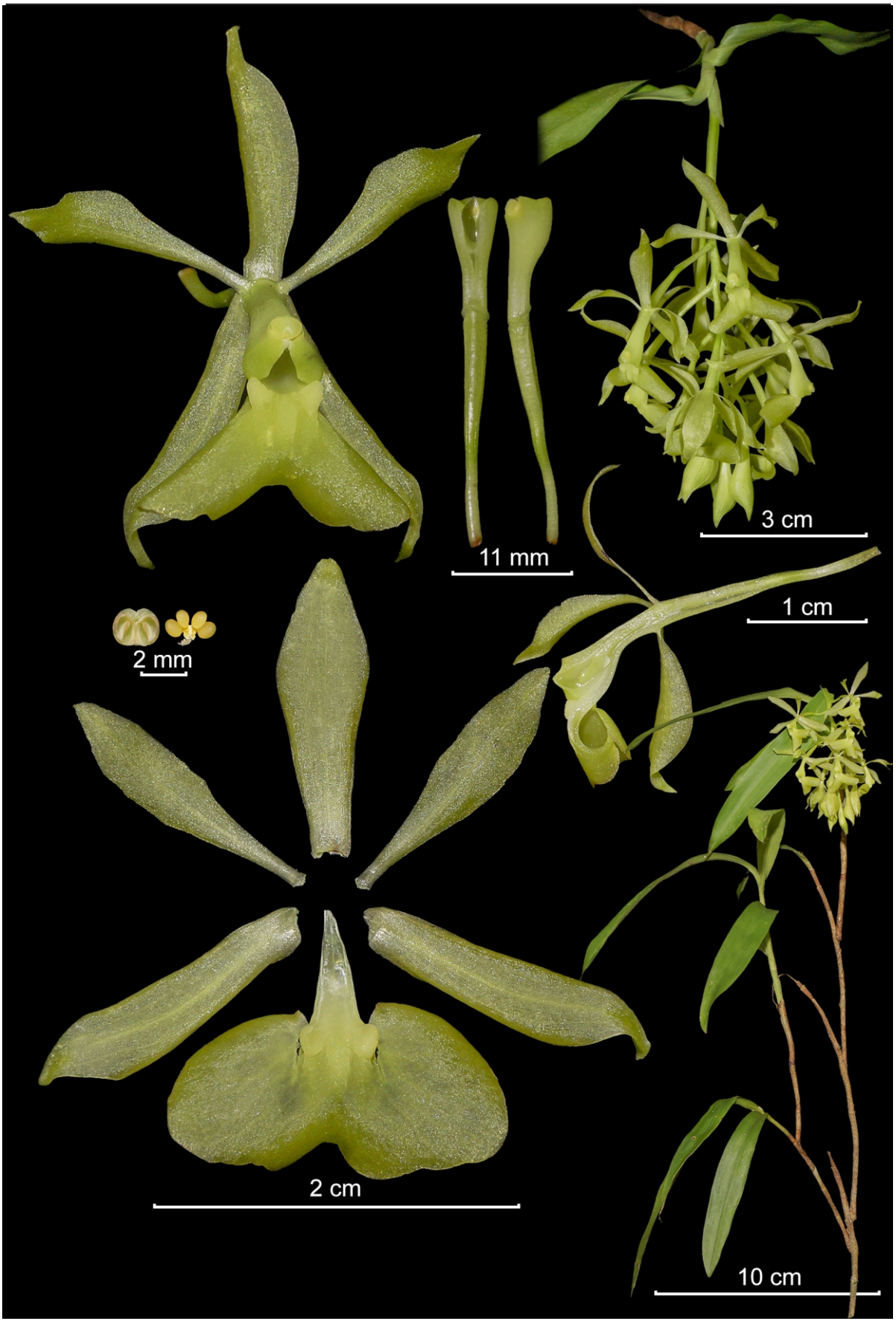
RECOGNITION: *Epidendrum chaparense* belongs to Megalospathum Group characterized by the caespitose but branching habit, the many-leaved stems, the fleshy, oblique leaves, the short, few-flowered raceme subtended by large semi-ovate spathaceous bracts, the resupinate flowers, and the column more or less united to the lip; and the Vesicicaule Subgroup which has a sympodial habit, numerous leaves throughout the stems, leaves concolor green, and a lip cordiform and bicallose. The species is recognized by the two-flowered inflorescence, the pale greenish white flowers, sepals 13-14 mm long, petals linear-oblong, the lip 10 x 11 mm, sub-orbicular with the base deeply cordate, apex rounded and minutely apiculate. *Epidendrum falcivesicicaule* Hágsater & E.Santiago has apple-green flowers with the calli white surrounded by a white fleshy growth, the sepals 18 mm long, petals 18 x 2.5 mm, and a lip 15 x 17.5 mm, widely cordiform with the apex sub-obtuse. *Epidendrum miradoranum* D.E.Benn. & Christenson has green flowers tinged with purple-rose, sepals are 19 mm long, and a lip 18 x 14 mm, cordiform with the apex obtuse. *Epidendrum vesicicaule* L.O.Williams has 4 apple green flowers, the lip 7.5 x 8 mm, cordiform, the apex obtuse, the disc with a prominent thickening, and the calli low and laminar.

CONSERVATION STATUS: NT. Not threatened, the species though known from few collections and ranges 800 km from Cuzco and Villa Tunari, with many conserved and protected areas in the region. It may well be found in a wider range.

ETYMOLOGY: In reference to the province of Chaparé in the Department of Cochabamba, Bolivia, where the species was originally collected.

REFERENCES: Hágsater, E., & E. Santiago, 2016, *Epidendrum falcivesicicaule* in E. Hágsater & L. Sánchez S. (eds.) Part 11, **Icon. Orchid.** 15(2): pl. 1581. Santiago, E., & E. Hágsater, 2016, *Epidendrum vesicicaule* in E. Hágsater & E. Santiago (eds.,) Part 11, **Icon. Orchid.** 15(2): pl. 1599. Jiménez, I., J. Quezada & J.C. Bermejo, 2015, Parque Nacional Cotapata y alrededores, La Paz, Bolivia, **Orquídeas de Cotapata**, rapid color guide, fig. 43, https://pdfslide.net/education/cotapata-orquideas.html Vásquez, C., R. & P. L. Ibisch, 2004, **Orq. Bolivia Div. Est. Cons.** 2:1-649 Editorial FAN, Santa Cruz de la Sierra.

Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M.** **Photo: I. Jiménez P.** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM CHISQUILLENSE Hágsater, Edquén & Cisneros **Plate 1806**

EPIDENDRUM CHISQUILLENSE Hágsater, Edquén *et* Cisneros, sp. *nov.*

Type: PERU: Amazonas: Prov. Chachapoyas; Distr. Granada, Comunidad campesina de Diosán, Sector Canchi, 2600 m, 22 octubre 2018, ***José Dilmer Edquén Oblitas 1054.*** Holotype: HURP! Digital image of specimen and live flowers, AMO!

Similar to *Epidendrum ulcumanoae* Hágsater, G.Gerlach & L.Valenz. but smaller, plants to 45 cm tall (vs. 300 cm tall), flowers green, somewhat smaller, sepals 16.5-16.9 mm long (vs. sepals 18-19 mm long and petals olive green to yellow tinged somewhat brown, lip and calli pale yellowish green), lip basically 2-lobed, obreniform, 9.5 x 18.6 mm, widest beyond the middle (vs. lip 3-lobed, obreniform, 14.5 x 25 mm, widest at the middle, the lateral lobes semi-orbicular, with a slightly receded mid-lobe, itself formed by a pair of semi-orbicular lobules).

Terrestrial, sympodial, erect, scandent **herb,** 30-45 cm tall, the new stems arising from a sub-apical internode of the previous stem. **Roots** from the base of the primary stem, simple, thick, occasional in upper stems. **Stems** 10-12 x 0.4-0.6 cm, erect, simple, cane-like, thin, terete, the new stems arising from a sub-apical internode of the previous stem. **Leaves** 2-3, aggregate towards the apical quarter of the stem, recurved, alternate, base embracing the stem; sheaths 0.7-4.0 x 0.3-0.5 cm, tubular, striated; blades 8-10 x 0.8-1.3 cm, the lowest one much smaller, oblong-elliptic, acute, sub-coriaceous, green, concolor. **Spathe** lacking. **Inflorescence** 8 cm long, apical, racemose, densely flowered; peduncle 2.2 x 0.2 cm, with a bract near the base, 11 mm long; rachis 3.8 cm long, arching, nutant. **Floral bracts** to 8 mm long, shorter than the ovary, linear-triangular, acuminate, embracing. **Flowers** ca. 15, opening in succession, until most open at the same time, resupinate; sepals and petals green, concolor; fragrance agreeable of lime. **Ovary** 18-19 mm long, slightly inflated ventrally along the apical half, thin, terete, furrowed. **Sepals** free, partly spreading, fleshy, 3-veined, acute, margins entire, revolute; dorsal sepal 16.5 x 5.0 mm, elliptic, acute, the apex long apiculate; lateral sepals 16.9 x 4.4 mm, obliquely oblanceolate, somewhat falcate, acute. **Petals** 16.0 x 3.6 mm, free, partly spreading, oblanceolate, acute, , fleshy, 1-veined, margin entire, spreading. **Lip** 9.5 x 18.6 mm, united to the column, 2-lobed, obreniform in general outline, when spread widest beyond the middle, lateral and apical margins strongly revolute in natural position, thus apron-like but wider than long, base truncate, apex deeply emarginate; bicallose, calli laterally compressed, in front of the sides of the column, conspicuous, semi-orbicular, leaning outwards, with three very short parallel low ribs running down the middle, the mid-rib somewhat thickened along the basal half and only reaching half the way to the apical sinus; lateral lobes 9.0 x 6.9 mm, obliquely semi-orbicular, directed somewhat forward. **Column** 11 mm long, thickened towards the apex, the apex forming a point on each side where the stigmatic cavity ends. **Clinandrium-hood** reduced, margin entire. **Anther** cordiform-sub-spherical, 4-celled. **Pollinia** 4, obovoid, slightly laterally compressed; caudicles short, soft and granulose; viscarium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** very short, much shorter than the stigmatic cavity. **Nectary** long, thin, penetrating half the pedicel, thin. **Capsule** not seen.

OTHER SPECIMENS: PERU: Amazonas: Bongará: Distr. Chisquilla; creciendo en bosque de relicto alto andino, parte baja del Cerro Campanario, 3359 m, 25 VIII 2018, *Edquén 2108*, UNACH! (LCDP and Photo voucher), digital images AMO!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Presently known from a single collection in northern Peru, on the eastern summit of the Andes at 3359 m altitude, in relicts of high Andean forest to 8 m tall, with high edaphic and ambient humidity. The ground is covered by a predominance of ferns and trees and shrubs with moss and lichens. The plants are found erect to prostrate or pendent among lianas and *Pacales* (from Paca, a bamboo). Flowers from August to October.

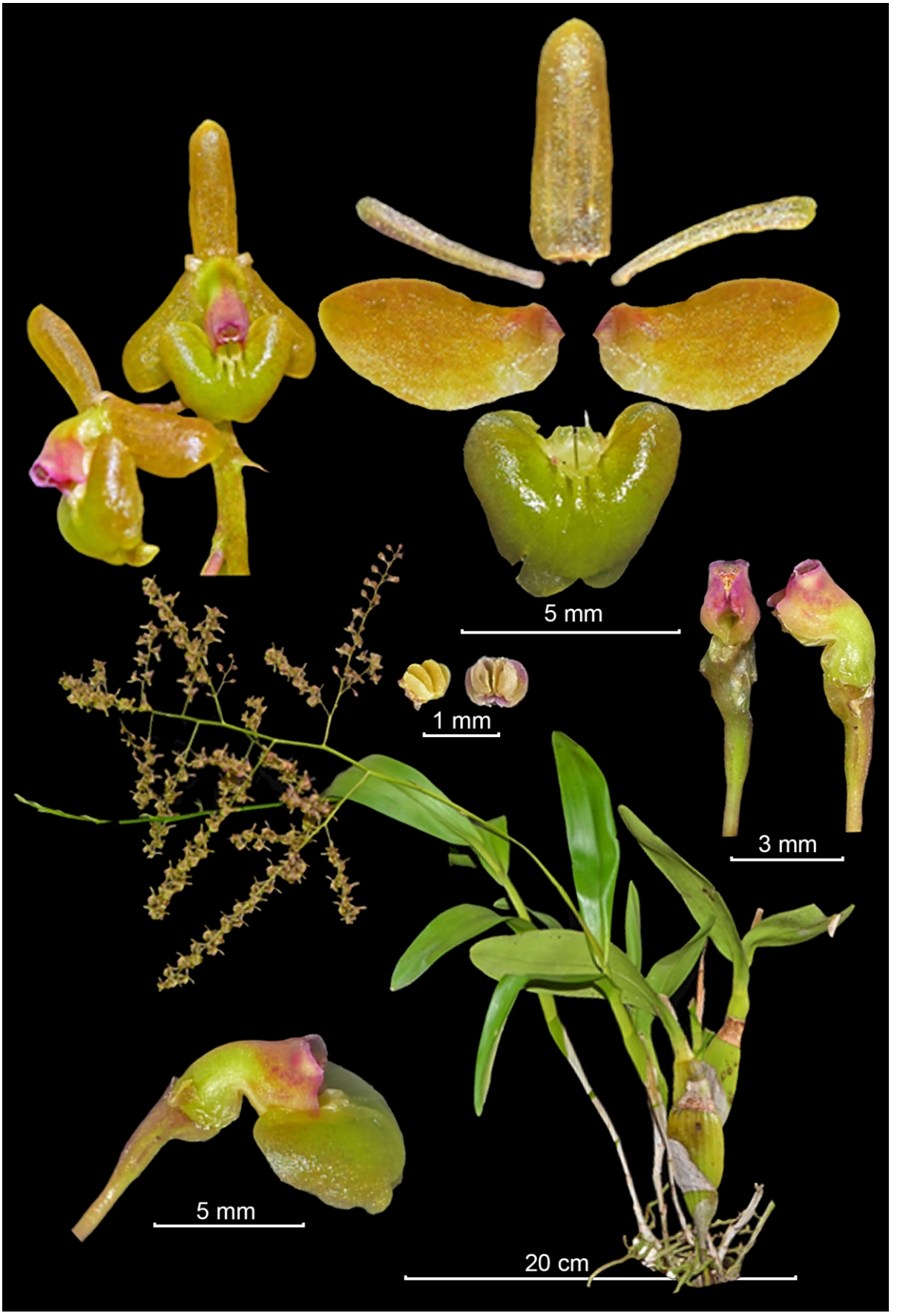
RECOGNITION: *Epidendrum chisquillense* belongs to the Incomptum group which is characterized by the successive lateral growths produced from the middle of the previous growth, the few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy green to violet-green flowers with short ovaries, and the lip entire to 3-lobed. The species is recognized by the green flowers, sepals 16.5-16.9 x 4.4-5.0 mm, petals oblanceolate, 16.0 x 3.6 mm, and the lip 9.5 x 18.6 mm, obreniform, widest beyond the middle, basically 2-lobed, apex deeply emarginate, with the calli laterally compressed, in front of the sides of the column, conspicuous, semi-orbicular, leaning outwards. It looks much like *Epidendrum ulcumanoae* which has somewhat larger flowers, sepals and petals olive green to yellow tinged somewhat brown, lip and calli pale yellowish green, with long, apiculate sepals 18-19 x 6.0-9.0 mm, falcate, oblanceolate petals 14-15 x 5.4 mm, and the obreniform lip 14.5 x 25 mm, widest at the middle, the lateral lobes semi-orbicular, with a slightly receded mid-lobe, itself formed by a pair of semi-orbicular lobules, the lip with the lateral margins revolute so as to appear apron like in natural position. *Epidendrum rimarachinii* Hágsater has sepals about half as wide as they are long, 13-15 x 6-9 mm, petals oblanceolate, 3-veined, 13-15 x 3-4 mm, and a lip 13-15 x 22-23 mm, 3-lobed, obreniform in general outline, lateral margins strongly revolute in natural position, base cordate, bicallose, lateral lobes 9 x 16.5 mm, transversely obovate, wider towards the apex, mid-lobe 2.5 x 6.5 mm, receded, formed by two small, semi-orbicular lobes, with a deep sinus in the middle. *Epidendrum posticorevolutum* Hágsater, A.Cisneros & Edquén is similar in having a receded mid-lobe of the lip but the flowers are smaller, green with a dark brown lip, the sepals are 13-15 x 7.0 x 9.0 mm, the petals are 12 x 3 mm, oblanceolate, with apex obtuse, and the lip is 12.8 x 24 mm, widest towards the apex.

CONSERVATION STATUS: DD. Data deficient. Presently known from a small area on the border of the Departments of San Martin and Amazonas, at the foot of Cerro Campanario. Rare. Found in the Bosque de Protección Alto Mayo.

ETYMOLOGY: In reference to the District of Chisquilla, Province of Bongará in the Department of Amazonas, Peru where the species was first collected, on the border with the Department of San Martín.

ACKNOWLEDGMENT: *Edquén 1054* was collected under permit SERFOR: Resolución de Dirección General No 137-2018-SERFOR/DGGSPFFS; Código de Autorización N.º AUT-IFL-2018-025, "Efecto de la fragmentación de hábitats de bosque alto andino en diversidad y distribución de las familias Orchidaceae & Bromeliaceae, del anexo de Diosán, distrito de Granada-Amazonas, 2018". *Edquén 2108* under Project SERNANP: Resolución Jefatural del Bosque de Protección Alto Mayo No. 006.2018- SERNAMP-BPAM-JBPAM, "Diversidad y distribución de orquídeas, en bosque no intervenido, parches o fragmentos y paisajes agrointervenidos, en el Bosque de Protección Alto Mayo-2018".

REFERENCES: Hágsater, E., 2019, *Epidendrum rimarachinii* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 17(1): pl. 1750. Hágsater, E., A. Cisneros & J.D. Edquén O., 2020, *Epidendrum posticorevolutum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 15, **Icon. Orchid.** 18(1): pl. 1832. Hágsater, E., G. Gerlach & L. Valenzuela, 2020, *Epidendrum ulcumanoae* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 15, **Icon. Orchid.** 18(1): pl. 1844.



EPIDENDRUM COMPRESSIBULBUM D.E.Benn. & Christenson **Plate 1807**

EPIDENDRUM COMPRESSIBULBUM D.E.Benn. & Christenson, Lindleyana 13(1): 36, fig. 1998.

Type: PERU: Huánuco, Leoncio Prado, near Cueva de las Pavas, 1000 m, leg. *Enrique Jara P.,* September 1991, flowered in cultivation September 1992, ***David E. Bennett Jr. 5332***. Holotype: NY, lost; Isotype: USM, lost. Lectotype (designated by Trujillo (2014): Peru, without exact locality [probably same as in the protologue], 02 Feb 1992, ***David E. Bennett Jr. 5332.*** MOL! (specimen and floral segments in spirit). "The type specimens were not found at NY (T. Zanoni, pers. comm.) nor at USM." (Trujillo, 2014).

Epiphytic, sympodial, caespitose, erect **herb,** 18-45 cm tall including the inflorescence. **Roots** 1-3 mm in diameter, basal, scarce, fleshy, white. **Stems** 12-20 x 1.5-3.0 cm, strongly laterally compressed, homoblastic pseudobulbs, ancipitose, basal third terete, thin, the broadening into an oblong, laterally compressed body, the lower part cane-like, terete, clothed by evanescent, bracts when young. **Leaves** 2-4, 7.5-12.4 x 1.5-3.0 cm, aggregate towards the apex of the stem, the first much reduced, oblong-elliptic, apex obtuse. **Spathe** lacking. **Inflorescence** to 30 cm long, apical, erect, paniculate, peduncle 11-12 cm long, sometimes with several diminishing conduplicate bracts to 2.0 x 0.4 cm, acute, spread along the peduncle, the lowermost pair somewhat imbricated near the base of the peduncle; rachis 9-14 cm long, with up to 14 branches spreading at right angles. **Floral bracts** very short. **Flowers** 70-100, simultaneous, resupinate, pale green to green to ochre or red brown, the sepals somewhat olivaceous, column green at base, apex tinged rose, anther wine-red; fragrance not registered. **Sepals** spreading, oblong-oblanceolate, obtuse, 3-veined, margins entire, spreading; dorsal sepal 4.2-5.4 x 1.8-2 mm mm, lateral sepals 4.4-5.7 x 2.0-3.0 mm, oblique, apex slightly aristate. **Petals** 4.0-5.0 x 0.5-0.8 mm, reflexed, linear-oblanceolate, 1-veined, margin entire, somewhat sinuous towards the apex. **Lip** 3-4.2 x 4.8-5.0 mm, united to the column, shallowly 3-lobed, widely cordiform, strongly convex, base cordate; calli two arches, hollow beneath, continued into three parallel ribs that terminate near the apex of the disc; lateral lobes hemi-ovate, widest near the base, the mid-lobe formed by a pair of small, semi-orbicular lobules, emarginate. **Column** 2.6-3.6 mm long in natural position, strongly arcuate, forming nearly a 90° angle, ventrally inflated at the base, constricted in the middle and widened towards the apex. **Anther** widely spherical, somewhat square, apex truncate, 4-celled. **Pollinia** 4, obovoid, somewhat elongate, laterally compressed, caudicles in two pairs, longer than the pollinia; viscidium semi-liquid. **Rostellum** apical slit. **Nectary** penetrating about ¼ of the pedicellate ovary, constricted at the middle of the column and widened at the insertion of the perianth, forming an obvious ventral vesicle at the apex of the ovary and the base of the column. **Lateral lobes of the stigma** not seen. **Capsule** not seen.

OTHER SPECIMENS: PERU: Junín: Chanchamayo: San Ramón: procedente de "El Refugio", cultivada en Moyobamba, 800 m, 21 XII 1982, *Fernández 185,* AMO! (illustration AMO!) USM!

OTHER RECORDS: ECUADOR: Hort Ecuagenera, 22 IX 2016, *Hágsater 14727*, (sterile) digital images, AMO! **Pastaza:** Puyo: carretero que conduce a Canelos, 700-800 m, hort. Ecuagenera, IX 2017, *Medina 342*, digital photos, AMO! (LCDP and photo voucher). **PERU:** without locality, *Jorge Saenz s.n.*, digital image, AMO! **Junín:** Satipo: Comunidad Nativa de Tsoroja, 600-700 m, 1 XII 2012, *Casaverde 122*, digital image, AMO! Tarma: Palca, received, 26 III 2009, *Morón s.n.,* digital images AMO! **Huánuco:** Leoncio Prado: Parque Nacional Tingo María, cruzando el Río Huallaga, frente a la Cueva de Las Pavas, 925 m, received, 7 III 2016, *Yupanqui. s.n.*, digital images, AMO! Ibid. 27 III 2017, *Yupanqui s.n.*, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Ecuador and Peru. Apparently rare and known from three localities; on the eastern slope of the Andes, Puyo in central Ecuador on the Pastaza River, and two areas of central Peru, with a range of 1100 km: Tingo María is in the basin of the upper Huallaga River, while San Ramón, is in the basin of the Chanchamayo River which eventually joins the Ucayali River. Epiphytic in wet tall forest, at 600-1000 m altitude. Flowering from December to March.

RECOGNTITION: *Epidendrum compressibulbum* belongs to the Compressibulbum Group which is characterized by the sympodial, caespitose habit, the prominent, laterally compressed pseudobulbs, the 1-4 leaves aggregate at the apex, the erect, large, paniculate inflorescence, the flowers numerous and small sepals, a cordiform to widely ovate lip, the nectary short, inflated at the perianth. The species is recognized by the very flat, ancipitose stems, the deeply cordate lip, the callus formed by two arches, hollow beneath and extending into 3 parallel ribs that terminate near the apex of the disc. *Epidendrum lumbaquiense* Hágsater & Dodson, from northern Ecuador, from the Amazonian foothills of the Andes, has smaller plants, the stems to 8 cm tall, somewhat laterally compressed but not ancipitose, and the lip widely ovate-reniform, the single callus rounded, flat, disc-like.

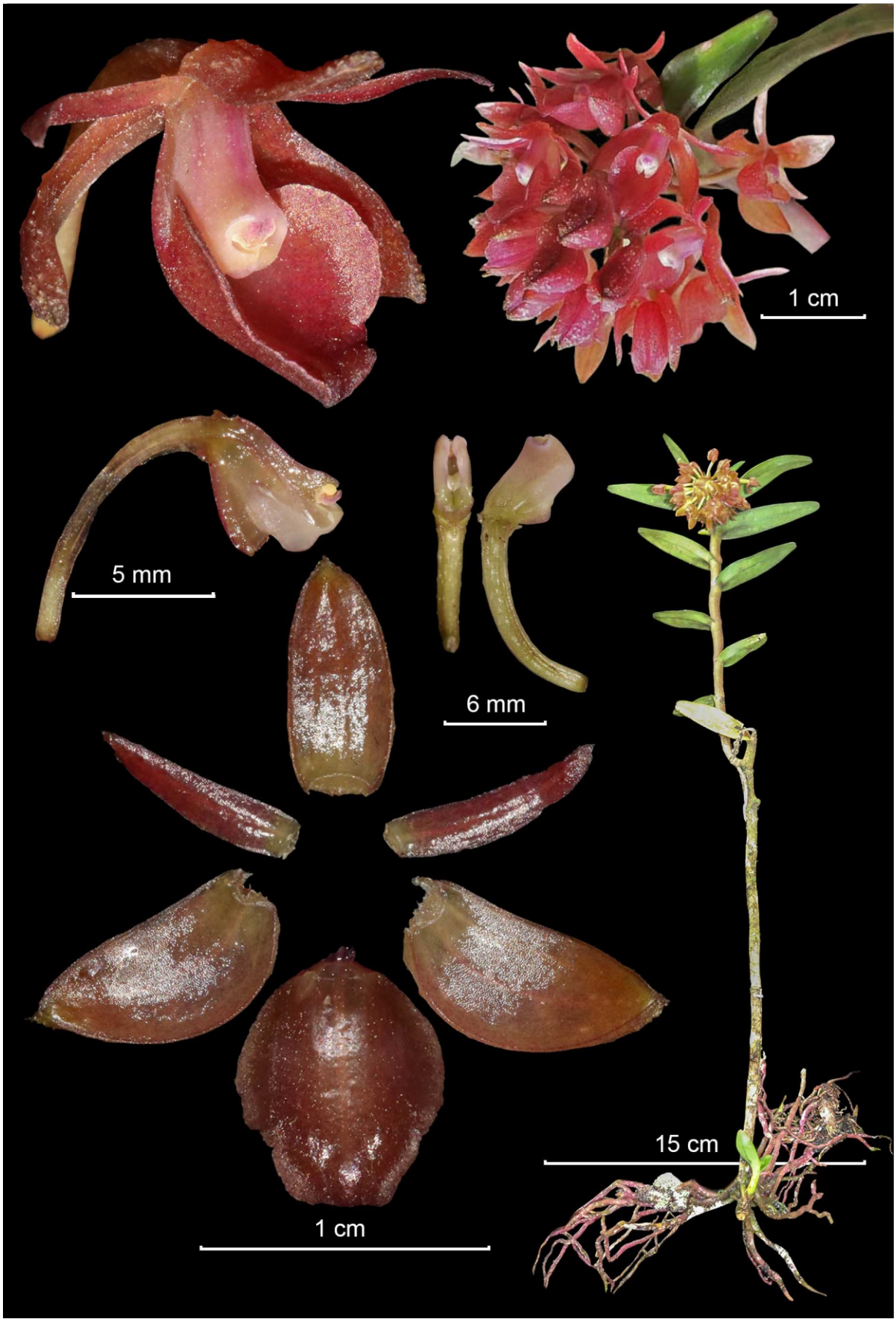
CONSERVATION STATUS: DD. Data Deficient. The species appears to be locally rare, but it is found in three different basins of the eastern Andes, so the range is extensive.

ETYMOLOGY: From the Latin *compressus*, flattened, and *bulbus*, a bulb, in this case a thickening of the stem, as the species is recognized by the flattened, ancipitose stems.

REFERENCES: Hágsater, E., & C.H. Dodson, 1999, *Epidendrum lumbaquiense*, in E. Hágsater, L. Sánchez & J. García-Cruz (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: pl. 349. Trujillo, D., 2014, Annotated list of Orchidaceae types of the Bennett collection at the forestry herbarium MOL. **Lankesteriana** 14(1): 1-88. Doi: 10.15517/lank.v14i1.15584

Authors: E. Santiago, E. Hágsater & H. A. Medina **LCDP: H. A. Medina** **Photo: H. A. Medina** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1807**



EPIDENDRUM DAVILAE Hágsater, E.Santiago & R.M.Cavero **Plate 1808**

EPIDENDRUM DAVILAE Hágsater, E.Santiago *et* R.M.Cavero, *sp. nov.*

Type: PERU: Cajamarca, Prov. Hualgayoc: Distrito Chugur: Caserío Perlamayo Capilla, 3000 m, flowers pale red, 31 diciembre 2004, ***Luis Dávila Estela 315.*** Holotype: CPUN!

Similar to *Epidendrum platystele* Hágsater & E.Santiago but the sepals dorsally papillose (vs. sepals smooth), petals oblong, oblique, obtuse and apiculate (vs. petals linear-oblong with the apex truncate-rounded), the lip truncate at the base (vs. lip cuneate at base), and the apex of the column arched upwards (vs. the apex of the column straight).

Epiphytic, monopodial, reptant or hanging **herb**, 40 cm tall or more, with new stem produced from sub-apical internode of the previous stem. **Roots** 1.0 mm in diameter, produced from the base of primary stem, fleshy, thin, occasionally a small root from the base of upper stems. **Stems** 3.2-14 x 0.2-0.4 cm, simple, cane-like, produced from a sub-apical internode of the previous stem, thin, straight, basal portion covered by several sheaths 5-14 mm long, tubular, non-foliar. **Leaves** up to 10, 2-3 persistent per stem towards apex, alternate, articulate, sub-coriaceous; sheaths 3-24 x 3.0-5.0 mm, tubular, minutely striated; blade 2.5-9.0 x 0.5-1.3 cm, lanceolate, obtuse, apex unequally bilobed, margin entire. **Spathe** lacking. **Inflorescence** 2-3 cm long, apical, racemose, arching-nutant, many-flowered; peduncle 0.5-0.7 cm long, thin, terete; rachis 1.5-2.5 cm long, nearly totally hidden by floral bracts. **Floral bracts** 3-8 mm long, shorter than ovary, narrowly triangular, acuminate, embracing. **Flowers** 13-20, simultaneous, resupinate, the lip always oriented towards the rachis, red brown to pale red, column pale red, the albino form yellow green; fragrance not registered. **Ovary** 10-20 mm long, thin, not inflated. **Sepals** free, partly spreading, elliptic, 3-veined, dorsally papillose, margin entire, spreading; dorsal sepal 10 x 3.7 mm obtuse; lateral sepals 12 x 5.7 mm, oblique, minutely apiculate. **Petals** 10 x 2 mm, free, spreading, oblong, oblique, 3-veined, obtuse, apiculate, margin entire, spreading. **Lip** 9.4 x10.2 mm, united to the basal 2/3 of the column, obscurely 3-lobed, concave, base truncate, margin erose; ecallose, the disc glabrous; lateral lobes 4.2 x 7 mm, hemi-elliptic, sometimes embracing the sides of column; mid-lobe 2 x 5.7 mm, rectangular with the apex truncate, slightly bilobed, mucronate, provided with a fleshy rounded knob at the apex. **Column** 5 mm long, thick, with the clinandrium-hood upturned, with narrow slit near the base of ventral surface. **Clinandrium-hood** short, tubular margin entire. **Nectary** wide, shallow without penetrating the ovary. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, the inner side of each pair flat. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: **PERÚ: Cajamarca:** Chota, La Palma, flowers green, I 2020, *Cavero s.n.*, digital images, AMO! (LCDP, AMO). Ibid.: digital images, AMO! (LCDP voucher). Chugur: Caserío Perlamayo Capilla, 3000 m, *Dávila s.n.*, digital image, AMO! (Photo voucher).

DISTRIBUTION AND ECOLOGY: Presently known only from northern Peru, in the Department of Cajamarca, at around 3000 m altitude. Epiphytic in evergreen montane cloud forest.

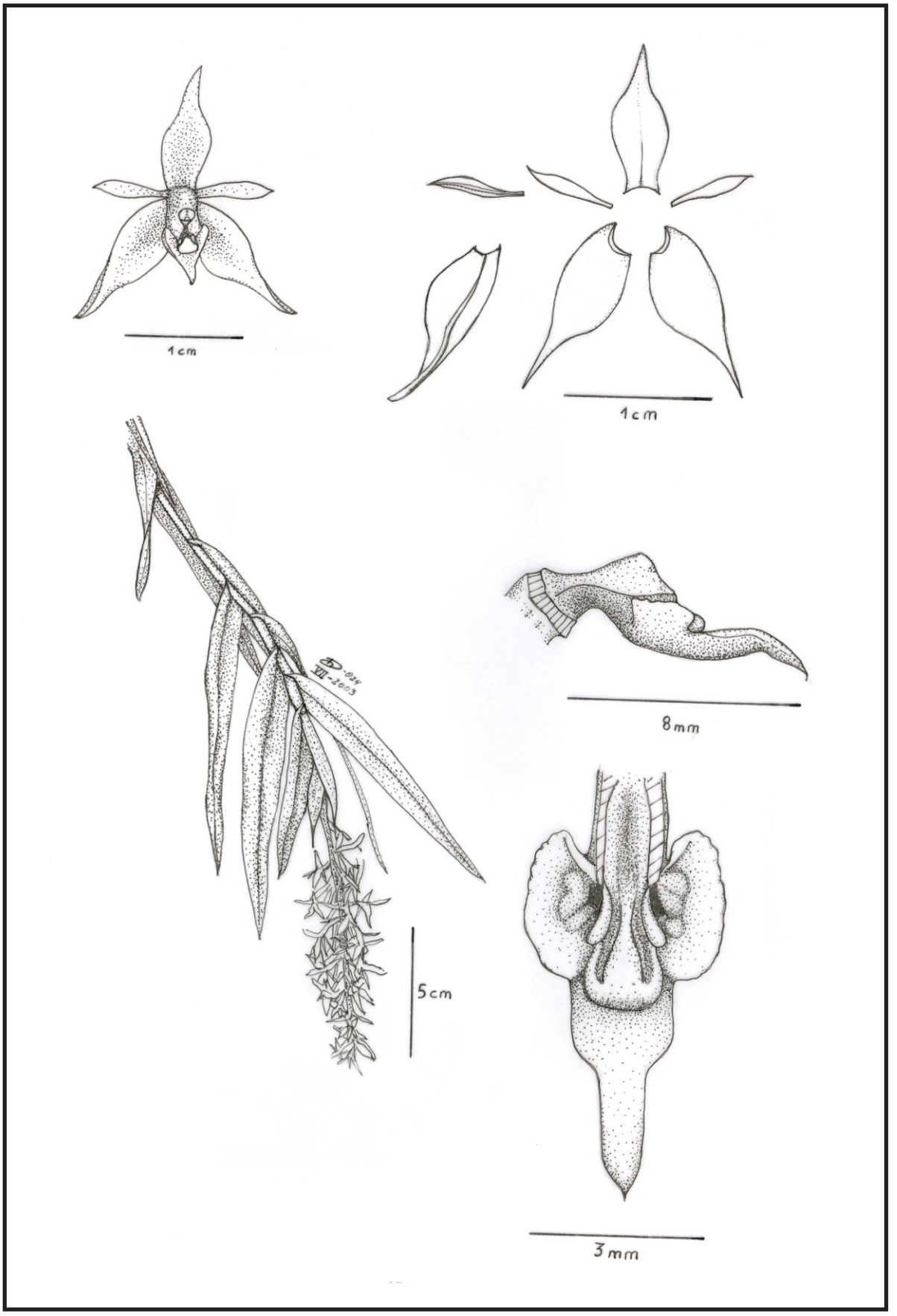
RECOGNITION: *Epidendrum davilae* belongs to the Diothonea group and subgroup which is characterized by the branching plants, the linear lanceolate to oblong, bilobed leaves, the racemose, arching-nutant inflorescence, membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose without or with 1-10 thin, smooth to erose keels, the column completely to obliquely united to the lip, and the anther reniform. The new species is recognized by the short, many-flowered inflorescence (up to 20 flowers), sepals dorsally papillose, petals oblong, oblique, the apex obtuse, and the lip united to the basal 2/3 of the column, deeply concave, the base truncate. *Epidendrum platystele* has fewer flowers, up to 13, sepals dorsally smooth, petals linear-oblong with the apex truncate, and the lip base cuneate. *Epidendrum sigmodiothoeum* Hágsater & E.Santiago has densely, many flowered inflorescences, but the flowers are small, sepals 5.5-6.6 mm long, unornamented, the lip is united to the column throughout, the column widely triangular, and the disc of the lip has a pair of very short ribs. *Epidendrum gastrochilum* Kraenzl. has a laxly few-flowered inflorescence with up to 5 flowers, lateral sepals 14-15 mm long, unornamented, and the lip entire, ovate-orbicular, the base cuneate and with 6 high laminar ribs on the disc.

NOTE: This species also has a peculiar slit on the underside of the base of the column, as does *Epidendrum cleistocoleum* Hágsater & E.Santiago and *Epidendrum gastrochilum*, a very hidden feature only visible when dissecting the flower and carefully preparing a vertical longitudinal section. The fact that the species has red-brown flowers, pale or dark, but is also found in the same area in what appears to be an albino form, with flowers yellow green, is unusual but not unknown in other *Epidendrum* species.

CONSERVATION STATUS: DD. Data deficient. Known presently from only a couple of collections from two localities in a heavily populated and intervened landscape.

ETYMOLOGY: In honor of Luis Dávila Estela (1970-), Forestry Engineer of the Universidad Nacional de Cajamarca, who collected the type, and has done floristic work in areas in the Department of Cajamarca, especially around his hometown of Hualgayoc.

REFERENCES: Hágsater, E. & E. Santiago, 2004, *Epidendrum cleistocoleum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid. 7**: pl. 726. Hágsater, E. & E. Santiago, 2007, *Epidendrum sigmodiothoneum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: pl. 987. Hágsater, E. & E. Santiago, 2013, *Epidendrum platystele* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: pl. 1474. Santiago E. & Hágsater E., 2006, *Epidendrum gastrochilum* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 8: pl. 835.



EPIDENDRUM DELSYAE Hágsater & Cisneros **Plate 1809**

EPIDENDRUM DELSYAE Hágsater *et* Cisneros, *sp. nov.*

Type: PERU: Huánuco: Chinchao: San Pedro Carpish, Ruta Paty, camino a Ñaupamarca, km 456, 5 abril 2003, ***Delsy María Trujillo Chávez 131.*** Holotype: HURP! (Illustration and Photo voucher).

Similar to *Epidendrum praeteritum* Hágsater, but the leaves wider, 1.0-1.2 cm wide (vs. leaves 0.6-0.9 cm wide), and the flowers ochre-orange with the column green (vs. flowers light yellow), and the mid-lobe of the lip wider, 3.8 x1.8 mm, attenuate (vs. mid-lobe of the lip 3.8 x 1.02 mm, narrower and triangular, not attenuate).

Epiphytic, sympodial, caespitose **herb**, ca. 60-80 cm long, arching pendent. **Roots** 3-4 mm in diameter, basal, fleshy. **Stems** 54 x 0.2-0.4 cm, simple, cane-like, terete, base erect, then arching pendent, the basal 1/4 covered by non-foliar sheaths, similar to the foliar sheaths. **Leaves** ca. 17, distributed along the apical ¾ of the stem, alternate, articulate, grass-like, conduplicate at the base; sheaths 1.6-3.4 x 0.2-0.4 cm, tubular, minutely striated; blade 7.4-13.4 x 1.0-1.2 cm, linear-lanceolate, acuminate, erect, margin entire, spreading. **Spathes** 2, 4.8-5.2 cm long, imbricated, tubular at base, conduplicate along the apical half, apex acuminate. **Inflorescence** 14 cm long, apical, racemose, cylindrical, straight, pendent, many-flowered; peduncle 4.4-5.4 cm long, thin, terete; rachis 8.2-8.8 cm long, terete. **Floral bracts** 8-11 mm long, longer than the ovary, narrowly triangular, acuminate, embracing. **Flowers** up to 30, simultaneous, resupinate, sepals and petals ochre, apex greenish orange, lip ochre-orange, column green; fragrance reminiscent of soap. **Ovary** 7-10 mm long, thin, not inflated. **Sepals** free, partly spreading, apex long acuminate, margin entire, spreading; dorsal sepal 10 x 3.9 mm, widely elliptic; lateral sepals 12.8 x 4.6 mm, ovate-lanceolate, with an apical dorsal keel its margin erose. **Petals** 7.0 x 1.0 mm, free, spreading, oblanceolate, acute, dorsally carinate, margin entire, spreading. **Lip** 6.3 x 3.4 mm, united to the column, 3-lobed, base cordate; bicallose, calli prominent, laminar, erect, with a widened mound in between truncate apically slightly beyond the calli; lateral lobes 2.8 x 1.3 mm, sub-reniform, erect, margin erose, spreading; mid-lobe 3.8 x 1.8 mm, triangular in general form, acute, attenuate at the middle, the apical half ensiform, margin entire, spreading. **Column** 4.7-5.0 mm long, thick, somewhat arcuate. **Clinandrium-hood** reduced, margin entire. **Nectary** not seen. **Anther** not seen. **Pollinia** not seen. **Rostellum** not seen. **Lateral lobes of the stigma** not seen. **Capsule** not seen.

OTHER SPECIMENS: PERU: Huánuco: Chinchao: San Pedro Carpish, Carpish Pass, 10,000 ft, 15 III 1945, *Hodge s.n.*, AMES! K! San Pedro de Carpish, Mirador, 1 II 1940, *Ridoutt s.n.*, UC! USM! **Pasco:** Oxapampa: Huancabamba: Entre el Río Cueva Blanca y Milpo, 2720 m, 18 IX 2004, *Monteagudo 7073*, HOXA! Oxapampa: Huancabamba: Camino a Milpo, Sector Cueva Blanca, 2700 m, 10 VIII 2020, *Valenzuela 38596*, HOXA! MO, USM. (digital images, AMO! HOXA!)

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Presently known from central Peru, from the Department on Huánuco, epiphytic in forests on white sand at 2700-3000 m altitude.

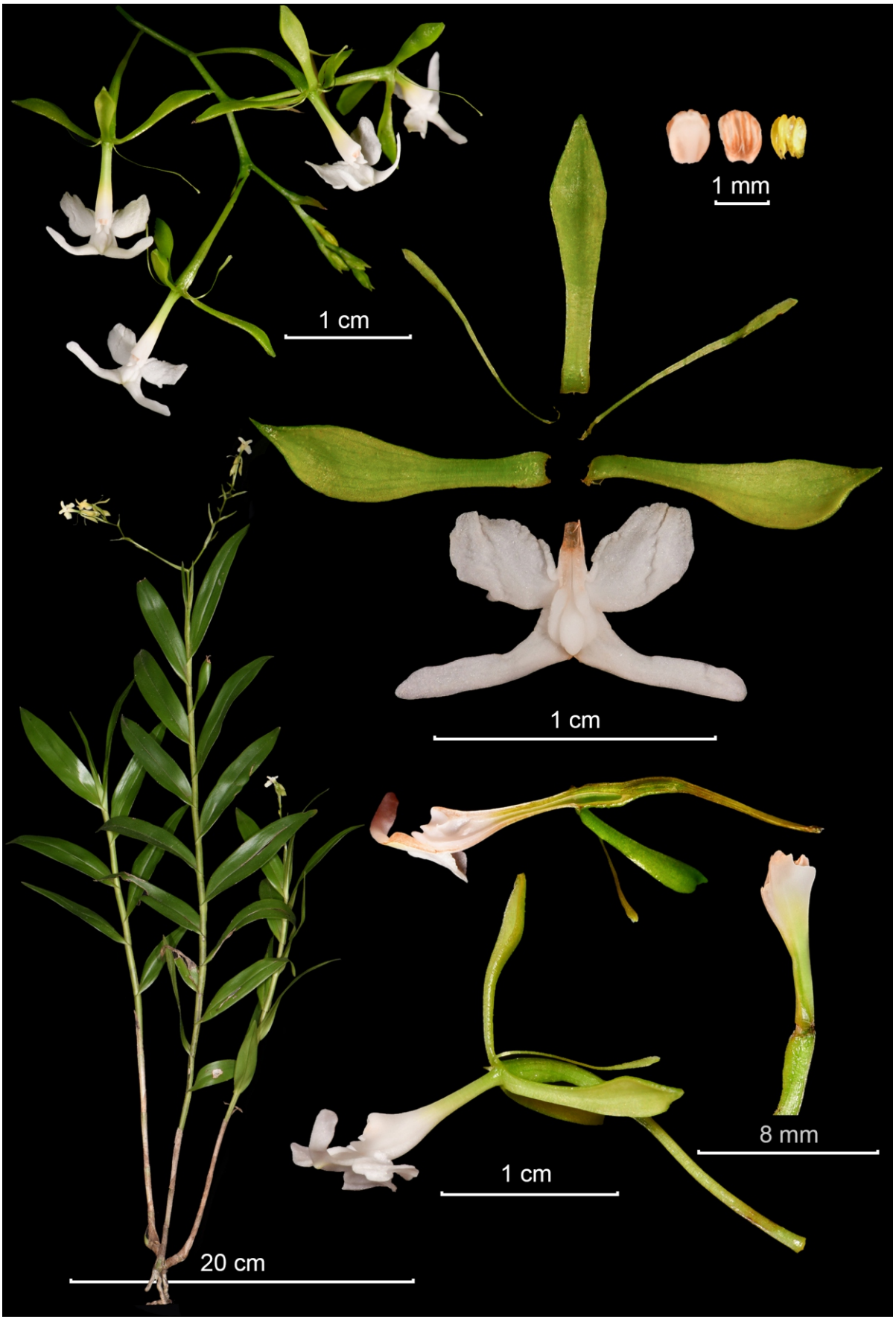
RECOGNITION: *Epidendrum delsyae* belongs to the Alpicola Group, which is characterized by the simple stems, long, narrow spathes, numerous flowers with fleshy lips, the triangular mid-lobe and roundish lateral lobes, and the lip with two laminar calli and a rounded process in between. The new species is recognized by the 54 cm long stems, leaves 7.4-13.4 x 1.0-1.2 cm, linear-lanceolate, acuminate, the peduncle of the inflorescence shorter than the apical leaf, the relatively large flowers, sepals 10-12.8 mm long, sepals and petals ochre, apex greenish orange, lip ochre-orange, column green, and the mid-lobe of the lip 3.8 x 1.8 mm, triangular in general form, acute, attenuate at the middle, the apical half ensiform. *Epidendrum ferrugineum* Ruiz & Pav. comes from the same area, but the leaves (to 15 x 2 cm) are oblong-elliptic, apex obtuse, emarginate, the peduncle of the inflorescence is nearly as long as the apical leaf, and the lip is described as entire, triangular (which is doubtful, as this group of species always has clearly 3-lobed lips); the original watercolor (MA, Real Jardín Botánico, Madrid) does not permit a detailed analysis of the floral segments, the type at MA shows a few floral buds and the sepals would seem to be much shorter, about 7 mm long. *Epidendrum praeteritum* Hágsater, has similarly sized plants, leaves 8-14 x 0.6-0.9, sepals 9.5-11.2 mm long, but the flowers are light yellow and the mid-lobe of the lip is 3.8 x 1.02 mm, considerably narrower and triangular, not attenuate. *Epidendrum melinoacron* Schltr. from Tabaconas, in northern Peru, has similar plants and leaves 8-12 x 1.0-1.5 cm, smaller flowers, sepals 8 mm long, oblong, acuminate, the flowers are described as brownish white, with the lip greenish white and orange appendages.

CONSERVATION STATUS: DD. Data deficient. Only two localities have been detected, the full range of distribution is unknown.

ETYMOLOGY: In honor of Delsy Mariela Trujillo Chávez (1975-) who has collected and worked extensively on the orchids of Peru and collected the type and shared her material with the team at Herbario AMO for years. She also organized the David E. Bennett Jr. specimens at MOL and obtained access to his notes, publishing a list (Trujillo, 2014).

REFERENCES: Hágsater, E., 2019, *Epidendrum praeteritum,* in E. Hágsater & E. Santiago, (eds.) The Genus *Epidendrum,* Part 13, **Icon. Orchid.** 17(1): pl. 1748. Ruiz L., H., & J.A. Pavón L., 1798, *Epidendrum ferrugineum* in **Syst. Veg. Fl. Peruv. Chil.** 1: 245-246. Schlechter, R., 1921, *Epidendrum melinoacron*, in Die Orchideenflora der Südamerikanischen Kordillerestaaten, IV Peru, **Repert. Spec. Nov. Regni Veg., Beih.** 9: 88-89. Trujillo, D., 2014, Annotated list of Orchidaceae types of the Bennett collection at the forestry herbarium MOL. **Lankesteriana** 14(1): 1-88.

Authors: E. Hágsater & A. Cisneros **Illustrator: D. M. Trujillo** **Photo: D. Trujillo** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM ENGLERIOIDES Hágsater, Uribe Vélez & Cisneros **Plate 1810**

EPIDENDRUM ENGLERIOIDES Hágsater, Uribe Vélez *et* Cisneros, *sp. nov.*

Type: COLOMBIA: Departamento: Santander: Municipio: Socorro: cerca de Socorro, 1850 m, cult. ***Carlos Uribe Vélez 52.*** Holotype: HPUJ! (LCDP voucher)

Similar to *Epidendrum englerianum* F.Lehm. & Kraenzl. but with sepals and petals bright green, the apex of the column and lip white (vs. sepals and petals deep purple or green in the albino form, the apex of the column and lip pink), width between the lobes of the mid-lobe wider than between the lateral-lobes of the lip (vs. lobes of the mid-lobe shorter, about the half of the length of the lateral-lobes of the lip).

Epiphytic or terrestrial, sympodial, erect **herb** 30-50 cm long**. Roots** 2.0-3.0 mm of diameter, basal, fleshy, thick. **Stems** 22.3-34.6 x 0.2-0.3 cm, simple, cane-like, terete, thin, erect, straight; the basal half covered by non-foliar, tubular, imbricated, papyraceous, scarious sheaths becoming fibrous with time, brown. **Leaves** 6-15, distributed along the apical 2/3 of the stems, distichous, articulate, sub-erect; sheaths 1.6-3.0 x 0.2-0.5 cm, tubular, minutely striated, blade 4.3-8.7 x 1.0-1.6 cm, lanceolate, acute, grass-like, margin entire, spreading. **Spathe** lacking. **Inflorescence** 6.4-13.5 cm long, apical, paniculate, sub-erect to slightly arching, lax, few-flowered; peduncle 5.4 cm long, thin, laterally compressed, straight, provided with 1-3 tubular bracts 9-17 long, that cover it completely, linear-triangular, acuminate; rachis 5.9-6.2 cm long, terete, thin, somewhat flexuous, composed by 1-2 few-flowered racemes, each raceme with a basal, linear-triangular, acuminate amplexicaul bract. **Floral bracts** 5-10 mm long, shorter than the ovary, decreasing in size towards the apex, narrowly triangular, acuminate, amplexicaul. **Ovary** 19 mm long, terete, thin, not inflated, striated. **Flowers** 4-12, opening in succession several basal flowers open when the apical buds are still small and developing, eventually all open together, resupinate, sepals and petals bright green, the apex of the column and lip white, anther cream colored, tinged red; without fragrance registered. **Sepals** 10-11 x 2.0-2.4 mm, free, spreading to somewhat reflexed, fleshy, narrowly oblanceolate to sub-spatulate, acute, unornamented, margin entire, spreading; lateral sepals slightly oblique, dorsally apiculate; dorsal sepal 3-veined; lateral sepals 5-veined. **Petals** 9.0 x 0.3 mm, free, reflexed, filiform-spatulate, apex rounded, 1-veined, margin entire, spreading. **Lip** 7.0 x 12.7 mm, united to the column, 3-lobed, base deeply cordate, widest between the apical lobes; bicallose, the calli thin, digitiform, elongate, reaching beyond the base of the mid-lobe, and nearly parallel to the 3 evident ribs of the disc, the mid-rib prominent, wide, very fleshy, reaching the apical sinus, the side ribs much shorter and narrower, similar to the calli; lateral lobes 4.8 x 2.8 mm, slightly retrorse, obliquely obovate-oblong, apex rounded, margin entire in parts irregular, spreading; mid-lobe 3.3 x 12.7 mm, bilobed, deeply emarginate, forming a pair of falcate, narrowly oblong, apically rounded, strongly divaricate lobes 6.0 x 1.1 mm, margin entire. **Column** 8 mm long, somewhat arcuate upwards at the apical 1/3, thin, wider at the apex, long, the apex with a pair of minute teeth. **Clinandrium-hood** short, margin entire. **Anther** 1 mm long, ovoid, 4-celled. **Pollinia** 4, "bird-wing" type, strongly laterally compressed, unequal, the inner pair somewhat shorter. **Rostellum** not seen. **Lateral lobes of the stigma** small, occupying a 1/3 of the length stigmatic cavity. **Nectary** shallow, penetrating only 1/5 of the ovary, slightly inflated in the pedicellate ovary, smooth. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Napo: El Chaco: Entre el río San Juan Chico, San Juan Grande y río Oyocachi, límite oriental de la reserva ecológica Cayambe-Coca, 1800 m, 6 I 1997, *Cerón 35194*, QAP! Quijos: Baeza: Hacienda Cumanda. Pendiente a la derecha de la tubería del Oleoducto, 1875-1900 m, 25 III 2012, *Cerón 71148*, Q! QAP! Quijos: Quito-Baeza between Papallacta and La Carcel, 11 km E of Río Victoria, 1 km W of Oleoducto, Estación Baeza, 2200 m, 16 IV 2003, *Croat 87622*, QCNE x2! El Chaco, 23 km E of El Chaco, Quito-Lago Agrio, 1700 m, 7 XI 1974, *Gentry 12617*, F! Archidona: Napo-Galeras National Park. Sumaco Mountains, 2000 m, 18 III 1996, *Clark 2296*, MO! (pro parte) Quijos: Baeza, 9 XI 1982, *Rauh 52867a sub Hágsater 6889*, AMO! Ibid. 22 XII 1984, AMO x2! COL! QCA! Quijos: km 6 Baeza-Quito, 2100 m, 8 VI 1983, *Thurston 3122 sub Hágsater 7489*, AMO! Quijos: 1 km E of the oil pump station on road Papallacta-Baeza, along of Rio Papallacta, 2050 m, 6 VI 1973, *Holm-Nielsen 6983*, AMES! Quijos: Route Papallacta-Baeza, escarpement du bord de route, 2150 m, 14 IV 1985, *Huttel 632*, QCNE! Quijos, San Francisco de Borja, 6 VII 1980, *Sobel 2387*, NY! **PICHINCHA: Quito:** San José de las Minas, Sector Las Palmas, margen derecho del Río Cumbagén, 1600-2200 m, 15 IX 1998, *Jiménez 380*, QAP!

OTHER RECORDS: COLOMBIA: Cauca: Hort. Popayán: Calibio, Finca San Isidro, 1726 m, in collection of Beatriz Vásquez, 29 III 2018, *Hágsater 15652*, digital images. Without data, *Carlos Augusto Mesa Londoño*, rec'd 15 IX 2015, digital image. Without data, *Uribe Vélez 3014*, digital image series, AMO! (Photo voucher). **ECUADOR:** Quijos: Baeza, 26 VII 1982, *Rauh 52867a sub Hágsater 6889*, AMO! digital image. El Chaco, Tres Cruces, Orquidario San Cristobal, km 132 desde Lumbaqui, 1680 m, 3 II 2017, *Hágsater 15384*, digital images AMO!

DISTRIBUTION AND ECOLOGY: Known presently from a single location on the cordillera Oriental of the Andes in the southern part of the Department of Santander, north of Bogotá, epiphytic at 1800 m altitude. Flowering from November to July.

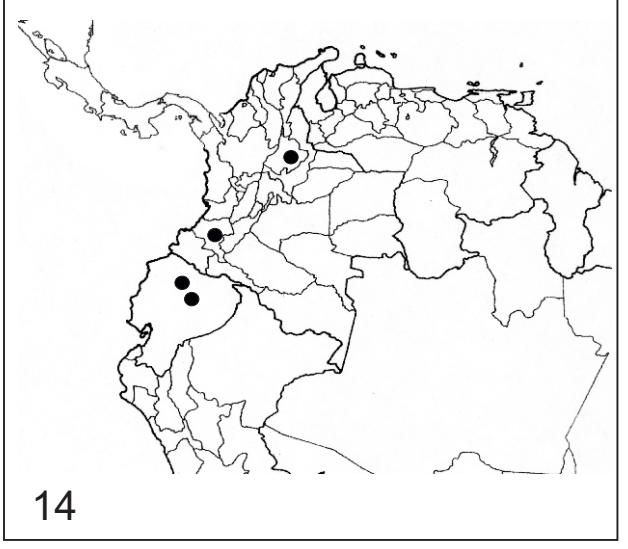
RECOGNITION: *Epidendrum englerioides* belongs to the Pseudepidendrum Group, characterized by caespitose plants, cane-like stems, acute to acuminate leaves, the apical inflorescence, lacking a spathe, the petals filiform, the lip usually 3-lobed, with 3 parallel fleshy ribs, the apical lobe often bifurcate, and the pollinia "bird-wing" type; The species is recognized by the sepals and petals bright green with the apex of the column and lip white, the sepals about 10 mm long, and the 3-lobed lip with the lobes of the mid-lobe longer than the ovate lateral-lobes of the lip which are slightly retrorse. *Epidendrum englerianum* has a lax, few-flowered inflorescence with the sepals and petals deep purple, the apex of the column and lip pink, though there is an albino form with green flowers and a white lip, sepals reflexed, 10-13 mm long, the base of lip deeply cordate, lateral lobes falcate-retrorse, wider between the lateral lobes than between the apical bilobed mid-lobe, and the lobes are proportionately shorter and wider, and the calli thin, prominent. *Epidendrum jasminosmum* Hágsater & Dodson has somewhat similar flowers, but plants are large to 70 cm tall, the leaves are elliptic (8-20 cm long), the inflorescence is a many-flowered panicle, and flowers are pale green turning yellow, the apical half of the column and lip white, strongly fragrant of Jasmin, the sepals are 10-13 mm long, the lateral lobes of the lip are sub-rectangular, slightly arching forward, and the bifid mid-lobe has long, falcate, oblong lobes, the width between the lateral and the mid-lobes about equal.

NOTE: We have decided to include the "alba" form of *Epidendrum englerianum* in this new entity. All collections of this green and white colored flowers come from the area between the Cordillera de Guacamayo and the lower part of the Reserva Ecológica Nacional Cayambe-Coca around Baeza and the Parque Nacional Sumaco Galeras on the southern slope. The typical purple and pink flowered *Epidendrum englerianum* is distributed in addition of the Napo to Tungurahua, where the type was collected.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Heinrich Gustav Adolf Engler (1844-1930), German botanist, editor of Botanischen Jahrbücher between 1880 and 1930, where the *Epidendrum englerianum* was published. His work is a standard reference for plant taxonomists. The ending *-oides* is the Latin suffix indicates resemblance, thus the specific epithet indicates resemblance with *Epidendrum englerianum*.

REFERENCES: Hágsater, E., & C.H. Dodson, 2001, *Epidendrum jasminosmum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 3, **Icon. Orchid.** 4: pl. 447. Santiago, E., & E. Hágsater, 2010, *Epidendrum englerianum* in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum,* Part 9, **Icon. Orchid.** 13: pl. 1328.



Authors: E. Hágsater, C. Uribe V. & A. Cisneros **LCDP: C. Uribe V. & A. Cisneros** **Photo: C. Uribe V.** **Editors: E. Hágsater & E. Santiago**

EPIDENDRUM ESCOBARIANUM Garay **Plate 1811**

EPIDENDRUM ESCOBARIANUM Garay, Orchid Rev. 75: 280, 1967.

Type: COLOMBIA: Valle del Cauca: Trujillo, 1700 m, 15 November 1967, ***Gilberto Escobar Restrepo 75***. Holotype: AMES! Isotype: JAUM!

Epiphytic, sub-caespitose, sympodial **herb**, 10-18 cm long. **Roots** 0.2-0.3 mm in diameter, basal, filiform. **Stems** 4-12.5 x 0.2-0.4 cm, simple, cane-like, laterally compressed, straight, producing new stems from several unpredictable basal internodes. **Leaves** 4-17, distributed throughout the stem, distichous, alternate, articulate, succulent, green with the dorsal surface marked with transverse red-purple bands, ventrally pale green, immaculate; sheaths 4-7 mm long, tubular, turning slightly infundibuliform when dry, minutely striated, marked with red-purple; blade 1.0-2.7 x 0.5-1.3 cm, ovate to ovate-lanceolate, apex acute to sub-acute, apical margin somewhat erose. **Spathe** 1, 17-25 x 8-12 mm (not spread), elliptic, apex obtuse, oblique, conduplicate, tan green tinged with red and changing color as it matures. **Inflorescence** 5 cm long including the flowers, apical, two-flowered, flowering only once, pendent, sub-sessile; peduncle 5 mm long, laterally compressed, totally hidden within the spathe. **Flowers** 2, resupinate, simultaneous, tan-green to greenish brown, tinged with red, the lip wine-red, lustrous, with the margin and the disc greenish tan; without fragrance. **Floral bracts** 3 mm long, much shorter than the ovary, triangular, acute, embracing, totally hidden within the spathe. **Ovary** 15-20 mm long, terete, base thin, gradually thickened towards the apex, forming a small, short ventral vesicle behind the perianth. **Sepals** 31-38 x 0.3-0.55 mm, spreading, narrowly linear-lanceolate, long-acuminate, 3-veined, margin entire, spreading; dorsal sepal free, lateral sepals obliquely united to the base of the column, oblique. **Petals** 31-36 x 1.0-1.5 mm, spreading, free, linear-filiform-triangular, acuminate, gradually narrowing from the base to the apex, 3-veined, margin entire, spreading. **Lip** 26-31 x 12-14 mm, united to the column, convex in natural position, base cordate, apically long-acuminate, margin entire; bicallose, the calli laminar, short, apex converging and prolonged into a thin mid-rib that reaches the acuminate apex; disc with radiating veins. **Column** 8-9 mm long, slightly arched upwards, thin. **Clinandrium-hood** prominent, slightly surpassing the body of the column, arching downward, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** very short, barely penetrating the ovary behind the perianth, forming a small vesicle, unornamented. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles soft and granulose as long as the pollinia. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: COLOMBIA: Cauca: Cultivada en Finca La Elvira, Vivero Angulorquídeas, Popayán, *Restrepo 460*, CAUP! **Valle del Cauca:** Las Juntas, 7000 ft, *Chesterton s.n.*, W 4345! Between Queremal and Anchicayá, 29 IV 1972, *Dressler 4178*, AMO! El Queremal, Cali-Buenaventura, pressed cult. 20 XII 1996, *Hágsater 11650*, AMO x2! (specimen and color slide of live flower, photo). Buenaventura, *Klaboch s.n.,* W 4345! El Queremal-La Elsa, 1390 m, 17 XII 2010, *Kolanowska s.n.*, UGDA. Restrepo, *Moreno s.n.*, CAUP! (LCDP voucher). El Queremal, vieja carretera de Cali a Buenaventura, 1700 m, 12 VI 1989, *Múnera 708B*, AMO! Calima, ca. 1600 m, VII 1980, *Ortiz Valdivieso 979*, HPUJ! (specimen & illustration). Restrepo: Distrito de Conservación de Suelos Cañón de río Grande. 1757 m ,17 I 2019, *Reina-Rodríguez 2933*, CUVC!

OTHER RECORDS: COLOMBIA: Without locality data, received 1 XI 1984, prepared 10 VII 1995, *J. & L. Orchids sub E. Hágsater 11390*, (flower in liquid, AMO) illustration, flower card and slide, AMO! Without locality, *Turkel s.n.*, digital image, AMO! (Photo voucher). Without locality data, Orquídeas Nativas de Colombia 2: 170, photo #180, *Robledo s.n.,* photo, AMO! Ibid. *Uribe s.n.*, digital photo, AMO! Without locality data, 2000-2500 m, *Duque 1284*, AMO! (photo) **Chocó:** Without locality data, *Sam Crothers s.n.*, digital photo, AMO! **Valle del Cauca:** Dagua, Valle del Cauca Colombia, 9 XII 2017, *Arango s.n*, digital image AMO! https://www.naturalista.mx/observations/33826003 Dagua, *Haelterman s.n.*, digital image, AMO! Carretera que conduce al Alto y Bajo Anchicaya, *Mora s.n.*, digital image, AMO! Queremal, ca. 2000 m, *Rincón-Useche s.n.*, digital image, AMO!

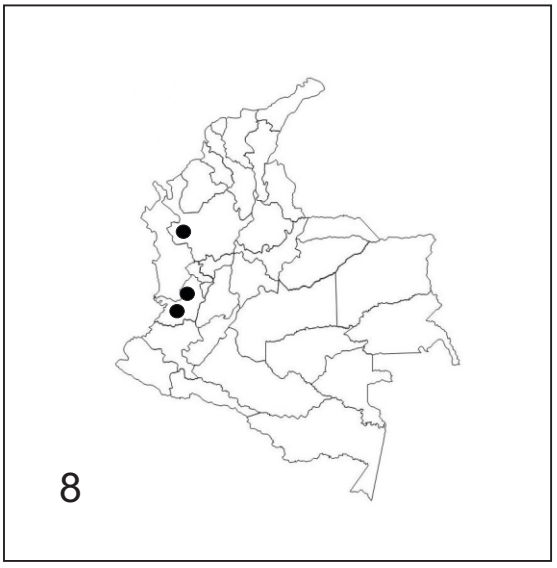
DISTRIBUTION AND ECOLOGY: Known from the Cordillera Occidental in Colombia, with only localities in Valle del Cauca confirmed to date; epiphytic, 1600-2500 m. Flowering from May to December and January.

CONSERVATION STATUS: VU. Vulnerable. Presently known its Extent of occurrence is 7,000 km2, hence is less than 20,000 km2 with less than 10 known localities. This species has collecting pressure. On the other hand, this area maintains high pressure on forests mainly due to agricultural and livestock expansion. Therefore, the proposed category is vulnerable, VU as sub-criteria B1ab(iii) applies (IUCN 2012). This attractive, large flowered species is cultivated extensively and has been available from propagated material for some years.

RECOGNITION: *Epidendrum escobarianum* belongs to the Megalospathum Group characterized by the caespitose but branching habit, many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathes, resupinate flowers, and the column more or less united to the lip, and the Tigriphyllum Subgroup which is characterized by the plants generally pendant and the leaves ovate to lanceolate, with purple-reddish transversal lines. The species is recognized by the pendent plants, ovate to ovate-lanceolate leaves with transverse reddish purple bands, the two-flowered inflorescence, the flowers green to greenish brown, the lip bright red, lustrous, and the floral segments long-acuminate, sepals 31-38 mm long. *Epidendrum tigriphyllum* Hágsater is vegetatively similar, but has 3-4 grayish green flowers, the lip sub-orbicular, vaguely-lobed, tinged pink, and the floral segments acute to obtuse, sepals 22-23 mm long. *Epidendrum posadarum* Hágsater has narrower leaves (3-8 mm wide), 2 small, pale green flowers dotted with red-violet towards the apex of the floral segments, the ovary forming a prominent vesicle, sepals and petals obtuse, 10-12 mm long, and the lip cordiform, obtuse.

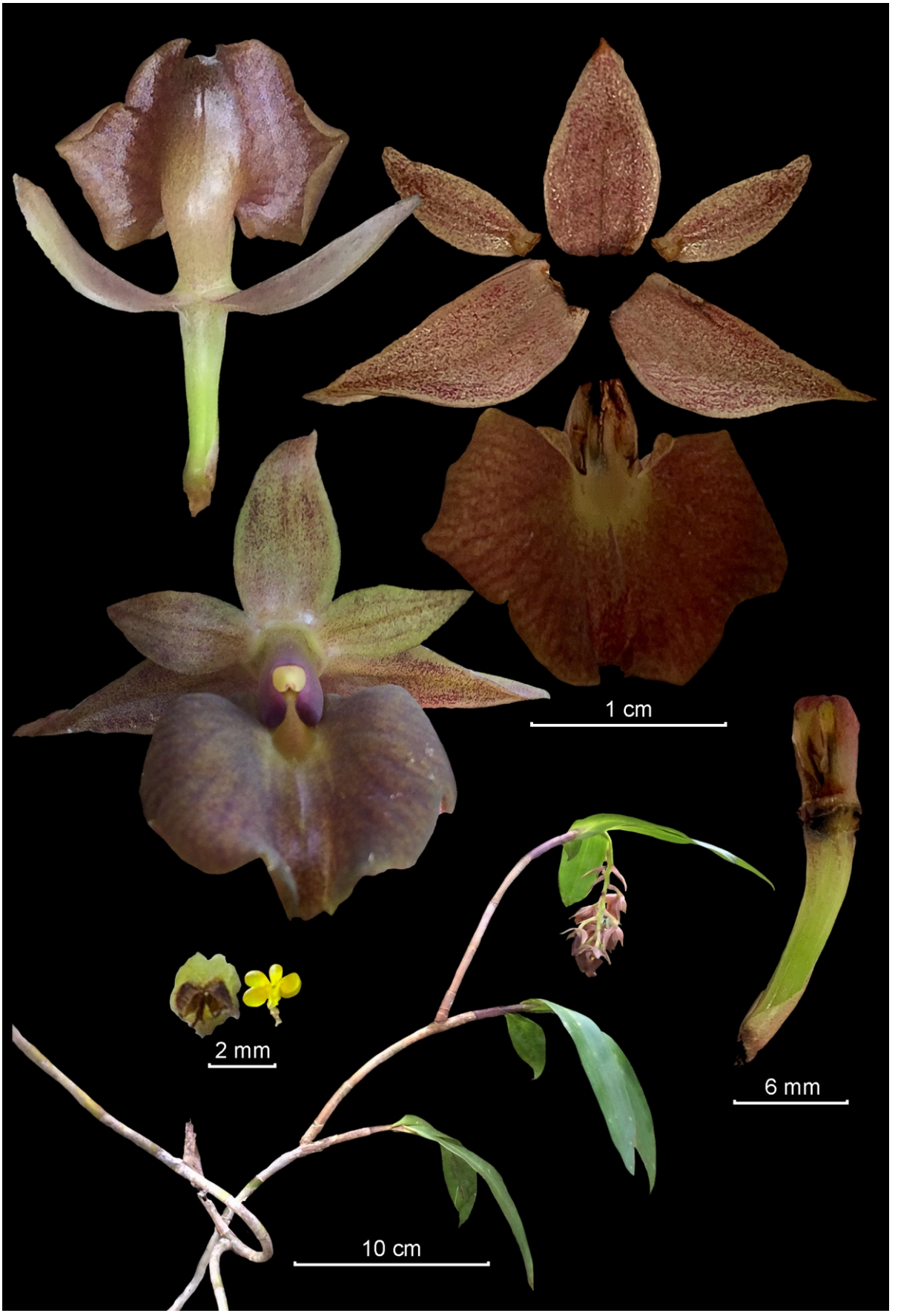
ETYMOLOGY: In honor of Gilberto Escobar Restrepo (1916-1988) of Medellin, an avid orchid collector and photographer, who collected the type.

REFERENCE: Escobar, R., 1991, *Epidendrum escobarianum*, **Native Colombian Orchids** 2: 170, photo 180, Ed. Colina, Medellín, Colombia. IUCN, 2012, **Red List Categories and Criteria**: Version 3.1. Second edition, Gland, Switzerland and Cambridge, UK; iv + 32 pp. Jenny, R., 2012, *Epidendrum escobarianum* Garay 1967, **Die Orchidee** 63(3): 1173-1174. Hágsater, E., 1999, *Epidendrum tigriphyllum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus Epidendrum, Part 2, **Icon. Orchid.** 3: pl. 387. Hágsater, E., 2001, *Epidendrum posadarum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus Epidendrum, Part 2, **Icon. Orchid.** 4: pl. 474.



Authors: E. Santiago & E. Hágsater **LCDP: J. S. Moreno** **Photo: M. Turkel** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1811**



EPIDENDRUM GONGORARUM Hágsater, Pfahl & Cisneros **Plate 1812**

EPIDENDRUM GONGORARUM Hágsater, Pfahl *et* Cisneros, *sp. nov.*

Type: COLOMBIA: Cundinamarca: Chía, 2/3 mi ESE of the peaje por la Carrera Séptima antes de Chía, Cerro del Oso, 2865 m, 2 septiembre 2020, ***Jay Pfahl s.n.*** Holotype: HPUJ! (LCDP voucher).

Similar to *Epidendrum platyglossum* Rchb.f. but floral bracts longer than the ovary, 7-15 mm long (vs. floral bracts shorter than the ovary, 5-7 mm long), longer inflorescence about 5-9 cm (vs. shorter inflorescence about 4 cm), sepals shorter, dorsal sepal 11-12 mm, lateral sepals 13.5-15 mm long (vs. sepals longer (dorsal 16 mm, laterals 20 mm long), dorsal sepal erect (vs. dorsal sepal reflexed), shorter petals (9 mm long) (vs. 16 mm long); lip shorter, 14 x 18.5 mm, sub-entire, with 1 low keel (vs. longer lip, 16 x 22 mm, 3-lobate, with 3 low keels), general form of the lip sub-reniform with margin sub-undulate (vs. lateral lobes of the lip ovoid, obtuse with margin undulate, mid-lobe obcunate, emarginated); column shorter, 6.9 mm (vs. column longer, 10 mm).

Epiphytic, sympodial, straggling, scandent, sub-erect **herb** 19-34 cm tall, the new stem produced from the middle of the previous stem. **Roots** 1.5-2.5 mm in diameter, basal from the primordial stem, and scarce at the base of some of the upper stems, fleshy, thick. **Stems** 12-15 x 0.2-0.5 cm, simple, cane-like, terete, sub-straight, the new stem originates from a middle internode of the previous stem; covered by tubular, non-foliar, papyraceous sheaths. **Leaves** 2-3, aggregate towards the apex of each stem, alternate, articulate, sub-erect, sub-coriaceous; sheath tubular, 1.7-3.0 x 0.2-0.5 cm, smooth; blade, 5.7-11 x 1.2-1.6 cm, oblong, acute, margin entire, smooth, medium green. **Inflorescence** 5-9 cm long, apical, from the mature stem, racemose, flowering only once, arching-nutant, compact, few-flowered; peduncle 1.5-3.5 cm long, laterally compressed, arching, unornamented; occasionally with a single bract 9-12 mm long, near the base, the bract narrowly elliptic, conduplicate, acute. **Floral bracts** 7-15 mm long, prominent, longer than the ovary and progressively shorter towards the apex of the inflorescence, triangular-lanceolate, long-acuminate, somewhat conduplicate, amplexicaul. **Flowers** 10-12, simultaneous, resupinate, sepals and petals green with copper spots, the veins are red or red brown with fine copper-brown spots over entire surface, denser over the veins, the apex of the column purple. **Ovary** 14 mm long, thick, terete, not inflated, unornamented, furrowed. **Sepals** partly spreading, free, acuminate, 4-veined, glabrous, fleshy, margins entire, spreading; the dorsal sepal 11-12 x 6.0 mm, ovate-elliptic, apiculate; the lateral sepals 13.5-15 x 6.0 mm, ovate, oblique, dorsal prominent high keel, aristate. **Petals** 9.0 x 3.5 mm, partly spreading, free, ovate, acute, oblique, 3-veined, glabrous, fleshy, lower margin denticulate, spreading. **Lip** 14 x 18.5 mm, united to the column, sub-entire, reniform, very fleshy, base deeply cordate, apex widely mucronate, forming a pair of rounded lobes, fleshy, disc concave in front of the column, margin sub-undulate, somewhat revolute, somewhat wider than long; ecallose, the disc with 1-low, wide, elongate rib terminating in the apical sinus of the lip. **Column** 6.9 mm long, thick, slightly upturned at the apex. **Clinandrium-hood** short, margin entire. **Anther** sub-ovoid, 4-celled. **Pollinia** 4, obovoid. **Rostellum** apical slit. **Lateral lobes of the stigma** 1/3 the length of the stigmatic cavity. **Nectary** penetrating half the ovary, not inflated, unornamented. **Capsule** ellipsoid, 5.3 x 1.5 cm, pedicel sub-sessile, 3 mm long, body 3.5 x 1.5 cm, with a 13 mm long apical neck.

OTHER SPECIMENS: COLOMBIA: Boyacá: Villa de Leyva, Capilla 2, Santuario de Flora y Fauna Iguaque, 2800-2900 m, 10 XII 2002, *Betancur 9828*, COL! HUA! Villa de Leyva-Arcabuco, vereda Dos Capillas, Santuario de Fauna y Flora de Iguaque, 2950 m, 14 XII 2002, *Betancur 9911*, COL! Santuario Flora y Fauna Iguaque, 2860 m, 10 XII 2002, *Parra-O 246*, COL! **Cundinamarca:** Subachoque: Alto del vino, a mano derecha de la carretera en la finca Friedmann, 2600-2700, 18 V 2008, *Farfán 1176*, FMB! Quebrada El Chicó, Macizo de Bogotá, between Quebrada de Rosales and Quebrada del Chicó, 3000 m, 19 VI 1960, *Hatheway 1099*, COL! Subachoque, vereda El Tobal, Finca EL Cerro, 2960 m, 13 III 1999, *Hernández 427*, COL! San Francisco: Alto del Vino, 2800 m, 1 III 2017, *Rincón 860*, JBB! **Distrito Capital:** Usaquén: Cerros Torca, Colegio Distrital Nuevo Horizonte, 2809, 29 VI 2017, *Fajardo 3407*, JBB!

OTHER RECORDS: COLOMBIA: Without locality, *Díaz s.n.*, digital imagen, AMO! **Cundinamarca:** Bogotá vía La Calera, Cerros Orientales, 12 IX 2007, *Farfán s.n.*, digital imagen, AMO! San Francisco, rec'd 10 V 2017, *Rincón*, digital images, AMO! **Boyacá:** Villa de Leyva-Arcabuco, 6 IX 2007, *Farfan s.n.*, digital image, AMO! (photo voucher). Santuario de Fauna y Flora de Iguaque, 2800 m, X 2006, *Farfán s.n.*, digital image AMO!

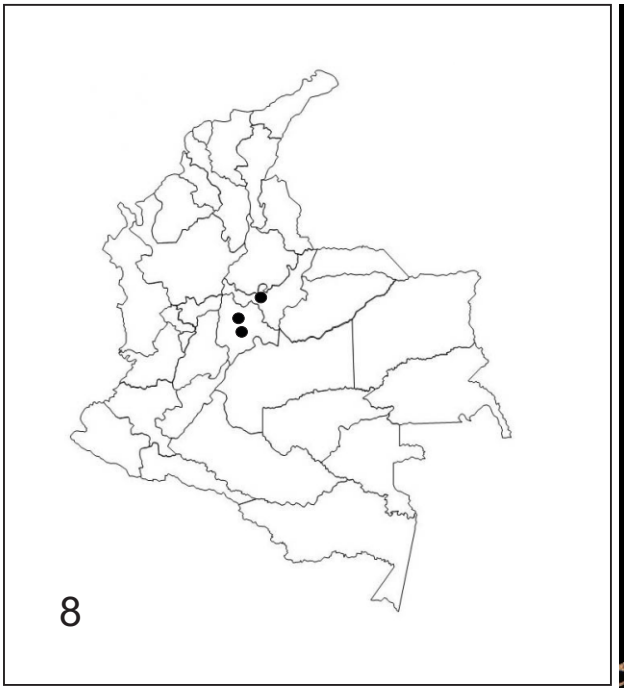
DISTRIBUTION AND ECOLOGY: Known only from the Cordillera Oriental of the Andes north of Bogotá, in Cundinamarca, Boyacá and Norte de Santander departments; epiphytic at 2600-2960 m altitude. Flowering from September to July.

RECOGNITION: *Epidendrum gongorarum* belongs to the Incomptum Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, the few leaves aggregate towards the apex of the stems, the roots generally only from the base of the primordial stem, and the short apical inflorescence with fleshy yellow-green to green to violet-green to black flowers with short ovaries, and the lip entire to 3-lobed. The new species is recognized by the arcuate stems, the green with copper-brown spotted flowers, the petals 3-veined, wide, the lateral sepals oblique, prominently awed with a dorsal keel, and the lip entire and reniform, fleshy, base deeply cordate, apex emarginate, slightly concave in front of the column, margin somewhat revolute, ecallose, the disc with a low, elongate rib running to the apical sinus of the lip. *Epidendrum pfahlii* Hágsater & Cisneros has straight, erect stems, short, oblong-lanceolate leaves, lateral sepals 17-20 mm long, longer petals, a 3-lobate lip, ecallose, disc with 3 low, narrow, parallel ribs, mid-lobe transversely rectangular, lateral lobes sub-orbicular, margin entire, revolute. *Epidendrum platyglossum* Rchb.f. has floral bracts shorter than the ovary, 3 flowers per raceme, sepals elliptic, 7-veined, dorsal sepal reflexed, larger (about 16 mm long), with a low dorsal keel, larger lateral sepals (20 mm long) and longer petals (16 mm long), a longer lip (16 x 22 mm), 3-lobed and a column about 10 mm long. *Epidendrum tamaënse* Foldats [illustrated by Foldats (1969), and Hágsater (2006)] has similarly large flowers, long floral bracts, wide, rhombic petals, and a deeply 3-lobed lip, with the lobes of the bilobed mid-lobe similar in size and shape to the lateral lobes.

CONSERVATION STATUS: DD. Data deficient.

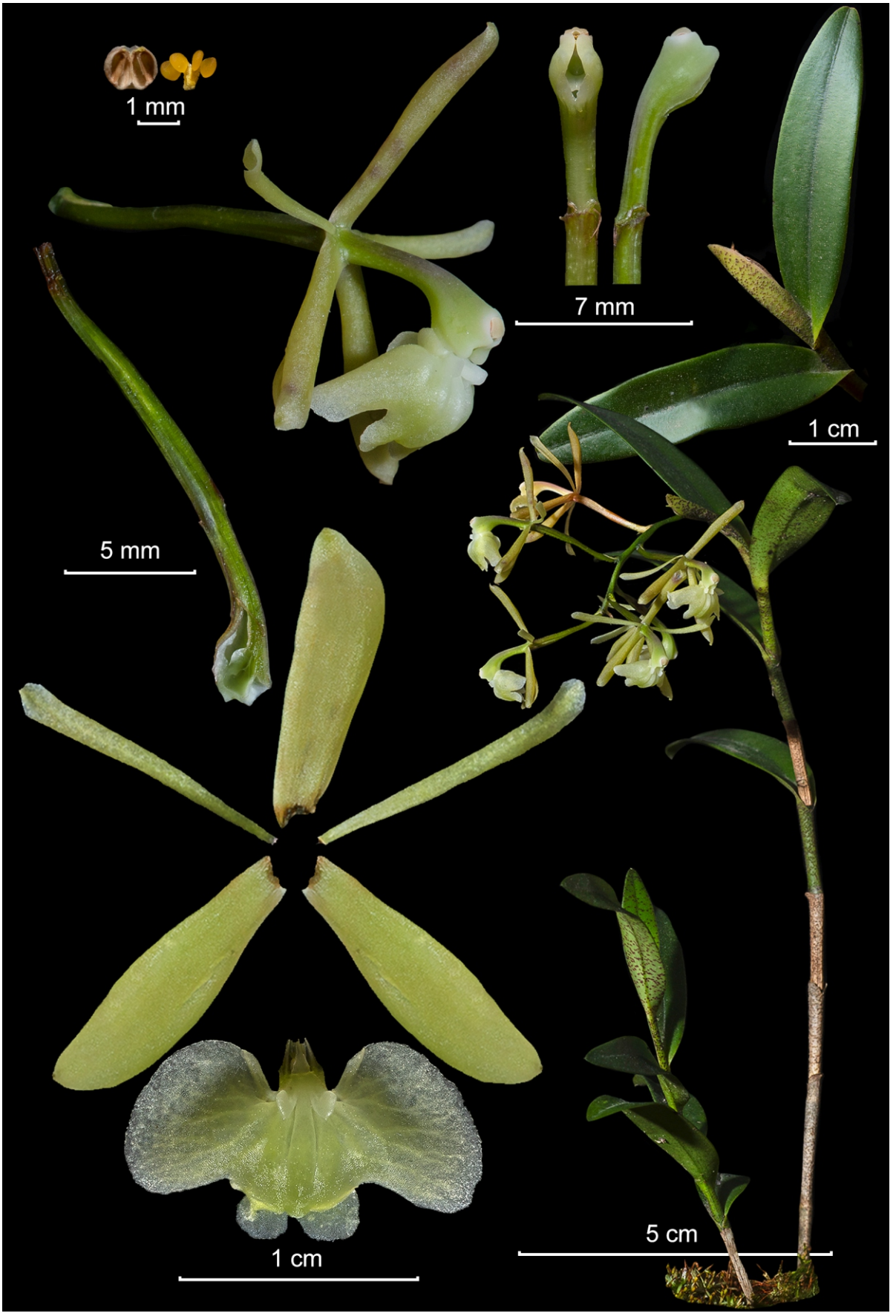
ETYMOLOGY: In gratitude of the Góngora family, the brother and sister in laws who lodged Jay Pfahl during the 2020 SARS-CoV-2 pandemic, in their country home in the Cerro del Oso, outside Bogotá, where he collected the type, together with the type of *Epidendrum pfahlii* Hágsater & Cisneros. Manuel Leopoldo Góngora (1953-) has planted some 20,000 orchids in his property, on a wooded slope of the Cerro del Oso, with old growth trees in a cloud forest with streams and waterfalls. Clara Inés Ávila Góngora (1962-), the sister in law, kept Jay and his wife healthy and happy in a safe place during the Pandemic.

REFERENCES: Hágsater, E., 2006, *Epidendrum tamaënse* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 9: pl. 891. Hágsater, E., 2007, *Epidendrum platyglossum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: pl. 974. Hágsater, E., & A. Cisneros, 2020, *Epidendrum pfahlii* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1830.



Authors: E. Hágsater, J. Pfahl & A. Cisneros **LCDP: J. Pfahl & A. Cisneros** **Photo: J. C. Farfán** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1812**



EPIDENDRUM GYGORUM Hágsater, E.Santiago & Cisneros **Plate 1813**

EPIDENDRUM GYGORUM Hágsater, E.Santiago *et* Cisneros, *sp. nov.*

Type: PERU: San Martín: Prov. Rioja: Distr. Pardo Miguel: sector Venceremos, 1766 m, Bosque de Protección Alto Mayo, 18 noviembre 2018, ***José Dilmer Edquén Oblitas 634***.Holotype: HURP! Isotype: UNACH!

Similar to *Epidendrum liguliferum* C.Schweinf. but the plant habit caespitose, the new stems arising from the base of the previous one (vs. plant erect, ascendant, new stem originates from a sub-apical internode of the previous stem), leaves, sheaths and spathe verrucose (vs. leaves and sheaths not verrucose, sheaths minutely striated), stems short, to 10.9 cm long (vs. stems long, 25-37 cm long), with a prominent spathe (vs. lacking any spathe), pluri-racemose, producing new racemes from the same peduncle years after year (vs. racemose, flowering only once), sepals 13 mm long (vs. sepals15.3-16.9 mm long), lip with lateral lobes obliquely reniform, somewhat retrorse (vs. lateral lobes of lip dolabriform, spreading, opposite), and calli small, sub-quadrate, sub-parallel, slightly converging (vs. calli 4-6 mm long, horn-like and digitiform, very prominent, divergent, wide-spreading).

Epiphytic, caespitose, sympodial, erect **herb**, 15-20 cm tall including the inflorescence. **Roots** 1 mm in diameter, basal, thick, fleshy. **Stems** 4.4-10.9 x 0.1-0.2 cm, simple, cane-like, terete, straight, the new stems arising from the base of the previous one, the basal 2/3 covered by tubular, non-foliar sheaths 1.5-3.2 x 0.2 cm, verrucose. **Leaves** 4-7, distributed along the apical 1/3 of the stem, sub-erect, articulate, unequal, progressively larger; sheaths 0.8-1.4 x 0.1-0.2 cm, tubular, verrucose, the warts brown; blade 2.0-15 x 1.3-2.7 cm, oblong-lanceolate, acute, sulcate, dark green above, somewhat paler and verrucose on the underside, margins entire, spreading. **Spathe** 1-2, 1.7-48 x 6.8 cm, imbricated, conduplicate, acute, verrucose; the spathes becoming fibrous and disappear after the first flowering so not present at second flowering. **Inflorescence** ca 5-7 cm long including flowers, apical, pluri-racemose, producing new racemes from the same peduncle year after year, on second flowering sometimes two racemes present simultaneously from same peduncle, arching-nutant, laxly few-flowered; peduncle and rachis ca. 1.6-1.9 cm long, arcuate, terete. **Floral bracts** 2.0-3.5 mm long, much shorter than the ovary, triangular-linear, acuminate. **Flowers** 6, simultaneous, resupinate, sepals pale green somewhat tinged brown, petals pale green, column green sometimes tinged purple towards the apex, lip pale green; fragrance not registered. **Ovary** 12-19 mm long, terete, longitudinally furrowed. **Sepals**12.5-16 x 3.6 mmwhen spread, free, spreading, fleshy, widely lanceolate-oblong, acute, 3-veined, margin entire, strongly revolute. **Petals** 12.5-15.8 x 1.3-1.6 mm in natural position, spreading, linear-oblanceolate, acute, membranaceous, 1-veined, margin entire, revolute. **Lip** 8.3 x 15 mm, united to the column, 3-lobed, strongly convex and side margins of lateral lobes strongly revolute in natural position, base cordate; bicallose, the calli small, sub-quadrate, sub-parallel, slightly converging, erect, laterally compressed and thus laminar, 3 low ribs that elongate to the apical sinus on the disc, disc fleshy thickened, especially the apical margin which separates the mid-lobe form the lateral lobes; lateral lobes 7.3 x 6.0 mm, obliquely reniform, somewhat retrorse, margin erose, strongly revolute; mid-lobe 2.1-2.5 x 5.0-5.8 mm, bilobed, lobes 2.1 x 2.6 mm, sub-quadrate, truncate, translucent, reflexed in natural position, margin erose, slightly revolute. **Column** 7.0-13 mm long, thinalong the basal 2/3, wider towards the apex, slightly arched. **Clinandrium-hood** reduced, margin entire. **Anther** spherical, unornamented, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles granulose, about as long as the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** small, occupying 1/3 of the length stigmatic cavity. **Nectary**deep, penetrating a 1/2 of the ovary, narrow, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: San Martín: hort. G Y G, Moyobamba; comprada a viverista de Nueva Cajamarca, del Bosque de Protección Alto Mayo, Centro Poblado La Florida, 23 III 2019, *Hágsater 16115*, digital images AMO! Hort. G Y G, Moyobamba; comprada a viverista en Nueva Cajamarca, del Bosque de Protección Alto Mayo, Centro Poblado La Florida, 23 III 2019, *Goicochea s.n.*, digital images, AMO! (LCDP voucher). Sector Zocre Organero, 1735 m, *Edquén s.n.* digital images AMO! (Photo voucher).

DISTRIBUTION AND ECOLOGY: Known presently from the Department of San Martín, in north eastern Peru, on the eastern slope of the Andes in forests on Andean tepuis. Flowering in November and March.

RECOGNITION:*Epidendrum gygorum* belongs to the new Gygorum Group which is characterized by the sympodial, caespitose habit, the sheaths, leaves' underside and spathe verrucose, the inflorescence apical, subtended by 1-2 prominent acute spathes, spathes only present and first flowering, pluri-racemose, producing new racemes from the same peduncle years after year, racemes few-flowered, the flowers with 3-lobed lip, strongly convex, the rostellum slit. The new species it recognized by caespitose habit, vegetative parts including the spathe verrucose, the widely lanceolate-oblong, acute sepals with strongly revolute margins, the lip deeply 3-lobed, lateral lobes obliquely reniform, somewhat retrorse, mid-lobe bilobed, and the arched column narrow along the basal 2/3, 7 mm long. In *Epidendrum liguliferum* the new stem originates from a sub-apical internode of the previous stem, flowers are green tinged brown, the disc of the lip and calli white, the is 3-lobed lip, lateral lobes dolabiform, spreading and opposite, with a pair of square lobes at the apex of the mid-lobe, with very prominent digitiform, divergent calli, and the ovary forms an elongate vesicle behind the perianth.

NOTE: The characteristic of all the vegetative parts heavily verrucose, including a prominent spathe is quite unusual. Verrucose sheathes are a distinguishing feature of the Oerstedella Group in *Epidendrum*, but they lack the spathe and instead of having a slit rostellum, there is a W shaped structure at 90° to the axis of the column, separating the stigmatic cavity from the clinandrium, and the pollinarium lacks a viscidium.

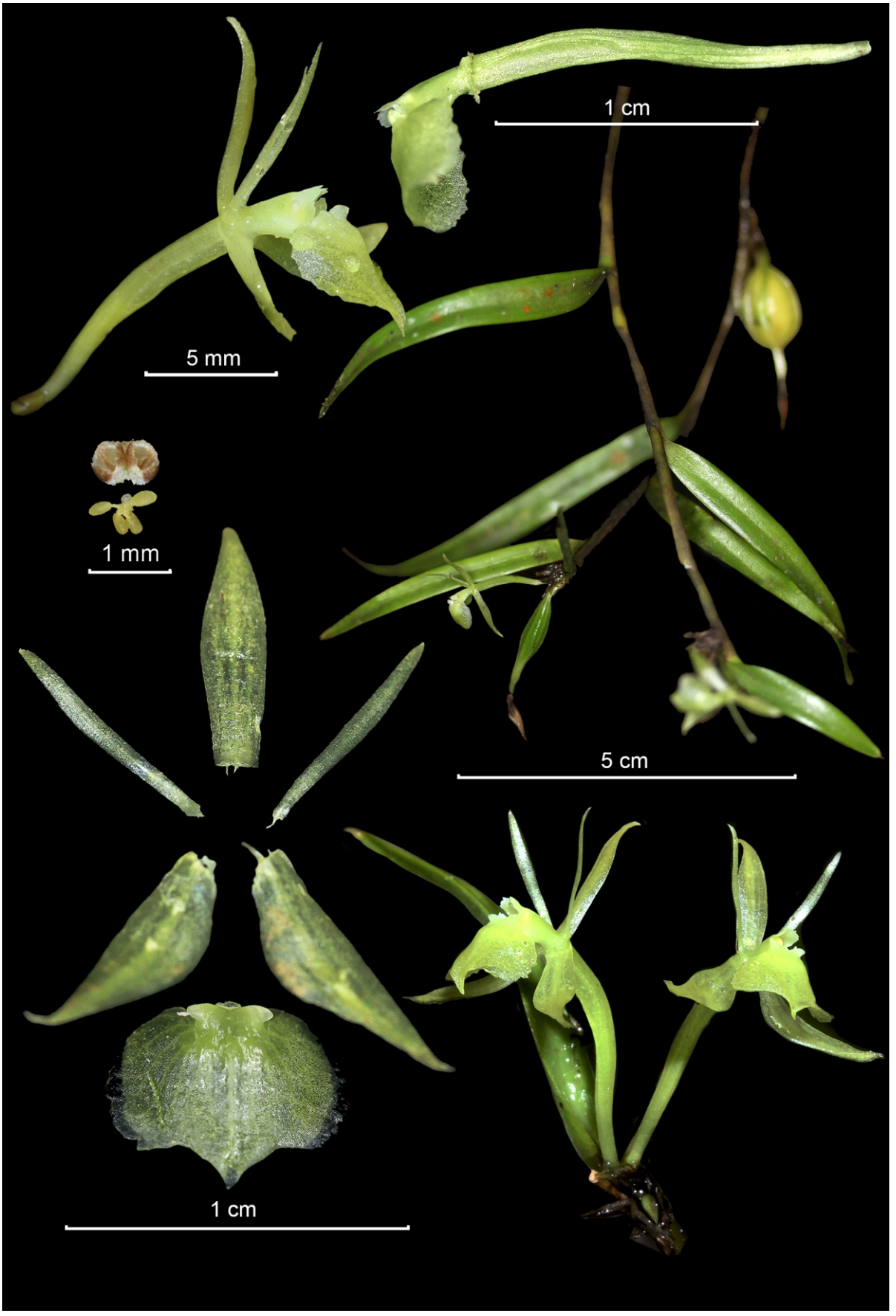
ETYMOLOGY: In honor of Astrid Domy Gutiérrez Ruiz (1984-) and Antonio Goicochea Rojas (1980-) who have formed the Corporación G Y G in Moyobamba, San Martín, Perú, to promote the propagation of native orchids, field trips and published a first list of the Orchids of Peru in November 2019.

CONSERVATION STATUS: DD. Data deficient. Known from a few collections.

ACKNOWLEDGMENT: Plants collected by José Dilmer Edquén Oblitas under permit N°006-2018-SERNANP-BPAM-JBPAM.

REFERENCES: Goicochea, A., Gutiérrez A., Ruiz A., & Salas G.M., 2019, Orquídeas de Perú: Relación de especies y sus sinónimos, pp. 288. Corporación G Y G in Moyobamba, Perú. Santiago, E., E. Hágsater & L.E. Yupanqui G., 2020, *Epidendrum liguliferum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(2): 1777.

Authors: E. Hágsater, E. Santiago & A. Cisneros **LCDP: A. Goicochea & A. Cisneros** **Photo: J. D. Edquén** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM HYALINILABRUM Hágsater, Reina-Rodr. & Cisneros **Plate 1814**

EPIDENDRUM HYALINILABRUM Hágsater, Reina-Rodr. *et* Cisneros, sp. nov.

Type: COLOMBIA: Valle del Cauca: Buenaventura: Reserva Forestal Nacional de los ríos Escalerete y San Cipriano, 150 m, 12 septiembre 2019, ***Guillermo Reina Rodríguez, Isabel Nicholls, Yerlin Hernández & Enrique Payán 3057.*** Holotype: CUVC! Digital images of pretype, AMO! (LCDP and Photo voucher).

Similar to *Epidendrum cuatrecasasii* Garay but leaves smaller, 2.9-5.3 x 0.4-0.5 cm (vs. leaves 3.8-11.5 x 0.3-1.3 mm), flowers smaller, sepals 7.0-9.0 mm long, 3-veined (vs. flowers larger, sepals 11 mm long, 5-veined); lip sub-orbicular with margin erose and hyaline (vs. lip sub-reniform with margin entire), and calli prominent, divergent, laminar, sub-quadrate (vs. calli small and thin).

Epiphytic, sympodial, caespitose **herb**, ca. 9.5-19 cm long. **Roots** basal, fibrous, terete. **Stems** ca. 7.3-15 x 0.3 cm, simple, cane-like, slightly laterally compressed, arcuate, pendent, all covered by foliar sheaths. **Leaves** ca. 4-5, distributed along the stem, alternate, articulate, grass-like; sheaths ca. 2.4 x 0.2 cm, tubular, slightly laterally compressed, minutely striated; blade ca. 2.9-5.3 x 0.4-0.5 cm, linear-lanceolate, acuminate, sub-erect, arched in natural position, coriaceous, margin entire, spreading. **Spathes** lacking. **Inflorescence** ca. 1.8 cm long, apical and lateral, apical pluri-racemose, sessile, successively few-flowered, 1-2 at a time, with a rosette of bracts. **Floral bracts** ca. 3.0 mm long, much shorter than the ovary, widely triangular, acute, embracing. **Flowers** few, successive, 1-2 at a time, resupinate, light green concolor; fragrance not registered. **Ovary** 15 mm long, thin, slightly inflated ventrally along the apical half, furrowed. **Sepals** 7.0-9.0 x 2.0-2.3 mm, free, membranaceous, spreading, acute; dorsal sepal lanceolate, margin entire, somewhat revolute; lateral sepals obliquely lanceolate, the outer margin straight, the lower margin curved, 3-veined, margin entire, spreading, with an apical dorsal keel. **Petals** 7.0-8.0 x 0.6 mm, free, membranaceous, partly spreading, linear, acute, 1-veined, margin entire, spreading. **Lip** 5.0 x 6.5 mm, united to the column, shallowly 3-lobed, sub-orbicular, base sub-truncate, lateral lobes semi-orbicular, the distant margin widely hyaline and erose, mid-lobe widely triangular, obtuse, small, somewhat revolute, margin entire, non-hyaline; bicallose, calli prominent, divergent, laminar, obliquely sub-quadrate, obtuse, leaning outwards, disc slightly thickened, with a low, narrow mid-rib nearly reaching the apex. **Column** 4 mm long, thick, somewhat arcuate, with a membranaceous obliquely truncate wing on each side, the distal margin entire. **Clinandrium-hood** prominent, surpassing the body of the column, margin erose-dentate. **Nectary** penetrating 2/3 of the pedicellate ovary, somewhat inflated in the pedicel, visible externally. **Anther** 4-celled, reniform. **Pollinia** 4, 0.4 mm long, ovate, laterally compressed, caudicles granulose; viscarium disk-shaped, semi-liquid**. Rostellum** not seen. **Lateral lobes of the stigma** not seen. **Capsule** 2.9-3.3 cm long; pedicel 8.6 mm long, thick, terete; body 1.0-1.2 x 0.3-0.9 cm, ellipsoid, furrowed, light green; apical neck 4.0-5.0 mm long.

OTHER SPECIMENS: COLOMBIA: Chocó: Nuquí, Jurubida, Serranía del Baudó, cerca de Morro Mico, quebrada Playa de Pedro, 50 m, 24 IX 1999. Betancur 8457, COL! HUA! Rio Baudó, Area of Baudó, on the right side of Rio, about 10 km upstream from the estuary, near Quebrada Paulita, 11 II 1967, Fuchs 22246, S! (mixed collection of several plants, specimens at COL! MO! US! correspond to *E. cuatrecasasii*) Bahía Solano, Serranía del Baudó, Río Nimiquía, 150 m, 01 I 1998, Misas 340, HPUJ! Río Baudó, Pizarro hacia La Porquera en los márgenes del río Baudó, 27 II 1967, Torres s.n., COL!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Distribution restricted to lowland areas (50-200 m altitude) in the Chocó biogeographical region with rainfall of ca. 7000 mm per year in the life zone of Tropical Wet Forest (Bmh-T) (Holdridge 1987) and annual average temperature of 26.1°C. Extent of occurrence estimated is 7560 km^2**.**

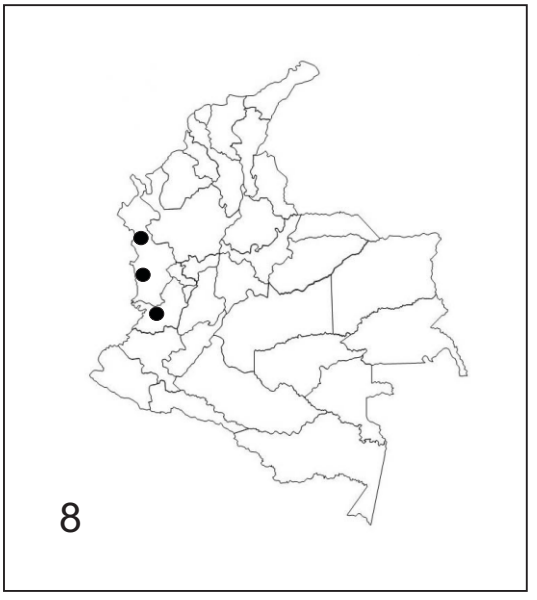
RECOGNITION: *Epidendrum hyalinilabrum* belongs to the Cuatrecasasii Group characterized by the caespitose habit, the fleshy coriaceous narrow leaves on simple stems, and the apical and lateral sessile inflorescences with successive flowers. The new species is recognized even without having flowers, it can be recognizable by the size of the plant to 19 cm tall, and by the smaller, 2.9-5.3 x 0.4-0.5 cm, linear-lanceolate, acuminate, coriaceous leaves, but in flower is characterized by the few flowered inflorescence, successive flowers, 1-2 open at a time, having both apical and lateral inflorescences that are sessile with non-floral bracts, an ovary about 15 mm long, the sepals and petals membranaceous, sepals about 7.0-9.0 mm long, dorsal lanceolate, lateral sepals oblique, the shallowly, sub-orbicular lip with a widely triangular mid-lobe, distal margin of the lateral lobes erose and hyaline, and the column about 4 mm long with a prominent erose-dentate clinandrium hood. *Epidendrum cuatrecasasii* Garay is larger overall, stems to 40 cm tall, leaves 3.8-11.5 x 0.3-1.3 cm, twice the size, sepals 11 mm long, an ovary about 16-23 mm long, sepals oblanceolate and rounded, a sub-reniform lip with margin entire, and a 6 mm long column.

NOTE: These two species are often confused with species of the Difforme Group, but the lateral and apical sessile inflorescences with successive flowers immediately place them in a subgroup of their own, which we hereby propose as the Cuatrecasasii Subgroup. A molecular sampling for comparison with other *Epidendrum* species would be desirable, to confirm what the closest species are.

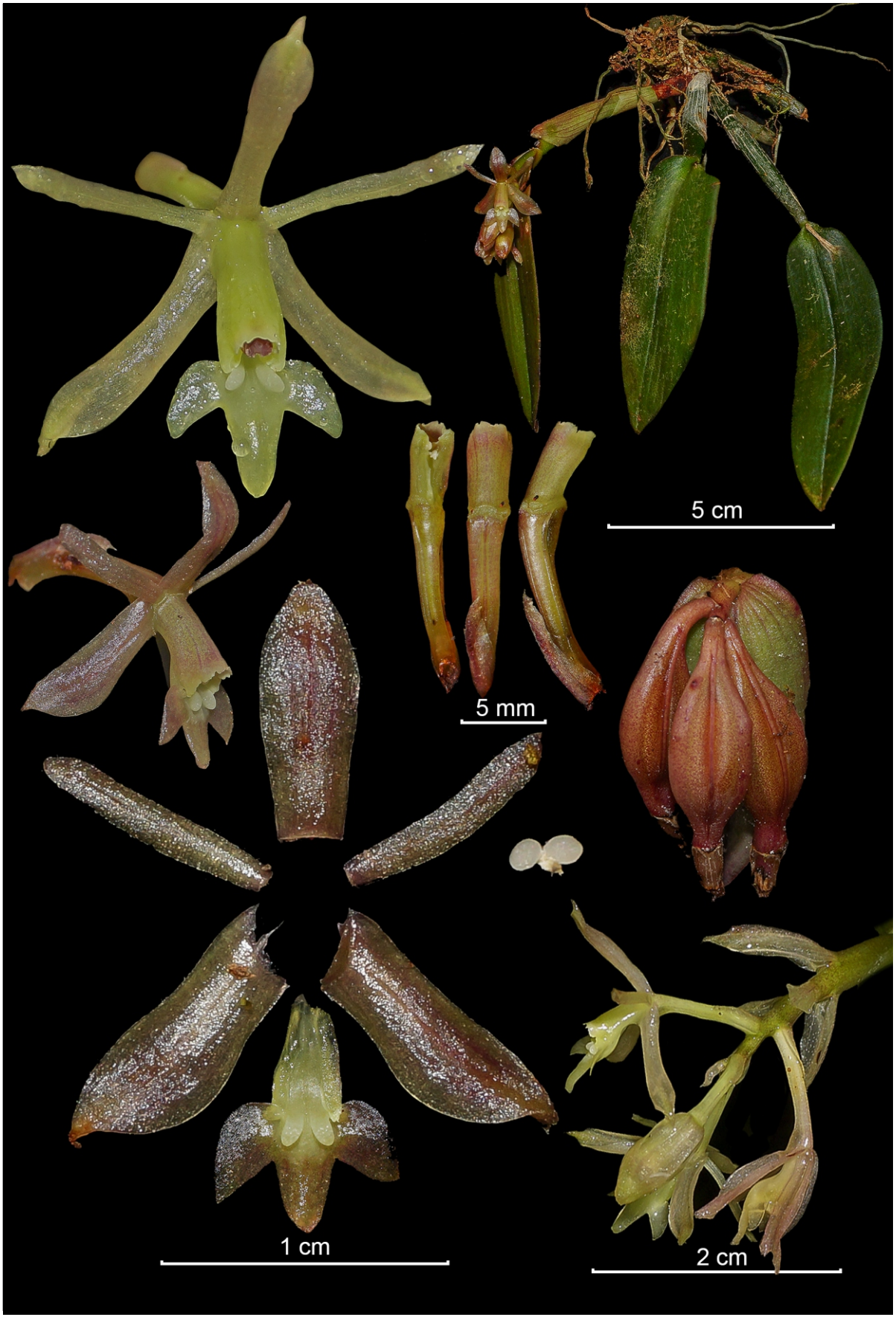
CONSERVATION STATUS: VU (Vulnerable). Extent of occurrence estimated to be less than 20,000 km^2. It complies with Criterion VU B1ab(iv)

ETYMOLOGY: From the Latin hyalinus, hyaline, a thin and transparent film, and labrum, lip. In reference to the wide, hyaline margin of the lateral lobes of the lip which is quite unusual in *Epidendrum*.

REFERENCES: Hágsater, E., E. Santiago & L. Sánchez S., 2006, *Epidendrum cuatrecasasii*, in E. Hágsater & L. Sánchez S., (eds.) **Icon. Orchid.** 8: pl. 824. Holdridge, L., 1987, Ecología basada en zonas de vida. IICA. San José. Costa Rica, 216 pp. IUCN, 2012, **IUCN Red List Categories and Criteria:** Version 3.1. Second edition. iv + 32 pp. Gland, Switzerland and Cambridge, UK.



Authors: E. Hágsater, G. A. Reina R. & A. Cisneros **LCDP: G. A. Reina R. & A. Cisneros** **Photo: G. A. Reina R.** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM JAJENSE Rchb.f. **Plate 1815**

EPIDENDRUM JAJENSE Rchb.f., Bonplandia 2: 20, 1854.

Type: VENEZUELA: [Mérida] Jají: ***Wagener s.n.*** Holotype: W-R 52183! Synonym: *Epidendrum breviracemum* C.Schweinf. Type: PERU: Junín: Prov. Tarma, Agua Dulce, 12 March 1948, ***Felix Woytkowsky 35456***, Holotype: AMES! Isotypes: UC! MO!

Epiphytic, sympodial, caespitose **herb**, [5]9-10 cm tall. **Roots** basal fleshy, thin. **Stems** 2.0-4.5 x 0.5-0.6 cm, slightly thickened, forming fusiform pseudobulbs, erect, covered at the base by 2-3 bracts 1.0-2.4 x 0.5-0.7 cm, tubular, imbricated, green with red veins when fresh, becoming scarious and fibrous through time. **Leaf** 1, apical, articulate, erect, coriaceous, upper side dark green with the parallel veins clearly marked white and the underside reddish purple; blade [1.7]5.0-6.3 x 1.2-1.9 cm, sessile, oblong-elliptic to elliptic, obtuse, margins entire, spreading. **Spathe** lacking. **Inflorescence** 2.8-3.5 cm long including the flowers, apical, racemose, straight, densely few-flowered; peduncle 1.0 cm long, terete, straight, thick, without bracts; rachis 1.0 cm long, totally hidden by the flowers. **Floral bracts** 3.0-7.8 mm long, shorter than the ovary, triangular, acuminate, embracing. **Ovary** 9-13 mm, terete, thin, inflated ventrally behind the perianth, furrowed. **Flowers** 3-7, simultaneous, the lip always facing the axis of the inflorescence, greenish yellow tinged pink to rarely pink (nearly concolor); fragrance none registered. **Sepals** spreading, free, dorsally with a low keel, acute, 3-veined, margin slightly revolute and thus semi-tubular; dorsal sepal 9.5 x 3.0-3.6 mm, oblanceolate; lateral sepals 11 x 4 mm, elliptic, oblique. **Petals** 8.8-9.0 x 1.2 mm, spreading, free, linear, obtuse, 1-veined, margins entire, spreading. **Lip** 4.4-6.0 x 5-6 mm, united to the column, deeply 3-lobed, base slightly cordate, margins entire; bicallose, the calli digitiform, slightly divaricate; lateral lobes 4.0 x 2.2 mm, obliquely ovate, acute; mid-lobe 2.3-3.0 x 2.0-2.5 mm, oblong, obtuse. **Column** 5 mm long, thin, slightly arched, apex with a pair of short lateral wings quadrate, forming a half tube with the clinandrium-hood, apex truncate. **Clinandrium** short, tubular, margin erose. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed, white; caudicles much shorter than the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** penetrating the ovary behind the perianth, slightly inflated, unornamented. **Capsule** 4.2 x 1.3 cm, ellipsoid; pedicel 7 mm long, body 2,5 x 1.3 cm, apical neck 1.0 cm long.

OTHER SPECIMENS: VENEZUELA: Lara: 3-6 Km al sur de Agua Negra, 17-20 km al este de Cubiro, 1600-1800 m, 5 VII 1974, *Steyermark 110294*, VEN! **Mérida:** Jají, *Funck 1198*, W 52182! Umgebung von La Trampa, NW von Lagunillas, 2000 m, 6 XI 1953, *Renz 8088*, RENZ! **Táchira:** Las Delicias, 1900 m, 30 VI 1959, *Renz 7125*, RENZ! Umgebung von Las Delicias, Weg Wash Regon Bahía, 1900 m, 2 IX 1951, *Renz 7316*, RENZ! **Trujillo:** Weg Escuque-Alto del Tornon, Passhohe, 12 X 1947, *Renz 4464*, RENZ! **COLOMBIA: Antioquia:** Mun. Envigado, Parque Regional Arví, Vereda El Plan, Finca la ECA, 24 II 2007, *Benavides 4048*, HUA! Mun. Yarumal, km 100 Medellín-Yarumal, El Manicomio, 2500 m, 12 IX 1984, *Dodson 15273*, MO! Mun. Medellín, Parque Ecológico Piedras Blancas, sector Lajas, 2350 m, 10 XII 1994, *Fonnegra 5322*, HUA! Yarumal, bajando a Ventanas, 2100 m, 26 III 1996, *Hágsater 11683*, AMO! (slide, AMO) Cerro de Frontino, 1800 m, 23 X 1984, *Lehmann 4159a*, G! Cerro Frontino, 1800 m, *Ortiz 404*, HPUJ! (xerox of illustration AMO!) Mun. San Andres Cuerquia, Vda. El Cedral, Finca de Don Félix, 2400 m, XI 2013, *Velásquez 13*, JAUM! **Boyacá:** Macanal, Vereda Peña Blanca, 2062 m, 7 VI 2018, *Orozco 584*, HUA! Villa de Leyva, 2700 m, VII 1969, *Ortiz 268*, HPUJ! **Cundinamarca:** Monte Redondo, 1650 m, 16 XII 1950, *Schneider 534*, COL! **Tolima:** Mun. Villarica, vereda La Colonia, bosque de Galilea, oriente de Tolima en límites con Cundinamarca, 2000 m, *Rincón 1429*, TOLI! **ECUADOR: Carchi:** above Maldonado, 2200 m, 25 II 1992, *Dalström 1570*, SEL! **Loja:** San Pedro de Vilcabamba, 2400 m, 23 IV 1983, *D'Alessandro 640,* MO! Bei Las Juntas, 7000 ft, 27 VIII 1978, *Lehmann s.n.*, W 62219! Above San Pedro, 2500 m, 1 IV 1984, *Höijer 801*, QCA! SEL! **Morona Santiago:** Sigsig-Chiguinda road, 2500 m, 11 VIII 1990, *Hirtz 5066*, SEL! **Zamora Chinchipe:** above the Río Quebrada Honda, 2 km from km 10, Valladolid to Yangana, 2100-2200 m, 27 III 1986, *D'Alessandro 574*, SEL! Quebrada Honda, 1700 m, 4 V 1982, *Dalström 182B*, SEL! San José, Amazonas, Gualaquiza, 1780 m, 4 V 1986, *Suin 52*, HA! area of Estación Científica San Francisco, road Loja-Zamora, ca. 35 km from Loja, Quebrada San Ramón, 1900 m, 9 VIII 2005, *Werner 1747*, AMO! (digital photos, AMO!) **PERU:** Without locality; cultivated at Ecuagenera El Pangui Facility, 8 VII 2007, *Hirtz 8347*, SEL! **Amazonas:** Chachapoyas, Distrito: Granada, Comunidad campesina de Diosán, 3168 m, 20 III 2017, *Edquén 545*, HURP! digital photo series, AMO! (LCDP voucher). ca. 12-18 trail km E of La Peca in Serrania de Bagua, 1800-1950 m, 14 VI 1978, *Gentry 22924*, MO! USM! Kuelap Fortress and surrounding, 3000 m, 16 V 2001, *Henning 253*, USM! Kuelap, cult. Ecuagenera, Cuenca, Ecuador, 2800 m, 8 IX 1999, *Portilla sub Hágsater 12277*, AMO! Bongara, 1500-1750 m, 11 V 1981, *Young 488*, MO! **Cusco:** Pillahuata, 2500 m, 1 I 1994, *Moscoso 931D*, MO! CUZ! Urubamba, entre Panpacahua y arriba de Pachachaca has el km 107 en el Santuario Histórico de Machu Pichu, 2380 m, 21-28 IX 1988, *Núñez 9915*, MO! Sapan-Sachayocc, 5 III 1942, *Vargas 2536*, CUZ! Machu Picchu, 9-10 III 1944, *Vargas 4122*, AMES! CUZ! Machu Picchu, 2250 m, 12 IV 1963, *Vargas 14379*, CUZ! **Huanuco:** Puerto Inca, Tahuantinsuyo, Reserva Comunal el Sira, 1400 m, *Valenzuela 27807*, HOXA! Muna, 9 III 1959, *Woytkowski 5224*, MO! **Pasco:** Oxapampa, vivero JBM, 1830 m, 7 II 2007, *Becerra 1455*, USM! Zona de amortiguamiento del Parque Nacional Yanachaga-Chemillén, sector San Daniel, 2362 m, 20 II 2011, *Briceño 814*, HOXA! La Suiza Nueva, 2210 m, *van der Werff 19922*, HOXA! MO! Distr. Huancabamba, Parque Nacional Yanachaga-Chemillén, Sector San Daniel, 2363 m, 25 II 2008, *Vásquez 33650*, HOXA! Sector Suiza baja, 2190 m, *Velita 48*, HOXA! **BOLIVA:** (cited by Vásquez & Ibisch, 2004) **Cochabamba:** Chapare: El Sillar, 100 km de Chochabamba a Villa Tunari, 1880 m, 20 II 1978, *Vásquez 6*, LPB. (copy of illustration AMO!) Ibid. 23 III 1981, *Vásquez 605*, LPB. Ibid. 29 I 1984, *Vásquez 878*, LPB. **La Paz:** Sud Yungas: Huancané, 7.5 km S, 2410 m, 0 III 1980, *Beck 3197*, LBP. Nor Yungas, Parque Nacional Cotapata, 2400 m, *Krömer 1158*, LBP.

OTHER RECORDS: ECUADOR: Without locality data, *Yong s.n.*, digital photo, AMO! **Loja:** Loxa, W 34757! **Zamora Chinchipe:** Estación Científica San Francisco, road Loja-Zamora, ca. 35 Km from Loja, 1850 m, 12 I 2004, *Werner 758*, digital photo, AMO! **COLOMBIA: Boyacá:** Macanal, *Daza s.n.*, digital photo, AMO! Sur de Boyacá, Garagoa, 2400 m, 5 IX 2018, *Espinoza s.n.*, digital photo, AMO! Ibid. Bosque zona cercana a Serranía del Peligro, 2100 m, 9 IV 2020, *Mojvanegas s.n.*, digital image, AMO! **PERU:** Without locality data, *Harding s.n.*, digital photo, AMO! **Amazonas:** camino Jumbilla-Asunción, km 32 desde carretera Fernando Belaunde Terry, Vilcaniza, antes de cascada Chorro Negro, 2539 m, 17 III 2019, *Hágsater 16095*, digital photo, AMO! Kuelap, cult. Ecuagenera, Cuenca, Ecuador, 2800 m, 8 IX 1999, *Portilla sub Hágsater 12277*, digital photo, AMO! Kuelap, 16 II 2009, *Morón s.n.*, digital image, AMO! Leimebamba, *Salas s.n.*, digital photo, AMO! **Cajamarca:** San José de Lourdes; cerca del Crucero, caserío Villa Rica, 1650 m, *Rimarachin s.n.*, digital photo, AMO! **Cusco:** La Convención, 2000 m, *Soras s.n.*, digital photo, AMO! (Photo voucher). **Junín:** Selva Central, 21 III 2015, *Morón s.n.*, digital photo, AMO! San Ramón-Yanango, 1300 m, 26 II 2009, *Morón s.n.*, digital image, AMO! **San Martín:** Prov. Rioja, Distr. Pardo Miguel Naranjos, sector Venceremos, 1952 m, 6 II 2018, *Edquén 49*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Epiphytic, in wet forests at 1300-2540[3000] m. Flowering throughout the year.

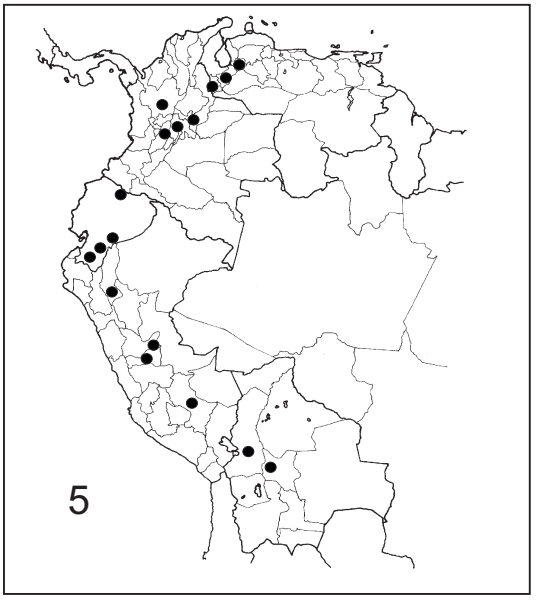
RECOGNITION: *Epidendrum jajense* belongs to the Jajense Group which is characterized by the caespitose plants with thickened stems, a single sessile leaf the upper side dark green with the veins marked white, short racemose or sub-umbellate inflorescence with or without a spathe, with compact flowers, the lip always facing towards the axis of the raceme. *Epidendrum jajense* is recognized by the greenish yellow tinged pink to pink flowers, sepals 9.5-11 mm long, the margins revolute and thus semi-tubular, linear petals and the lip deeply 3-lobed, the lateral lobes obliquely ovate, narrow, with the apical corner acute, and the mid-lobe oblong, the apex obtuse. *Epidendrum unifoliatum* Schltr. is vegetatively similar, but the inflorescence has a tubular spathe covering nearly the whole peduncle, and the 3-lobed lip has wide lateral lobes, and the mid-lobe is sub-quadrate with the apex emarginate.

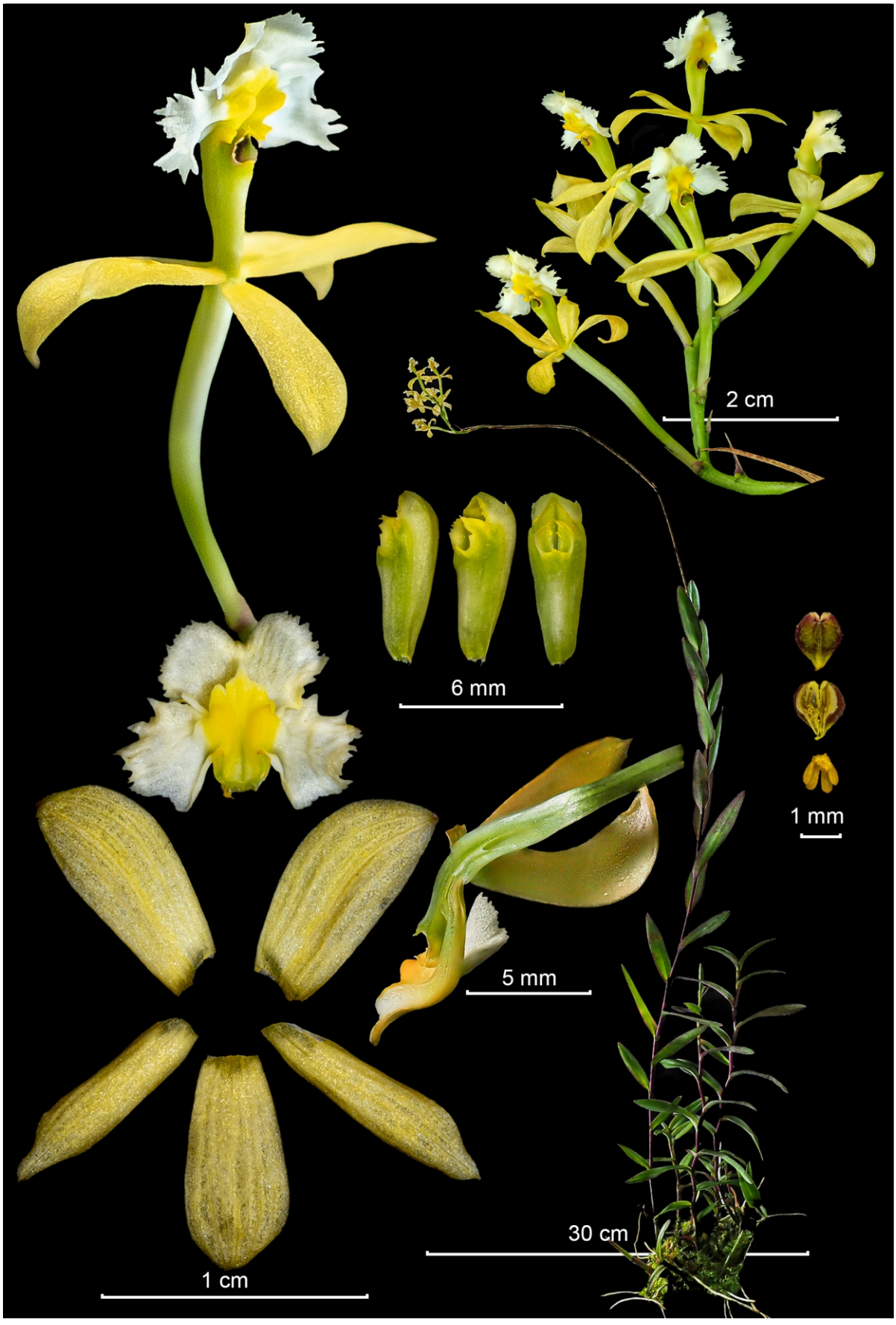
CONSERVATION STATUS: NT. Not threatened, as the species is widespread from western Venezuela to central Bolivia, and there are numerous localities from where it has been reported.

ETYMOLOGY: The specific epithet refers to the town of Jají, in the state of Mérida, Venezuela, where the type was collected.

ACKNOWLEDGMENT: Collections made under project "Efecto de la fragmentación de hábitats de bosque alto andino en diversidad y distribución de las familias Orchidaceae y Bromeliaceae, del anexo de Diosán, distrito de Granada-Amazonas, 2018" emitido bajo el Permiso 01 SERFOR: RESOLUCIÓN DE DIRECCIÓN GENERAL Nº 137-2018-MINAGRI-SERFOR/DGGSPFFS, con Código de Autorización Nº AUT IFL-2018-025.

REFERENCES: Vásquez, R., & P.L. Ibisch, 2004, **Orquídeas de Bolivia** 2: 123, 152 Fotos 49-50. Santiago, E., & E. Hágsater, 2020, *Epidendrum unifoliatum*, in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl.1846.





EPIDENDRUM KATARUN-YARIKU Hágsater & Wrazidlo **Plate 1816**

EPIDENDRUM KATARUN-YARIKU Hágsater & Wrazidlo, Phytotaxa 472(1): 33-40.

Type: VENEZUELA: Bolívar: Gran Sabana, Macizo del Chimantá, sector SSE, Altiplanicie suroriental del Acopán-tepuí, cabeceras del Río Arauác, 1920 m, 14 February 1984, ***Julian A. Steyermark, J. L. Luteyn & Otto Huber 129987.*** Holotype: VEN! Isotype: MO!

Lithophytic or terrestrial, sympodial, caespitose **herb**, 23-300 cm tall including the inflorescence. **Roots** 1-2 mm in diameter, basal, terete, fleshy, thin, white. **Stems** 6-48 x 0.3-0.5 cm, simple, cane-like, slightly sinuous, terete to slightly compressed towards the apex, thin, covered by foliar sheaths. **Leaves** 6-24, distichous, distributed throughout the stem; sheaths 0.8-2.8 x 0.3-0.5 cm, tubular, smooth, green tinged wine red, papyraceous and scarious when dry; blades 3.2-8.0 [10.5] x 0.7-2.0 [2.6] cm, narrowly elliptic-lanceolate to ovate-oblong, articulate, apex obtuse to rounded, narrowly bilobed, coriaceous, smooth, green, margins entire, spreading. **Spathe** lacking. **Inflorescence** 19-75 cm long, racemose becoming pluri-racemose, producing new racemes over time from the upper nodes of the peduncle; peduncle 17-70 cm long, elongate, green, covered by several tubular bracts 5.9-6.9 cm long, yellow with brown dots, scarious when dry, striated, papyraceous, imbricated, acute; rachis 2.0-8.5 cm long. **Floral bracts** 4-7 x 2.0-2.5 mm, progressively smaller, much shorter than the ovary, triangular, acuminate. **Flowers** up to 17 or more, successive, with up to 6 open at any time, non-resupinate, sepals and petals yellow, lip white to pale yellow, callus yellow, column pale green, anther green tinged brown along the sides, becoming totally brown with age; fragrance none. **Ovary** 16-20 mm long, terete, thin, not inflated, pale green, darker towards the base, furrowed. **Sepals** 8.3-9.1 x 3.3 mm, spreading, the apical half becoming somewhat revolute as the flower ages, oblong-obovate, the outer margin nearly straight, apex obtuse, slightly apiculate, 7-veined, margin entire, spreading; lateral sepals oblique. **Petals** 9.1-10.0 x 2.5 mm, spreading, the apical half becoming somewhat revolute as the flower ages, oblanceolate, acute, 5-veined, margin entire, somewhat revolute. **Lip** 7.3 x 9.6 mm, united to the column, more or less flat in natural position, deeply 3-lobed, base deeply cordate; callus massive, fleshy, thick, with a total of 7 tubercles, the platformed formed by 5 unequal tubercles merged at the base, the central body formed by 3 tubercles, the middle part longer and prolonged into a low, short mid-ridge with a pair of lateral shorter tubercles, one on each side of the main body, slightly divergent, and two more, short elevated somewhat laminar, obliquely triangular, the apex rounded and then somewhat concave below, so as to be nose-shaped, placed atop the base of the lateral tubercles of the main body; lateral lobes 3.2 x 4.3 mm, the distal lateral margin superposed over the edge of the mid-lobe, sub-orbicular, lateral margins erose, distal margin irregularly erose-dentate; mid-lobe 3.7 x 6.3 mm, bilobed, the lobes sub-orbicular, apical sinus somewhat mucronate, margin irregularly erose dentate. **Column** 6.3 mm long, straight, terete, slightly thickened towards the apex, with a pair of fleshy, yellow lateral lobes, recurved in front of the column, the apex rounded to truncate, margin entire. **Clinandrium hood** reduced, narrow, margin irregularly dentate. **Anther** cordiform, apex acute, laminar, surface rugose, 4-celled. **Pollinia** 4, narrowly obovate, elongate, laterally compressed; caudicles longer than the pollinia, soft and granulose, like a pile of roof-tiles; viscarium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** occupying 1/4 of the length of the stigmatic cavity. **Nectary** deep, penetrating half the pedicellate ovary. **Capsule** ellipsoid, 38 mm long (immature), pedicel 6 mm long, body 20 mm long, apical neck 12 mm long.

OTHER SPECIMENS: BRAZIL: Amazonas: Santa Isabel do Rio Negro, Igarapé Cuiabixi, P.N. do Pico da Neblina, 2060 m, 20 IX 2020, *Forza 7189*, RB! **VENEZUELA: Amazonas:** Rio Negro: Neblina Camp 10; 12.5 km NNW of Pico Phelps, 16.25 km NE of Base Camp, 1670-1690 m, 12 II 1985, *Boom 5758* VEN! Ibid. 13 II 1985, *Boom 5849*, NY! VEN! Atabapo: Cerro Duida, Campamento 3, 2140 m, 21 XI 1991 *Fuentes 1263*, VEN! Atabapo: Plateau of Cerro Huachamacari, 1720 m, 1 III 1985, *Liesner 18122*, MO! VEN! Rio Negro: Cerro Aracamuni, summit, Proa camp, 1400 m, 25 X 1987, *Liesner 22453*, MO! VEN! Cerro Huachamacari, Río Cunucunuma. cumbre W of Caño de Dios, 1800 m, 14 XII 1950, *Maguire 30238*, NY! **Bolívar:** Macizo del Chimantá, sector sur-occidental. Cumbre meridional del Amurí-tepuí; altiplanicies levemente inclinadas hacia el sur y sureste, en las cabeceras del Río Aparurén, 2100 m, 4 III 1986, *Huber 11425*, VEN! Macizo del Chimantá, sector occidental. Brazo sur del Acapará-tepuí, cerca de la conexión con el Abacapá-tepuí, en las cabeceras occidentales del Río Tirica, 2100 m, 8 III 1986, *Huber 11470*, VEN! Central and western part of saddle between Camarcaibarai-tepuí and Tereké-Yurén-tepuí, 1800-1900 m, 23 V 1986, *Liesner 21005*, VEN! Ptarí-tepuí. Vicinity of Cave Rock camp below southern face of mountain, 1600-2000 m, 14 VIII 1970, *Moore 9753*, UC! VEN! Chimantá Massif. central section. Rocky edge of scarpment above Middle Falls Río Tirica below summit, 1925 m, 5 II 1955, *Steyermark 496*, AMES! VEN x2! Auyán-tepuí, Cumbre de la parte norte de la sección sur (división occidental del cerro): a lo largo del rio Churum, vecindad del campamento sur, sureste del "Second Wall", Bordering zanjones, 1690 m, 3 V 1964, *Steyermark 93266*, AMES! VEN! Meseta del Jaua: Cerro Sarisariñama, cumbre, porción NE, 1380 m, 11 II 1974, *Steyermark 108970* VEN! Meseta del Jaua: Cerro Jaua: cumbre, porción SW; al W del tributario del Río Marajano 2-3 km al oeste del campamento y bordeando la sabana, 1850-1920 m, 4 III 1974, *Steyermark 109802*, VEN! Macizo del Chimantá. Altiplanicie en la base meridional de los farallones superiores de Apacará-tepuí, sector norte del macizo, 2200 m, 31 I 1983, *Steyermark 128290*, VEN! Macizo del Chimantá, sector SSE. Altiplanicie SE del Acopán-tepuí, cabeceras del Río Arauác, 1930 m, 14 II 1984, *Steyermark 129988*, VEN! Camarcaibarai-Tepuí, SW facing shoulder 1800-1825 m, 22-24 V 1986, *Steyermark 1311993*, MO! VEN! Ibid. *Steyermark 1311993-A*, MO!

OTHER RECORDS: VENEZUELA: Bolívar: Amurí tepuí, 29 I 2009, *Hingst s.n.*, digital image, https://www.facebook.com/tepuyy/photos/a.174589736491463/201062447177525 (Photo voucher) Cima del Auyán Tepuí, 2300-2400 m, received V 2016, *Kaes 9*, digital image, AMO! Abacapá-tepuí, observed 2011, *Wilson s.n.* digital image; SW slopes of Ptari-tepuí, above Punto Phelps cave rock camp, 1900–2000 m, photographed V 2018, *Wrazidlo s.n.*, digital image, AMO! Summit plateau of Acopán-tepuí, observed I 2017, *Wrazidlo s.n.*, digital images, AMO! (LCDP voucher).

DISTRIBUTION: Known currently from the "high-tepui belt", especially summit plateaus and upper talus slopes of the tepuis in the southwestern part of the states of Bolívar and Amazonas, Venezuela: Chimantá Massif (Acopán-tepuí, Amurí-tepuí, Apacará-tepuí, Abacapá-tepuí), Auyán-tepuí, Ptari-tepuí, Camarcaibarai-tepuí, Meseta del Jaua, Sierra de la Neblina and Cerro Duida, as well as the neighboring area around Pico da Neblina in Brazil. Terrestrial in wet savanna; "praderas húmedas y arbustales enanos sobre turberas, bosquecillos ribereños y vegetación sobre rocas abiertas", at 1380 to 2400 m altitude, with the lowest occurrences recorded on Cerro Sarisariñama. Flowering throughout the year.

RECOGNITION: *Epidendrum katarun-yariku* belongs to the Schistochilum group, Secundum subgroup, which is recognized by the caespitose habit, simple stems, leaves oblong-lanceolate, coriaceous, bilobed, peduncle elongate, erect, the inflorescence pluri-racemose, the flowers non-resupinate, and the callus complicated, pluri-tuberculate. The species is recognized by the yellow flowers with the lip white. *Epidendrum holstii* Hágsater has crimson red to salmon or coral-red sepals and petals and the lip pink to purple, the callus massive, yellow with edges white, the flowers relatively small, and the sepals 8-13 mm long. *Epidendrum secundum* Jacq. has pink flowers with a massive white callus with base yellow, it is found atop the Auyán tepuy, as well as at the foot or on the slopes around the middle of the tepuis. There are in addition a totally yellow flowered species, concolor, which requires study. A totally white entity, and an orange-red species with a large yellow callus.

NOTE: The specimens included have been seen, but as the dried flowers are very similar for the three species mentioned above, they have been identified based on the yellow and white color noted by the collectors, as that is definitely the most notable distinguishing feature, aside from differences in the calli which would require boiling a good pressed flower to regain the original three dimensional structure. From photographs provided by Martin Hingst and Brad Wilson, it is clear that there is an additional species with completely yellow flowers, another with white flowers with a yellow callus, as well as one with orange flowers with a yellow callus atop Auyán Tepuí and also on the Chimantá Massif. Additional photograph provided by Mateusz Wrazidlo, taken in vicinities of Kavanayén in Venezuela proves that a similar species characterized by completely white flowers with yellow callus occurs also on lower elevations in La Gran Sabana.

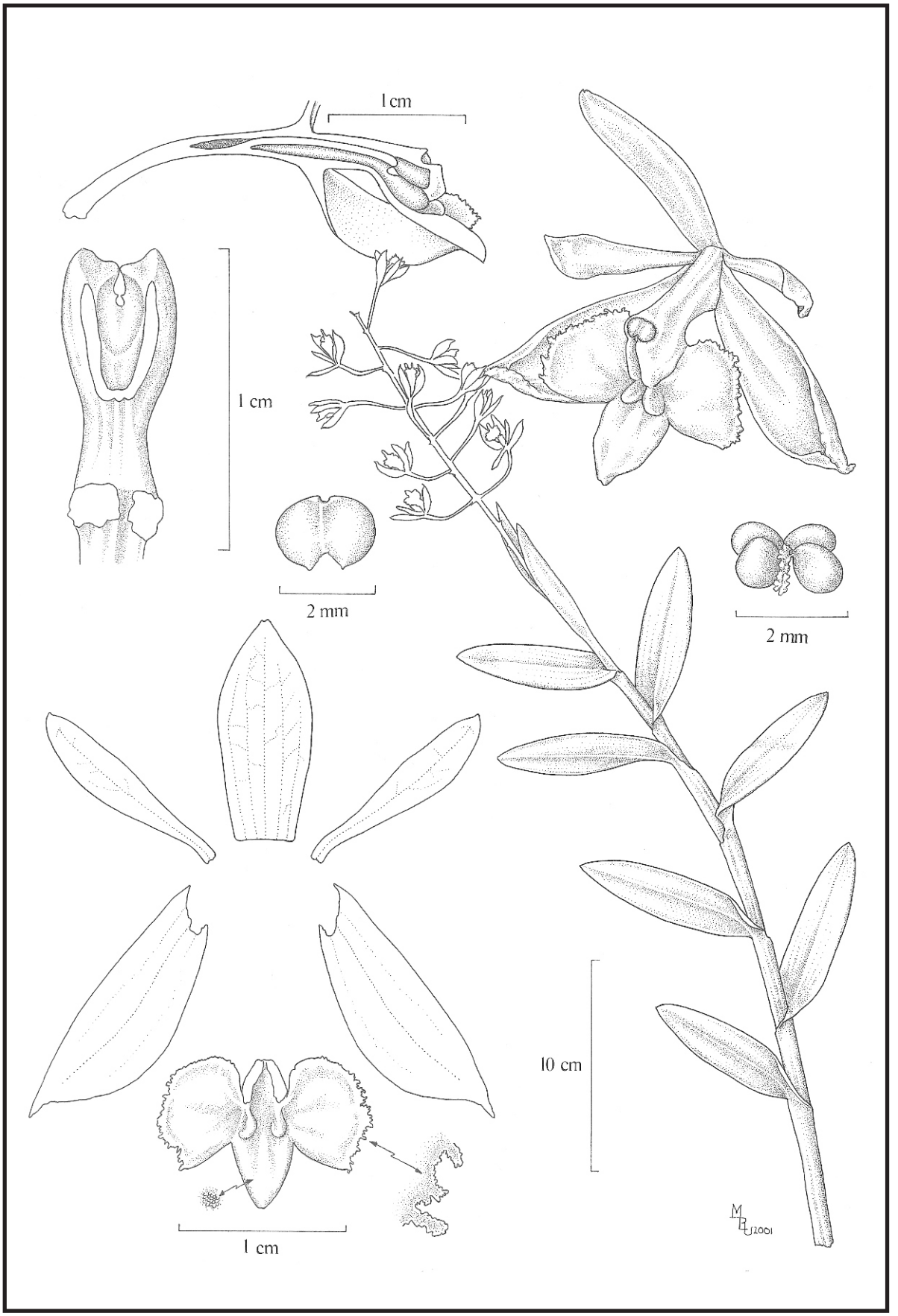
CONSERVATION STATUS: VU Vulnerable. Assuming that as stated by Steyermark (1979) only 63% of the Pantepui flora is endemic above 1500 m. *Epidendrum katarun-yariku* is only present in the "high tepuy belt" as expressed by Huber (1988). Its present extension area is confined to less than 20,000 km². It complies with Criterion B1 for the VU (Vulnerable) applies (IUCN 2001). It is threatened by the effects of climate change, increased temperatures and less rainfall, and is unable to migrate to higher altitudes.

ETYMOLOGY: From the indigenous Pemón Arekuna language, *katarun* (high), and *yariku* (flower), meaning high flower, in reference to this species being found only on the summits and upper foothills of the tepuis. The name was chosen in consultation with members of the Pemón Arekuna community of Paruima, to honor the indigenous heritage of the Guiana Highlands.

ACKNOWLEDGEMENTS: The Elliman family, especially Calio and Chris Elliman, as well as Rufus Henrito, members of the Pemón Arekuna community of Paruima, are thanked for helpful comments and recommendations regarding the usage of their indigenous language for the naming of the species. Romario Hastings is thanked for comments about the Akawaio-Kapohn and Arekuna languages. Martin Hingst and Brad Wilson are thanked for sharing their photographic material.

REFERENCES: Hágsater, E., & G. Carnevali, 2018, *Epidendrum holstii* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): pl. 1623. Hágsater, E., & J. Duarte, 2020, *Epidendrum holstii* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(2): pl. 1770. Huber, O., 1987, Vegetación y flora de Pantepui, región Guayana. **Acta Bot. Bras**. 1(2): 41-52. IUCN, 2001, **IUCN Red List Categories and Criteria**, Version 3.1, IUCN Species Survival Commission, IUCN, Gland, Switzerland, ii + 30 pp. Steyermark, J.A., 1979, Plant Refuge and Dispersal Centres in Venezuela: Their Relict and Endemic Element, in K. Larsen & L.B. Holm-Nielsen (eds.) **Tropical Botany** pp. 185-221, Academic Press, Inc. Great Britain: London.

Authors: E. Hágsater & M. Wrazidlo **LCDP: M. Wrazidlo & A. Cisneros** **Photo: M. Hingst** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM LEIOMESOMICRON Hágsater & E.Santiago **Plate 1817**

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

Type: ECUADOR: Azuay: Cuenca-Loja road, km 13 S of Cumbe, 3300 m, 9 June 1979, ***Bernt Løjtnant, A. Molau & Ulf Molau 14404.*** Holotype: AAU! (Illustration voucher). Isotype: GB!

Similar to *Epidendrum mesomicron* Lindl. but the flowers non-resupinate (vs. flowers resupinate), clinandrium-hood reduced, margin entire (vs. clinandrium-hood short, margin sub-crenate), apex of the column with a pair of truncate wings (vs. apex of column with a pair of dentate wings), and the lip smooth, without thickened veins, the base cordate and the margin erose (vs. lip with prominent thickened veins, and the base cuneate and margin laciniate).

Terrestrial, sympodial, caespitose **herb** to 100 cm tall. **Roots** basal, fleshy. **Stems** 80 x 0.5-1.0 cm, cane-like, laterally compressed, erect, straight. **Leaves** 8, distributed along the apical half of the stems, subequal in size, articulate, sub-spreading, coriaceous, green; sheaths 3.0-7.3 x 0.5-1.0 cm, tubular, minutely striated; blade 8.3-9.0 x 1.9-2.3 cm, oblong, obtuse, margin entire, spreading. **Spathes** 2, 3.5-9.5 cm long, tubular, obtuse, partially imbricated. **Inflorescence** 21.5 cm long, apical, lax-flowered, racemose to paniculate; peduncle 10 cm long, terete, straight, thin; rachis 11.5 cm long. **Floral bracts** 3-4 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 21-27 mm long, terete, thin, furrowed. **Flowers** 14-23, simultaneous, non-resupinate, yellowish green, sepals dorsally tinged brown; without fragrance. **Sepals** partly spreading, free, 5-veined, margin entire; dorsal sepal 13.5 x 5.7 mm, narrowly obovate, obtuse; lateral sepals 17.5 x 5.5 mm, oblong-elliptic, oblique, acute. **Petals** 13.1 x 2.8 mm, partly spreading, free, oblanceolate, slightly oblique, obtuse, 1-veined, margin entire, spreading. **Lip** 9.3 x 13 mm, united to the column, 3-lobed, base cordate; bicallose, calli short and fleshy, with a low mid-rib reaching the apex of the lip; lateral lobes 5.6 x 7.3 mm, dolabriform, margin erose; mid-lobe 4.1 x 3.6 mm, triangular, obtuse, margin entire. **Column** 10 mm long, basal half thin, widened towards the apex, straight, apex with a pair of truncate wings. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, apex retuse, 4-celled. **Pollinia** 4, lentil-shaped, caudicles soft and granulose, as long as the pollinia; viscarium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, ¼ the length of the stigmatic cavity. **Nectary** penetrating ¼ of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently from a single collection south of Cuenca, Azuay, from the general area of the Páramo de Tinajillas, at 3300 m altitude, in low montane forest close to timberline. Flowering in June.

RECOGNITION: *Epidendrum leiomesomicron* the belongs to the Ampliracemum Group which is characterized by the simple, cane-like, few-leaved stems, with 1-2, tubular, tight spathes at the base of a racemose, or few branched, erect inflorescence, and the flowers resupinate or not. The new species is recognized by the small leaves, 8.3-9.0 x 1.9-2.3 cm, oblong, sub-spreading, the erect inflorescence with 2 prominent, imbricated spathes 3.5-9.5 cm long, the non-resupinate flowers yellowish green the sepals dorsally tinged brown, and the lip 3-lobed, the mid-lobe triangular, the surface of the lip smooth. *Epidendrum mesomicron* Lindl. has leaves 3.2-14 x 2.5-4.7 [6.5] cm, oblong to oblong-elliptic, a single spathe, an erect inflorescence with resupinate flowers, the clinandrium-hood margin sub-crenate, and the lip with the veins prominently thickened. *Epidendrum melanoxeros* Hágsater & Dodson has larger leaves 12.5-14.5 x 2.6-2.9 cm, narrowly elliptic, yellowish green flowers with an arching, nutant inflorescence, and the lip 3-lobed with the mid-lobe oblong. *Epidendrum ampelomelanoxeros* Hágsater, E.Santiago & E.Parra has the new stem produced from a middle internode of the previous stem, the leaves 4.2-11.5 x 1.0-3.0 cm, narrowly ovate-lanceolate to lanceolate, sub-parallel to the stem, the inflorescence 18-24 cm long, arching nutant, the flowers greenish yellow tinged red, and the mid-lobe of the lip oblong-triangular.

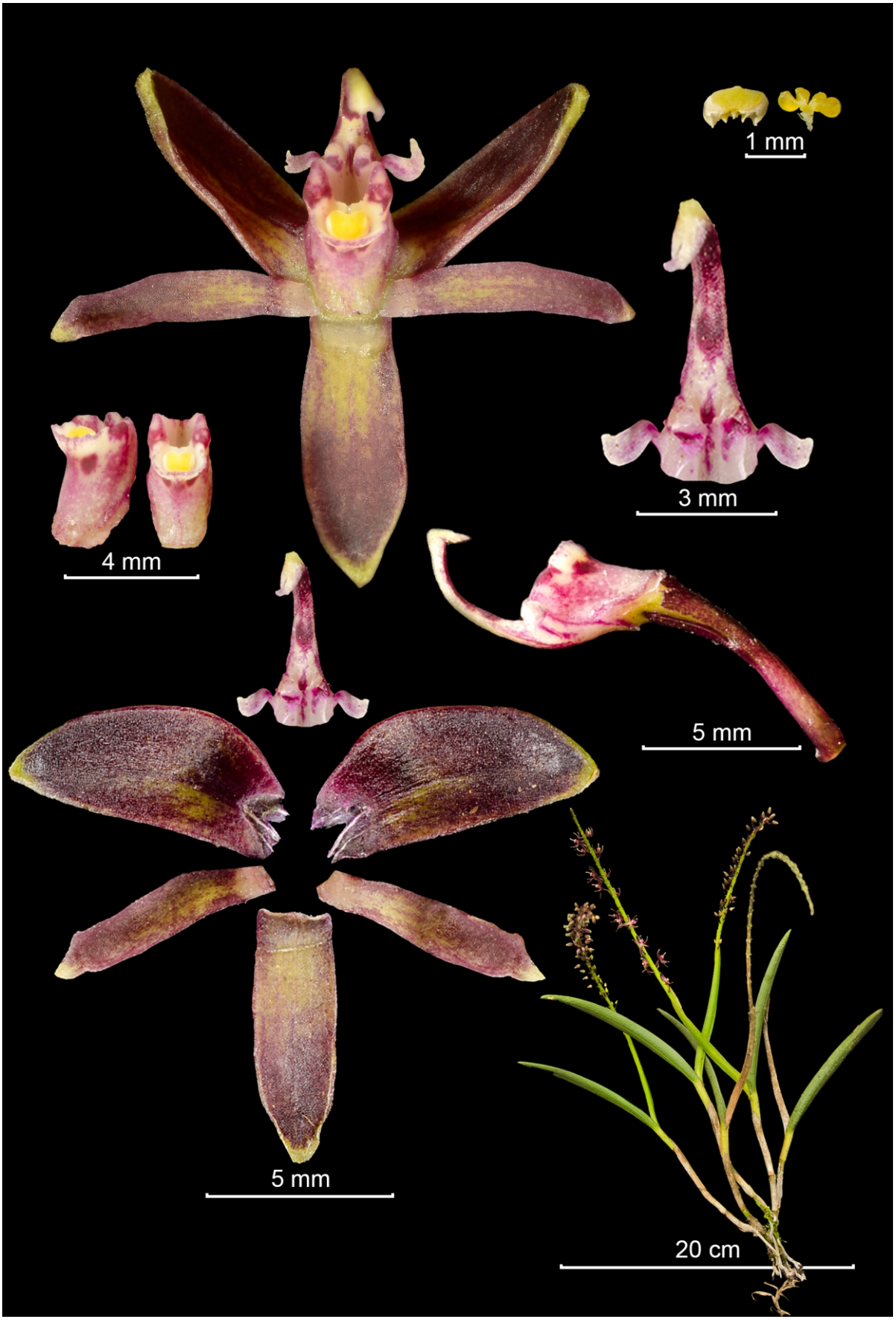
CONSERVATION STATUS: DD. Data Deficient. Known presently from a single specimen from a single locality.

ETYMOLOGY: From the Greek , smooth, -, middle, and , in reference to smooth lip, and smaller mid-lobe of the lip as compared to the closest species, *E. mesomicron* with prominently thickened veins.

REFERENCES: Hágsater, E., & C.H. Dodson, 1999, *Epidendrum melanoxeros* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: pl. 354. Hágsater, E., E. Santiago & E. Parra, 2013, *Epidendrum ampelomelanoxeros* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: pl. 1405. Hágsater, E., & E. Santiago, 2020, *Epidendrum mesomicron* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1823.

Authors: E. Hágsater & E. Santiago **Illustrator: M. A. López R.** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1817**



EPIDENDRUM MACHINENSE M.F.Escal. & Rinc.-Gónzalez **Plate 1818**

EPIDENDRUM MACHINENSE M.F.Escal. & Rinc.-González, Phytotaxa 435(1): 33-40. 2020.

Type: COLOMBIA: Tolima: Ibagué: Vereda el Guaico, cráter Volcán Cerro Machín, 2363 m, 7 enero 2019, ***María Fernanda Escalante & Milton Rincón 170.*** Holotype: TOLI! (LCDP & photo voucher).

Epiphytic, sympodial, caespitose **herb** 32-37 cm tall, including the inflorescence. **Roots** from the base of each stem, thin, fleshy. **Stem** 10-15 x 0.5-0.6 cm, simple, cane-like, produced from the lower nodes of the anterior stem, erect, terete, straight, cylindrical, laterally flattened towards the apex. **Leaf** 1, at the apex of stem; sheath 8-11 mm long, tubular, striated, smooth to finely rugose; blade, 13-15 x 1.0 cm, elliptic-lanceolate, apex obtuse, margin entire. **Spathe** 9-10 x 0.83 cm, 1 or rarely 2, oblong, acute. **Inflorescence** 22-28 cm long, apical, racemose, cylindrical, generally dense many-flowered; peduncle 9-10 cm long, covered almost entirely by the spathe; rachis straight to generally arching when mature. **Floral bracts** 5 mm long, much shorter than the ovary, triangular, acute. **Flowers** 50-80, simultaneous, lip always directed towards the apex of the rachis, sepals and petals yellow suffused purple-brown, apices yellow, column and lip white tinged or spotted wine red; without fragrance. **Ovary** 8 mm long, finely striated, curved, purple. **Dorsal sepal** 7.0 x 2.5 mm, spreading to reflexed, ovate-elliptic, apex obtuse, 3-veined, margin entire; the lateral sepals 7.4 x 3.7 mm, flanking the column, elliptical slightly falcate, concave, apex obtuse, 3-veined, margin entire. **Petals** 6.5 x 1.4 mm, spreading, free, oblong, base cuneate, apex rounded, 3-veined, margin entire. **Lip** 5 x 3.5 mm, united to the column, 3-lobed, margin entire; bicallose, calli rounded, laterally flattened, erect, divergent, prominent; lateral lobes 1.0 x 0.6 mm, sub-ovate, membranous, twisted, broadly hamate in natural position, laterally extended; mid lobe 4.2 x 1.5 mm, narrowly triangular, fleshy, forming a wide arch, apex rhombic or bifid, inflexed. **Column** 3.7 x 2 mm, straight, short, thick, wide at apex, white irregularly marked with wine red. **Clinandrium-hood** short, funnel-shaped, margin erose. **Anther** widely reniform, 4-celled, yellow. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose; viscarium wide, viscous. **Rostellum** apical slit. **Lateral lobes of the stigma** prominent, 1/2 the length of the stigmatic cavity. **Nectary** wide and elongated, penetrates about half of the pedicellate ovary, no ornamented. **Capsule** ellipsoid, carinate.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

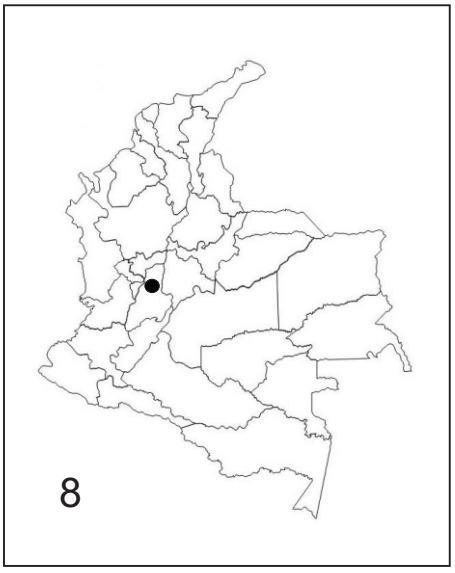
DISTRIBUTION AND ECOLOGY: Known only from a small area within the crater of the Cerro Machín volcano in the municipality of Ibague, department of Tolima. This volcano is categorized by the Servicio Geológico Colombiano (SGC) as active in resting state, therefore, the vegetation found there would be at high risk of disappearing due to a volcanic event. The species was found in the humid montane forest (bh-M) (Holdridge, 1967) between 2300 and 2600 m of elevation, and it is found growing in the middle and top of trees of the genus *Inga* (Fabaceae, Mimosoideae) and trees of *Tibouchina lepidota* (Bonpl.) Baill (Melastomataceae). Flowering was observed in the month of January.

RECOGNITION: *Epidendrum machinense* belongs to the Stenoglossum Group which is characterized by the sympodial habit, stems of one or few leaves, a racemose, ancipitose, elongate, arching inflorescence with 1-2 spathes with parallel sides; and the having flowers lip always directed towards the apex of the rachis, a short column, an entire or 3-lobed lip, tiny hamate lateral lobes and a filiform linear mid-lobe with a rhomboid sagittal apex. The species is recognized by the tall plants, 32-37 cm tall including the inflorescence, the inflorescence 22-28 cm long with 50-80 simultaneous flowers with yellow corolla suffused purple-brown with yellow apices and a white lip and a column with numerous wine-red spots, a dorsal sepal shorter than the lateral sepals, the petals flanking the column, 3-veined, and the 3-lobed lip, lateral lobes broadly hamate in position, mid-lobe triangular-linear, apex inflexed, rhombic or bifid apex, and bicallose. *Epidendrum coryophorum* (Kunth) Rchb.f. is distinguished by the smaller plants, 15-30 cm tall including the inflorescence, 8-23 cm long, with 10-34 simultaneous flowers, the purple flowers often with white apices, the petals narrow, flanking the column, 1-veined, and by the linear lip without calli. *Epidendrum hamatum* (Garay) Dressler is vegetatively very similar but the flowers are white slightly tinged pink, with pink-red dots at the apex of the column and base of the lip and is apparently endemic to Cundinamarca and Boyacá, north of Bogotá. Domínguez and Hágsater published a plate under the name *E. hamatum* (2019) of a similar species well known from around Medellín, Antioquia, with yellow-green flowers mottled with brown dots, but that is a new species which is being described elsewhere.

CONSERVATION STATUS: DD. Data deficient.

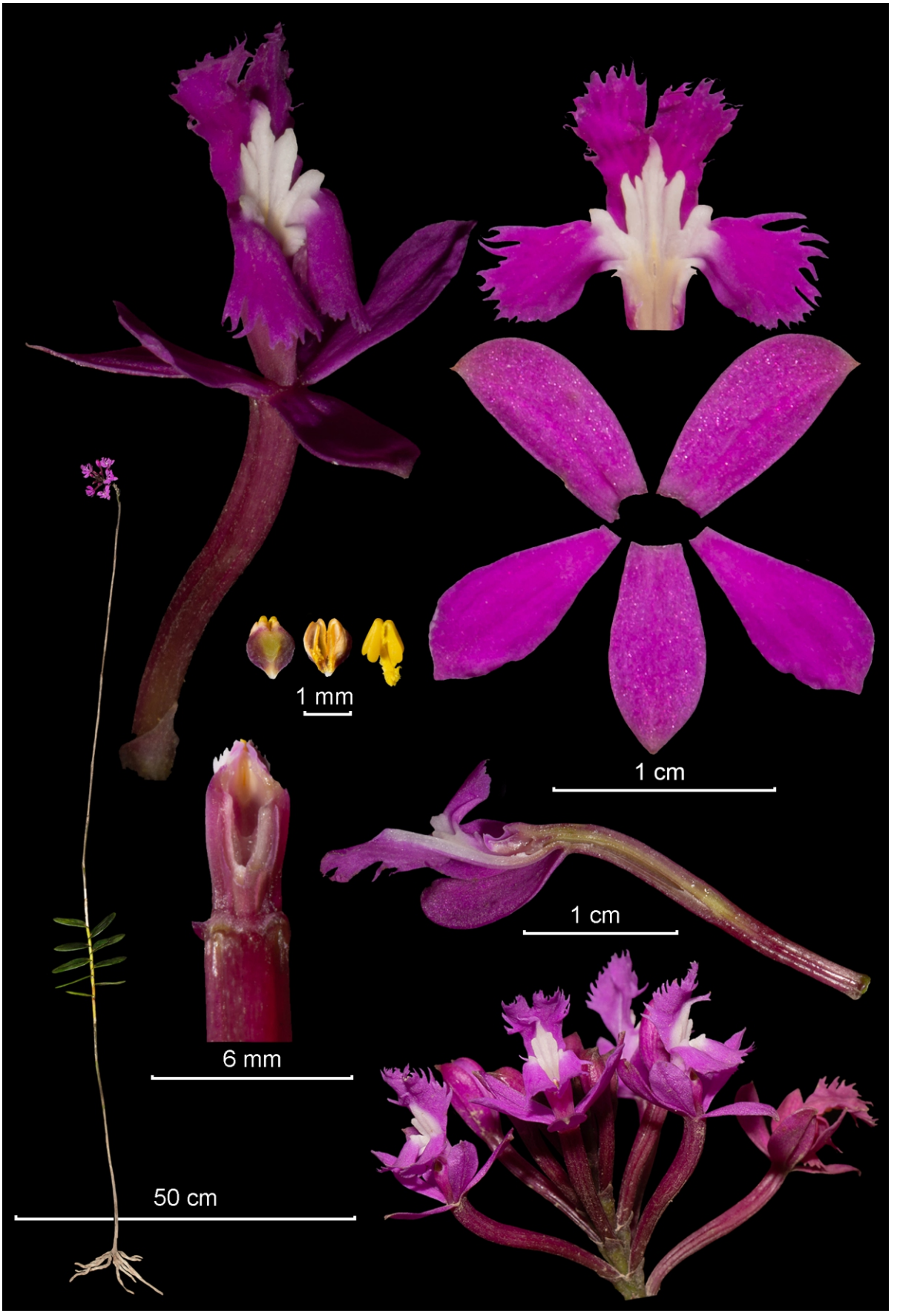
ETYMOLOGY: In reference to the Cerro Machín volcano where the type specimen was collected. With this epithet the authors want to give visibility to this place, so that the relicts of humid montane forest that still exist are subject to conservation.

REFERENCES: Domínguez, E., & E. Hágsater, 2019, *Epidendrum hamatum*, in Species Orchidacearum 3(1): LCDP 28. Garay, L.A., 1969, *Stenoglossum hamatum*, Orquideología 4:72. Holdridge, L.R., 1967, *Life zone ecology*, vol. 9, Tropical Science Center, San José, Costa Rica, 206 pp. Servicio geológico Colombiano, 2019, *Generalidades Volcán Cerro Machín.* Bogotá, D.C. Available from: https://www2.sgc.gov.co/sgc/volcanes/VolcanCerroMachin/Paginas/generalidades-volcan-cerro-machin.aspx (accessed 12 June 2019). Hágsater, E., & L. Sánchez S., 2009, *Epidendrum coryophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: pl. 1230. Rincón-González., M. & Escalante M.F., 2020, *Epidendrum machinense a new species from Colombia*, Phytotaxa 435(1): 33-40.



Authors: E. Santiago, E. Hágsater & M. Rincón **LCDP: M. Rincón & A. Cisneros** **Photo: M. Rincón** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1818**



EPIDENDRUM MACROCYPHUM Kraenzl. **Plate 1819**

EPIDENDRUM MACROCYPHUM Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 185. 1905.

Type: PERU: Cajamarca: Prov. Hualgayoc: [today Prov. Santa Cruz:] bei Santa Cruz. 2000-2200 m, ***August Weberbauer 4119***, Holotype: B, destroyed. Photograph of type: CNHM 18321, F! Copies AMES! NY! SEL!

Synonym: *Epidendtrum tricarinatum* Rolfe, Bull. Misc. Inform. Kew 1917(2): 81. 1917. Type: PERU: Introduced by Messrs. Sander & Sans, St. Albans, and flowered at the ***Royal Botanic Gardens, Glasnevin*** in June 1916. Sent for determination by Sir Frederick W. Moore. Holotype K 583957!

Epiphytic, sympodial, caespitose **herb**, ca.120 cm tall including the inflorescence. **Roots** 5-6 mm in diameter, basal, terete, fleshy, white. **Stems** 50 x 0.4 cm, simple, cane-like, terete to slightly compressed towards the apex, thin, covered by foliar sheaths. **Leaves** 8-12, distichous, distributed along the upper 1/4 of the stem; sheaths 6.0 x 0.4 cm, tubular, smooth, papyraceous when dry; blade 4.0-9.0 x 1.3-2.0 cm, oblong, apex unequally bilobed, articulate, coriaceous, smooth, green, margins entire. **Spathe** lacking. **Inflorescence** 70 cm long, racemose to pluri-racemose, laxly flowered, cylindric; peduncle 66 cm long, elongate, covered by numerous tubular, imbricated bracts 4.5 x 0.4 cm, acute, scarious when dry, striated, papyraceous; rachis ca. 4 cm long. **Floral bracts** 5-15 x 0.7-3.0 mm, much shorter than the ovary, decreasing in size, triangular, acuminate, embracing. **Flowers** ca. 10-20, successive, 4-6 open at a time, non-resupinate, pink to deep violet, column purple, callus white, turning violet when pollen is removed or as the flowers age; fragrance none. **Ovary** 20-25 mm long, terete, thin, not inflated, red-violet, furrowed. **Sepals** spreading, apex obliquely rounded, short apiculate, 5-veined, margin entire, spreading; dorsal sepal 8.0-15.0 x 3-4 mm, obovate-oblong, lateral sepals 8.0-15.0 x 4.6 mm, obovate-oblong, oblique, the upper margin nearly straight, lower margin strongly curved towards the apex. **Petals** 8.0-14.0 x 4.0-4.7 mm, extended, obparabolic, apex obtuse, 3-veined, margin entire, spreading. **Lip** 12.0 x 12.0-15.5 mm, united to the column, deeply 3-lobed, in natural position the mid-lobe flat, extended, the lateral lobes erect, sometimes embracing the entire column, with outer margins strongly revolute, base cordate, distal margins laciniate; callus low, complex, formed by 3-5 straight, parallel ribs on the mid-lobe, the mid-rib longest nearly reaching the apical sinus, two divergent bifid calli at the base of the lateral lobes, the longer segment projecting on the junction of the mid-lobe with the lateral lobes; lateral lobes 5.0-6.3 x 4.9-5.4 mm, obovate; mid-lobe 7.2-9.0 x 7.7 mm, obcuneate, bifid, deeply and narrowly emarginate, slightly divergent. **Column** 5.0-6.0 mm long, straight, wider at the apex, with a pair of long, apical recurved fleshy wings with the distal margin erose. **Clinandrium-hood** very short, margin entire, leaving the anther totally exposed. **Anther** ovoid, apiculate, surface rugose, 4-celled. **Pollinia** 4, narrowly obovoid, laterally compressed, caudicles formed by a pile of elongate pollen tetrads like a pile of tiles; viscidium semi-liquid. **Rostellum** apical, split. **Lateral lobes of the stigma** short, occupying ¼ the length of the stigmatic cavity. **Nectary** penetrating half the pedicellate ovary, minutely papillose. **Capsule** not seen.

OTHER SPECIMENS: PERU: Cajamarca: Introduced by Messrs. Sander & Sans, St. Albans, and flowered at the Royal Botanic Gardens, Glasnevin in 3 VII 1916, Sent for determination by Sir Frederick W. Moore, K 583958! Huambos, cerca a Yamaluc, 1960 m, 14 VIII 1952, *Ferreyra 8466*, AMES! UC! SE of Huambos in valley of Río Chotano, 2200 m, 9 II 1988, *Gentry 61447*, F! NY! Querecoto, a 1 km de Paraguay (ruta Querecoto-La Granja, 2280 m, 10 VIII 1994, *Leiva 1452*, F! SEL! Santa Cruz-Catache, 1850 m, 21 V 1965, *López 5190*, AMES! Huambos, Bosque El Pargo, Paso Credo (LLama-Huambos), 2370 m, 22 V 1965 *López 5246*, AMES! Chota, Huambos, Llamalud, 21 VI 1980, *Sánchez Vega 8280*, CPUN!

OTHER RECORDS: PERU: Cajamarca: Cajamarca a Congas, 1 II 2020, *Gutiérrrez s.n.*, digital images, AMO! Hualgayoc, *Dávila s.n.*, digital images, AMO! Chota, pasando Chuyamba hacia el N, 13 XI 2019, *Gutierrez s.n.*, digital images, AMO! Huambos, 10 I 2020, *Soras s.n.* digital image, AMO! Cutervo-Chota, desviación Huambos a Querecoto, 2383 m, 6 XI 2019, *Hágsater 16353*, (LCDP & Photo voucher).

DISTRIBUTION AND ECOLOGY: Presently is range of known distribution is restricted to the Department of Cajamarca, in the basin of the Río Chotano, at an altitude of 1850-2950 m. The native vegetation is dry brush, influenced by the Interandean wind currents. The plants are often found on grassy roadsides, in full sun, in areas which have been heavily modified for agriculture and in rocky habitats with *Echeverria* sp., *Peperomia dolabriformis* Kunth, *Xylobium bractescens* Kraenzl. Flowering mainly from November to July.

RECOGNITION: *Epidendrum macrocyphum* belongs to the Schistochilum Group, Secundum Subgroup, which is characterized by the caespitose habit, erect, simple, cane-like stems, a normally elongate peduncle of the inflorescence, an erect raceme of generally non-resupinate, showy, colorful flowers, and a lip adorned by a complex a callus. The species is recognized by the pink to violet flowers with a complex but low white callus consisting of low, complex, formed by 3-5 straight, parallel ribs on the mid-lobe, the mid-rib longest nearly reaching the apical sinus, with two divergent bifid calli at the base of the lateral lobes, the longer segment projecting on the junction of the mid-lobe with the lateral lobes, the lip in natural position has the mid-lobe flat, extended, the lateral lobes erect, sometimes embracing the entire column, outer margins strongly revolute. It is similar to *Epidendrum reflexilobum* C.Schweinf., from Huánuco and Junín Departments, but flowers red with the callus yellow. In addition, there is another similar species in the Department of Ancash with a similar callus but the whole flower is pink-lilac including the callus; we have not been able to pin a name on that species yet.

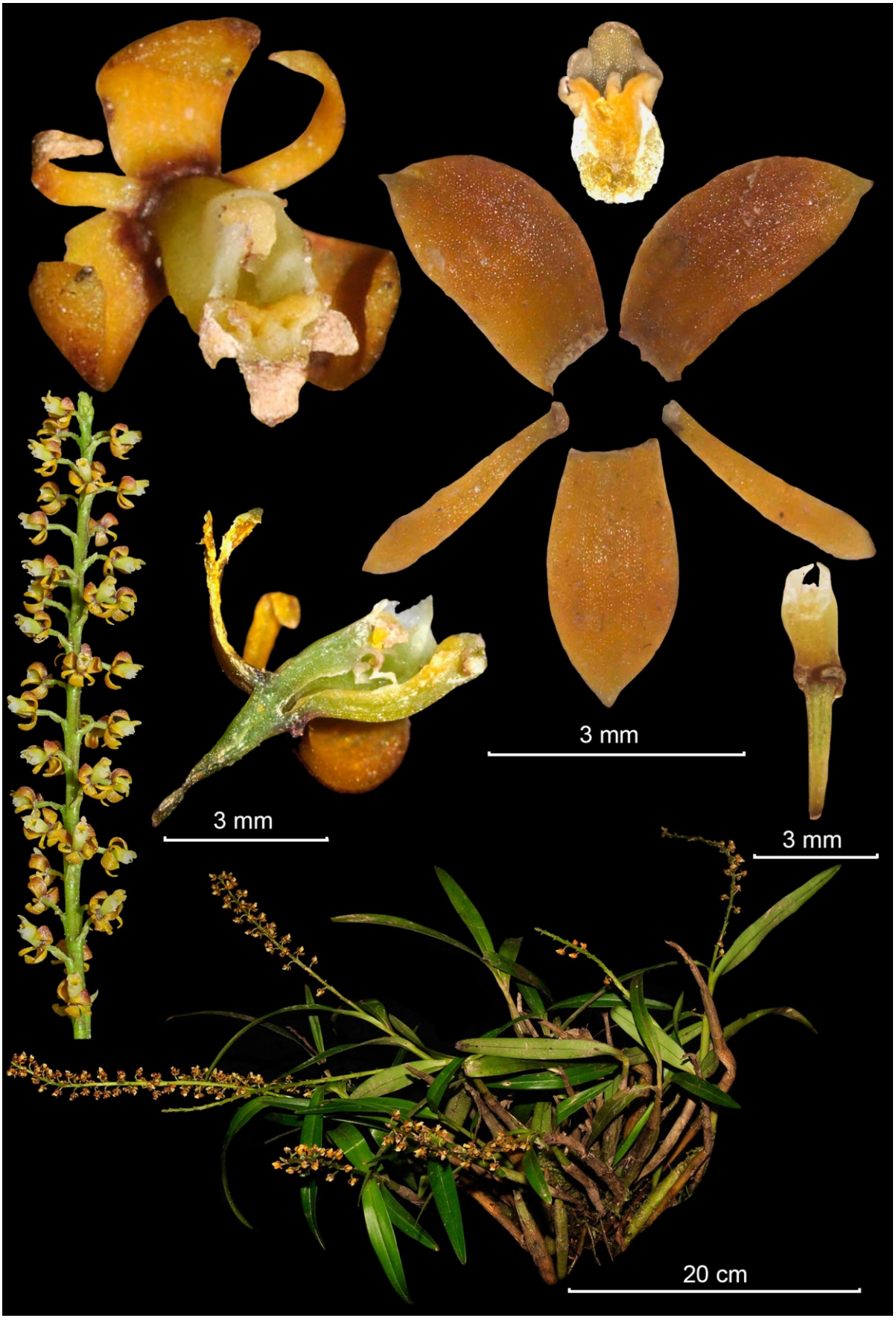
CONSERVATION STATUS: CR Critically Endangered. The species is known from a limited area, though numerous localities have been identified, as it grows sparsely on grassy roadsides in heavily modified ecosystems.

ETYMOLOGY: From the Greek, , large, and , bent, hunch-backed, in reference to the long ribs on the lip.

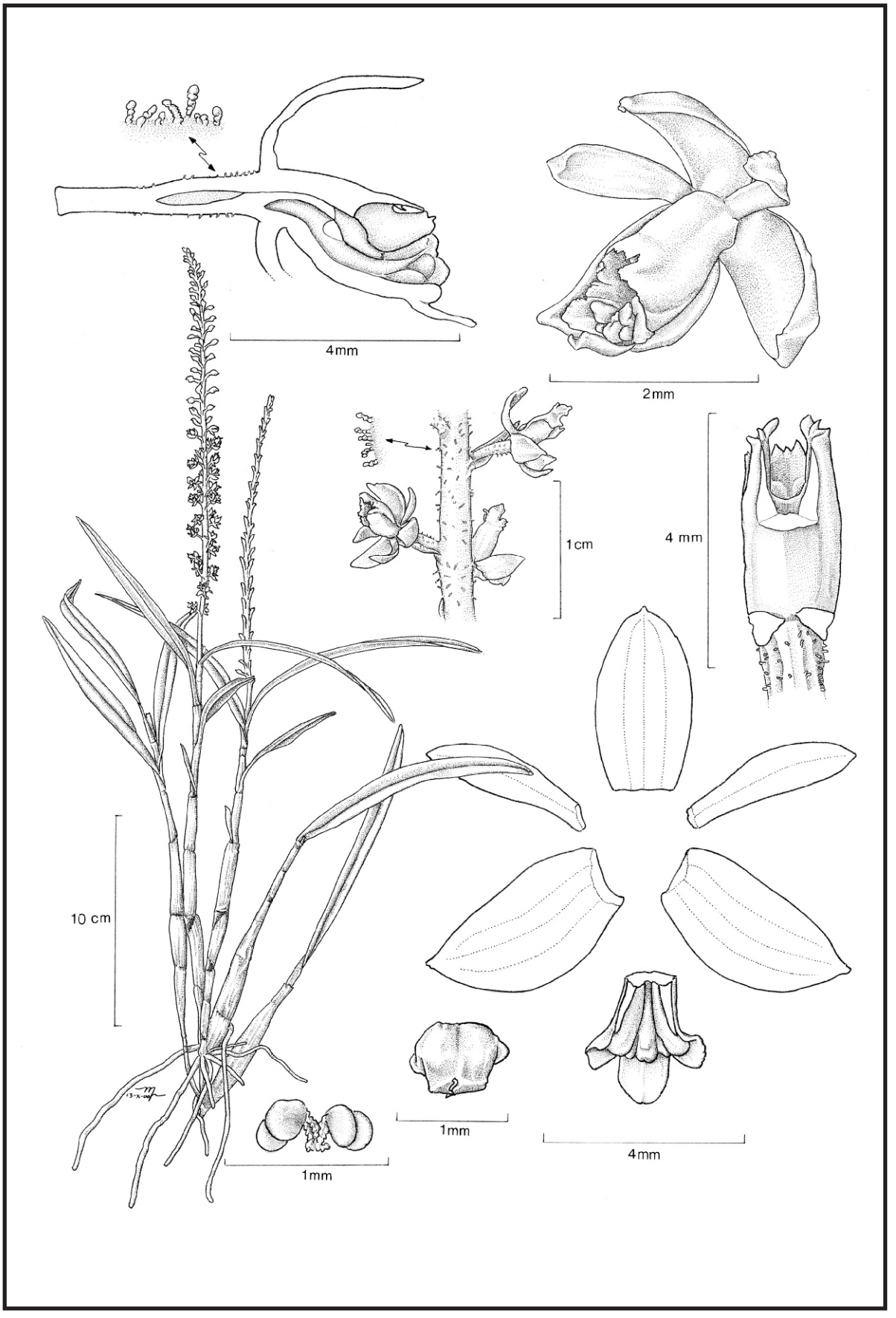
REFERENCES: Schweinfurth, C., 1959, *Epidendrum reflexilobum*, in Orchids of Peru, Fieldiana: Bot. 30(2): 502-503.

Authors: E. Hágsater & A. Cisneros **LCDP: E. Hágsater & A. Cisneros** **Photo: E. Hágsater** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1819**



EPIDENDRUM MACRUM Dressler **Plate 1820**



EPIDENDRUM MACRUM Dressler **Plate 1820a**

EPIDENDRUM MACRUM Dressler, Brittonia 19: 240. 1967.

Basionym: *Amblostoma gracile* Garay, Orquídea (Rio de Janeiro) 15: 174, fig. 1. 1953, Type: ECUADOR: Prov. Napo-Pastaza, Mera, 29 April 1940, ***Manuel Lugo 249***. Holotype: S! Isotypes: AMES! B! (cited by Butzin, 1981, digital image available at Jstor). Non *Epidendrum gracile* Lindl., 1836. = *Encyclia gracilis* (Lindl.) Schltr.

Synonym: *Amblostoma gracile* Garay var. *robustum* C.Schweinf., Bot. Mus. Leafl. 17: 42, t. 16. 1955. Type: PERU: Junín: Prov. Tarma, Agua Dulce, at 1900 m, 16 March 1948, ***Felix Woytkowski 35476.*** Holotype: AMES!

Epiphytic, sympodial, caespitose, erect **herb,** 14-40 cm tall. **Roots** 1.5-2.0 mm in diameter, fleshy. **Stems** 8-17 x 0.7-1.1 cm, straight, somewhat thickened, forming thin fusiform pseudobulbs covered by sheaths 2.7-4.0 cm long, tubular, obtuse, becoming fibrous with age. **Leaves** 2-5, distributed towards the apical 1/3 of the stem, grass-like, somewhat spreading, slightly arched; sheaths 1.5-3.5 x 0.35-0.5 mm, tubular, pale green; blade 3-18 x 0.5-1.7 cm, narrowly lanceolate-elliptic, apex acute, margin entire, spreading. **Spathe** lacking. **Inflorescence** 4[10]-23 cm long, apical, erect or slightly arched, racemose, helicoidal, many-flowered; peduncle 0.8-1.7 cm long, terete, thin, without bracts; rachis 2.3-21.3 cm long, terete, scarcely minutely dactylo-verrucated. **Flowers** 19-75, successive, eventually all open at the same time, before the lower flowers start wilting, non-resupinate, sepals and petals yellow, the dorsal surface turning ochre at maturity, basal half of the column green, apical half of column and lip white; very fragrant, of coconut. **Floral bracts** 2-3 mm long, slightly shorter than the ovary, triangular, acute. **Ovary** 3.5 mm long, scarcely minutely dactylo-verrucated, terete, thin, furrowed. **Sepals** 3-4 x 1.5-2.0 mm, partly spreading, free, concave, oblong-obovate, obtuse, apiculate, 3-veined, margin entire, spreading, lateral sepals somewhat oblique. **Petals** 3.0-3.5 x 0.6-0.95 mm, oblong-oblanceolate, oblique, obtuse, margin entire, spreading. **Lip** 2.7-3.2 x 2.3-2.5 mm, united to the column, 3-lobed, margin entire; bicallose, the calli laminar, divaricate, and elongate to the base of the lateral lobes; disc with 3 ribs, short, the mid-rib thicker, similar to the calli, the lateral pair parallel shorter, narrower and parallel to the calli; lateral-lobes 0.5-0.6 x 0.5-0.6 mm, quadrate, oblique, the basal margin involute; mid-lobe 1.0-1.2 x 0.5-1.0 mm, sub-quadrate, apex rounded, margin entire spreading. **Column** 3 mm long, straight, thickened, with a pair of wings with their margin dentate. **Clinandrium-hood** reduced, margin dentate. **Anther** 4-celled, reniform. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles soft and granulose, as long as the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, ¼ de length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Caquetá: Río Orteguaza, cerca de Venecia, 400 m, 1 IX 1971, *Ortiz 528*, HPUJ! (xerox of illustration, AMO!) **Putumayo:** ca. 10 km N of Mocoa, 1000 m, 20 VII 1966, *Garay 874*, AMES x2! **ECUADOR: Pastaza:** Mera, 1100 m, 2 III 1956, *Asplund 19537*, AMES! G! NY! Z! along Río Allpayacu, 1000 m, 6 III 1980, *Harling 16986*, GB! Ibid. *Harling 16987* GB! a few km E of Mera, 1000 m, 20 III 1976, *Luer 919*, MO! Mera, 27 III 1940, *Lugo 138*, MO! Mera, Río Pastaza, 19 IV 1969, *Lugo 1118*, AMES! GB! Colonia Pindo Mirador, ca. 8 km NE of Mera, 21 VI 1969, *Lugo 1136*, AMES! GB! **Morona-Santiago:** San Juan Bosco, hort. Ecuagenera, 1200 m, 2 IX 2000, *Hágsater 12262*, AMO! (Illustration voucher). Chiguinda of Sigsig, 1600-1800 m, V 1906, *Lehmann 6532*, K! **PERU: Junín:** Chanchamayo Valley, above La Merced at Cumbre Yacunay near Summit, 2500 m, 15 VIII 1957, *Hutchison 1878*, AMES x2! **Pasco:** 5 km S of Oxapampa, 1800 m, 30 I 1979, *Luer 3825*, SEL!

OTHER RECORDS: COLOMBIA: Without locality data, 17 I 2015, *Asociación Payanesa de Orquideología s.n.*, digital photo, AMO! **ECUADOR: Azuay:** Gualaceo, Ecuagenera, viveros de Gualaceo, 2240 m, 23 IX 2016, *Hágsater 14807*, digital photo, AMO! (Photo voucher). **PERU:** INRENA, 30 I 2007, illustration, *Dalström OIC 15066*, SEL, digital copy AMO! **Pasco:** Pozuzo, 1000-1300 m, 14 I 1997, *Bennett 7716*, illustration published (Bennett ,1998). Entre Pasco y Ayacucho, *Morón s.n.*, digital photos, AMO! (LCDP voucher).

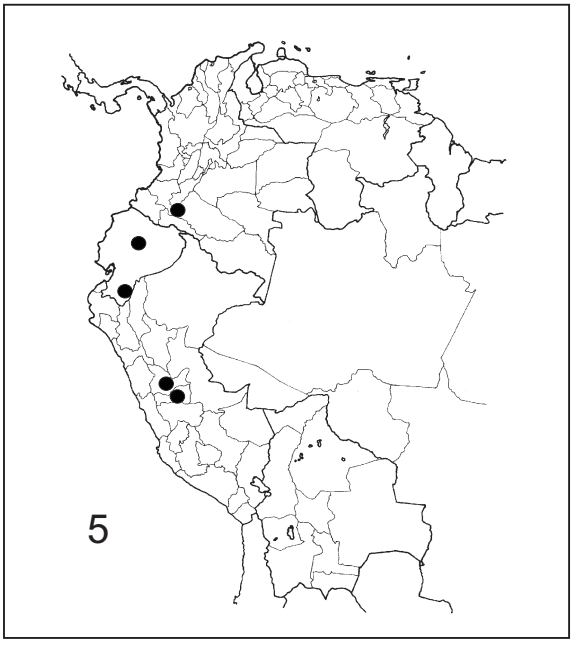
DISTRIBUTION AND ECOLOGY: Known presently from the eastern slopes and valleys of the Andes from southern Colombia to central Peru, a range of some 1400 km in length. The species is found on rocks along river banks and in the forest floor as well as epiphytic, at 400 to 2500 m altitude in wet montane forests. Flowering throughout the year, but especially in Ecuador in March and April.

RECOGNITION: *Epidendrum macrum* belongs to the Amblostoma Group, which is characterized by the sympodial, caespitose habit, the thinly fusiform stems with sub-coriaceous leaves distributed along the apical half of the stems, the ovary and the sepals usually dorsally pubescent, and the lip 3-lobed. The species is recognized by the erect, racemose inflorescence, helicoid and densely flowered, flowers non-resupinate, ochre yellow, the apex of the column and lip white, ovary and rachis pubescent, sepals 3.4 x 1.5-2.0 mm, elliptic, petals 3.0-3.5 x 0.6-0.95 mm, oblong, oblanceolate, margins of the clinandrium-hood and wings of the column dentate, and the lateral lobes of the lip quadrate, oblique with the posterior margin involute. It is similar to *Epidendrum appendiculatum* T.Hashim. from central Peru, but that species has an erect, racemose to paniculate inflorescence, the ovary is very thin along the basal 2/3 and smooth, warted only in the apically thickened 1/3, the lateral lobes of the lip are wider, dolabriform and erect, the mid-lobe is triangular, apically rounded, and the callus is a very prominent quadrate platform which completely covers the basal half of the mid-lobe. *Epidendrum holochilum* (Schltr.) Mansf. ex Hágsater is vegetatively similar with a racemose to paniculate, erect inflorescence, small, pale yellow, resupinate flowers, sepals 2.75-3.0 x 1.2 mm, and a cordiform, entire lip with 3 parallel calli continued into 3 low ribs.

ETYMOLOGY: From the Latin *macro*, very large. The reason for using this epithet is not discussed by Dressler. There is nothing especially large in this species, except perhaps for the clinandrium-hood.

CONSERVATION STATUS: NT. Not threatened. The species is widespread and common where it grows. Presently known from southern Colombia to central Peru, a range of 1400 km in length.

REFERENCES: Bennett Jr., D.E., & E.A. Christenson, 1998, *Epidendrum macrum*, in E.A. Christenson (ed.), **Icon. Orchid. Peruviarum**, pl. 465. Butzin, F., 1981, Typenstudien im Berliner Orchideen-Herbar: Diverse markierte Typen, **Willdenowia** 11: 119-120. Hágsater, E., 2019, *Epidendrum holochilum*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1727.



Authors: E. Santiago & E. Hágsater **LCDP: E. Morón, B. Collantes & A. Cisneros** **Illustrator: M. A. López R.** **Photo: E. Hágsater** **Editors: E. Hágsater & E. Santiago**

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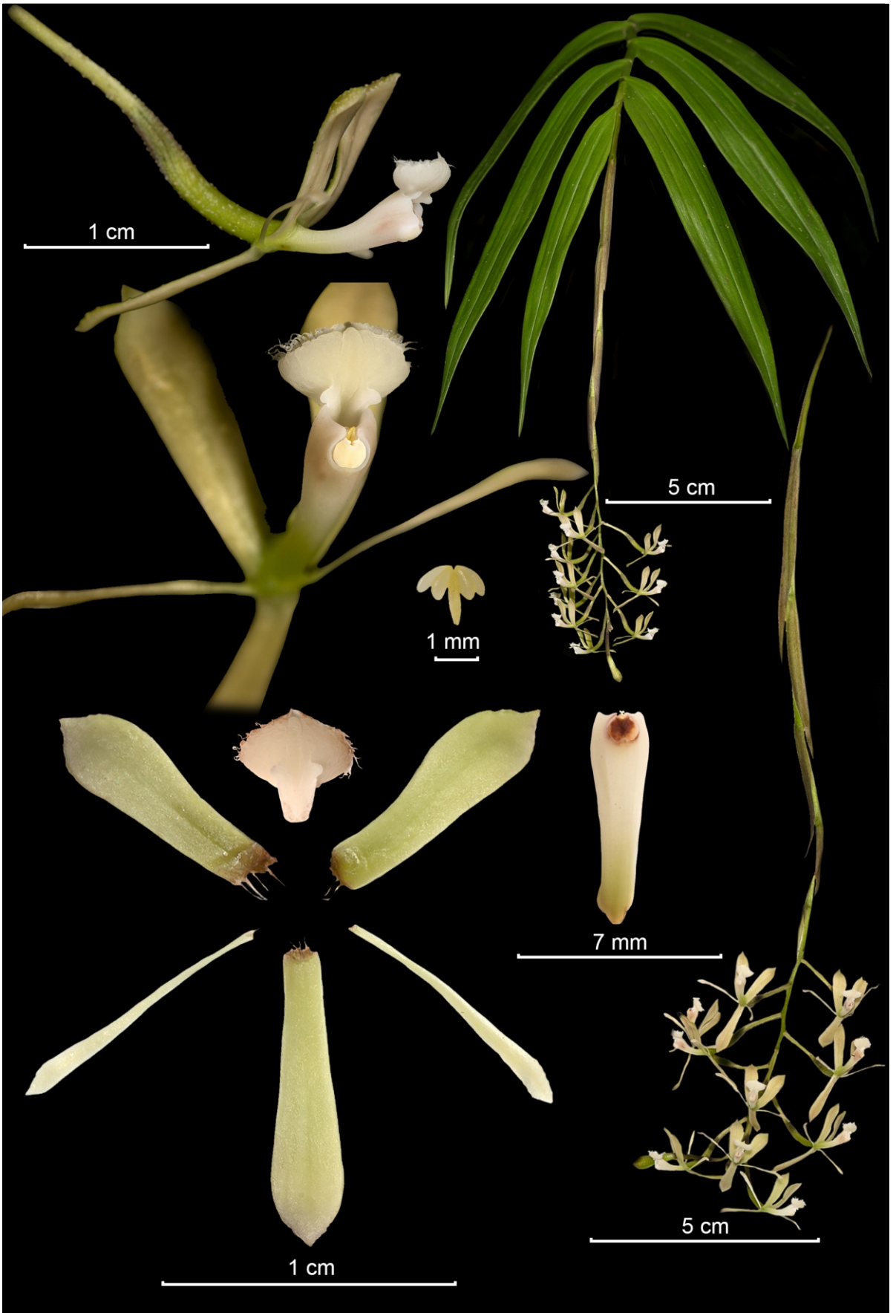


EPIDENDRUM MEDUSICHILUM Hágsater, E.Santiago & Gal.-Tar. **Plate 1821**

EPIDENDRUM MEDUSICHILUM Hágsater, E.Santiago *et* Gal.-Tar., *sp. nov.*

TYPE: COLOMBIA: Valle del Cauca, Mun. Dagua: borde del Parque Nacional Natural Los Farallones de Cali, Cto. El Queremal km 56, vía Simón Bolívar, 1241 m, ***Robinson Galindo Tarazona & Javier Serna 1455.*** Holotype: CUVC 72719! (LCDP and Photo voucher).

Similar to *Epidendrum jatunsachanum* Dodson & Hágsater but flowers simultaneous (vs. flowers solitary, successive), the lip entire, transversely elliptic, convex, immaculate, the margins revolute, short fimbriate, hyaline (vs. lip 3 lobed, spreading, heavily dotted purple, margin fimbriate, spreading), sepals 9-10 mm long, dorsally pustulate near the apex (vs. sepals 16 mm long, unornamented), and the ovary pubescent (vs. ovary unornamented).

Epiphytic, sympodial, caespitose arching **herb**, to 150 cm tall. **Roots** 4 mm in diameter, basal, thick. **Stems** 150 x 0.4-0.5 cm, simple, cane-like, thin, straight, arching; new plantlets or keikis produced from the internodes of older stems. **Leaves** numerous, distributed throughout the stems, alternate, articulate, sub-coriaceous, sub-plicate, green, concolor, of similar size and shape; sheaths 1.0-3.4 x 0.4-0.5 mm, tubular, pale green, minutely striated; blade 10.7-20.0 x 1.0-2.0 cm, lanceolate, long-acuminate, margin entire, spreading. **Spathe** lacking. **Inflorescence** 17.6-23 cm long, apical, racemose, nutant, few-flowered, the flowers laxly distributed along the rachis; peduncle 14 cm long, thin, ancipitose, pale green, provided with 5 bracts 1.1-4.8 x 0.15-0.4 cm, buff-colored, tubular along the basal half, laterally compressed, conduplicate along the apical half, acuminate, partly imbricated, decreasing in size; rachis 5.0 cm long, terete, thin, slightly sinuous. **Floral bracts** 6.0 mm long, shorter than the ovary, narrowly triangular, acuminate, embracing. **Flowers** 11, simultaneous, spreading horizontally, the lip facing downwards, tepals pale buff colored, the base pale green, column green at base, white tinged pale pink along the apical half, lip white to cream colored, the fimbriate margin hyaline; fragrance not recorded. **Ovary** 17 mm long, terete, pubescent, basal half straight and thin, apical half thickened, arched and striated. **Sepals** free, oblanceolate-spatulate, acute, 5-veined, dorsally pustulate at the apex, margin entire, spreading; dorsal sepals 10 x 2.5 mm, reflexed; lateral sepals 9.0 x 2.6-3.0 mm, partly spreading, oblique, slightly concave near the apex. **Petals** 9.1-9.3 x 0.9-1.2 mm, free, spreading, linear-filiform, 1-veined, acute, margin entire, spreading. **Lip** 2.8-3.0 x 4.0 mm, united to the entire length of the column, convex, base cuneate, entire, transversely elliptic, fleshy thickened except for the membranaceous, hyaline, fimbriate, revolute margin: bicallose, the calli horn-like, divergent, laterally compressed, disc with 3 low thickened ribs, parallel and reaching the mucronate apex of the lip. **Column** 7.5-8.5 mm long, basal half thin, gradually dilated towards the apex, slightly arched. **Clinandrium-hood** reduced; margin entire. **Nectary** penetrating half the pedicellate ovary, slightly thickened behind the perianth with forming a vesicle, unornamented. **Anther** reniform, 4-celled, creamy white. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles twice as long as the pollinia, soft and granulose. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, half as long as the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

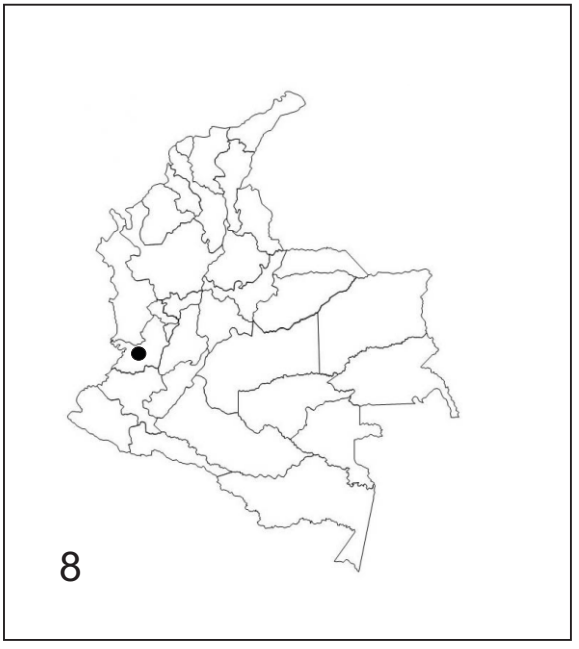
DISTRIBUTION AND ECOLOGY: Known presently from a single collection from the Pacific watershed of the Cordillera Occidental in southern Colombia, at 1250 m altitude, in wet humid forests. Found in the presence of other orchids such as *Epidendrum dendromacroophorum* Hágsater & Dodson (vegetatively very similar), *Elleanthus robustus* Rchb.f., as well as plants of the genera *Elaeagia* Wedd. (Rubiaceae), *Oreopanax* Decne. & Planch. (Araliaceae), *Cavendishia* Lindl. (Ericaceae), *Anthurium* Schott (Araceae), and ferns. Flowering in May-June.

RECOGNITION: *Epidendrum medusichilum* belongs to the Jatunsachanum Group, which is recognized by the caespitose habit, numerous narrow leaves, the apical inflorescence in young stems, the lateral inflorescences in mature plants of some species, the inflorescences producing new racemes through time, the lip with margins fimbriate, and the pollinia obovoid, not "bird-wing" type. The species is recognized by the arching stems with sub-plicate, lanceolate, long-acuminate leaves, the inflorescence with a long peduncle, the laxly 11 flowered raceme, flowers spreading horizontally and lip facing downwards, pale buff colored, column and lip white, the lip transversely elliptic, fleshy, convex, the margins revolute, fimbriate, hyaline, sepals 9.0-10 mm long, dorsally pustulate towards the apex, and the ovary pubescent. *Epidendrum jatunsachanum* Dodson & Hágsater is vegetatively similar, but produces solitary, successive flowers, sepals 16 mm long, yellowish brown inside, dorsally green, lip white heavily dotted with purple, the 3-lobed lip has lateral lobes obliquely rectangular, and the mid-lobe is flabellate, ovary unornamented. *Epidendrum hajekii* Vásquez & Dodson has linear-lanceolate leaves, 3 flowers, sepals 11.5-16 mm long, greenish brown and the lip white tinged purple, lip 3-lobed, the lateral lobes sub-quadrate, and the ovary unornamented.

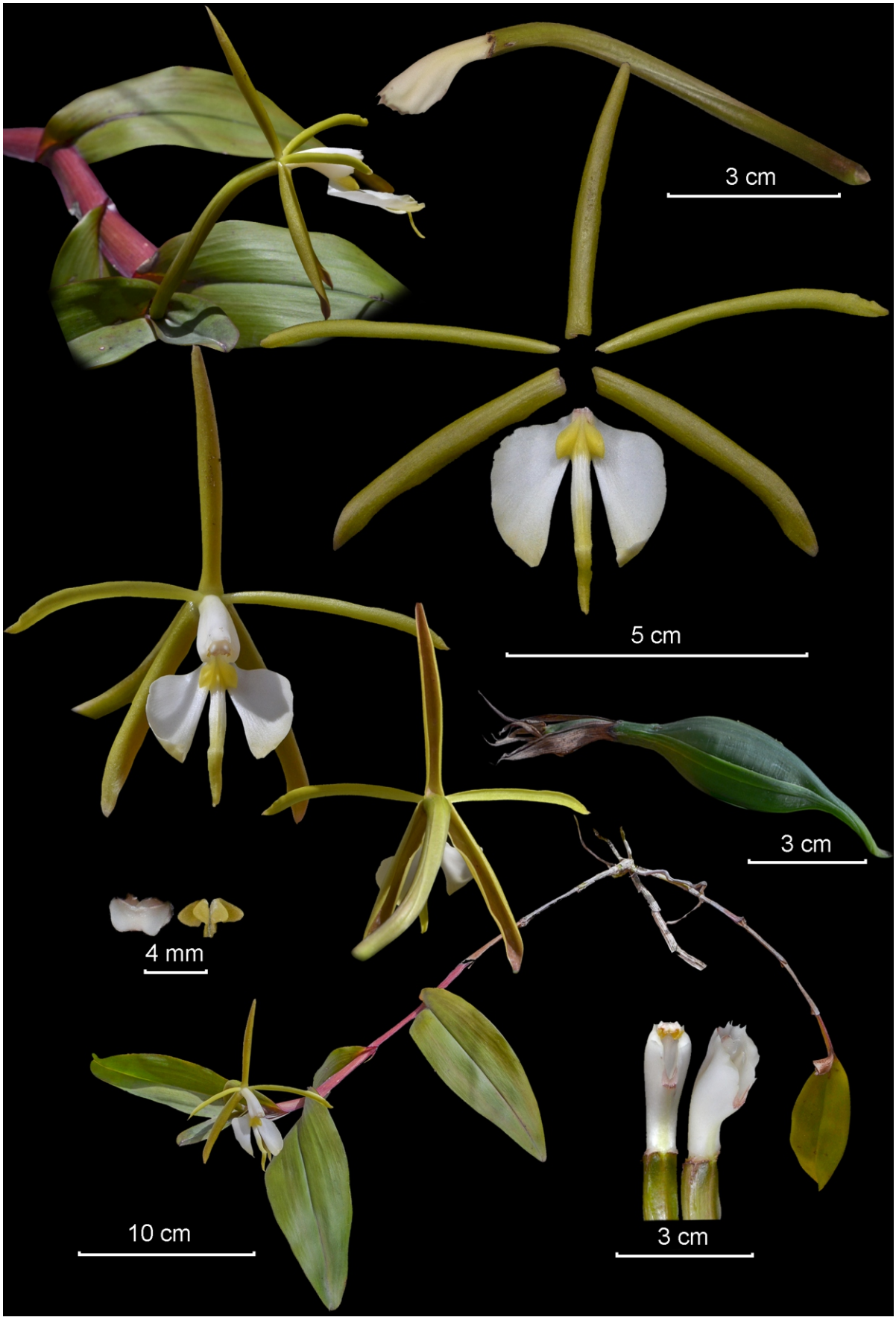
CONSERVATION STATUS: DD. Data deficient. Known presently from a single collection. Possibly widespread along the Chocó area at the same altitudinal range.

ETYMOLOGY: From the Greek medusa, jellyfish, and ς, lip, in reference to the convex, fleshy lip with the margin fimbriate, and the fimbria very thin and hyaline, reminiscent of a jellyfish.

REFERENCES: Hágsater, E., 2007, *Epidendrum hajekii* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: pl. 945. Hágsater, E., & E. Santiago, 2013, *Epidendrum dendromacroophorum* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: pl. 1422. Santiago E. & Hágsater E., 2010, *Epidendrum jatunsachanum* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: pl. 1342.



Authors: E. Hágsater, E. Santiago & R. Galindo T. **LCDP: R. Galindo T. & A. Cisneros** **Photo: R. Galindo T.** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM MERIDENSE Hágsater & C.Jerez **Plate 1822**

EPIDENDRUM MERIDENSE Hágsater *et* C.Jerez*, sp. nov.*

Type: VENEZUELA: Estado Mérida: Mun. Libertador: Sector La LLanada, 2070 m, 16 septiembre 2020, ***Carlos J. Jerez 1299***.
Holotype: MER! (digital images of pretype, AMO!)

Similar to *Epidendrum tumuc-humaciense* (Veyret) Carnevali & G.A.Romero but the leaves green on both sides with the sheaths red (vs. leaves and sheaths medium green, exceptionally the plants completely wine-red), ovary 75-105 mm, longer than the sepals (vs. ovary [40-]80-100[-110] cm long, longer than the sepals), sepals 42-72 mm long (vs. sepals [35-]48-81 mm long), capsule 84 mm long with the body slightly displaced towards the apex (vs. [65-]90-110 mm long, the body occupying the apical half).

Epiphytic, sympodial, caespitose **herb**, 27-42 cm tall including the inflorescence. **Roots** 2-3 mm in diameter, fleshy. **Stems** 24-27 x 0.3-1.3 cm, laterally compressed, ancipitose towards the apex. **Leaves** 4-6, distributed along the apical 2/3 of the stems, coriaceous; sheaths 1.3-2.5 x 0.5-1.7 cm, tubular, laterally compressed, ancipitose, red; blades 1.5-16.0 x 1.5-6.0 cm, green on both sides, ovate to elliptic, apex bilobed, with an evident dorsal keel. **Inflorescence** racemose, producing new racemes from the same peduncle through age and thus becoming pluri-racemose; peduncle inconspicuous. **Floral bracts** very small, much shorter than the ovary, triangular, acuminate, embracing. **Ovary** 75-105 x 4 mm, not inflated, terete, unornamented, furrowed. **Flowers** 1 at a time per raceme, if 2-3 from different racemes, resupinate, green, column white, lip white with the apexes green, especially the apical half of the mid-lobe, calli yellow; fragrance nocturnal, similar to *Epidendrum ciliare* L. or *E. leucochilum* Link, Klotzsch & Otto. **Sepals** 42-72 x 5-9 mm, spreading, free, linear-lanceolate, acute, 10-veined, margins entire, revolute. **Petals** 43-58 x 3-4 mm, spreading, linear-oblanceolate, acute, 6-veined, margins entire, revolute. **Lip** 31-56 x 26 mm, united to the column, deeply 3-lobed, base rounded, margins entire, spreading; bicallose, calli laterally compressed, prominent, divergent; disc 3-carinate, the lateral ribs extending to the half of the mid lobe, the central rib throughout the mid lobe; lateral lobes 23-37 x 10.5-10.8 mm, oblique, semi-ovate, smooth, the inner margin straight, apex obtuse; mid-lobe 44 x 3-4 mm, linear-triangular, acute, margin entire, spreading. **Column** 22-25 x 7.4-8.0 mm, slightly arched, obconical, dilated towards the apex, the apex widely rounded below. **Clinandrium-hood** prominent, entire, margin scarcely long dentate. **Anther** 4-celled, reniform. **Pollinia** 4, sub-triangular, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semi-liquid, translucent. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, reduced. **Nectary** deep, penetrating nearly the whole pedicellate ovary, narrow, unornamented. **Capsule** 84 x 22 mm, ellipsoid (prolate); pedicel 22-24 x 2-4 mm; body 45-48 x 22, slightly displaced towards the apex, occupying around half the total length; apical neck 12 x 6 mm.

OTHER SPECIMENS: VENEZUELA: Estado Mérida: Mun. Libertador: alrededores de la ciudad de Mérida, al pie de la Sierra Nevada de Mérida, 2000-2100 m, col. septiembre 2018, photographed 7 VII 2020, pressed 16 IX 2020, *Jerez 571*, MER! (sterile).

OTHER RECORDS: VENEZUELA: Estado Mérida: Mun. Libertador: alrededores de la ciudad de Mérida, al pie de la Sierra Nevada de Mérida, 2000-2100 m, col. IX 2018, photographed 7 VII 2020, *Jerez 571* (plant & flower); *Jerez 572* (capsule). (LCDP and Photo voucher).

DISTRIBUTION: Known presently only from the foothills of the Sierra Nevada de Mérida, northeastern end of the Andes, south of Mérida, Venezuela, at an altitude of 2000-2100 m, which is relatively high for this group of species. No other herbarium specimen has been seen at that altitude in the area. However, the collectors have known the species since 1986 from this area. Flowering in July and probably throughout a larger part of the year with successive flowers.

RECOGNITION: *Epidendrum meridense* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, short, racemose or pluri-racemose inflorescence, lacking spathes, large, star-shaped flowers with similar sepals and petals, and the lip mostly deeply 3-lobed with entire margins. The new species has small sized plants, stems 24-27 cm long, 4-6 leaves 1.5-16.0 x 1.5-6.0 cm, ovate to elliptic, ovary 75-105 cm long, sepals 42-72 mm long, and the lip comparatively wide, 31-56 x 26 mm, with the mid-lobe only slightly longer than the lateral lobes, the lip white with the apexes green. *Epidendrum tumuc-humaciense* has taller stems to 105 cm high with up to 27 leaves, 3.0-9.2 x 1.2-2.8 cm, medium green (exceptionally plants completely wine red), a long ovary usually [40-]80-110[-110] mm long, and sepals varying greatly, [35-]48-81 x 3-5 mm. *Epidendrum spruceanum* Lindl. described from the "Barra do Rio Negro", Amazonas, occurs in the Amazon basin of Brazil and Peru below 200 m altitude; it is recognized by its relatively longer and narrower leaves, 8.0-17.5 x 2.0-4.5 cm, shorter ovaries, 37-45 mm long, sepals [30]48-70 mm long, lateral lobes of the lip hemi-lanceolate, apex narrowly rounded, and the body of the capsule centered (we have used here only measurements of the type specimens: *R. Spruce 1666*). *Epidendrum carpophorum* Barb.Rodr. has stems 30 cm tall, stems terete, and smaller flowers, sepals 40-41 mm long, capsule 132 mm long as per the type illustration

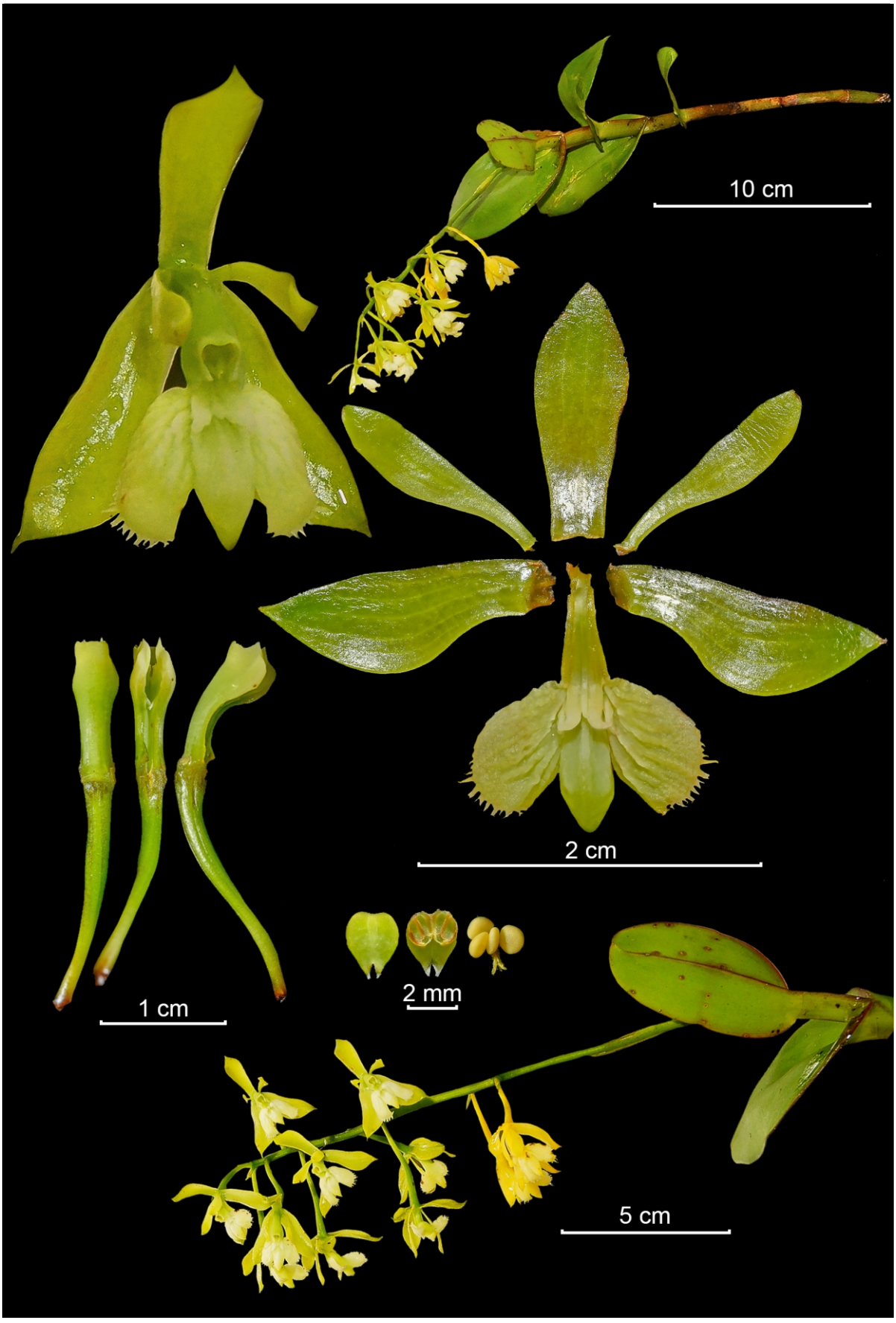
NOTE: There is a specimen labelled as *Epidendrum nocturnum* Jacq. at AMES of *Julian A. Steyermark 62666* from Sucre State, Cerro Turumuquire, between the eastern and western peaks, just west of Boquerón, which is similar in size to this specimen and is the only other specimen found at higher altitudes, 2300-2500 m. We only have a photograph of the specimen and as it is far to the east in isolated mountains, we are not able to see if it corresponds to this new species. The description of *Epidendrum carpophorum* by Sánchez and Hágsater (2010) is based on a collection of various species; that description must be reevaluated. Here we provide data from the type from the state of Rio de Janeiro.

CONSERVATION STATUS: DD. Data Deficient. Found often around the city of Mérida where it is abundant, but the forests had been turned into prairies which are now recuperating their forests and epiphytic species.

REFERENCES: Carnevali, G., & G.A. Romero, 1996, Orchidaceae Dunstervillorum VII: The *Epidendrum nocturnum* alliance in the Venezuelan Guayana and the Guianas, **Lindleyana** 11(4): 239-249. Sánchez S., L. & E. Hágsater, 2010, *Epidendrum carpophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.**: 13: pl. 1313. Sánchez S., L. & E. Hágsater, 2015, *Epidendrum tumuc-humaciense* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.**: 15(1): pl. 1566. Sánchez S., L. & E. Hágsater, 2015. *Epidendrum spruceanum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.**: 15(1): pl. 1561.

Authors: E. Hágsater & C. J. Jerez **LCDP: C. J. Jerez & A. Cisneros** **Photo: C. J. Jerez** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020. Plate 1822**



EPIDENDRUM MESOMICRON Lindl. **Plate 1823**

EPIDENDRUM MESOMICRON Lindl., Fol. Orchid. 3(Epidendrum): 51 (1853).

Type: BOLIVIA: ***Bridges sub John Lindley 161.*** Type: K (not seen). Tracing of type, of Lindley's sketch of column and lip, and loose flowers: W-R 4753!

Epiphytic, sympodial, caespitose, erect **herb** to 75 cm tall including the inflorescence. **Roots** 1 mm in diameter, basal, fleshy. **Stems** 40 x 0.5-1.5 cm, cane-like, laterally compressed, erect, straight; basal half covered by 3-4 sheaths 2-4 cm long, tubular, scarious and fibrous with time. **Leaves** 4-6, distributed along the apical half of the stem, unequal in size (the lower leaf smaller), articulate, sub-spreading, coriaceous, green; sheaths 2-6 x 0.5-1.5 cm, tubular, minutely striated; blade 3.2-14 x 2.5-4.7 [6.5] cm, oblong to oblong-elliptic, apex obtuse, unequally bilobed, margin entire, spreading. **Spathe** 3.0-5.7 cm, tubular, obtuse. **Inflorescence** 15-40 cm long, apical, lax flowered, generally paniculate, rarely racemose, when paniculate with up to 6 racemes 6.5-15.5 cm long, each raceme subtended by a bract 7-20 mm long, triangular, obtuse, embracing; peduncle 9-17 cm long, terete, straight, thin; rachis 8.1-26 cm long. **Floral bracts** 2-10 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 17-21 mm long, terete, thin, furrowed. **Flowers** 7-70, successive, resupinate, green to yellowish green, concolor; fragrance not registered. **Sepals** spreading, free, slightly convex, oblanceolate, acute, 5-veined, margin entire, spreading, dorsal sepal 15.0-15.6 x 4.9-5.5 mm, lateral sepals 16.8-17.0 x 4.6-6.0 mm. **Petals** 13.4-14.2 x 2.8-3 mm, partly spreading, free, narrowly oblanceolate, obtuse, 3-veined, margin entire, spreading. **Lip** 8.8-9.2 x 10.8-15.0 mm, united to the column, 3-lobed, base cuneate, tricallose, the lateral calli fleshy, divaricate, with the mid-callus a long narrow trip pointed and slightly shorter than the main calli; disc with multiple radiating thickened veins, prominent, crenate, disappearing before they reach the margins of the lip and a long low mid-rib; lateral lobes 6.6-7.8 x 6.3-7.7 mm, obliquely obovate, the margins rounded, margin laciniate, especially towards the outer apical half; mid-lobe 4.7-4.9 x 2.4-3.1 mm, oblong, apex obtuse, margin entire. **Column** 11 mm long, thin at base, widened towards the apex, slightly arched, with a pair of apical wings ending in acute apex. **Clinandrium-hood** short, margin sub-crenate. **Anther** ovoid, apex bidentate, 4-celled. **Pollinia** 4, lentil-shaped, caudicles granulose, longer than the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, ½ the length of the stigmatic cavity. **Nectary** penetrating ¼ of the pedicellate ovary, not inflated. **Capsule** not seen.

OTHER SPECIMENS: BOLIVA: Without locality, *Bang s.n.*, NY! **Cochabamba:** Prov. Chapare, along the road to Villa Tunari, 1500 m, 24 I 1980, *Luer 4940*, SEL! Chapare, Pampa Tambo, 10 I 1979, *Vásquez 93*, SEL! (illustration, AMO, published Vásquez & Ibisch 2004). **La Paz:** Nor Yungas, 11 km NE of Chuspipata on Coroico road, valley of Río Coroico, 2350 m, 27 I 1984, *Gentry 44724*, MO! NY! along Rio Zongo, north of La Paz, 2600 m, 27 I 1980, *Luer 4971*, SEL! Sud Yungas, along Rio Unduavi, 2900 m, 29 I 1980, *Luer 5000*, SEL! Nor Yungas, 22 km NE (below) Unduavi on road to Yolosa Junction (Corioco), 3000 m, 29 II 1980, *Solomon 5184*, MO! Nor Yungas, 8.7 km below Chuspipata on road to Yolosa, 2400 m, 23 I 1983, *Solomon 9306*, MO! 27.4 km below N dam at Lago Zongo, 2500 m, 16 III 1984, *Solomon 11867*, MO! Nor Yungas, 4.7 km al NE (Abajo) de Chuspipata, 2800 m, 11 XI 1987, *Solomon 17332*, MO! Valle del Río Zongo, 24.3 km al N de la Cumbre, 2850 m, 8 I 1988, *Solomon 17472*, MO! Murillo, Valle del Río Zongo, 26 km al N de La Cumbre, 2600 m, 14 II 1988, *Solomon 17857*, MO! **PERU: Cusco:** Paucartambo, Bs. Aires a Morro Leguía-Cosñipata, 2200 m, II 1994, *Moscozo 869*, CUZ! Along road Cusco - Quillabamba, Abra Malaga-San Luis, 2800 m, 4 V 2006, *van der Werff 21294*, MO! Quispicanchis, Hda. Ttis Marcapata, 2000 m, 27 I 1943, *Vargas 3121*, CUZ! Machu Picchu, 2550 m, 9 III 1944, *Vargas 4123*, CUZ! **Huánuco:** Carpish, 2850 m, 15 VIII 1940, *Asplund 13131*, S! Caserio San Pedro de Carpish, alrededor del tunel, 2818 m, 4 II 2002, *Beltrán 5039*, USM! Between Huánuco and Carpish, 2200 m, 30 IX 1986, *Bennet 3686*, MOL! San Pedro de Carpish, 2670 m, 29 VIII 2002, *Salinas 680*, USM! (illustration AMO!) Carpish Divide, near the Carpish cumbre), 9000 ft, 1 X 1945, *Sandeman 5209*, K! San Pedro de Carpish, 3 km E of tunnel, 2250 m, 15 I 1987, *Stein 3860*, MO! USM! **Pasco:** Parque Nacional Yanachaga Chemillén, Dist. Oxapampa, Parque Nacional Yanachaga-Chemillén, Sector Chacos-Antena, 2600 m, 14 I 2004, *Vásquez 28710*, HOXA! MO! Ibid. Sector Chacos, 2600 m, 18 I 2018, *Vásquez 28759*, HOXA! SEL! Sector Chacos, 2471 m, 24 I 2004, *Vásquez 28948*, AMO! HOXA! Sector Abra Esperanza, 2750 m, 22 II 2007, *Vásquez 31902*, HOXA!

OTHER RECORDS: PERU: Without locality data, *Rudi Cruz Ch. s.n.* digital photo, AMO! (Photo voucher) **Amazonas:** ACP "Los Chilchos" Comunidad Campesina de Leymebamba, 2600-2800 m, 27 I 2015, *Salas s.n.*, digital photo, AMO! **Cusco:** Hotel Pueblo Inkaterra, jardín botánico, 2500 m, XI 2011, *Hágsater s.n.*, digital photo, AMO! Colca, Valle de Yanatile, 1900 m, 31 III 2014, *Huamantupa s.n.*, digital photo, AMO! Cusco y su ceja de selva y los valles interandinos, *Nuñez s.n.*, digital photo, AMO! **Junín:** Without locality data, 1 XII 2013, *Nauray s.n.*, digital photo, AMO! **Madre de Dios:** Without locality data, *Soras s.n.*, digital photo, AMO! **San Martín:** Rioja, Bosque de Protección Alto Mayo, Sector Venceremos, 1870 m, 14 II 2016, *Edquén 2101*, digital photos, AMO! (LCDP voucher)

DISTRIBUTION AND ECOLOGY: Widely distributed from northern Peru to central Bolivia, along the upper eastern slope of the Andes, at 1500-3000 m. Flowering throughout the year.

RECOGNITION: *Epidendrum mesomicron* belongs to the Ampliracemum Group which is characterized by the simple, cane-like, few-leaved stems, with 1-2, tubular, laterally compressed, tight spathes at the base of a racemose to paniculate, erect inflorescence, and the flowers resupinate or not. The species is recognized by the oblong to oblong-elliptic leaves 3.2-14 x 2.5-4.7 [6.5] cm, the erect inflorescence subtended by a prominent spathe, the green to yellowish green flowers, a 3-lobed lip, the apical outer margin of the lateral lobes laciniate, the mid-lobe oblong, obtuse, and the disc with radiating thickened veins. *Epidendrum melanoxeros* Hágsater & Dodson is similar but the leaves are elliptic, 12.5-14.5 x 2.6-2.9 cm, the inflorescence is racemose and arching, the lip 3-lobed without radiating thickened veins and the lateral lobes are dolabriform, with the margin erose-dentate. *Epidendrum ampelomelanoxeros* Hágsater, E.Santiago & E.Parra has leaves ovate-lanceolate to lanceolate, acute, 4.2-11.5 x 1.0-3.0 cm, flowers yellowish green tinged red, the lateral lobes of the lip with an erose margin, and mid-lobe oblong-triangular with the apex obtuse. *Epidendrum leiomesomicron* Hágsater & E. Santiago, from Azuay, Ecuador, has smaller leaves , 8.3-9.0 x 1.9-2.3 cm, oblong, sub-spreading, the erect inflorescence with 2 prominent, imbricated spathes 3.5-9.5 cm long, non-resupinate flowers yellowish green the sepals dorsally tinged brown, the lip 3-lobed, smooth, without prominently thickened veins, and the mid-lobe triangular.

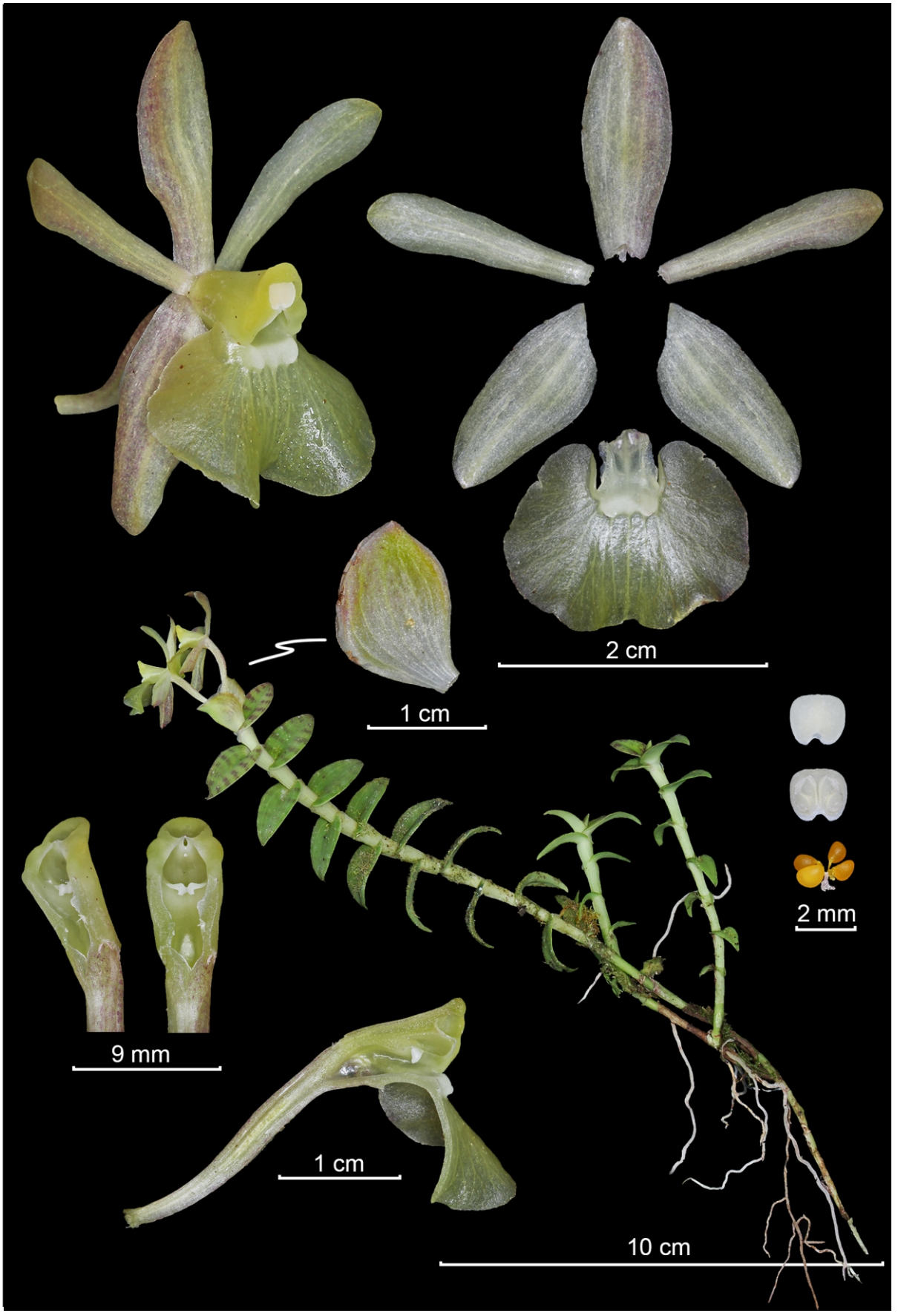
***NOTE:** This species exhibits a third callus in between the usual large main calli, which is clearly long, at least half as long as the column, pointed and slightly shorter than the main calli. No similar structure has been detected in any other species of the genus *Epidendrum*.

CONSERVATION STATUS: NT Not Threatened, the species is widespread and apparently common from central Peru to central Bolivia. It has been widely collected and photographed.

ETYMOLOGY: From the Greek -, middle, and , small, in reference to smaller mid-lobe of the lip.

REFERENCES: Hágsater, E. & C.H. Dodson, 1999, *Epidendrum melanoxeros* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3, pl. 354. Hágsater, E., & E. Santiago, 2020, *Epidendrum leiomesomicron* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl.1817. Hágsater, E., E. Santiago & E. Parra, 2013, *Epidendrum ampelomelanoxeros* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14, pl. 1405. Vásquez, R., & P.L. Ibisch, 2004, **Orquídeas de Bolivia: diversidad y estado de conservación** 2: 197 (pl. 39).

Authors: E. Santiago & E. Hágsater **LCDP: J. D. Edquén & A. Cisneros** **Photo: R. Cruz** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM MICROTIGRIPHYLLUM Ocupa, Hágsater & E.Santiago **Plate 1824**

EPIDENDRUM MICROTIGRIPHYLLUM Ocupa, Hágsater *et* E.Santiago, *sp. nov.*

Type: PERU: Amazonas: Prov. Bongará: Distr. Yambrasbamba: Ruta San José - Nuevo Horizonte, 2350 m, 25 octubre 2018, ***Luis Ocupa Horna 403***. Holotype: HUT! (LCDP voucher).

Similar to *Epidendrum tigriphyllum* Hágsater but stems erect (vs. stems pendulous), leaves small 1.0-3.0 x 0.4-1.0 cm (vs. leaves 1.6-3.8 x 0.5-1.5 mm), petals shorter and wider, 17 x 4.3 mm (vs. petals narrower 21 x 1.6-2.0 mm), clinandrium-hood thick but truncate, not surpassing the body of the column (vs. clinandrium-hood very prominent, fleshy, expanded, bulging above the body of the column), and lip cordiform-reniform, widest beyond the mid-length, base deeply cordate, apex rounded (vs. lip widely cordiform, wider at the mid-length), callus prominent, entire, broad, the sides formed by semi-orbicular thickenings (vs. callus divided into 4 lobes, one pair superimposed on the other pair).

Epiphytic and lithophytic, sub-caespitose, sympodial, repent, erect **herb**, 11-28 cm tall including the flowers. **Roots** 1-2 mm in diameter, filiform, scarce along the rhizomatous part of the stem. **Stems** 8-18 cm long, cane-like, erect, terete, lower part covered with several tubular, non-foliar sheaths, pale green, turning brown. **Leaves** numerous throughout the stem, spreading perpendicular to the stem; sheaths tubular, pale green; blade 1.0-3.0 x 0.4-1.0 cm, ovate-lanceolate, acute, grayish green, sometimes with transverse purple bands. **Spathes** 2, 1.4-1.7 x 1.0-1.3 cm, prominent, semi-ovate, conduplicate, oblique, obtuse, covering the peduncle of the inflorescence. **Inflorescence** apical, from mature stem, sessile; peduncle up to 1 cm long. **Floral bracts** 3 mm long, very small, much shorter than the ovary, hidden within the spathe, triangular, acute. **Ovary** 1.5-2.1 cm long, dilated shortly behind the perianth. **Flowers** 1-2, resupinate, simultaneous, grayish yellow-green, callus and anther white, column and clinandrium green; fragrance lacking. **Sepals** spreading, free, elliptic, obtuse, margin entire, somewhat revolute, 5-veined; dorsal sepals 18 x 6.5 mm, lateral sepals 16.5 x 7 mm, oblique. **Petals** 17 x 4.3 mm, free, spreading, oblanceolate, apex rounded, 3-veined, margins entire, spreading. **Lip** 14 x 18 cm, united to the column, entire, cordiform-reniform, widest beyond the middle, base deeply cordate, apex rounded, margin entire, scarcely and slightly undulate; callus prominent, entire, broad, white, the sides formed by semi-orbicular thickenings forming a shallow arc when seen from in front. **Column** 10 x 5 mm, straight, thick, widened vertically towards the obliquely truncate apex. **Clinandrium-hood** prominent, fleshy thickened at the apex above and on the sides. **Anther** 2 mm wide, reniform, 4-celled. **Pollinia** 4, semi-obovoid, slightly laterally compressed, in two pairs, dark yellow; caudicles short; viscidium translucent, clear white. **Nectary** wide, slightly penetrating behind the perianth, unornamented. **Lateral lobes of the stigma** small, triangular, white, stigmatic cavity occupying about 1/3 of the column, apical. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Morona-Santiago: Macas-Guamote, ca. 1800 m, 5 II 1985, *Hirtz 3138*, MO! Digital image of live flowers AMO! Macas-Guamote, 2200 m, III 2000, *Hirtz 7233*, SEL! flower in spirit and photo of live flower: AMO! Cantón Gualaquiza, Bosque Vegetación Protectora Tambillo, 2400 m, 1 IV 2001, *Suin 909*, HA!

OTHER RECORDS: ECUADOR: Zamora-Chinchipe: Chinchipe, San Andrés, Parque Nacional Yacuri, camino Zumba-Jimbura, a 50 km de Zumba, pasando San Andrés y la Quebrada Troya, 2192 m, 30 I 2004, *Hágsater 14098*, AMO in spirit! Digital images, AMO! (Photo voucher) **PERU: Amazonas:** prov. Bongará, Yambasbramba, Exposición 2 Congreso Peruano de Orquideología, Orquídeas Amazónicas vivero alto, Alto Nieva, 2165 m, 2 XI 2019, *Hágsater 16315*, digital image, AMO! **San Martín:** Moyobamba, Exposición 2 Congreso Peruano de Orquídeología, *Hágsater 16282*, digital photo, AMO! Ibid. *Hágaster 16382*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Ecuador and Peru: Amazonian slope of the Cordillera de los Andes, Parque Nacional Sangay, Yacuri, and Cordillera de Colán. On shrubs and boulders in wet montane forest, at 1800-2400 m altitude. Flowering in October and April.

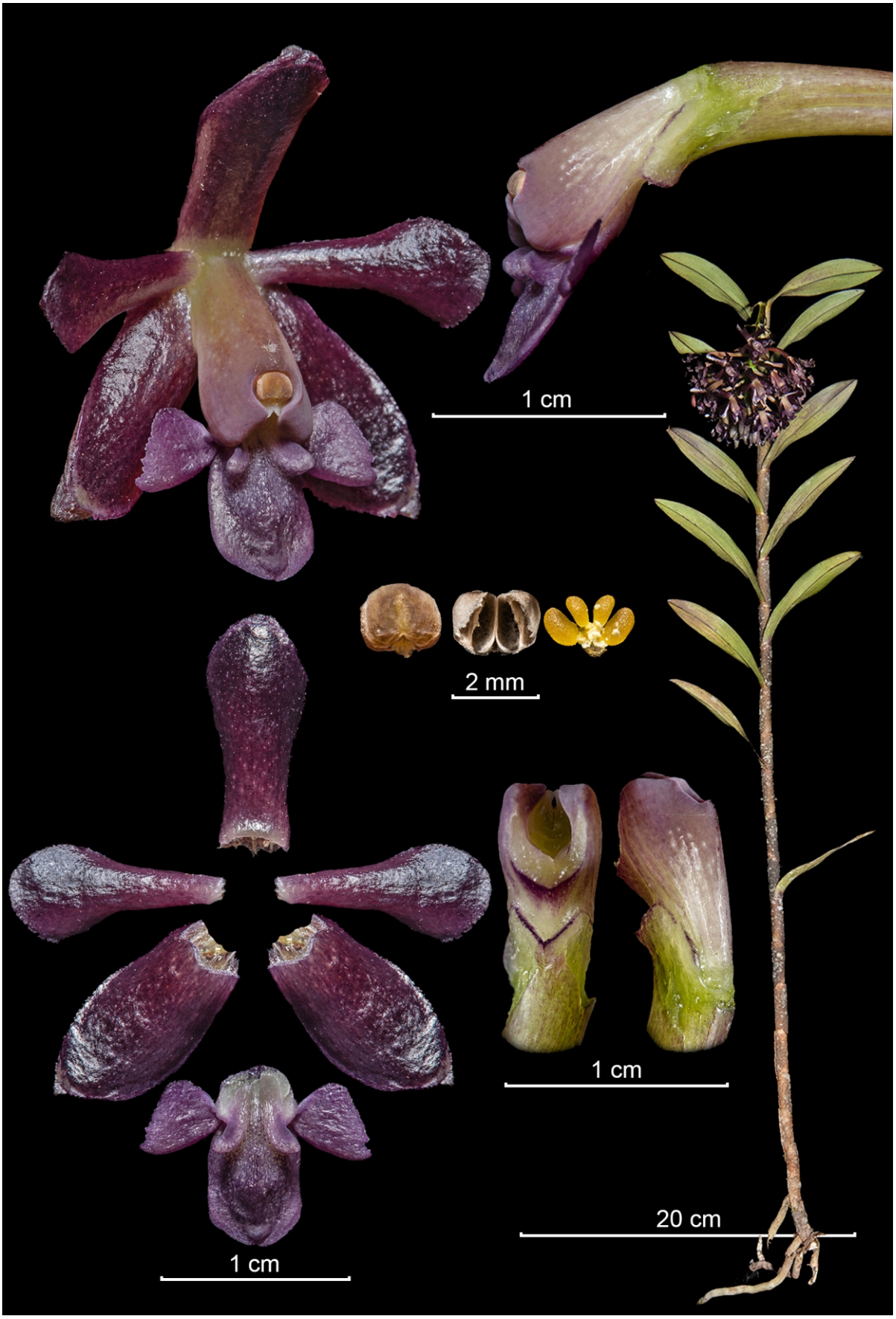
RECOGNITION: *Epidendrum microtigriphyllum* belongs to Megalospathum Group characterized by the caespitose but branching habit, the many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathaceous bracts, resupinate flowers, and the column more or less united to the lip, and the Tigriphyllum Subgroup which is characterized by the plants generally pendant and the leaves ovate to lanceolate, with purple-reddish transversal lines. The new species is recognized by the comparatively small leaves, 1.0-3.0 x 0.4-1.0 cm, the column straight with fleshy prominent clinandrium-hood, and the lip cordiform-reniform, widest beyond the middle, and callus prominent, entire, broad, white, the sides formed by semi-orbicular thickenings. *Epidendrum tigriphyllum* Hágsater has pendulous plants, larger leaves, 1.6-3.8 x 0.5-1.5 mm, narrower petals 21 x 1.6-2.0 mm, the column a very prominent, fleshy with an expanded clinandrium-hood, and the lip spade-shaped, with only a slightly cordate base, obtuse apex, with a narrow, prominent callus divided into 4 lobes, one pair superimposed on the other pair. *Epidendrum miradoranum* Dodson & D.E.Benn. has ovate-lanceolate leaves 1.2-2.7 x 0.5-1.0 cm, a single apical spathe 16 mm long, and up to 4 green flowers slightly tinged pale pink, sepals 22-25 mm long, and the lip rectangular-reniform with two short, sub-orbicular calli. *Epidendrum chaparense* Dodson & R.Vásquez has narrowly lanceolate, oblique leaves, 1.4-2.5 x 0.3-0.8 cm, a two-flowered inflorescence, flowers smaller, pale greenish white, sepals 13-14 mm long, and the lip sub-orbicular with a pair of short, globose calli.

CONSERVATION STATUS: NT. Not Threatened. Widespread and relatively common. Some collections have been made in protected areas in both Ecuador and Peru, some in forest remnants.

ETYMOLOGY: From the Greek μικρος, small, τιγρη, tiger and φυλλο, leaf, in reference to the relatively small leaves of this species with purple striped leaves, that facilitates its recognition.

ACKNOWLEDGMENTS: Collections by Hágsater and Salazar made in Ecuador under framework contract "Diversidad Genética del Ecuador" MAE-DNB-CM 2016-0045, Instituto Nacional de Biodiversidad, INABIO. "Investigando las causas de la megadiversidad. Factores asociados a la diversificación macroevolutiva de cuatro grupos vegetales neotropicales".

REFERENCES: Dodson, C.H., & D.E. Bennett Jr., *Epidendrum miradoranum,* **Icon. Pl. Trop.** ser 2, 1: pl. 66. 1989. Dodson, C.H., & R. Vásquez Ch., *Epidendrum chaparense*, **Icon. Pl. Trop.** ser 2, 4: pl. 327. 1989. Hágsater, E., 1999, *Epidendrum tigriphyllum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: pl. 387. Hágsater, E., & E. Santiago, 2020, *Epidendrum chaparense,* in E. Hágsater & E. Santiago (eds.), The Genus Epidendrum, Part 11, **Icon. Orchid.** 18(1): pl. 1805.



EPIDENDRUM MOLANOI Rinc.-González, M.F.Escal., E.Santiago & J.S.Moreno **Plate 1825**

EPIDENDRUM MOLANOI Rinc.-González, M.F.Escal., E.Santiago *et* J.S.Moreno, *sp. nov.*

Type: COLOMBIA: Tolima: Anaime, predios Fundación Semillas de Agua, 3400 m, 8 de noviembre de 2018, ***María Fernanda Escalante y Milton Rincón 122.*** Holotype: TOLI! (LCDP voucher). Digital images of fresh material and floral segments in alcohol, AMO!

Similar to *Epidendrum gaertelmaniae* Hágsater & O.Pérez but the bracts floral 10 mm long (vs. bracts floral 3-4 mm long), the petals with the margin slightly revolute in the basal half, extended and crenate in the apex (vs. petals with the margin strongly revolute and erose), the lateral sepals with tiny appendix, dorsal pustulous at the apex (vs. sepals laterals prominently aristate, unornamented), the mid-lobe of the lip rectangular, obovoid, proportionately longer than wide (vs. mid-lobe of the lip transversely rectangular, wider than long).

Terrestrial, monopodial, **herb** 130-150 cm tall, branching distally, the branches shorter than the main stem. **Roots** 3 mm in diameter, basal from the primary stem, thick, fleshy, white. **Stems** cane-like, terete, straight, branching sub-apically; the primary stem 130-150 x 1.0-1.1 cm, the branches 6-8 x 0.6-0.7 cm. **Leaves** 15-22 along the main stem, alternate, 5 distributed along the apical half of the branches; sheaths tubular, striated; blade elliptic, apex rounded to bilobed, coriaceous, smooth, green to dark purple, with 1-3 pairs of secondary veins, margin entire; the leaves of the main stem 8-9 x 1.5-1.8 cm, those of the branches 1.6-4.5 x 1.5-1.8 cm. **Spathe** lacking. **Inflorescence** 12 cm long, apical from the primary stem and branches, racemose, arching-nutant, dense, peduncle terete, arching, unornamented, without bracts, rachis straight. **Floral bracts** 10 mm long, triangular, acuminate, much shorter than the ovary, embracing. **Flowers** 12-30, simultaneous, resupinate, dark purple, column greenish-yellow in the base, purple to the apex; without fragrance. **Ovary** 30 mm long, thin, terete, not inflated, furrowed, the furrows disappear below the middle. **Sepals** fleshy, glabrous, apex rounded, 3-veined, margin entire; the dorsal sepal 12 x 5.0 mm, free, extended, oblanceolate, revolute in the basal half, dorsally pustulous towards the apex; lateral sepals 12 x 6.5 mm, adnate to the base of the column, partly spreading, obovoid, slightly oblique, short apiculate, the apex very much fleshier than the rest of the blade. **Petals** 12 x 4.5 mm, free, spreading, fleshy, spatulate, apex rounded, 3-veined, mid-vein prominent, lateral veins short branched throughout, margin crenate in the apex, slightly revolute in the basal half. **Lip** 7 x 11 mm, united to the column, 3-lobed, bicallose, the calli fleshy, prominent, divaricate, disc with a prominent, entire, rugose, wide thickening, disappearing towards the apex of the mid-lobe; lateral lobes 4.5 x 4 mm, dolabriform, distal margin crenate; mid-lobe 5 x 4.5 mm, rectangular-obovoid, margin entire, apex minutely emarginate. **Column** 10 mm long, thick, straight, the apex with a pair of short, rounded wings. **Clinandrium-hood** reduced, margin entire. **Anther** 1.5 x 1.8 mm, reniform, microscopically papillose in front, 4-celled. **Pollinia** 4, ovate, flattened, the inner pair smaller, caudicles soft and granulose, short. **Rostellum** sub-apical, slit. **Lateral lobes of the stigmatic cavity** about half as long as the stigmatic cavity. **Nectary** penetrating ¾ of the pedicellate ovary, thin. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Tolima: between Ibagué and Armenia, 3500 m, 20 IX 1982, *Luer 8494*, SEL! Cajamarca-Bolivar, Vereda La Nevera, 3099 m, 31 VIII 2011, *Montoya 253*, HUA! Mun. Cajamarca, Vereda la Ceja, Montecristo; 3300 m, 13-29 III 2012, *Montoya 737*, MEDEL! Roncesvalles, Páramo de la Yerbabuena, 13 VI 2015, *Rincón 447*, COL!

OTHER RECORDS: COLOMBIA: Tolima: Roncesvalles, Páramo de Yerbabuena, 2800 m, 18 VII 2015, *Riñaos s.n.*, digital photo, AMO! (Photo voucher)

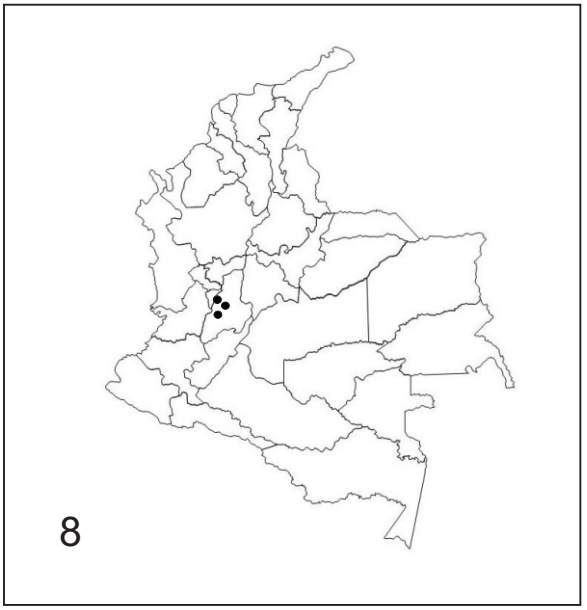
DISTRIBUTION AND ECOLOGY: So far the species is known only for the upper eastern slope of the Cordillera Central in Tolima, Colombia. Lithophytic or terrestrial at 2800-3400 m, growing together with *Epidendrum bogotense* Schltr. in the paramo vegetation dominated by many species of grasses and shrubs.

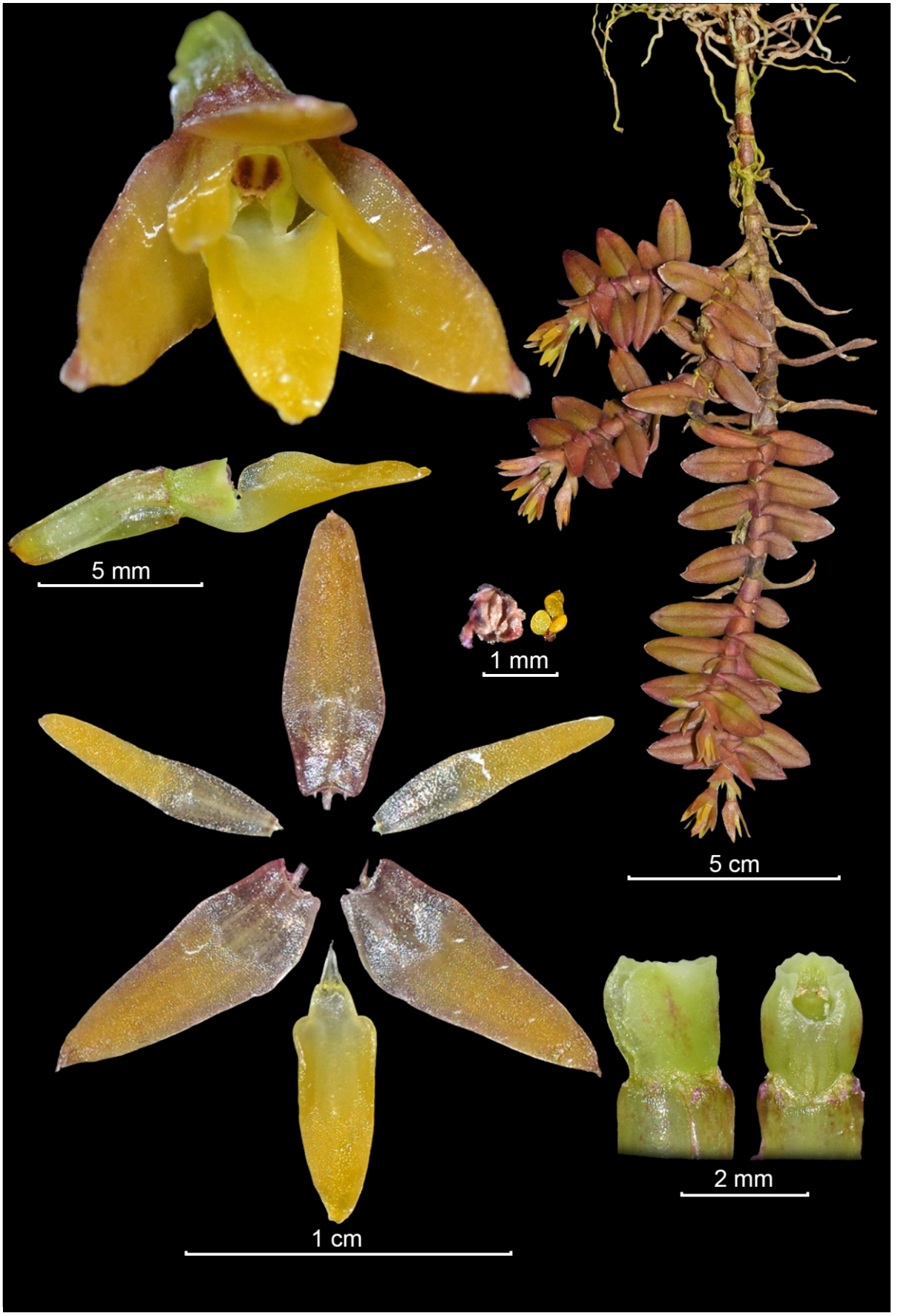
RECOGNITION: *Epidendrum molanoi* belongs to the Cernuum group, characterized by the monopodial, cane-like stems with sub-apical branching, the branches much shorter than the main stem, coriaceous to sub-coriaceous, bilobed leaves and fleshy resupinate flowers with the lip 3-lobed. This new species is recognized by its purple flowers, with the base of the column greenish-yellow, the sepals of 12 mm long, fleshy and dorsally pustulous, the petals 12 x 5 mm, spatulate with the apex obtuse and the margin revolute in the basal half, and the lip 7 x 11 mm, 3-lobed, the lateral lobes dolabriform with the distal margin crenate, the mid-lobe rectangular, obovoid. *Epidendrum gaertelmaniae* Hágsater & O.Pérez has greenish-purple flowers, sepals unornamented, the lateral sepals with the prominent apex aristate, petals 8.3 x 3.8 mm, with the margin strongly revolute, erose, and the lip 7 x 8.3 mm with a tridentate thickening on the disc, the mid-lobe transversely rectangular. *Epidendrum brevicernuum* Hágsater & Dodson has greenish-white to green flowers, sepals 8-12 mm long, unornamented, the laterals prominently aristate, petals 8-0-10.5 x 1.0-2.5 mm, narrowly oblanceolate with the margin strongly revolute, and the lip 6-6.5 x 7.6-9.5 mm, with the mid-lobe sub-quadrate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: Named after Alfredo de la Cruz Molano Bravo (1944-2019), Colombian sociologist, journalist and writer, who dedicated his life to travel the rural areas of Colombia with the intention of compiling the historical memory of the Colombian conflict, and worked his last years of life to be mediator in the peace dialogues.

REFERENCES: Hágsater, E., & C.H. Dodson, 2001, *Epidendrum brevicernuum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 3, **Icon. Orchid.** 4: pl. 421. *Epidendrum gaertelmaniae*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: pl. 1334.





EPIDENDRUM NAMBIJAENSE Hágsater & H.Medina **Plate 1826**

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

Type: ECUADOR: Zamora-Chinchipe: Cantón Zamora; Parroquia San Carlos de las Minas, vía a las minas de oro de Nambija, ca. 1200 m, pressed 27 May 2020 in cult. at Ecuagenera, Gualaceo, collected by ***Iván Portilla 0090***. Holotype: HA! (LCDP and Photo voucher). Ibid., digital images, 27 Mayo 2020, AMO!

Similar to *Epidendrum integrinanum* Hágsater but the plants shorter, 5.8-20 cm long (vs plants ca. 6-30 cm long), leaves greenish brown (vs. green concolor), the flowers yellow to pale brown (vs. flowers white with green tinge), sepals ovate-lanceolate, 8 x 1.5-2.5 mm (vs. sepals oblanceolate, 9.3-9.6 x 2.5-2.6 mm), petals linear-lanceolate (vs. petals linear) and the lip 6.0 x 2.0 mm, triangular in general form, without lateral lobes (vs. lip 4.0 x 2.5 mm, the mid-lobe narrowly triangular and the lateral lobes very reduced, hemi-orbicular and rounded).

Epiphytic, sympodial, pendent **herb,** 5.8-20 cm long, including the inflorescence, the new stems arising from a sub-apical internode of the previous stem. **Roots** 1 mm in diameter, basal from the initial stem and sometimes from a sub-apical stem, thin, filiform. **Stems** 4.6-17.8 x 0.2-0.3 cm, simple, cane-like, laterally compressed, straight, the new stem originating from a middle to sub-apical internode of the previous stem, gradually becoming slightly thinner and shorter. **Leaves** 5-15, aggregate along the stem, alternate, articulate, spreading, unequal in size, the basal one generally larger, sub-coriaceous, twisted at the base so as to be in the same plane as the stem, reddish brown; sheaths 5.0-6.0 mm long, tubular, laterally compressed, coriaceous; blade 0.6-2.0 x 0.6-0.9 cm, widely lanceolate, obtuse, margin entire. **Spathe** lacking. **Inflorescence** 1.6-1.8 cm long, apical, racemose, sub-umbellate, straight; peduncle strongly reduced, laterally compressed, straight; rachis 5.0 mm long, short, laterally compressed to terete, thick, straight. **Floral bracts** 5.0-7.0 mm long, almost the same length as the ovary, decreasing towards the apex, ovate-triangular, acute to acuminate, margin entire, light brown. **Flowers** 2-4, simultaneous, pendent, the lip always oriented towards the rachis, yellow to pale brown, the sepals dorsally minutely dotted reddish brown, lip slightly brighter than sepals, column light green, anther brown; without any apparent fragrance. **Ovary** 5.0 mm long, terete to slightly laterally compressed, thin, inflated ventrally at the apex, furrowed, light green. **Sepals** 8.0-9.0 x 2.9-3.2 mm, partly spreading, free, ovate-lanceolate, acute, short apiculate, 3-veined, margin entire, spreading; lateral sepals like the dorsal sepal, slightly oblique. **Petals** 7.0 x 1.6 mm, partly spreading, free, linear-lanceolate, obtuse, 1-veined, margin entire, spreading. **Lip** 6.0 x 2.0 mm, united to the column, sub-entire, triangular in general form, basal corners rounded, fleshy, without lateral lobes, margin entire, apex obtuse; ecallose and disc forming a wide channel into the nectary. **Column** 1.8-2.0 x 1.7 mm, slightly thicker at the apex, the sides somewhat rounded so as to be somewhat spherical when seen from below. **Clinandrium-hood** short; margin crenulate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, yellow, caudicles short and granulose. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, the stigmatic cavity somewhat round. **Nectary** deep, ventral, somewhat inflated, unornamented, penetrating 2/3 of the pedicellate ovary. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known from a single locality in the Amazonian region of Ecuador; in Zamora-Chinchipe, around San Carlos de Las Minas, along the road leading to the Gold Mines, in secondary forest at 1200 m altitude. It prefers rain forests, found epiphytic in trees and shrubs of secondary forest and in less often in trees of *Psidium guajava* L. (common name Guayaba). Flowering in May.

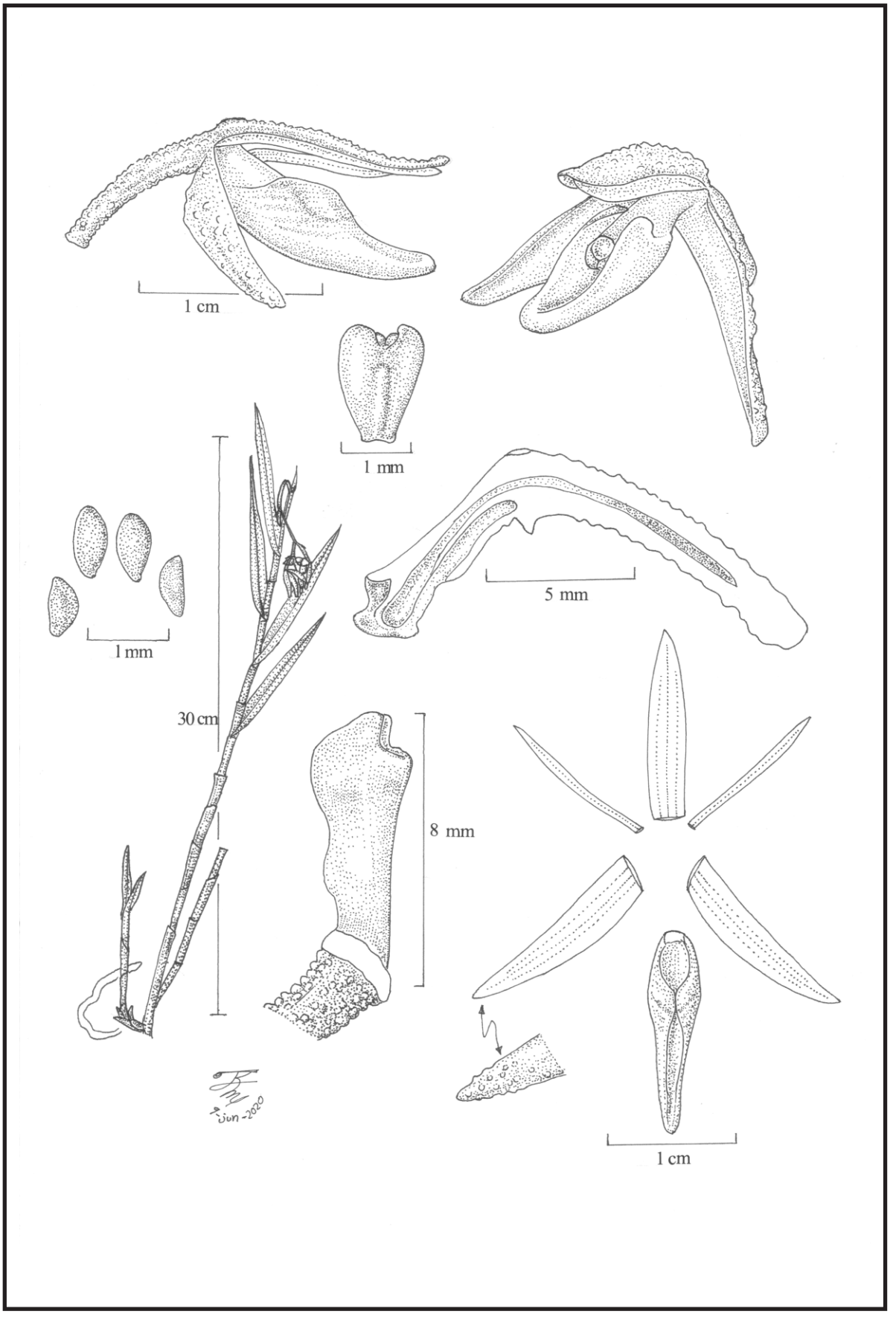
RECOGNITION: *Epidendrum nambijaense* belongs to the Nanum Group, which is characterized by the *Dichaea*-like pendent stems, the inflorescence produced by pairs of opposite flowers, without spathaceous bracts, but with prominent floral bracts. The new species is recognized by the plants 5.8-20 cm long, widely lanceolate leaves, reddish brown, the ovate-triangular floral bracts, the resupinate yellow to pale brown flowers, column green, with sepals ovate-lanceolate, 8.0-9.0 x 2.9-3.2 mm, and petals linear-lanceolate, obtuse, and by the small sub-entire lip, 6.0 x 2.0 mm, the mid-lobe triangular in general form, basal corners rounded, fleshy, with no lateral lobes, margin entire, apex obtuse; ecallose. *Epidendrum integrinanum* Hágsater has large, plants (about ca. 6-30 cm long), green concolor leaves, flowers white with green tone, with dorsal sepal oblanceolate, and lateral sepals oblanceolate-elliptic, 9.3-9.6 x 2.5-2.6 mm, petals linear, and by the small sub-entire lip, 4.0 x 2.5 mm, the mid-lobe triangular (longer than wide) and the lateral lobes very reduced, hemi-orbicular and rounded. *Epidendrum vesicinanum* Hágsater & L.Valenz. has smaller plants, 4.4-6.7 cm long, light green flowers, a lanceolate dorsal sepal, 5.6-6.0 x 1.8-2.0 mm, petals linear, acute, and by 3-lobed, bicallose lip, 3.1 x 2.5 mm, with lateral lobes reduced, transversely elliptic, and the mid-lobe lanceolate.

CONSERVATION STATUS: DD. Deficient. Apparently, the species seems to be rare on the slopes of the Cordillera del Cóndor. As it is found in disturbed secondary growth habitats and Guayaba trees it appears to be a colonizer, and probably has been overlooked by collectors.

ETYMOLOGY: Named after the town of Nambija, where the new species has been found.

ACKNOWLEDGMENT: The collection of the type was made under the permit: Rescate, conservación, reproducción y manejo ex- situ de la flora del Ecuador," Ministerio del Ambiente Autorización No 004-2016- IC-FLO DNB/MA

REFERENCES: Hágsater, E., 2019, *Epidendrum integrinanum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1729. Hágsater, E., & L. Valenzuela G., 2019, *Epidendrum vesicinanum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum,* Part 13, **Icon. Orchid.** 17(1): pl. 1755.



EPIDENDRUM NAVICULARE Hágsater, M.E.Acuña & E.Santiago **Plate 1827**

EPIDENDRUM NAVICULARE Hágsater, M.E.Acuña *et* E.Santiago, *sp. nov.*

TYPE: PERU: Pasco: Prov. Oxapampa: Distr. Huancabamba; Parque Nacional Yanachaga-Chemillén, Sector Quebrada Yanachaga, Parcela permanente 1 Ha, 3170 m, 19 noviembre 2009, ***Margot Elizabeth Acuña Tarazona, Rigoberto Rivera & José Luis Mateo 361.*** Holotype: USM! Flower in liquid AMO! Digital images of floral segments, AMO! (Illustration voucher). Isotype: MO 6329439!

Similar to *Epidendrum papallactense* Hágsater & Dodson but the stems ancipitose (vs. laterally compressed but not ancipitose), flowers green with the sepals dorsally dotted red (vs. flowers blue to black, the lip green to black, column green), sepals 14-15 x 3.0-3.5 mm, narrowly triangular (vs. sepals 8-9 x 4.0-5.5 mm, ovate), lip 14.5 x 10-11 mm, navicular in natural position, incipiently 3-lobed and ecallose (vs. lip 7 x 11 mm, entire, widely reniform with a "Y" shaped callus).

Epiphytic, sympodial, caespitose, **herb**, ca 45 cm tall. **Roots** 3 mm in diameter, basal, thick, scarce. **Stems** to 41 x 0.4-0.6 cm, cane-like, terete at base, laterally compressed and ancipitose apically. **Leaves** 8-10, distributed along the apical 2/3 of stem, articulate, sub-coriaceous, sub-erect; sheaths 1.2-3.5 x 0.4-0.6 cm, tubular, laterally compressed, ancipitose, striated, pale green in young stems, turning ochre colored in mature stems; blade 8.5-14 x 0.8-1.4 cm, narrowly lanceolate, slightly oblique, acuminate, green. **Inflorescence** 10-16 cm long, apical, racemose to paniculate; peduncle 4-12 x 0.2 cm, laterally compressed, ancipitose, with intermediate large bract 10 mm long, at about 2/3 the length, narrowly triangular, acuminate; rachis 1.2-5 cm long, somewhat zigzag, thicker than peduncle but terete, producing new racemes near the base, and sequential flowers. **Floral bracts** 1-3 mm long, triangular, acute, much shorter than ovary, apical bracts imbricated, verrucose. **Flowers** up to 26 per raceme, successive, up to 4 open at one time per raceme, sepals green, red doted minutely, splotched outside, petals pale green, lip pale green, column green; fragrance sweet. **Ovary** 5-6 mm long, thin, densely papillose, at a 120° angle to the column. **Sepals** 14-15 x 3.0-3.5 mm, free, narrowly triangular, slightly concave at base, acuminate, dorsally papillose, margin entire, spreading; dorsal sepal partly spreading, nearly parallel to the column, 3-veined; lateral sepals spreading, 5-veined, oblique. **Petals** 12 x 1 mm, free, petals adpressed to the inside margin of the dorsal sepal, linear, acuminate, 1-veined, margin entire, spreading. **Lip** 14.5 x 10-11 mm, united to the basal half of the column, fleshy, navicular in natural position, somewhat 3-lobed, ecallose; lateral lobes 1.5 x 5 mm, small and incipient, hemi-elliptic; mid-lobe 4.5 x 4.2 mm, the apex acute, margin entire. **Column** 7.5 mm long, straight, basal half thin, thickened towards the apex and with a pair of obliquely truncate wings. **Clinandrium** reduced, margin entire. **Anther** ovoid, apex truncate, 4-celled. **Pollinia** obovoid, somewhat laterally compressed. **Lateral lobes of the stigma** small. **Nectary** shallow, without penetrating the ovary, thin. **Capsule** 33 x 16 mm, pedicel 3 x 1 mm, body 30 x 16 mm, surface verrucose, apical neck very short, obsolete; perianth persistent.

OTHER SPECIMENS: PERU: Pasco: Prov. Oxapampa: Distr. Huancabamba; Parque Nacional Yanachaga-Chemillén, Sector Quebrada Yanachaga, 3170 m, 7 X 2009, *Acuña 182,* HOXA! Distr. Huancabamba; Parque Nacional Yanachaga-Chemillén, Sector Quebrada Yanachaga, 2922 m, 7 X 2009, *Acuña 193*, USM! Parque Nacional Yanachaga-Chemillén, Abra Esperanza, camino a la laguna, 2828 m, 14 XI 2010, *Briceño 457*, HOXA! MO USM! Distr. Huancabamba; Parque Nacional Yanachaga-Chemillén, Sector Quebrada Yanachaga, 3110 m, 24 IX 2008, *Ureta 934A*, USM! (only stem) MO.

OTHER RECORDS: BOLIVIA: La Paz: Parque Nacional Cotapata, *Iván Jiménez et al.* (2015), fig. 71, *Epidendrum* sp. 11. **PERU: Pasco:** Distr. Huancabamba: Parque Nacional Yanachaga-Chemillén, Abra Yanachaga, received 10 XI 2010, *Ortiz s.n.*, digital images, AMO! (Photo voucher).

DISTRIBUTION AND ECOLOGY: Known presently from central Peru, Department of Pasco, District of Huancabamba, in the Parque Nacional Yanachaga-Chemillén, and from western Bolivia. Epiphytic at 2828-3170 m altitude in primary montane, very wet forest and elfin. Flowering from September to November.

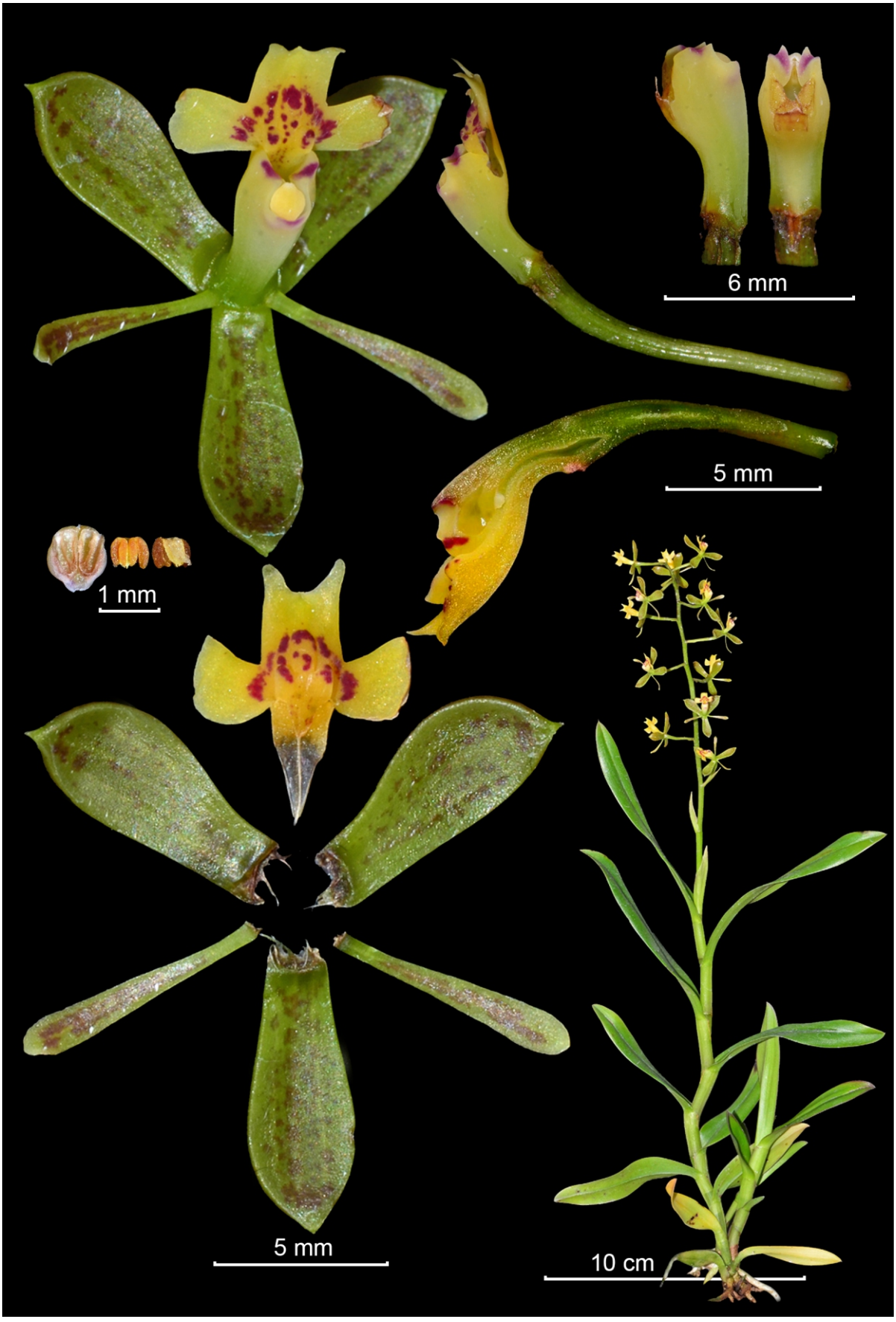
RECOGNITION: *Epidendrum naviculare* belongs to the Frutex Group characterized by the caespitose, sympodial plants with simple, cane-like stems, lacking any spathe, apical inflorescence usually arching nutant, and the fleshy small flowers with a more or less cup shaped lip. The new species is recognized by the stems about 45 cm tall, the upper part laterally compressed and ancipitose, the leaves 8.5-14 x 0.8-1.4 cm, narrowly lanceolate, the ovary and bracts papillose, the flowers green dorsally dotted red, sepals 14-15 mm long, narrowly triangular, and the lip navicular and incipiently 3-lobed when spread. *Epidendrum papallactense* is vegetatively similar but the stems are flat without being ancipitose, the ovary and floral bracts are unornamented, the flowers are blue to black, the lip green to black, column green, the sepals 8-9 mm long, and the lip widely reniform with a "Y" shaped callus. *Epidendrum chinchaoënse* Hágsater, D.Trujillo & E.Santiago, belonging to the Elleanthoides group, is florally similar but the inflorescence is 2.7 cm long, the peduncle terete, sepals 6.5-8.0 mm long, flowers yellowish green, concolor, smooth, and the floral bracts unornamented.

CONSERVATION STATUS: DD. Data deficient. It has been collected relatively frequently in the Parque Nacional Yanachaga-Chemillén, in Pasco, and there is a recent photographic record from near La Paz, Bolivia, so the species appears to be widespread, but collections throughout the range are scarce.

ETYMOLOGY: From the Latin, *navicularis*, boat, an adjective. In reference to the lip which is reminiscent of a boat.

REFERENCES: Hágsater, E. & C.H. Dodson, 2001, *Epidendrum papallactense* in E. Hágsater & L. Sánchez S. (eds.) **Icon. Orchid.** 4: pl. 468. Hágsater, E., D. Trujillo & E. Santiago, 2009, *Epidendrum chinchaoënse* in E. Hágsater & L. Sánchez S. (eds.) **Icon. Orchid.** 12: pl. 1220. Jiménez, I., J. Quezada & J.C. Bermejo, 2015, Parque Nacional Cotapata y alrededores, La Paz, Bolivia, **Orquídeas de Cotapata**, rapid color guide 361 version 2, 280 figs. field.guides@fieldmuseum.org

Authors: E. Hágsater, M. E. Acuña & E. Santiago **Illustrator: R. Jiménez M.** **Photo: E. M. M. Ortiz V.** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM NEGROPAUTENSE Hágsater & H.Medina **Plate 1828**

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

Type: ECUADOR: Morona-Santiago: Cantón Santiago de Méndez; sector El Partidero, entre los ríos Paute y Negro, ca. 800 m, colectado 27 abril 1994, espécimen preparado de material propagado de semilla sembrada junio 2015, prensado junio 2020, ***Ecuagenera MAE-DPAA-2020-0028***. Holotype: HA! (LCDP voucher.)

Similar to *Epidendrum xelidonourum* Hágsater & H.Medina, but the inflorescence elongate, laxly flowered, racemose, flowering only once (vs. short and compact, pluri-racemose, producing new racemes over several years), flowers non-resupinate, green to brown, lip yellow marked with wine red (vs. flowers resupinate, pale greenish white to pale ochre, column and lip white), mid-lobe of the lip rectangular, the apex strongly concave forming a pair of narrow, triangular lobules, apex narrowly rounded, parallel, the outer margin straight with the rest of the mid-lobe, sometimes reduced (vs. mid-lobe rectangular ending in a pair of linear-triangular, acuminate, arching, divaricate lobules).

Epiphytic, sympodial, caespitose, erect **herb**, 22-30 cm tall. **Roots** 2-3 mm in diameter, basal, fleshy, white, the apex pale green. **Stems** 18 x 0.4-0.6 cm, straight, terete, thin. **Leaves** ca. 7 [up to 10 in the first stem of propagated material], distributed throughout the stem; sheaths 15-25 x 5 mm, tubular, pale green; blade 2.0-12.5 x 0.8-2.2 cm, lanceolate-elliptic, acute, fleshy, dark green, appearing waxy, with one vein prominent running the length of the blade, margin entire, spreading. **Spathe** lacking. **Inflorescence** 13 cm long, apical, longer than the apical leaf, erect, racemose, laxly-few flowered; peduncle 5.4 x 0.2-0.3 cm, thin, terete, provided with two prominent bracts 15-26 x 3-4 mm, arched, apex acute, the lowest tubular along the basal half, ancipitose; rachis 8 x 0.2-0.3 cm, slightly sinuous, terete. **Floral bracts** 1-10 x 1 mm, the lowest about as long as the ovary rapidly decreasing in size to much shorter than the ovary, linear-triangular to triangular, acute, embracing. **Ovary** 10 x 1 mm, straight, terete, furrowed, slightly inflated ventrally at the apex. **Flowers** 8-14, simultaneous, non-resupinate, green to brown, with a few red-brown spots on petals and sepals, the lip yellow dotted with wine-red around the disc, on the ribs and at the of the white clinandrium-hood, column green to white, apex with wine red dots; fragrance lacking. **Sepals** 7.0 x 3.0 mm, spreading, oblanceolate-oblong, apex apiculate especially the lateral sepals, somewhat concave towards the apex, 3-veined, margins entire, spreading. **Petals** 7.0 x 0.1 mm, linear-oblanceolate apex rounded, slightly oblique near the base, 1-veined, margin entire, spreading. **Lip** 4.5 x 6.0 mm, united to the column, deeply 3-lobed, base cordate, the whole lip flat except for the apical lobules which are slightly upturned, lobes spreading; bicallose, calli elongate, thick rounded, separated by a thickened mid-rib which surpasses the calli somewhat and is thickened beyond the calli, reaching the middle of the lip and lying on the thickened disc; lateral lobes 2.0 x 1.9 mm, hemi-orbicular, the forward margin straight; mid-lobe 3.8 x 2.1 mm, rectangular, the apex usually strongly concave forming a pair of narrow, triangular lobules, apex narrowly rounded, parallel, the outer margin straight with the rest of the mid-lobe, sometimes lacking and the mid-lobe obtuse at the apex. **Column** 6.0 x 2.9 mm, nearly straight, thin at the base, sharply thickened ventrally in the middle. **Clinandrium-hood** much reduced, totally exposing the anther, margin entire. **Rostellum** apical slit. **Anther** sub-globose, 4-celled. **Pollinia** 4, laterally compressed, the inner pair slightly smaller; caudicles as long as the pollinia, laminar, margins granulose; viscarium semi-liquid, transparent. **Nectary** only penetrating the apex of the pedicellate ovary, unornamented. **Lateral lobes of the stigma** small, about ¼ the length of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: ECUADOR: Morona-Santiago: Cantón Santiago de Méndez; sector El Partidero, entre los ríos Paute y Negro, ca. 800 m, hort. Ecuagenera, from propagated material from seed, June 2020, *Ecuagenera MAE-DPAA-2020-0028*. Digital image AMO! (Photo voucher).

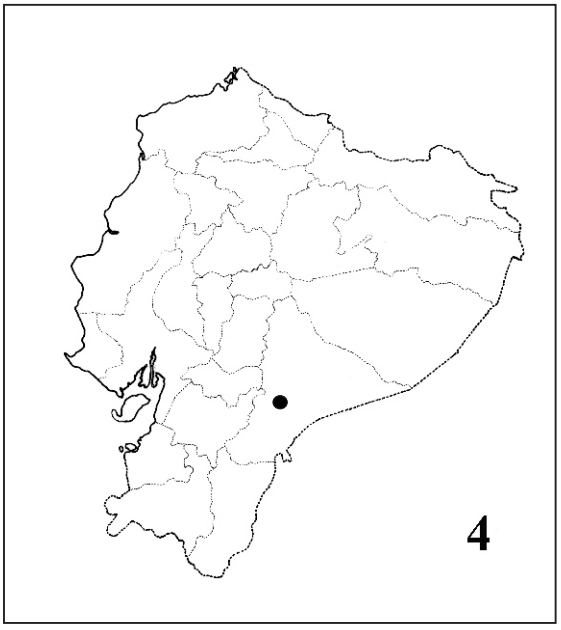
DISTRIBUTION AND ECOLOGY: Presently known from a single site from southeastern Ecuador. In the province of Morona-Santiago, in the basin of the Río Paute; growing below the canopy of large trees among lichens and moss in primary forest at about 800 m altitude. Flowering in May and June, in cultivation from May to September.

RECOGNITION: *Epidendrum negropautense* does not fit well in any known group, we thus propose a new Negropautense Group which is recognized by the sympodial, caespitose plant, the simple, erect inflorescence lacking spathes but with two large bracts on the somewhat long peduncle, inflorescence flowering only once, flowers non-resupinate, with a large 3-lobed lip, and the pollinia unequal, the inner pair smaller, and each pair compressed and flat on the inner face. The new species has green to brown, flowers sparsely spotted with red-brown, the deeply 3-lobed lip yellow, the disc and calli spotted with wine-red, the calli fleshy, thick, parallel, with a prominent mid-rib that thickens beyond the calli and does not go beyond the disc of the lip at the base of the mid-lobe. At first sight it is reminiscent of *Epidendrum pseudosarcoglottis* Hágsater & Dodson of the Mancum Group due to the plant habit and non-resupinate green flowers, with a white column lip, the lip marked with purple dots, but that group of species has prominent narrow spathes, and the lip is much reduced and fleshy. The mid-lobe is reminiscent of *Epidendrum xelidonourum* of the Bicirrhatum Group, but inflorescence of that species is short and a compact, sub-corymbose, producing successive racemes over several years, the flowers resupinate, pale greenish white to pale ochre, column and lip white, and the lobules of the mid lobe are linear-triangular, acuminate, arching, divaricate.

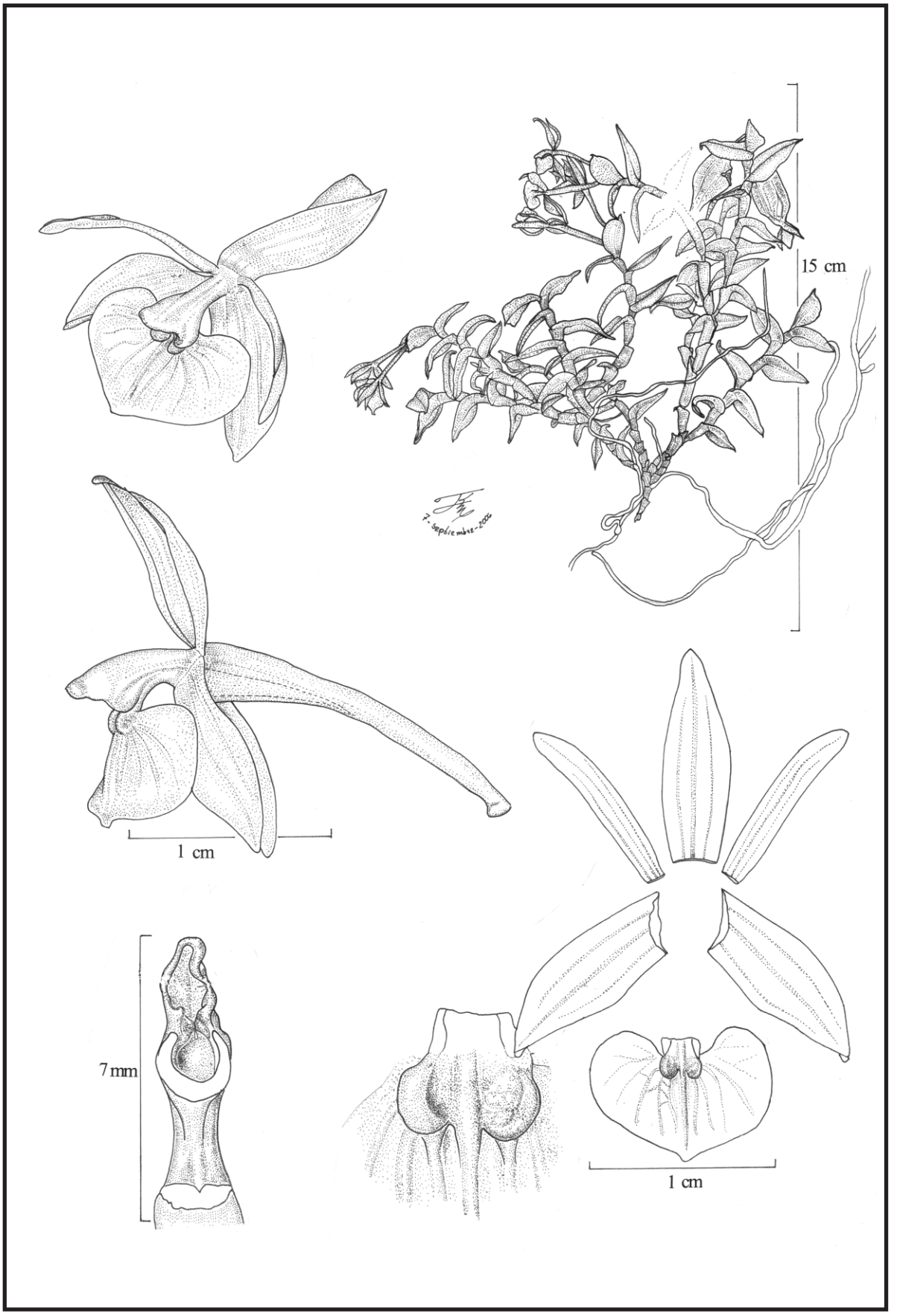
CONSERVATION STATUS: DD. Data deficient. Presently known from a single locality. The specimens collected and cultivated were pollinated and successfully reproduced in the laboratories of Ecuagenera, thus ensuring its survival *ex-situ*.

ETYMOLOGY: In reference to the junction of the Río Negro and the Río Paute, near where the species was first collected, in the Province of Morona-Santiago.

REFERENCES : Bennett Jr., D.E., & E.A. Christenson, 1998, *Epidendrum bicirrhatum*, **Icon. Orchid. Peruviarum** t. 453. Hágsater, E., & H. Medina, 2018, *Epidendrum xelidonourum* in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 16(1): pl. 1666. Sánchez. S., L., 2004, *Epidendrum pseudosarcoglottis* in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: pl. 783.



Authors: E. Hágsater & H. A. Medina **LCDP: H. A. Medina** **Photo: H. A. Medina** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM NUDOSABANILLENSE Hágsater **Plate 1829**

EPIDENDRUM NUDOSABANILLENSE Hágsater, *sp. nov.*

Type ECUADOR: Loja: Yangana: N Slopes of Nudo de Sabanilla S of Yangana on road to Valladolid, 2500 m, 24 February 1988, ***Ulf Molau & Björn Eriksen 3196.*** Holotype: GB! (Illustration voucher).

Similar to *Epidendrum calacaliënse* Hágsater & Dodson but the flowers are light green suffused with purple (vs. yellow), petals narrowly oblong, slightly falcate, apex rounded (vs. linear, acute), lip with the apex widely obtuse and two short low ribs in front of the calli (vs. reniform, rounded, shortly apiculate, without ribs in front of the calli), and the nectary penetrates about half of ovary (vs. very short, without penetrating the ovary).

Epiphytic, pendent **herb,** ca. 11 cm long, producing new stems from the lower internodes of the older stems. **Roots** ca. 0.7-1.4 mm in diameter, scarce, from the base of the primary and basal stems. **Stems** 4.0-9.0 x 0.15-0.3 cm, simple, cane-like, terete, the new stems produced from near the base of the previous stem, completely covered by evanescent, imbricating, foliaceous sheathes. **Leaves** ca. 7, articulate, distichous, spreading, evenly distributed throughout the stems; sheaths 0.3-0.7 x 0.2-0.3 cm, tubular, infundibuliform, minutely striated; blades 0.8-2.0 x 0.4-0.7 cm, lanceolate, acute, fleshy, entire, light green, transversely barred with purple. **Spathe** 1, 11-12.9 x 5.0-7.0 mm, semi-ovate, conduplicate, oblique, acute. **Inflorescence** apical, short, hanging. **Flowers** 2, simultaneous, resupinate, light green suffused with purple; fragrance not registered. **Ovary** 18-20 mm long, progressively inflated ventrally along the apical half, furrowed. **Sepals** free, spreading, 3-veined, margins entire, spreading; dorsal sepal 11.5 x 3.6 mm, lanceolate-elliptic, apex sub-acute; lateral sepals 12 x 4.2 mm, obliquely elliptic, slightly falcate, apex acute, with a low dorsal keel towards the apex. **Petals** 10.5 x 1.7 mm, spreading and slightly arched forward in natural position, narrowly oblong, slightly falcate, apex rounded, 3-veined, margins entire, spreading. **Lip** 7.2 x 10 mm, united to the column, entire, cordiform, base deeply cordate, apex widely obtuse, margins entire; bicallose, calli sub-orbicular, fleshy, somewhat leaning outwards, joined in the middle with the mid-rib, low and rounded, that reaches the apex of the lip, and with two short low ribs in front of the calli. **Column** 7.0 mm long, dorsally arched, the apex oblique, the sides rounded. **Clinandrium-hood** very prominent, longer than the body of the column, margin fleshy, thickened, margin entire, following the arch of the column, not funnel shaped. **Rostellum** apical, slit. **Anther** not seen. **Pollinia** not seen. **Lateral lobes of the stigma** not seen. **Nectary** penetrating about half the ovary, constricted near the base of the column, thickened at the perianth and gradually diminishing in diameter. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from southern Ecuador, on the upper slopes of the Nudo de Sabanilla, 2500 m altitude. Epiphytic in conserved and disturbed wet cloud forest. Flowering in February. The Nudo de Sabanilla, which divides the valley of Yangana, in the Province of Loja, and the area where the eastern ridge of the Andes along the Parque Nacional Podocarpus, which runs north-south, turns west into a complex knot of mountains which constitute the continental divide, which then run south along the Parque Nacional Yacuri. These are the headwaters of the Río Catamayo that runs northwest into the Pacific as part of the Río Chira that forms the border between Ecuador and Peru. To the south is the Valley of Valladolid, where the Río Valladolid runs, joining the Río Palanda, that runs south into the Río Mayo, which forms the border between Ecuador and Peru at its southernmost as part of the Amazon watershed.

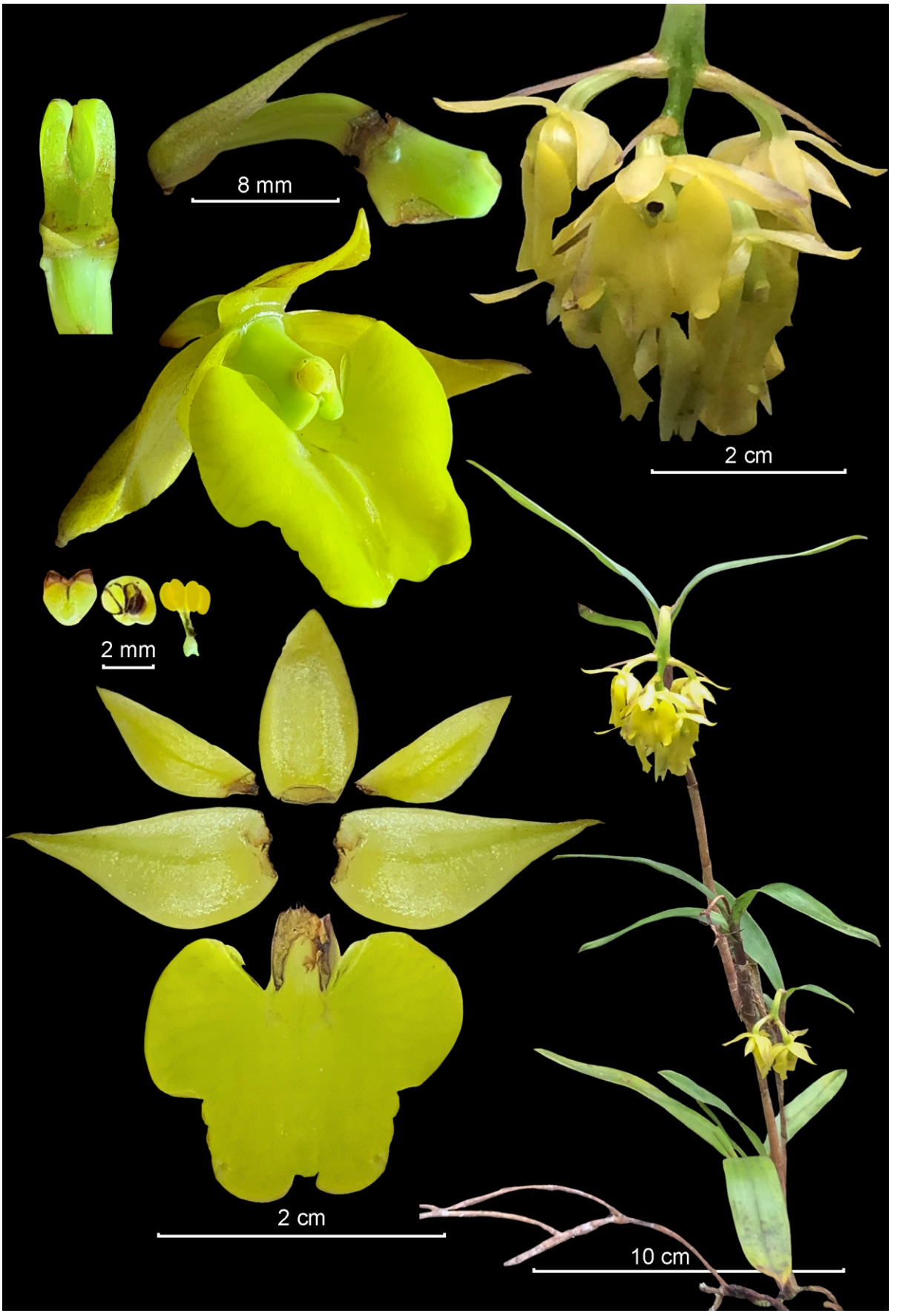
RECOGNITION: *Epidendrum nudosabanillense* belongs to the Megalospathum Group with pendent plants, fleshy leaves and large, semi-ovate spathes, and Tigriphyllum Sub-group which often has the leaves marked with purple transverse bars. The new species is recognized by the petals narrowly oblong, apex rounded, the cordiform lip, the apex widely obtuse, and the nectary penetrating about half the pedicellate ovary, somewhat widened at the perianth and thereafter narrower. *Epidendrum calacaliënse* Hágsater & Dodson has petals acute, minutely erose margin, and the shallow nectary does not penetrate the ovary. *Epidendrum posadorum* Hágsater is similar in size but the stems are laterally compressed, flowers light green with red-purple dots son the column, dorsal sepals 3-5 veined, petals linear with an acute apex, and the small lip (4.5-6 x 5-8 mm) is cordiform with a single large globose callus, and the nectary penetrates about half the ovary. *Epidendrum stanhopeanum* Kraenzl. has 3-4 somewhat larger, light green with rosy-purple flowers, broader sepals, 5 mm wide, a longer lip, 10 x 15 mm, margin denticulate. *Epidendrum microtigriphyllum* Ocupa, Hágsater & E.Santiago, has larger plants, leaves 1.0-2.5 cm long, a column straight and clinandrium hood truncate, and a lip cordiform-reniform, widest beyond the middle (14 mm wide), and base deeply cordate, callus entire, broad.

ETYMOLOGY: In reference to the Nudo de Sabanilla, which divides the valley of Yangana, in the Province of Loja, and the area where the eastern ridge of the Andes along the Parque Nacional Podocarpus, and Valladolid, in the Province of Zamora-Chinchipe.

CONSERVATIONS STATUS: DD. Data deficient. Known presently from a single collection. It is surprising no more specimens have been seen as it an obligatory stopping point for botanists, though trees are difficult to reach and most collections are made on roadside rocks and cliffs.

REFERENCES: Hágsater, E., 2001, *Epidendrum posadarum* in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 3, **Icon. Orchid.** 2: pl. 474. Hágsater, E., & C.H. Dodson, 2001, *Epidendrum calacaliënse* in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 3, **Icon. Orchid.** 2: pl. 424. Ocupa H., L., E. Hágsater & E. Santiago, 2020, *Epidendrum microtigriphyllum*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl.1824.

Author: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM PFAHLII Hágsater & Cisneros **Plate 1830**

EPIDENDRUM PFAHLII Hágsater *et* Cisneros, *sp. nov.*

Type: COLOMBIA: Distrito Capital: Chapinero: Quebrada El Chicó, Macizo de Bogotá, between Quebrada de Rosales and Quebrada del Chicó, 3000 m, 19 VI 1960, ***William H. Hatheway & Peter R. Jennings 1084***, Holotype: COL!

Similar to *Epidendrum gongorarum* Hágsater, Pfahl & Cisneros but stems straight, erect (vs. stems curved, sub-erect), sepals longer, 14-20 mm (vs. sepals shorter 11-13.5 mm), lip larger, 16 x 21 mm, 3-lobed (vs. lip smaller, 14 x 18.5 mm, sub-entire), lateral lobes of the lip sub-orbicular with margin entire (vs. general form of the lip sub-reniform with margin sub-undulate), and the column longer, 8.8 mm long (vs. column shorter, 6.9 mm long).

Epiphytic, sympodial, scandent, erect **herb** 18.5-27 cm tall, where the new stem is produced from the middle of the previous stem. **Roots** from the base of the primary stem, thick. **Stems** simple, cane-like, 4.9-10 x 0.4-0.5 cm, terete, straight, the new stem originates from a middle internode of the previous stem; covered by tubular, non-foliar, papyraceous sheaths, 1.5-3.0 x 0.4-0.5 cm. **Leaves** 2-3, aggregate towards the apex of each stem, alternate, articulate, erect, sub-coriaceous; sheath tubular, 0.5-2.0 x 0.4-0.5 cm, minutely striated; blade 3.0-9.1 x 1.5-2.0 cm, oblong-lanceolate, acute, margin entire, smooth, medium green. **Spathe** lacking. **Inflorescence** 6.0-9.5 cm long, apical, from the mature stem, racemose, flowering only once, nutant, compact, few-flowered; peduncle 3 cm long, straight, laterally compressed, arching, unornamented, without bracts; rachis 1.3-4.0 cm, slightly compressed, sinuous. **Floral bracts** 6-16 mm long, prominent, longer than the ovary and progressively shorter towards the apex of the inflorescence, triangular-lanceolate, long-acuminate, amplexicaul. **Flowers** ca. 14, simultaneous, resupinate, greenish yellow. **Ovary** 12 mm long, furrowed, not inflated, unornamented. **Sepals** spreading, free, fleshy, acuminate, glabrous, margin entire, spreading; the dorsal sepal 14-16 x 6.5-7 mm, narrowly elliptic, apiculate, 5-veined; the lateral sepals 17-20 x 8.4 mm, ovate-elliptic, oblique, 3-veined, with a high dorsal, prominent keel, aristate, the distant margin slightly erose. **Petals** 12.5-13 x 4.0-5.0 mm, spreading, free, narrowly ovate, slightly oblique, acute, 3-veined, glabrous, membranaceous, margin entire, spreading. **Lip** 16-18 x 21 mm, united to the column, 3-lobed, base cordate; ecallose, disc with 3 parallel, narrow, low, short ribs, which disappear before the apical sinus; lateral lobes 11 x 9.0 mm, sub-orbicular, margin entire, the outer basal margin revolute; mid-lobe transversely rectangular, 7.2 x 13.6 mm, widely emarginate and mucronate, forming a pair of sub-quadrate apical lobes. **Column** 8.8 mm long, thick, slightly upturned at the apex. **Clinandrium-hood** short, margin entire. **Anther** sub-ovoid, 4-celled, apex minutely papillose. **Pollinia** 4, obovoid. **Rostellum** apical slit. **Lateral lobes of the stigma** about half the length of the stigmatic cavity. **Nectary** penetrating one third of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Boyacá: Villa de Leyva, vereda Capilla Dos, 2800 m, 2950 m, 14 XII 2002, *Betancur 9906*, COL! Ibid. Villa de Leyva-Arcabuco, vereda Pan de Azúcar, Capilla Dos, Santuario de Flora y Fauna de Iguaque, 2850 m, 12 XII 2002, *Parra-O 260*, COL! Villa de Leyva, Capilla 1, "La Capilla", 2700 m, 18 V 1968, *Ortiz 95*, HPUJ! (watercolor, HPUJ, digital image AMO!) Ibid. X 1971, *Ortiz 4176*, HPUJ! **Cundinamarca:** Subachoque: Alto del vino, carretera Finca Friedmann, 2600-2700 m, 18 V 2008, *Farfán 1176*, FMB! El Tobal, Vereda El Tobal, Finca El Cerro, 2950 m, 8 IV 2020, *Hernández 448*, COL! Chía, 2/2 mi ESE of Peaje por la Carrera Séptima antes de Chía, Cerro del Oso, 2865 m, 2 septiembre 2020, *Pfahl s.n.* HPUJ! (LCDP voucher). Nördlich Bogotá, 2700 m, 01 X 1938, *Renz 3057*, RENZ! **Distrito Capital:** Chapinero: Quebrada El Chicó, quebrada Chicó-Bogotá, 01 XII 1946, *Black 46-429*, AMES! (illustration AMO!) Quebrada El Chico au Nord de Bogota. Cordillera Oriental, 2700 m, 30 XI 1952, *Humbert 27549*, AMES! Usaquén: Cerros Torca, Camino real, predios Condominio Bosques de Torca, 2897 m, 18 VII 2017, *Fajardo 3474*, JBB! Chapinero, El Chicó, near Bogotá, 9000-10000 ft, 11 VII 1961, *Garay 190*, COL! Quebrada El Chicó, carretera hacia La Calera, 10 III 1963, *Mejía 23*, COL! Alrededores de Bogotá, Quebrada de El Chicó, 2900-3000 m, 27 XII 1943, *Schneider 78/1*, COL! Macizo de Bogotá, Quebrada Chicó, ca. 8500-9500 ft, 30 XI 1952, *Schultes 18596*, AMES! (illustration, AMO!) **Norte de Santander:** Toledo: Parque Nacional Natural Tamá, Sector Oro, 2600 m, *Orozco 1728*, COL!

OTHER RECORDS: COLOMBIA: Meta: Villavicencio, *Villalba s.n.*, digital image, AMO! (Photo voucher).

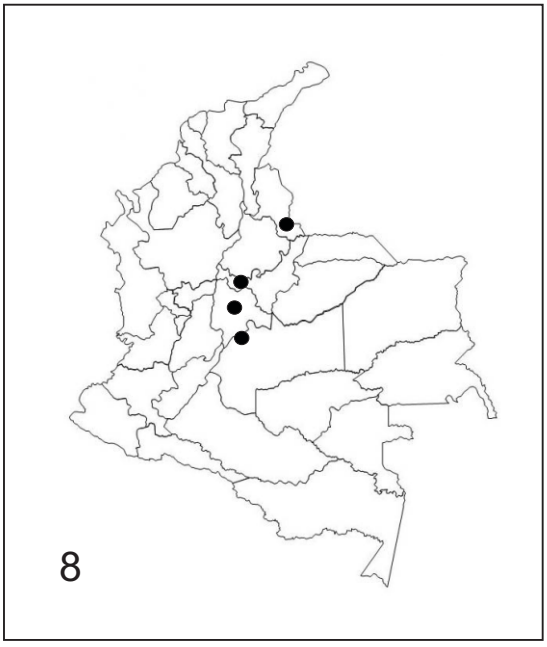
DISTRIBUTION AND ECOLOGY: Known only from the Cordillera Oriental of the Andes, north of Bogotá, epiphytic at 2600-3000 m altitude. Flowering from November to December. The species is sympatric with *Epidendrum gongorarum* in this locality, and they flower simultaneously; they can be separated by the straight versus curved stems.

RECOGNITION: *Epidendrum pfahlii* belongs to the Incomptum Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, the few leaves aggregate towards the apex of the stems, the roots generally only from the base of the primordial stem, a short apical inflorescence with fleshy yellow-green to green to violet-green to black flowers with short ovaries, and the lip entire to 3-lobed. The new species is recognized by the straight, erect stems, short, oblong-lanceolate leaves, the ovary about 12 mm long, lateral sepals 17-20 mm long, petals 12.5-13mm long, and the lip 3-lobed, ecallose, disc with 3 low, narrow, parallel ribs, mid-lobe transversely rectangular, lateral lobes sub-orbicular, margin entire, revolute. *Epidendrum gongorarum* Hágsater, Pfahl & Cisneros has sub-erect, curved stems, oblong leaves, green to copper-brown colored flowers, petals 3-veined, wide, the lateral sepals shorter, about 13.5-15 mm long, prominently awned with a dorsal keel, and the sub-entire reniform fleshy lip, margin somewhat undulate, slightly concave in front of the column; ecallose, the disc with a low, elongate rib running to the apical sinus of the lip. *Epidendrum tamaënse* Foldats [illustrated by Foldats (1969)] has similarly large flowers, long floral bracts, wide, rhombic petals, and a deeply 3-lobed lip, the lobes of the bilobed mid-lobe are similar in size and shape to the lateral lobes. *Epidendrum curtisii* A.D.Hawkes, as illustrated by Dunsterville (1979), has a similar vegetative habit, but smaller flowers, a 3-lobed lip with two small calli, and comparatively narrow, oblanceolate petals. *Epidendrum platyglossum* Rchb.f. from Antioquia is somewhat similar but the petals are narrowly oblanceolate, oblique, much narrower, 3.5 mm wide.

CONSERVATION STATUS: DD. Data deficient.

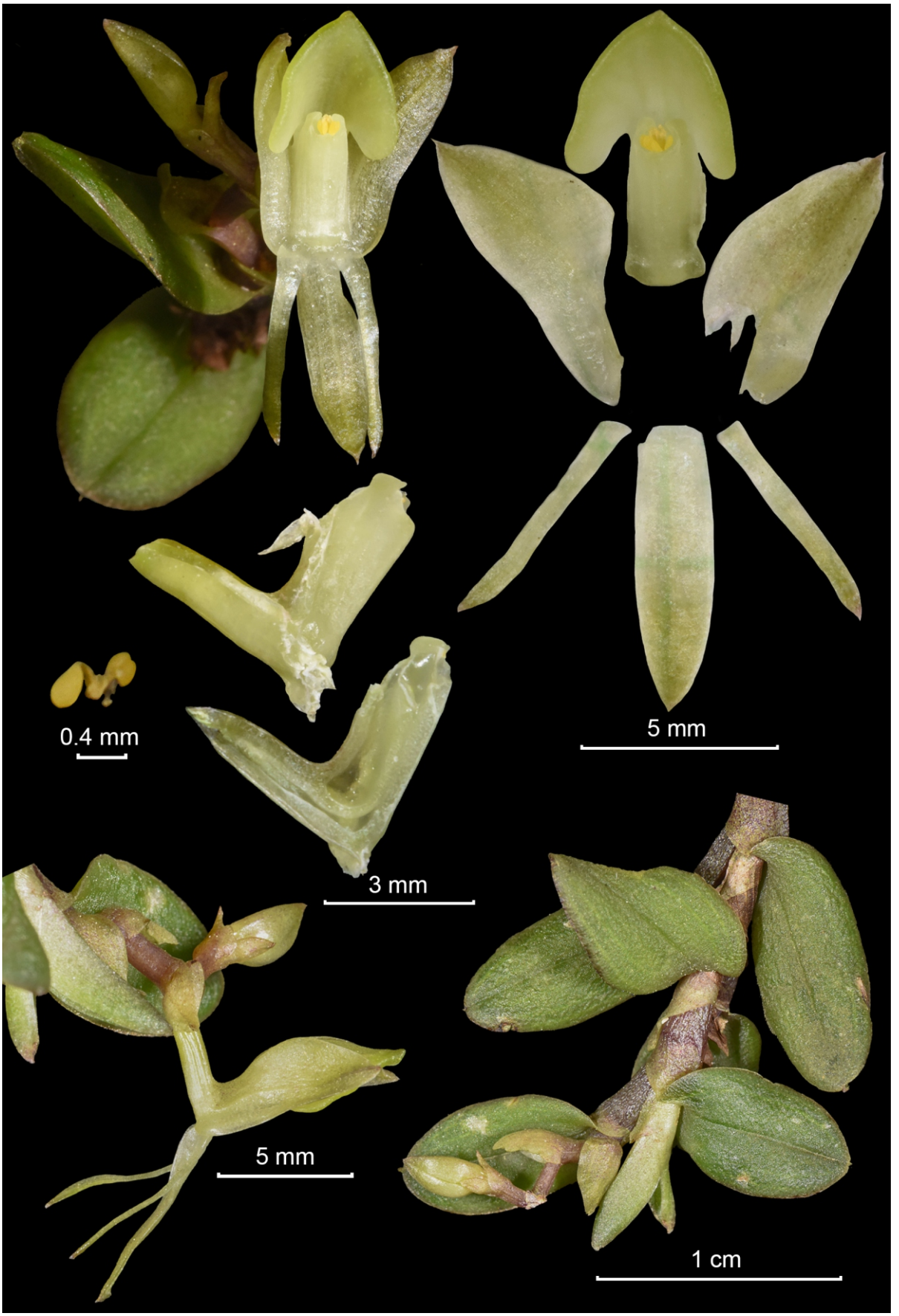
ETYMOLOGY: In honor of Jay Pfahl (1953-) born in Ohio, USA, spent college years in Paraguay as a cowboy, jewelry designer living in Key West, Florida, where he grows orchids. Started IOSPE in 1997 as a way to keep track of blooming times, which eventually grew into a widely used photographic catalogue of orchids with relevant data, numbering 23,366 species in 872 genera as of November 2020. Grounded in Bogota during the 2020 SARS-CoV-2 pandemic, collected the type in his back yard, together with the type of *Epidendrum gongorarum* Hágsater, Pfahl & Cisneros.

REFERENCES: Dunsterville, G.C.K., and L.A. Garay, 1979, *E. curtisii* A.D.Hawkes in the **Orchids of Venezuela; An Illustrated Field Guide**, pg. 218. Foldats, E., 1969, Contribución a la Orquidioflora de Venezuela, **Acta Bot. Venez.** 3: 1, 2, 3 & 4: pg 329. Hágsater, E., 2006, *Epidendrum tamaënse* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 8: pl. 891. Hágsater, E., 2007, *Epidendrum platyglossum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: pl. 974. Hágsater, E., J. Pfahl & A. Cisneros, 2020, *Epidendrum gorgorarum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1812. IOSPE, Internet Orchid Species Photo Encyclopedia. www.orchidspecies.com

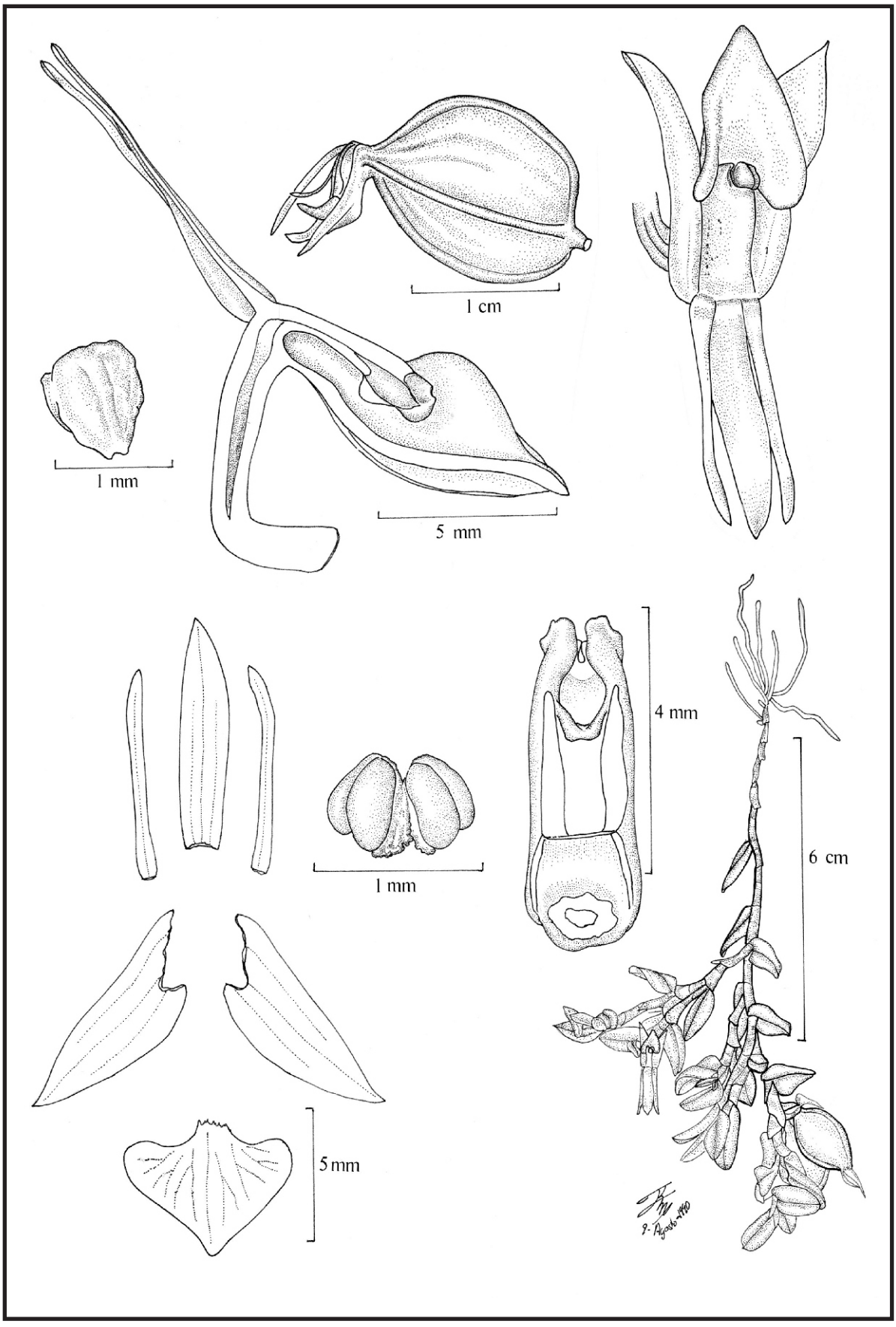


Authors: E. Hágsater & A. Cisneros **LCDP: J. Pfahl & A. Cisneros** **Photo: J. Pfahl** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1830**



EPIDENDRUM PIPERINUM Lindl. **Plate 1831**



EPIDENDRUM PIPERINUM Lindl. **Plate 1831a**

EPIDENDRUM PIPERINUM Lindl., Ann. Mag. Nat. Hist. 15: 256. 1845.

Type: ECUADOR: Culumbia [Colombia] ad viam inter Quito et pagum Machache [Machachi], October 1843, ***Theodor Hartweg 1419***. Holotype: K-L! Isotypes: FI! G! K-L! LD! W-R 42407! (two specimens, a whole plant, and a part of the holotype from K-L! [Lindley 245] copy of drawing on holotype of Lindley 245, W-R 5849! [Hartweg] 1419, a single flower from the holotype at Kew in envelope mounted with 11 other envelopes, W-R 55276!

Epiphytic, monopodial, branching, pendent **herb**, 9-38 cm long. **Roots** 0.8-1.3 mm in diameter, basal, fleshy, thin. **Stems** primary stem 9-38 x 0.1-0.25 cm, secondary branches 2.5-4.5 x 0.1-0.25 cm, cane-like, sub-terete, straight; the branches produced from middle to sub-apical internodes, from within the sheaths of the leaves; new branches progressively shorter and producing new branches from the sub-apical internode, eventually producing a scandent pendent herb. **Leaves** 9 or more on the main stem, 2-4 on the branches, distributed throughout the stems, coriaceous, somewhat fleshy, articulate, alternate, partly spreading from the stem, the basal ones eventually falling; sheaths 2-6 x 2-4 mm, somewhat infundibuliform, striated, rugose; blade 0.7-1.6 x 0.3-0.6 cm, the leaves of the secondary stems progressively somewhat smaller than those of the primary stem, oblong to oblong-elliptic, obtuse, minutely carinate at the apex, margin entire, slightly revolute when dry. **Spathe** lacking. **Inflorescence** ca. 14 mm long (excluding the flower), generally 2-3-flowered, erect, strongly zigzag; peduncle 2 mm long, sub-terete, arching outwards, provided with a basal bract 1.5-4.0 mm long, similar to the floral bracts; rachis 4.0-7.0 mm long, zigzag. **Floral bracts** 2.5-4.0 x 3.0-4.0 mm, shorter than the ovary, widely ovate, acute, embracing. **Flowers** 2-3, successive, one open at a time, non-resupinate, greenish yellow; fragrance not recorded. **Ovary** 4.5-5.0 mm long, forming a right angle with the column, terete, furrowed, not inflated. **Sepals** 3-veined, margin entire, spreading; dorsal sepal 7.4-8.8 x 1.8-2.0 mm, spreading to slightly reflexed, free, oblong, acute; lateral sepals 8.3-9.3 x 3.0-4.0 mm, partly spreading, obliquely fused to the column, ovate-elliptic, oblique, short acuminate. **Petals** 6.5-8.0 x 0.45-0.6 mm, free, spreading to slightly reflexed, parallel to the dorsal sepal, free, linear, obtuse to sub-acute 1-veined, margin entire, spreading. **Lip** 3.0-4.5 x 4.5-6.3 mm, united to the column, entire, fleshy, triangular, base widely cordate, apex obtuse, slightly concave in natural position, ecallose and without ribs, margin fleshy, entire, spreading. **Column** 4.0 mm long, thick, straight, with a pair of sub-quadrate wings at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, as long as the pollinia; viscarium semi-liquid. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, occupying ½ the length of the stigmatic cavity. **Nectary** without penetrating the ovary, not inflated, unornamented. **Capsule** 18-19 x 7-8 mm, pedicel 1.5-2.0 mm long, body 13-14 x 7-8 mm, apical neck 8 mm long.

OTHER SPECIMENS: ECUADOR: Carchi: Tulcán-El Carmelo km 18, 3300 m, 7 VII 1990, *Dodson 18410*, AMO! (slide and illustration) MO! QCNE! Road Tulcán-Carmelo-Sta. Barbara, 2650-3200 m, 8 IV 1985, *Hirtz 2473*, MO! (digital image of live flower. AMO!) **Imbabura:** Pimampiro: Mariano Acosta, 3000 m, cultivated at Ecuagenera, 5 VII 2002, *Hirtz 8233*, SEL! Cotacachi, Lake Cuicocha, Islote Chica 3150 m, 23 VI 1939, *Asplund 7174*, S! Lake Cuicocha, 3000 m, 2 VI 1939, *Penland 836*, AMES! QCNE! Reserva Ecológica Cotacachi-Cayapas, Laguna de Cuicocha. Islote Teodoro Wolf, 3000 m, 29 VII 1999, *Peñafiel 216*, AMO x2! QAP! Ibid. 2900-3100 m, 17 VIII 1991, *Peñafiel 258*, AMO! QCNE! Ibid. 3100-3300 m, 30 VIII 1991, *Peñafiel 284*, QCNE! Cotacachi, on dry hillside of Island in Cuicocha, 12500 ft, 24 I 1953, *Prescott 209*, NY! **Napo:** Papallacta, IV 1918, *Mille 106*, QPLS! **Pichincha:** Cantón Quito, parroquia Calacalí, Reserva Geobotánica del Pululahua, 3050 m, 29 IX 2007, *Cerón 60836*, QAP! Mt. Pasachoa cerca de Aloag, carretera Quito-Machachi 2900-3200 m, 1 V 1985, *Dodson 15811*, MO! Bosque Protector Pasachoa, 30 km SE de Quito, 2850-3900 m, 15 IX 1988, *Granada 26*, QCA! Pasachoa, 3000 m, 15 VII 1983, *Hirtz 1133*, LE! MO! QCA! QCNE! SEL! high Andes of Quito, 3000-3300 m, IX 1906, *Lehmann 6843*, K x2! LE!

OTHER RECORDS: COLOMBIA: Without locality data, *Uribe Vélez s.n.*, digital images, AMO! (LCDP voucher) without locality data, *Ortiz Valdivieso s.n.*, illustration of the flower, AMO! **ECUADOR: Carchi:** desviación de la carretera Tulcán-Ibarra hacia El Carmelo km 18, 3300 m, 9 VIII 1990, *Hágsater 10861*, illustration, photo and spirit, AMO! (Illustration voucher). **Imbabura:** Pimampiro: Mariano Acosta, 3000 m, cultivated at Ecuagenera, 5 VII 2002, *Hirtz 8233*, digital copy of slide, AMO! Otavalo, Laguna de Mojanda, *Monge s.n.*, digital photo, AMO! (Photo voucher).

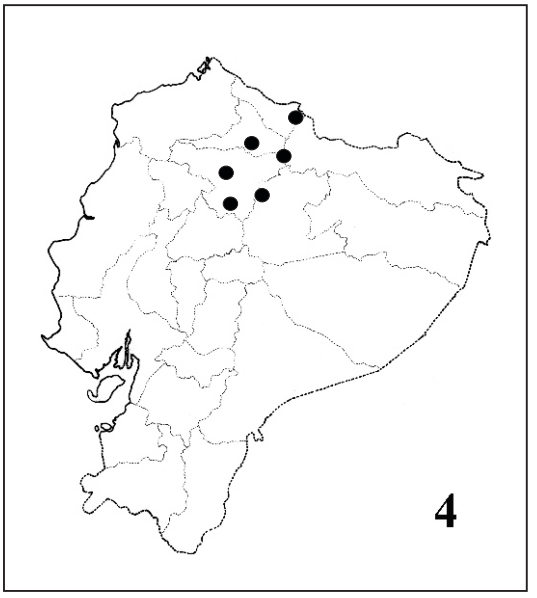
DISTRIBUTION AND ECOLOGY: Known presently from northern Ecuador, from the mountains around Quito and north to Tulcán, epiphytic in wet, foggy moss-covered low trees, at 2650-3300 m altitude. The plant photographed by Carlos Uribe probably was taken at an exposition, and there is no note on the watercolor illustration by Ortiz Valdivieso, so the species' occurrence in southern Colombia has not been confirmed.

RECOGNITION: *Epidendrum piperinum* belongs to the Piperinum Group which is recognized by the monopodial, short, branching habit, the filiform petals, and the entire, ecallose lip. The species is recognized by its pendent habit, the leaves 0.7-1.6 x 0.3-0.6 cm, oblong to oblong-elliptic, 2-3-flowered inflorescence, sub-sessile and zigzag, flowers successive, non-resupinate, greenish yellow, the sepals 7.4-9.3 mm long, dorsal sepal spreading to somewhat reflexed, the lateral sepals partly spreading and obliquely united to the column, the petals parallel, and the lip triangular, base widely cordate, apex obtuse. *Epidendrum troxalis* Luer has a repent habit, leaves 2-3 x 0.5-0.8 cm, elliptic, inflorescence single flowered, flowers yellowish purple, petals pink, sepals 21 mm long, dorsal reflexed, lateral sepals fused and adnate to the column, petals partly spreading, and a lip sub-orbicular, concave and embracing the apex of the column. *Epidendrum neudeckeri* Dodson & Hágsater has erect plants to 100 cm tall, leaves 2.5-9.0 x 0.9-20 cm, elliptic, flowers yellowish green, column white, 9-16 per raceme, sepals 10.5-13 mm long, 5-veined, and a lip triangular-ovate when spread, canaliculate in natural position, the sides embracing the column.

CONSERVATION STATUS: VU Vulnerable. The species is common where it is found and appears to be widespread along the high volcanos in the Inter Andean Valley in northern Ecuador. Its present extension area is confined to less than 20,000 km2 and it is known in less than 10 locations. It complies with Criterion B1a for the VU (Vulnerable) which therefore applies (IUCN 2012).

ETYMOLOGY: In reference to the similarity of the plant habit to that of genus *Peperomia* Ruiz & Pav.

REFERENCES: Dodson, C.H., & P.M. Dodson, 1989, *Epidendrum pipierinum* Lindl., Orchids of Ecuador, **Icon. Pl. Trop.** ser 2, 5: pl. 481. Dodson, C.H., & E. Hágsater, 1994, *Epidendrum neudeckeri*, Orquideología 19(2): 145. Luer, C.A., 1981, *Epidendrum troxalis*, a new species from Ecuador (Orchidaceae), **Selbyana** 5(3-4): 385. Santiago, E., & E. Hágsater, 2010, *Epidendrum neudeckeri*, The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: pl. 1360. Santiago, E., & E. Hágsater, 2020, *Epidendrum troxalis*, The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1842.



Authors: E. Santiago & E. Hágsater **Illustrator: R. Jiménez M. & LCDP: C. Uribe V.** **Photo: J. C. Monge** **Editors: E. Hágsater & E. Santiago**

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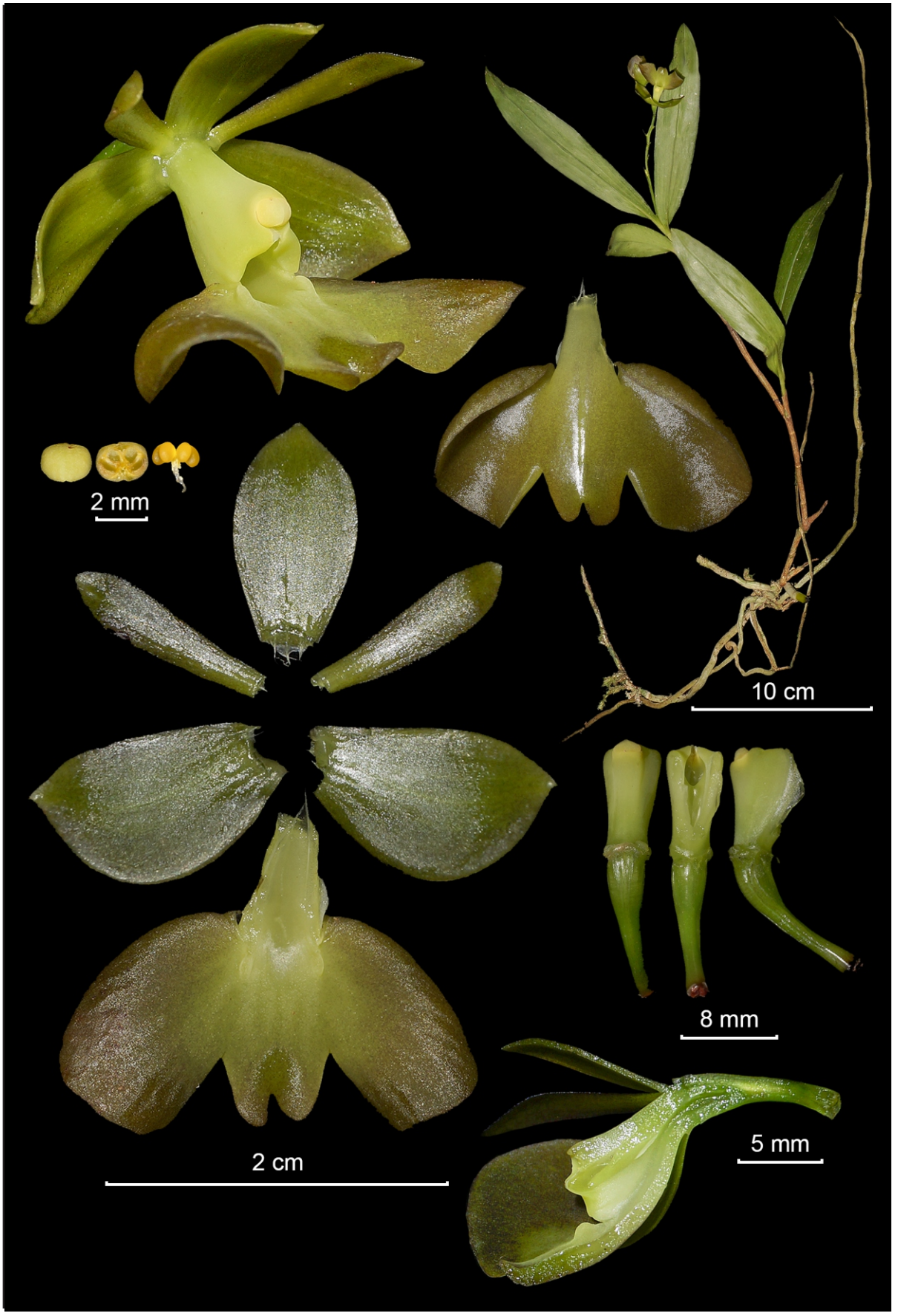


EPIDENDRUM POSTICOREVOLUTUM Hágsater, Cisneros & Edquén **Plate 1832**

EPIDENDRUM POSTICOREVOLUTUM Hágsater, Cisneros *et* Edquén, *sp. nov.*

Type: PERU: Amazonas: Provincia Chachapoyas; Distrito Granada; comunidad campesina de Diosán, 3150 m, 14 agosto 2018, ***José Dilmer Edquén Oblitas 231***. Holotype: HURP! (LCDP and Photo voucher).

Similar to *Epidendrum rimarachinii* Hágsater but the lip flat in natural position, the lateral lobes extended, the medial and lateral margins of lateral lobes revolute (vs. lip lateral lobes strongly revolute and thus apron-shaped), mid-lobe larger, 4.0-6.0 mm long, with 2 widely triangular lobes (vs. shorter mid-lobe, 2.5 mm long, with 2 semi-orbicular lobes), calli small, laminar, laterally compressed, with 2 each thin ribs bellow that reach the apex of the lobes of the mid-lobe (vs. calli wider, somewhat laterally compressed, disk with 3-ribs reaching the apical sinus of the lip), shorter column, 8 mm long (vs. larger column, 11 mm long).

Epiphytic, sympodial, erect **herb** 28 cm tall, including the inflorescence; each new growth originates from a middle to sub-apical internode of the previous growth. **Stems** 9-12 x 0.3 cm, erect, simple, cane-like, thin, terete, stems straight, progressively larger, covered by several non-foliar sheaths. **Leaves** 2-3, aggregate at the apex of the stems, alternate, suberect, somewhat conduplicate at the base; blade 5.9-10.5 x 1.6-2.2 cm, sub-equal, narrowly elliptic, acute, dark green above, somewhat paler on the underside. **Spathe** lacking. **Inflorescence** 6.0-9.2 cm long, apical, racemose, arching, nutant, few-flowered; peduncle 3 cm long, slightly laterally compressed, not ancipitose; rachis 3.1-3.5 cm long. **Floral bracts** 5-12 mm long, much shorter than the ovary, decreasing, triangular-lanceolate, acute, embracing. **Flowers** ca. 7, opening in succession, eventually all open at once, resupinate, fleshy, olive-green, somewhat tinged brown, the column and disc of the lip including the calli pale green, anther pale yellow; fragrance not registered. **Ovary** 10-13 mm long, arcuate, furrowed, thin, terete, somewhat thickened ventrally at the apex, forming an incipient vesicle. **Sepals** 13-15 x 7.0-9.0 mm, spreading, free, fleshy, obovate-elliptic, apex apiculate, margins entire, spreading, 5-veined; lateral sepals somewhat wider and oblique. **Petals** 12 x 3.0 mm, partly spreading, free, fleshy, oblanceolate, obtuse, 3-veined, margin entire, spreading. **Lip** 12.8 x 24 mm, united to the column, 3-lobed, slightly concave at the disk, margins entire, revolute especially at medial and lateral margins of lateral lobes, base cordate if spread; bicallose, calli small, laminar, separate, nearly parallel, continued into 2 thin ribs that disappear before the apices of the lobes of the mid-lobe; disk of the lip smooth forming a wide entrance to the nectary, lateral lobes 12.8-14 x 9.0-10 mm in natural position, oblique, obovate, apically sub-truncate, the apices aligned with the apex of the mid-lobe; mid-lobe 4.0 x 6.0 mm, cuneate, deeply emarginate, formed by a pair of narrowly triangular, parallel lobes, 4.0 x 2.8 mm, apices rounded. **Column** 8 mm long, cuneate, progressively thickened towards the apex. **Clinandrium-hood** reduced; margin entire. **Anther** transversely ellipsoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, about as long as the pollinia, viscarium, semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** long, narrow, occupying a little less than 1/2 of the length stigmatic cavity. **Nectary** deep, penetrating a 1/3 of the ovary, slightly inflated behind the perianth, smooth. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Presently known from a single collection from northern Peru, on the eastern slope of the Andes; epiphytic at 3150 m altitude. Flowering in August.

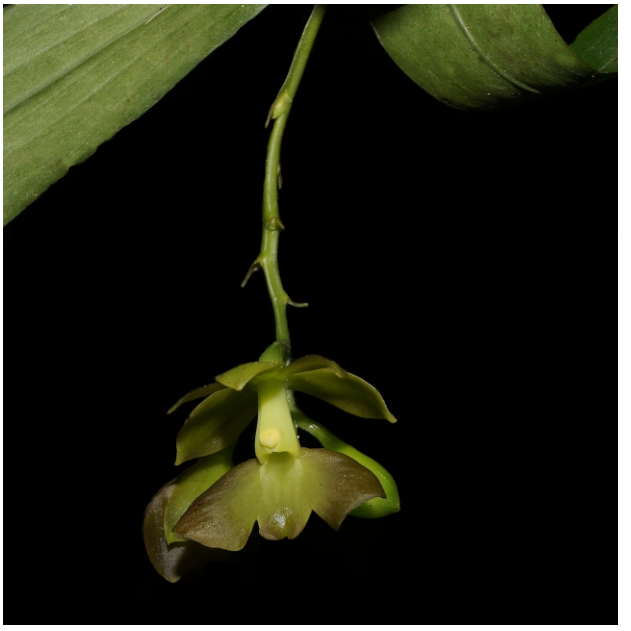
RECOGNITION: *Epidendrum posticorevolutum* belongs to the Incomptum Group, which is characterized by the erect habit with successive lateral growths being produced from the middle of the previous growth, the few leaves aggregate towards the apex of the stems, roots are produced generally only from the base of the primordial stem, the inflorescences are short with fleshy yellowish to green to violet-green to black flowers with short ovaries, and the lip is entire to 3-lobed. The species is recognized by the olive-green flowers, somewhat tinged brown, the column and disc of the lip pale green, the short ovary, 10-13 mm long, the oblanceolate petals 12 x 3.0 mm, and the 3-lobed lip, with obovate lateral lobes, apically sub-truncate, 12.8-14 mm long, the apices aligned with apex of the mid-lobe, the laminar calli, each forming a low, thin rib that disappears before the apices of the lobes lobe of the mid-lobe. *Epidendrum rimarachinii* Hágsater has a many-flowered inflorescence, an elliptic, 6-veined dorsal sepal, a 3-lobed lip, the sides strongly revolute and thus apron-like, the mid-lobe shorter, about 2.5 mm long, bicallose, calli redounded, somewhat laterally compressed, the disk with 3 mid ribs, and a longer column, about 11 mm long. *Epidendrum ulcumanoae* Hágsater, G.Gerlach & L.Valenz. has sepals and petals olive green to yellow tinged somewhat brown, lip and calli pale yellowish green, with long, apiculate sepals 18-19 x 6.4-9.0 mm, falcate, oblanceolate petals 14-15 x 5.4 mm, and the obreniform lip 14.5 x 25 mm, widest at the middle, the lateral lobes semi-orbicular, with a slightly receded mid-lobe, itself formed by a pair of semi-orbicular lobules, the lip with the lateral margins revolute so as to appear apron like in natural position. *Epidendrum chisquillense* Hágsater, Edquén & Cisneros similar, but larger plants, with flowers green concolor, larger ovary (19 mm long), sepals larger (16.5-16.9 mm long), with margin revolute in natural position, elliptic to oblique oblanceolate, somewhat falcate, smaller lip (9.5 x 18.6 mm), 2-lobed, obreniform in general outline and a longer column (11 mm long).

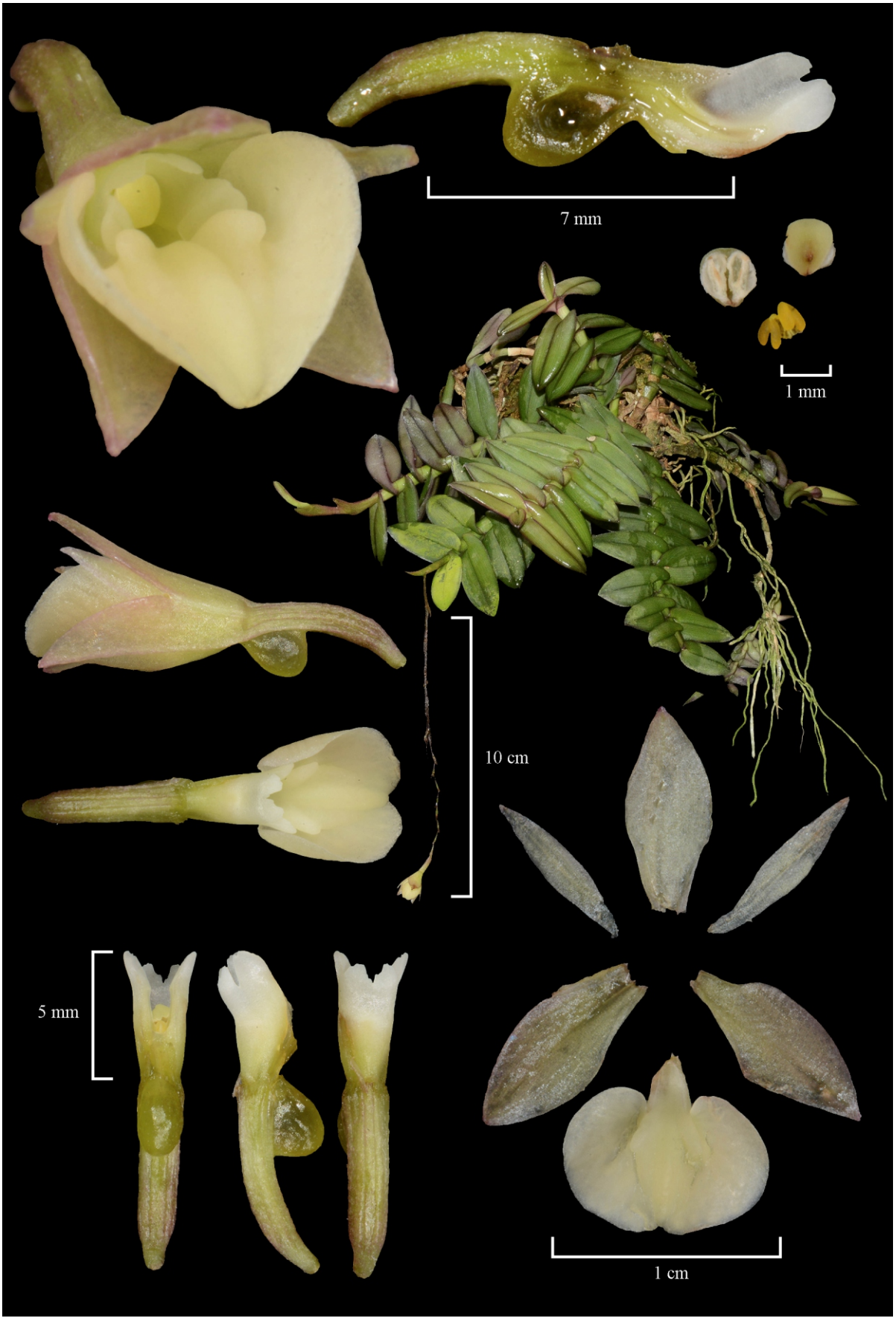
CONSERVATION STATUS: DD. Data deficient. Known presently from a single collection.

ETYMOLOGY: From the Latin, *posticus*, that which is behind, and *revolutus*, revolute, rolled back from the edge. In reference to the posterior margin of the lip which is rolled down.

ACKNOWLEDGMENT: Collection made under permit (RDG) N° 137-2018- SERFOR/DGGSPFFS; Código de Autorización Nº AUT- IFL-2018-025.

REFERENCES: Hágsater, E., 2019, *Epidendrum rimarachinii* in E. Hágsater & E. Santiago (eds.), The Genus Epidendrum, Part 13, **Icon. Orchid.** 17(1): pl. 1750. Hágsater, E., J.D. Edquén O. & A. Cisneros, 2020, *Epidendrum chisquillense* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1806. Hágsater, E., G. Gerlach & L. Valenzuela G., 2020, *Epidendrum ulcumanoae* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1844.





EPIDENDRUM PROSTRATUM (Lindl.) Cogn. **Plate 1833**

EPIDENDRUM PROSTRATUM (Lindl.) Cogn., Fl. Bras. (Martius) 3(5): 112. 1898.

Basionym: *Physinga prostrata* Lindl., Edwards's Bot. Reg. 24(Misc.): 32. 1838. Type: GUYANA: Demerara: March 1838, ***Loddiges s.n.***, Holotype: K (Kew Negative 6667)! Tracing of type: W 26956! Dodson (1989) cited "*Epidendrum prostratum* (Lindl.) Rchb.f., Gard. Chron. (ser. 1) 30: 289. 1873", however, in Reichenbach's publication *Epidendrum physodes* Rchb.f. is described and compared with *Physinga prostrata* without making a new combination. Non *Epidendrum prostratum* Schltr., Beih. Bot. Centralbl., Abt. 2. 36(2) 407. 1918. = *Epidendrum confertum* Ames & C.Schweinf., Schedul. Orchid. 10: 61. 1930. (see Sánchez & Hágsater, 2007).

Epiphytic, sympodial, caespitose, caulescent, prostrate or pendent **herb**, ca. 30 cm long including the inflorescence. **Roots** 1 mm in diameter, basal, fleshy, thin. **Stem** 7.6-15 x 0.4-0.5 cm, short, simple, cane-like, terete at base, slightly laterally compressed towards the apex, straight. **Leaves** 9-15, distributed along the stem, alternate, distichous, spreading, twisted so as to be on the same plane as the stem; sheaths 6-9 x 4-6 mm, tubular, laterally compressed, smooth; blade 2.2-3.5 x 0.5-0.9 cm, lanceolate, apex acute, margin entire, fleshy, adaxial surface green, abaxial surface green tinged purple. **Spathe** lacking. **Inflorescence** 8.4-22.5 cm long, apical, arching to pendent, racemose, producing new racemes from the apex of the peduncle over many years becoming pluri-racemose; peduncle 9-20 cm long, filiform, arching to pendent, provided with 5-9 bracts 11-20 mm long, diminishing in size, becoming fibrous, tubular, somewhat laterally compressed, acuminate, partly imbricating, brown; rachis 7-40 mm long, comparatively short. **Flowers** 1-9 successive, developing one at a time, trumped-shaped, sepals and petals green to pale pink-purple, the lip pink-white; fragrance not registered. **Floral bracts** 1-2 mm long, much shorter that the ovary, ovate-lanceolate, acute, amplexicaul. **Ovary** 5-6.5 mm long, terete, thin, furrowed, forming a prominent spherical ventral vesicle at the apex. **Sepals** 7.0-9.7 x 3.0-4.0 mm, partly spreading extended, elliptic, acute, connate in its basal half thus giving the flower a trumped shape, 1-veined, margin entire, spreading. **Petals** 7.0-8.5 x 1.0-1.8 mm, partly spreading, narrowly elliptic, acute, , 1-veined, margin entire, spreading. **Lip** 5.0-6.3 x 7-9 mm, united to the column, bilobed, base slightly cordate, transversely reniform, apex slightly emarginate, margin entire; bicallose, the calli divaricate, fleshy, slightly laterally compressed; disc provided with 3 parallel ribs, the lateral ribs short, mid-rib reaching the apical sinus; lobes semi-orbicular, margin entire, somewhat embracing the column. **Column** 5.6 mm long including the clinandrium; body ca. 1.3-2.0 mm long, very short, thin at base, short, with a prominent clinandrium-hood. **Clinandrium-hood** very prominent, funnel-shaped, deeply emarginate at the apex, forming a wide sinus, apical margin entire to erose. **Anther** globose, 4-celled. **Pollinia** 4, obovoid, slightly laterally compressed; caudicles long and narrow, granulose, shorter than the pollinia; viscarium semi-liquid. **Rostellum** below the middle of the column, completely hidden by the clinandrium-hood, slit. **Lateral lobes of the stigma** not seen. **Nectary** prominent, penetrating ventrally behind the perianth and forming a globose vesicle occupying 1/4th the length of the pedicel, unornamented. **Capsule** not seen.

OTHER SPECIMENS: BOLIVIA: Amazon Basin, 01 I 1921, *White 2405,* AMES! **La Paz:** Tumupasa, 1000-1500 ft, 12 VIII 1921, *White 1835,* AMES! **Beni:** San Buenaventura, Capaina, cult. BGUT (Tokyo), *Hashimoto BOL-29,* TI. **BRAZIL: Amazonas:** Presidente Figueiredo, Balbina, Rebio Uatuma, 7 X 2006, *Carvalho-Sobrinho 1080,* INPA! Maraá, Rio Japura, lg. Lontra alargado, 16 VI *1989, da Silva 4,* MG! [Río?] Potomayo [Putumayo], Amazone, 01 I 1877, *Jobert 673,* P! **Roraima:** Amajarí, Roraima Tepuí, marco divisor No. 10, 700 m, 4 IX 1979, *Rosa* 3269, MG! **ECUADOR: Napo:** La Cruz, Arajuno Misahualli en el Rio Napo, 500 m, 1 VII 1984, *Suárez 76,* MO! (illustration, Dodson 1989). **GUYANA:** Watershed between Rupununi and Kuyuwini Rivers, Parabaru Savanna, 15 II 1938, *Smith 3042*, NY! K! P! U! US! **PERU:** Without data, *Bennett 5252,* MOL! Parque Nacional Yanachaga Chemillén, sector Huampal (Vegetación Cañón de Huancabamba), 1210 m, 20 VIII 2009, *Valenzuela 13431*, HOXA! **Loreto:** Iquitos, 100 m, XI-XII 1936, *Klug 10030*, AMES! Vicinity of Iquitos, 100 m, *Moore* 200, AMES! **Madre de Dios:** Manu: Reserva Comunal Amarakaeri, sector Setapo, 300 m, VI 2012, *Daminán s.n.*, USM! Ibid. Cocha Cashu Station, 350 m, 16 IX 1980, *Foster 5342,* F! Ibid. 350 m, *Foster 8276*, SEL! Ibid. 400 m, 18 IX 1986, *Núñez 6168,* MO! CUZ! Ibid. 30 IX 1986, *Núñez 5977,* CUZ! MO! Ibid. 30 VIII 1986, *Núñez 5977,* CUZ! Ibid. Cocha Cashu, 400 m, *Vargas 29549*, CUZ! **Pasco:** Parque Nacional Yanachaga Chemillén, sector Huampal (Vegetación Cañón de Huancabamba), 1210 m, 20 VIII 2009, *Valenzuela 13431*, HOXA! Oxapampa, Pozuzo, carretera Yanahuanca a Tingo Mal Paso, 742 m, 26 V *2009, Vásquez 35776*, HOXA! ***San* Martín:** Prov.: Moyobamba, Distr.: Yántalo, Caserío: Nuevo San Ignacio, 810 m, 16 IV 2018, *Edquén 832,* HURP! (LCDP, AMO!). near Chazuta, 380 m, 14 I 1987, *Fernández ex Bennett 3783*, USM! Distr. Tocache Nuevo; Puerto Pizana (margen derecho del río Huallaga), 22 I 1971, *Schunke 4684,* F! USM! Ibid. Maynas Alto, Misión de Tocache, *Poeppig 2024,* W! Moyobamba, Hort. Mexico City, 1800 ft, 19 X 1992, *Meunnier sub Hágsater 9900,* AMO! (spirit) Ibid. 14 I 1997, *Meunnier sub Hágsater 9900*, AMO x3! Ibid. 12 III 1999, *Meunnier sub Hágsater 9900*, AMO x3! Near Chasuta, 380 m, 14 I 1987, *R. Fernández sub Bennett 3783*, USM! Maynas Alto, Misión de Tocache, VII 1830, *Poeppig 2024*, W! (illustration W!).

OTHER RECORDS: PERU: Madre de Dios: Huaypetue, Sector Setapo de la Reserva Comunal Amarakaeri, *Damian 64,* digital images, AMO! **San Martín:** Without data, *Arévalo s.n.*, digital photo, AMO! Moyobamba: *Monnier sub Hágsater 9900,* slide, AMO! Ibid. *Morón s.n.,* digital images, AMO! (Photo voucher). Without locality, 1087 m, *Yupanki s.n.,* digital images, AMO! Moyobamba, Hort. Mexico City, 1800 ft, 12 III 1999, *Meunnier sub Hágsater 14563* (LCDP voucher).

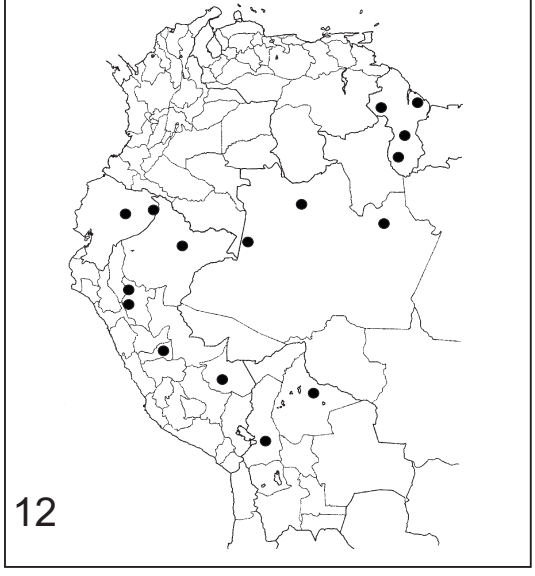
DISTRIBUTION AND ECOLOGY: Widespread at the base of the Andes from Ecuador to Bolivia, and northern Brazil and Guyana; epiphytic at 100-810 m altitude. Flowering from July to February. The report from the Pacific lowlands of Colombia, Chocó (Misas, 2005), corresponds to *Epidendrum macroclinium* Hágsater. Two photographs from Colombia, Valle del Magdalena, by Gilberto Escobar, appear to correspond to another species, AMO!

RECOGNITION: *Epidendrum prostratum* belongs to the Physinga Group which is characterized by the generally small, caespitose plants, the inflorescence apical and racemose producing new racemes with time and thus pluri-racemose, the successive flowers opening one at a time on an elongate peduncle with acuminate bracts, and the lip entire and the ovary with a prominent vesicle. The species is recognized by the short stem with numerous fleshy leaves, spreading, lying on the same plane as the stem, lanceolate, apex acute, the flowers trumpet-shaped, green to pale rose-purple, lip white, the lip transversely reniform, 3-ribbed, sepals 7.0-9.7 mm long and the clinandrium-hood very prominent and deeply emarginate. *Epidendrum macroclinium* Hágsater has very similar plants, but smaller flowers; sepals 5-7 mm long, petals linear lanceolate, clinandrium-hood very large, entire, funnel-shaped, apical margin dentate, and the lip bilobed with a single mid-rib. *Epidendrum physodes* Rchb.f. has sepals 7 mm long, column longer 3.5-4 mm long, is truncate lacking a prominent clinandrium-hood, the lip entire, transversely ovate, apex entire. *Epidendrum polygonatum* Lindl. has a zig-zag inflorescence, and a sub-reniform lip, apically emarginate, disc tricallose, 5-ribbed. *Epidendrum acreense* (Brieger & Bicalho) Christenson has sepals 5-6 mm long, and the lip transversely oblong, apex slightly emarginate, with two prominent, long calli.

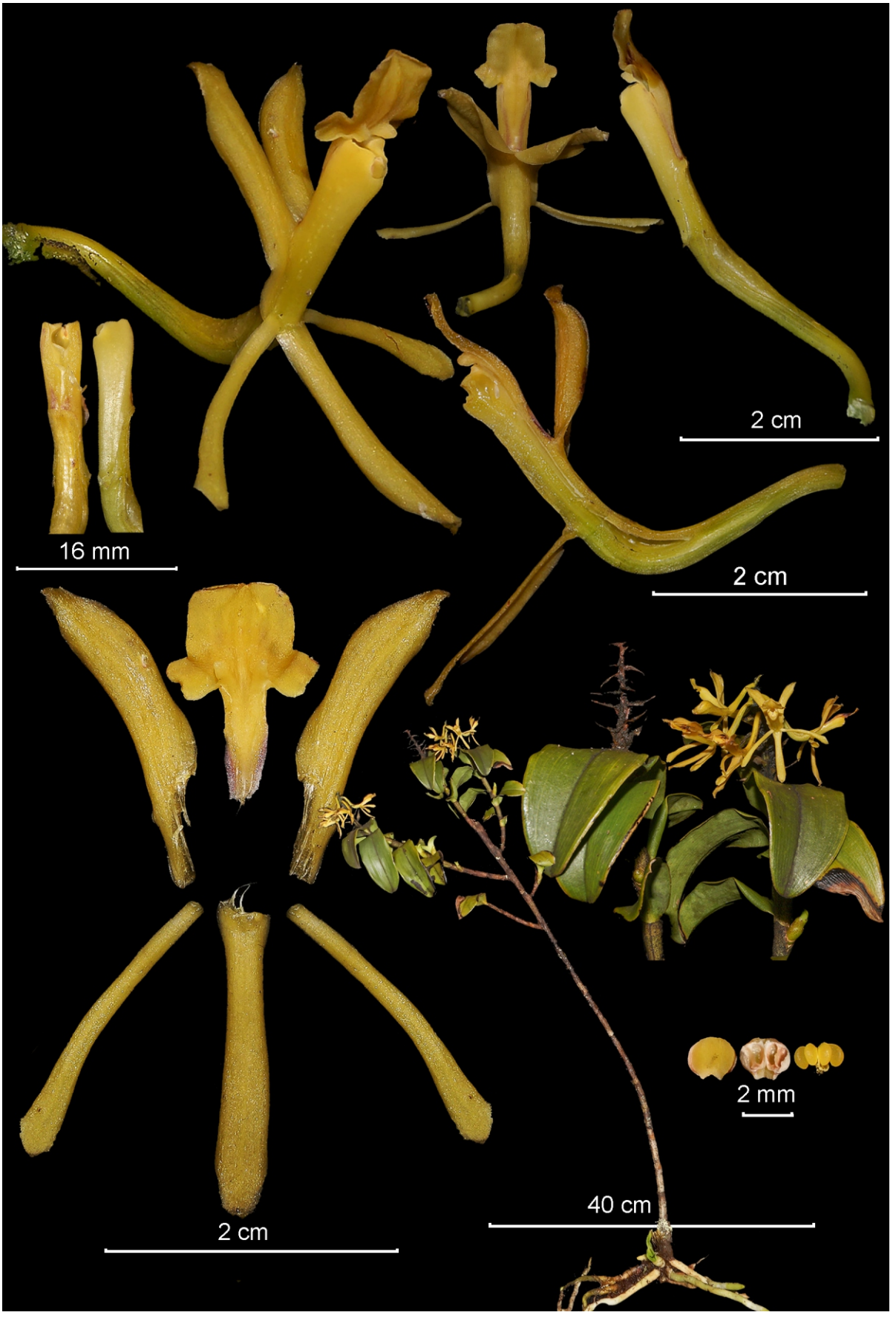
CONSERVATION STATUS:NT. Not Threatened. Widespread throughout the upper Amazon Basin at the foot of the Andes, from Ecuador to Bolivia, and in Guyana and northern Brazil. at 300-810 m altitude.

ETYMOLOGY: In reference to the prostrate stems which are either running along the branches or pendent along the trunk of trees where it grows.

REFERENCES: Bennett Jr., D.E. & E.A. Christenson, 1993, *Epidendrum prostratum* in **Icon. Orchid. Peruviarum** pl. 54. Bennett Jr., D.E. & E.A. Christenson, 1998, *Epidendrum prostratum* in **Icon. Orchid. Peruviarum** pl. 482. Brieger & Bicalho 1978, *Physinga acreensis,* **Bradea** 34(2): 234. Dietrich, H., 1984, *Epidendrum polygonatum* in Floristische und Taxonomische Notizen zu den Orchideen Cubas 5, **Rev. Jard. Bot. Nac. Univ. Habana** 5(1): 29-56. Dodson, C.H., 1989, *Epidendrum prostratum* in Orchids of Ecuador, **Icon. Pl. Trop.** ser. II, 5: pl. 482. Hágsater, E., 1987, *Epidendrum macroclinium*, **Orquídea (Mexico City)** 10(2): 319-322. Hágsater, E., 1987, *Epidendrum physodes*, **Orquídea (Mexico City)** 10(2): 322-323. Misas, G., 2005, **Orquídeas de la Serrania del Baudó, Chocó, Colombia**, Corporación Capitalina de Orquídeología, Zona Ediciones, Bogotá, Colombia, pp. 208-209. Sánchez, L. & E. Hágsater, 2007, *Epidendrum confertum*, in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum,* Part 6, **Icon. Orchid.** 9: pl. 919. Santiago, E. & E. Hágsater, 2008, *Epidendrum physodes* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum,* Part 7, **Icon. Orchid.** 11: pl. 1159.



Authors: E. Santiago & E. Hágsater **LCDP: R. Jiménez & A. Cisneros** **Photo: E. Morón** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM QUADRATILOBUM Hágsater, E.Santiago & Edquén **Plate 1834**

EPIDENDRUM QUADRATILOBUM Hágsater, E.Santiago *et* Edquén, *sp. nov.*

Type: PERU: Amazonas: Chachapoyas: Distr. Granada, Comunidad Campesina anexo de Diosán, en parte alta de la comunidad campesina en el sector denominado 7 Lagunas al frente de la laguna María Gondolán, 3702 m, 26 abril 2018, ***José Dilmer Edquén Oblitas 850***. Holotype: HUTP! (LCDP and Photo voucher)

Similar to *Epidendrum panduratum* Hágsater & Dodson but the flowers ochre-yellow, non-resupinate, sub-secund, column and lip ascendant, at an angle of 45° to the vertical axis of the inflorescence, lip facing downwards, (vs. flowers pink-green, non-resupinate, secund, lip vertical), ovary longer, 26 mm long (vs. ovary shorter 18-24 mm long), lateral sepals 22 x 5 mm, with the margins strongly revolute (vs. lateral sepals 15-16 x 7 mm, margins spreading), and lip 3-lobed, lateral lobes sub-quadrate, mid-lobe apically truncate (vs. lip pandurate, apex bilobed and mucronate).

Lithophytic or terrestrial, monopodial, branching **herb**, to 75 cm tall. **Roots** 1.2 mm in diameter, basal from the primary stem, fleshy, scarce. **Stems** primary stem 66 x 0.4-1.1 cm, secondary stems 5.5-26 x 0.3-0.7 cm, producing new branches from the middle of the primary stems; cane-like, terete, thin, erect, straight or curving upwards, base covered by non-foliar, tubular sheaths. **Leaves** numerous on the main stem, up to 8 on the secondary stems, distributed along the apical half of the stems, spreading, alternate, coriaceous, recurved, green, concolor; sheaths 15-22 mm long, tubular, verrucose, brownish green; blade 2-9 x 1.8-3.8 cm, elliptic, apex rounded, margin entire, spreading. **Spathe** lacking. **Inflorescence** 5.0-6.5 cm long, apical, erect, racemose, sub-dense, the flowers distributed in a helicoid; peduncle sessile; rachis 5.0-6.5 cm long, terete, straight. **Floral bracts** 9-15 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 26 mm long, terete, not inflated, furrowed, arcuate, slightly wider at the apex. **Flowers** 14-17, successive, several open at one time in various stages of ageing, non-resupinate, sub-secund, the column and lip ascendant, at an angle of 45° to the vertical axis of the inflorescence, lip facing downwards, ochre-yellow, concolor; fragrance not registered. **Sepals** somewhat fleshy, 5-veined, margin entire, strongly revolute so as to be tubular; dorsal sepal 20 x 4.5 mm, spreading, free, oblanceolate-elliptic, apex rounded; lateral sepals 22 x 5 mm, partly spreading, obliquely united to the base of the column, narrowly elliptic, oblique, apex acute. **Petals** 20 x 3 mm, spreading, free, narrowly oblanceolate, oblique, obtuse, 1-veined, margin denticulate, strongly revolute. **Lip** 8 x 10 mm, united to the column, 3-lobed, base cordate, apex truncate, margin minutely erose; bicallose, the calli laterally compressed, but not laminar; disc provided with a wide, fleshy mid-rib, with the apex narrowed and reaching the apex of the lip; lateral lobes 3 x 3 mm, sub-quadrate, margin spreading and somewhat retrorse at a 45° angle; mid-lobe 4 x 7 mm, quadrate, margin slightly involute at the apex. **Column** 16 mm long, thin, straight. **Clinandrium-hood** reduced; margin entire. **Rostellum** apical, slit. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles soft and granular, as long as the pollinia; viscarium semi-liquid. **Lateral lobes of the stigma** prominent, half as long as the stigmatic cavity. **Nectary** penetrating 1/3 of the ovary, slightly inflated. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Amazonas: Chachapoyas: Distr. Granada, Comunidad Campesina anexo de Diosán, 3785 m, 12 VI 2017, *Edquén 857*, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Known presently only from the eastern slope of the Andes in northern Peru, in the Department of Amazonas, near the border with San Martín, in *Pajonal alto andino (Jalca)*, in a rocky slope of sandstone, very wet with accumulation of organic material, at 3700-3785 m altitude. Flowering in April through June.

RECOGNITION: *Epidendrum quadratilobum* belongs to the Andean group, Vernixium subgroup, which is characterized by the monopodial sub-apical branching habit, erect inflorescences, lax, non-resupinate flowers, and the lip entire to 3-lobed. The new species is recognized by the ochre-yellow, concolor, sub-secund flowers, lip and column ascendant, at an angle of 45° to the vertical axis of the inflorescence, lip facing downwards; the margin of the tepals strongly revolute, lateral sepals 22 mm long, lip 3-lobed, the lateral lobes very small, 3 x 3 mm, obliquely sub-quadrate and the mid-lobe quadrate, apex truncate. *Epidendrum panduratum* Hágsater & Dodson has green-pink, secund flowers, only the petals have revolute margins, lateral sepals 15-16 mm long, and the lip vertical, pandurate, the apex of the mid-lobe emarginate and mucronate. *Epidendrum adamsii* Hágsater & Dodson has green flowers, lateral sepals 15 mm long, and the lip clearly 3-lobed with the lateral lobes 6.3 x 4 mm, as long as the mid-lobe which is widely mucronate. *Epidendrum montistoletanum* Hágsater & E.Santiago has flowers green tinged purple-black to totally purple-black, except for the column which is green at the base, non-resupinate, with the lip vertical, the flowers often secund, lateral sepals 12-20 mm long, and the lip sub-quadrate, corners rounded.

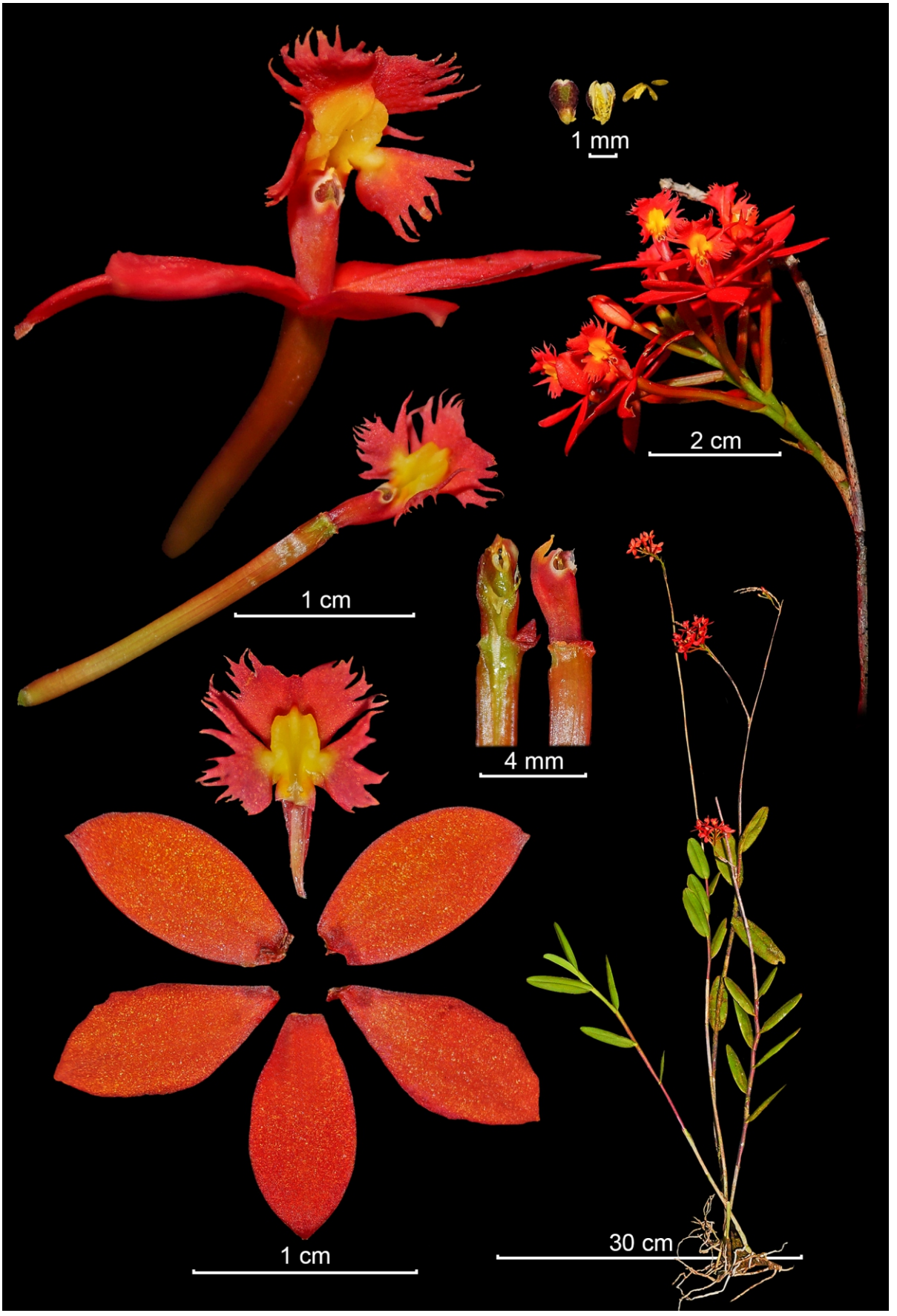
ETYMOLOGY: From the Latin, *quadratus*, square, and *lobus*, lobe, in reference to the 3-lobed lip where the lobes are all square.

CONSERVATION STATUS: DD. Data deficient. Presently known from two collections and a single locality, at very high altitude where there is no use for the land, though escaped fires do occur.

ACKNOWLEDGMENT: The type was collected under permit (RDG) N° 137-2018-SERFOR/DGGSPFFS; Código de Autorización Nº AUT- IFL-2018-025.

REFERENCES: Hágsater, E., & C.H. Dodson, 1993, *Epidendrum adamsii* in E. Hágsater & G.A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: pl. 101. Hágsater, E., & C.H. Dodson, 1993, *Epidendrum panduratum* in E. Hágsater & G.A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: pl. 172. Hágsater, E., & E. Santiago, 2019, *Epidendrum montistoletanum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): pl. 1645.

Authors: E. Hágsater, E. Santiago & J. D. Edquén **LCDP: J. D. Edquén & A. Cisneros** **Photo: J. D. Edquén** **Editors: E. Hágsater & E. Santiago**



EPIDENDRUM REFLEXILOBUM C.Schweinf. **Plate 1835**

EPIDENDRUM REFLEXILOBUM C.Schweinf., Bot. Mus. Leafl. [Harvard University] 11(4): 112-113. 1943.

Type: PERU: Huánuco: [Pasco: Prov. Daniel Alcides Carrión:] Yanahuanca, on rocks among shrubs, 3070 m, 16-22 June 1922, ***J. Francis MacBride & William Featherstone 1290***, Holotype: F 517800! Isotype: AMES 61589!

Epiphytic, sympodial, caespitose **herb**, ca. 72-120 cm tall including the inflorescence. **Roots** 5-6 mm in diameter, basal, terete, fleshy, white. **Stems** 19-37.5 x 0.4 cm, simple, cane-like, terete to slightly compressed towards the apex, thin, covered by foliar sheaths. **Leaves** 7-12, distichous, distributed along the upper 1/4 of the stem; sheaths 4.4-6.0 x 0.4 cm, tubular, smooth, papyraceous when dry; blade 4.0-6.6 x 1.3-1.5 cm, oblong, apex unequally bilobed, articulate, coriaceous, smooth, green, margins entire. **Spathe** lacking. **Inflorescence** 34-79 cm long, racemose to pluri-racemose, laxly flowered, cylindric; peduncle 30-66 cm long, elongate, covered by numerous tubular, imbricated bracts 4.5 x 0.4 cm, acute, scarious when dry, striated, papyraceous; rachis ca. 4.8 cm long. **Floral bracts** 4-15 x 0.7-3.0 mm, much shorter than the ovary, decreasing in size, triangular, acuminate, embracing. **Flowers** ca. 10-20, successive, 4-6 open at a time, non-resupinate, red, callus yellow, turning red when pollen is removed or as the flowers age; fragrance none. **Ovary** 20-25 mm long, terete, thin, not inflated, red-violet, furrowed. **Sepals** spreading, apex obliquely rounded, short apiculate, 7-veined, margin entire, spreading; dorsal sepal 10.2-12.5 x 4.9 mm, ovate-elliptic, lateral sepals 10.8-13.0 x 5.0 mm, elliptic-oblong, oblique. **Petals** 10.6-13.5 x 4.0-5.0 mm, extended, oblanceolate or cuneate-spathulate, apex acute, 3-5-veined, margin entire, spreading. **Lip** 7.4-12.0 x 8.6-15.5 mm, united to the column, deeply 3-lobed, in natural position the mid-lobe flat, extended, the lateral lobes sub-erect, base cordate, distal margins laciniate; callus low, complex, formed by 3-5 straight, parallel ribs on the mid-lobe, the mid-rib longer, nearly reaching the apical sinus, with two divergent bifid calli at the base of the lateral lobes, the longer segment projecting on the junction of the mid-lobe with the lateral lobes; lateral lobes 5.2-6.5 x 3.7-5.0 mm, spreading when flattened, obovate; mid-lobe 4.6 x 8.2 mm, obcuneate, bifid, slightly divergent, deeply and narrowly emarginate. **Column** 4.0-6.0 mm long, straight, wider at the apex, with a pair of long, apical recurved fleshy wings with the distal margin erose. **Clinandrium-hood** very short, margin entire, leaving the anther totally exposed. **Anther** ovoid, apiculate, surface rugose, 4-celled. **Pollinia** 4, narrowly obovoid, laterally compressed, caudicles formed by a pile of elongate pollen tetrads like a pile of tiles; viscidium semi-liquid. **Rostellum** apical, split. **Lateral lobes of the stigma** short, occupying ¼ the length of the stigmatic cavity. **Nectary** penetrating half the pedicellate ovary, minutely papillose. **Capsule** not seen.

OTHER SPECIMENS: PERU: *Bennett 3480*, MOL x2! **Pasco:** Cerro de Pasco: Huariaca, 3200 m, 26 VI 1940, *Asplund 11966*, S! **Huánuco:** Huánuco: Chinchao, abajo de Carpish hacia Huánuco, 11 IX 1960, *Acleto 172*, UC! Casapi, 1868, *Mathews s.n.*, W! **San Martín:** Rioja, Pardo Miguel Naranjos: Mirador venceremos: 1867 m, 6 XII 2015, *Edquén 1979*, HURP! (LCDP voucher, AMO!)

OTHER RECORDS: PERU: Amazonas: Chachapoyas: Balsas-Leimebamba, Cordillera Calla Calla, 2363 m, *Harding s.n.* digital images AMO! **Huánuco:** Prov. Huánuco: entre Churubamba y Chinchao, 2307 m, 17 XI 2019, *Yupanqui s.n.*, digital images AMO! (Photo voucher) sin localidad, 2909 m, 19 I 2020, *Yupanqui s.n.*, digital images, AMO! Prov: Dos de Mayo: ruta a la Unión, 3200 m, 29 I 2017, *Rivas s.n.*, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Known presently from central Peru in the Departments of Huánuco, Pasco and Junín and north to the border between San Martín and Amazonas, terrestrial at 2900-3200 m altitude. Flowering from September to June.

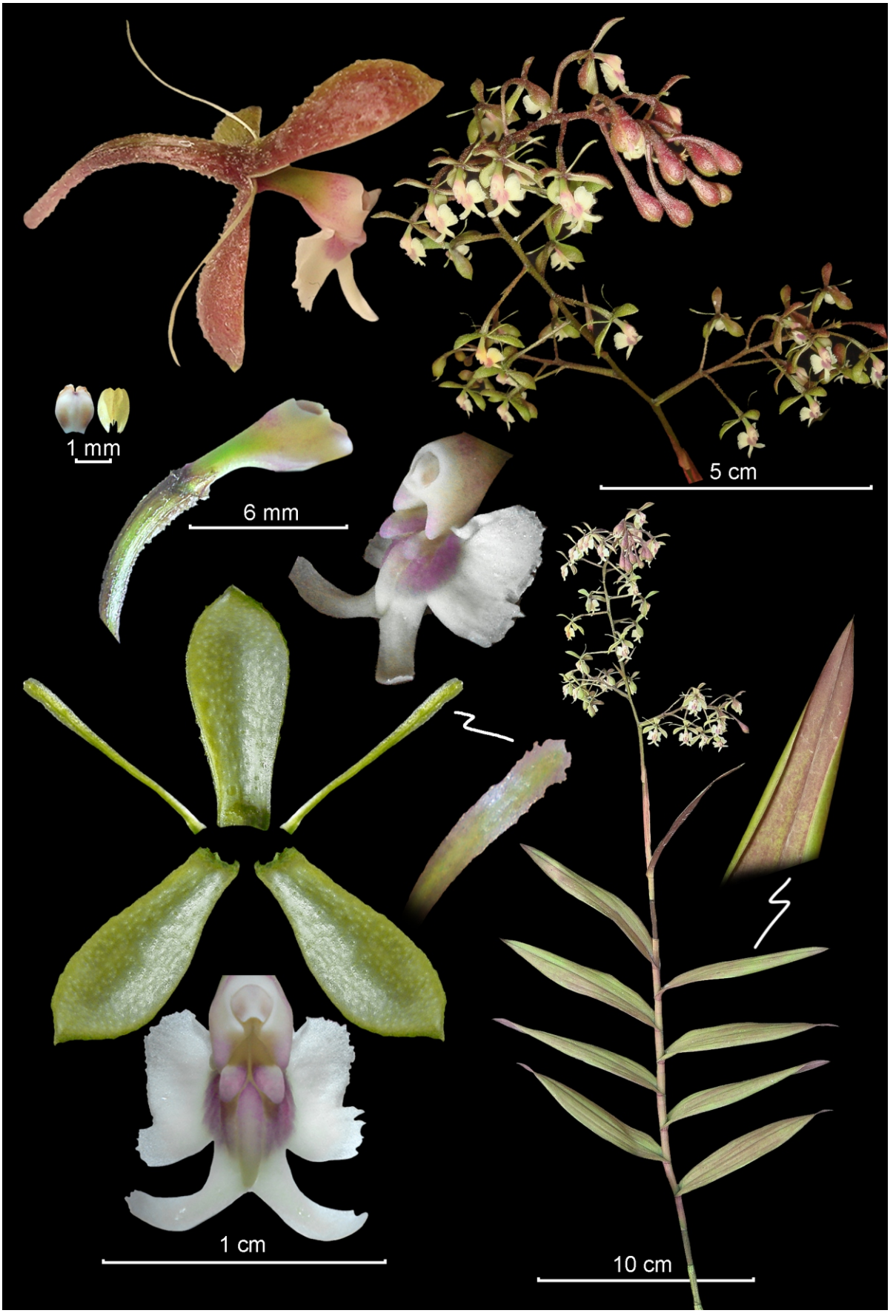
RECOGNITION: *Epidendrum reflexilobum* belongs to the Schistochilum Group, Secundum Subgroup, which is characterized by the caespitose habit, the erect, simple, cane-like stems, a normally elongate peduncle of the inflorescence, an erect raceme of generally non-resupinate, showy, colorful flowers, and a lip adorned by a complex a callus. The species is recognized from Huánuco and Junín Departments, has red flowers with the callus yellow, the lateral lobes of the lip narrow and spreading. It is similar to *Epidendrum macrocyphum* Kraenzl. which has pink-purple flowers with a white callus formed by 3-5 straight parallel ribs on the mid-lobe, the mid-rib longer nearly reaching the apical sinus, with two divergent bifid calli at the base of the lateral lobes, the longer segment projecting on the junction of the mid-lobe with the lateral lobes, the lip in natural position has the mid-lobe flat, extended, the lateral lobes erect, embracing the entire column with outer margin strongly revolute. In addition, there is another similar species similar to *E. macrocyphum* in the Department of Ancash with a similar callus but the whole flower is pink-lilac including the callus; we have not been able to pin a name on that species yet. There is a population with smaller flowers in the province of San Martin in northern Peru, collected by Jose Dilmer Edquén, which has been included here. *Epidendrum ptochicum* Hágsater has similar flowers, but these are orange with the callus yellow, the leaves longer, to 13 cm long, and the sepals and petals shorter, 8-9 mm long; that species is epiphytic and myrmecophilous form western Ecuador and Colombia.

CONSERVATION STATUS: DD. Data deficient, known presently from two regions in central and northern Peru.

REFERENCES: Hágsater, E., 2006, *Epidendrum ptochicum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5, Icon. Orchid. 8: pl. 877. Hágsater, E., & A. Cisneros, 2020, *Epidendrum marocyphum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1819. Schweinfurth, C., 1959, *Epidendrum reflexilobum*, in Orchids of Peru, Fieldiana: Bot. 30(2): 502-503.

Author: E. Hágsater **LCDP: J. D. Edquén & A. Cisneros** **Photo: L. E. Yupanqui G.** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020. Plate 1835**



EPIDENDRUM SANFRANCISCOËNSE Hágsater, E.Santiago & Medina-Tr. **Plate 1836**

EPIDENDRUM SANFRANCISCOËNSE Hágsater, E.Santiago *et* Medina-Tr., *sp. nov.*

Type: COLOMBIA: Putumayo: Mun: San Francisco, finca de Narciso Coral, cerca de la población de San Francisco, 2300 m, colectado 8 diciembre 2006, prensado 10 marzo 2017, ***Ramiro Medina Trejo 446.*** Holotype: JAUM! (LCDP and Photo voucher)

Similar to *Epidendrum sodiroi* Schltr. but the plants smaller, to 72 cm tall (vs. plant large, 100-300 cm tall), lip 3-lobed, with the lateral lobes rectangular-reniform with the lateral margin erose (vs. lip only slightly 3-lobed, with the margin fimbriate).

Epiphytic, sympodial, caespitose **herb**, 72 cm tall including the inflorescence. **Roots** basal, thin. **Stems** 52 x 0.2-0.4 cm, simple, cane-like, terete, thin, erect, straight, basal 1/3 covered by sheaths 2 cm long, tubular, non-foliar, becoming scarious and fibrous with time. **Leaves** 11, distributed along the apical 2/3 of the stems, alternate, articulate, spreading, plicate, light green, the underside tinged reddish purple; sheaths 8-15 x 2-4 mm, tubular, minutely striated, green tinged red; blade 6.5-8.0 x 1.0-1.3 cm, narrowly elliptic, acute, margin entire, revolute. **Spathe** lacking. **Inflorescence** 16 cm long, apical, paniculate, erect, laxly-many flowered, provided with 2 racemes ca 4.5 cm long, each raceme subtended by a bract 1.5 cm long, linear-lanceolate, acuminate embracing; peduncle 6.5 cm long, terete, thin, straight, totally covered by 2 bracts 1.7-4.5 cm long, tubular, acuminate, partly imbricated; rachis 8.5 cm long, terete, thin, densely papillose. **Floral bracts** 4 mm long, shorter than the ovary, narrowly triangular, long acuminate, embracing. **Ovary** 11-15 mm long, terete, thin, muricate, reddish purple. **Flowers** 40, nearly simultaneous, some apical buds closed when most of the flowers are open; sepals ventrally green to pale greenish brown, dorsally reddish purple, petals green, column green at base, apex white with purple hew, lip white with the disc covered by a solid pale purple splotch, including the calli; fragrance not registered. **Sepals** 9.5-9.8 x 3.6mm, spreading, free, narrowly obovate, sub-acute, fleshy, minutely apiculate, dorsally muricate, slightly concave, margin entire, spreading. **Petals** 8 x 0.7 mm, reflexed, free, linear-filiform, falcate, obtuse, 1-veined, apical margin erose, spreading. **Lip** 8 x 8 mm, united to the column, 3-lobed, base cordate; bicallose, the calli prominent, elongate, terete, divergent, apex rounded; disc provided with 3 parallel, thin, adjoining ribs, the mid-rib larger and reaching the apical sinus; lateral lobes 3.7 x 5 mm, rectangular-reniform, lateral margin erose; mid-lobe 3.3 x 7.5 mm, bilobed, divergent, each lobe 4.4 x 1.3 mm, oblong, falcate, apex rounded, erose, lateral margins entire. **Column** 6 mm long, straight, thin at base, gradually thickened towards the apex, which has a pair of subacute wings on each side above the calli, surpassing the rest of the column. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex truncate, 4-celled. **Pollinia** 4, bird-wing type, the inner pair somewhat smaller; caudicles and viscidium not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Presently known only from Colombia, Putumayo Department, near San Francisco, epiphytic at 2300 m altitude. Flowering in March.

RECOGNITION: *Epidendrum sanfranciscoënse* the belongs to the belongs to the Sodiroi Group which is characterized by the tall plants with thick cane-like stems, the leaves clearly marked and thickened by the veins, the lip more or less 3-lobed, the margin erose-dentate to fimbriate, the dorsal surface of the sepals and ovary verrucose or muricate. The species is recognized by the short plants, 72 cm tall including the inflorescence, the petals linear-filiform, the sepals dorsally muricate and reddish purple, ventrally green to greenish brown, 9.5-9.8 mm long, lateral lobes of the lip rectangular-dolabriform with the lateral margin erose, and the lip with a purple splotch covering the disc including the calli. *Epidendrum sodiroi* (syn. *E. goodspeedianum* A.D.Hawkes) has taller plants, 100-300 cm tall, and the lip only slightly 3-lobed with the margin fimbriate. *Epidendrum calothyrsus* Schltr. has even taller plants to 400 cm high, the lip immaculate, incipiently 3-lobed with the lateral lobes semi-orbicular-quadrate and the margin denticulate.

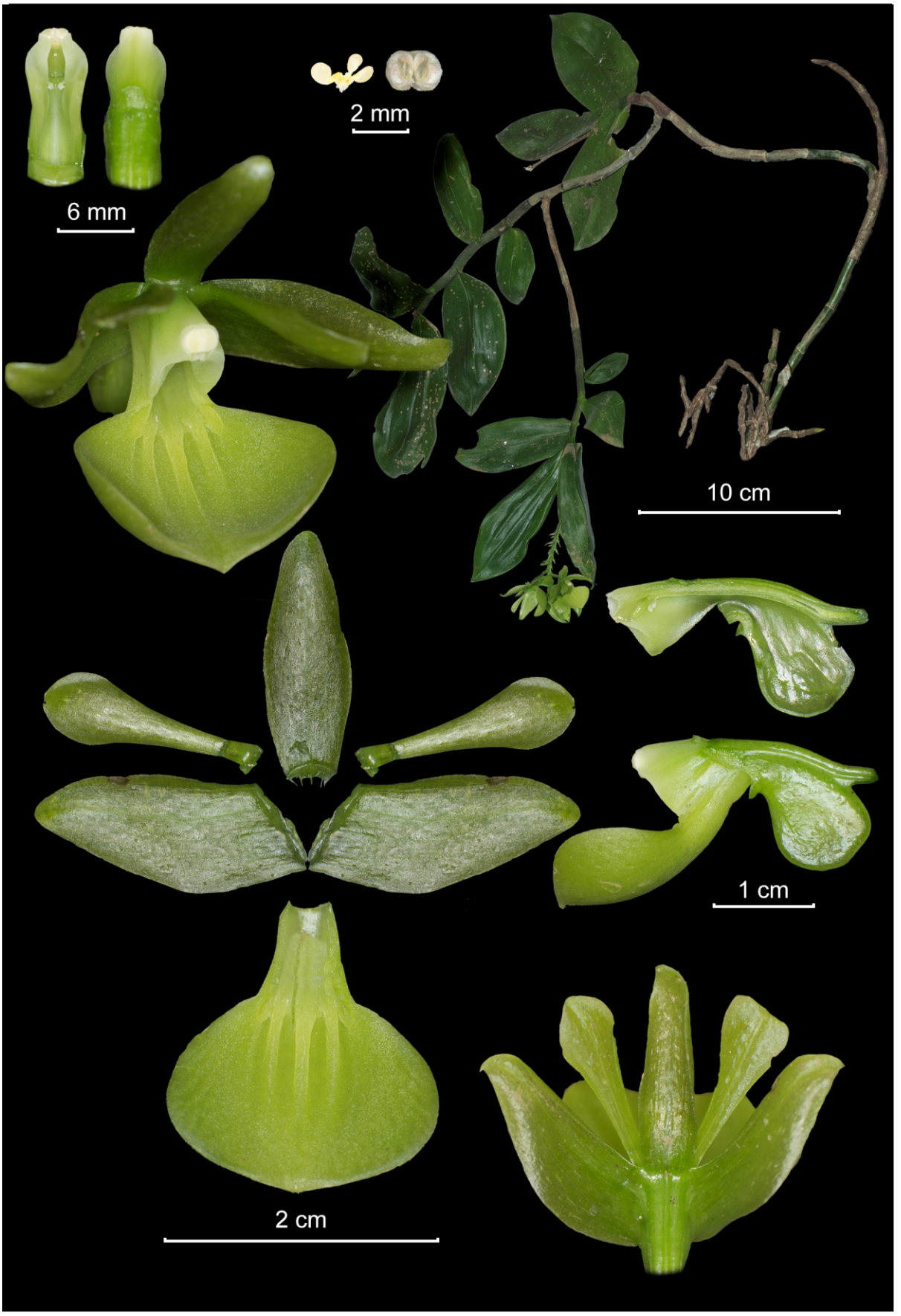
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the type locality of San Francisco, Putumayo, Colombia, where the type was collected.

REFERENCES: Santiago, E., & E. Hágsater, 2020, *Epidendrum sodiroi*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1838. Schlechter, F. R. R., 1920, *Epidendrum calothyrsus*, in Repert. Spec. Nov. Regni Veg. Beih. 7: 126-127.

Authors: E. Hágsater, E. Santiago & R. Medina T. **LCDP: R. Medina T. & A. Cisneros** **Photo: R. Medina T.** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1836**



EPIDENDRUM SCROTIFORME Est.Domínguez, S.Mesa, E.Santiago & Hágsater **Plate 1837**

EPIDENDRUM SCROTIFORME Est.Domínguez, S.Mesa, E.Santiago & Hágsater in Species Orchidacearum 4(1): LCDP 41. 2020.

Type: COLOMBIA: Antioquia, Municipality of Don Matías, Vereda La Piñuela, "Relleno Sanitario La Pradera" 1200 m, November 2019. ***Juan David Saldarriaga 87***, Holotype: HUA! (LCDP voucher.)

Epiphytic, sympodial, erect to arching and pendent **herb**, to 50 cm tall. **Roots** 5 mm in diameter, basal from the primary stem, thick, white. **Stems** 16.5-21 x 0.25-0.5 cm, simple, cane-like, terete, the new stem arising from a middle internode of the previous stem usually below the first leaf; lower part covered when young by non-foliar sheaths. **Leaves** 4-5, articulate, distributed along the apical half of the stems, unequal, progressively larger, twisted at the base so as to be in the same plane of the stem; sheaths 1.0-1.5 x 0.4-0.6 cm, tubular, rugose, dark green turning brown as they dry; blade 2.5-12 x 1.1-4 cm, dark green, elliptic to widely elliptic, somewhat apiculate, obtuse to acute, margin entire, spreading. **Spathe** lacking. **Inflorescence** ca. 8 cm long, pendent, racemose, peduncle very short, flowers densely packed, few open at a time. **Floral bracts** 3.0-4.0 mm long, triangular, apex acute, pale green, lustrous, embracing. **Ovary** 19-20 cm long, lustrous green, terete, furrowed, a prominent vesicle in the middle, scrotum-like, but very flat, obliquely sub-rectangular, the apex rounded. **Flowers** ca. 20, successive, 3-4 open at a time, non-resupinate, deep green turning ochre when maturing or yellow, the veins marked with reddish brown, the column and lip green to yellow, somewhat paler towards the disc, apex of the column whitish green, anther white to yellow, pollinia pale yellow; fragrance none. **Sepals** partly spreading, fleshy, margins entire, slightly revolute; dorsal sepal 20-21 x 7-8 mm, free, elliptic, apex obtuse, 5-veined; lateral sepals 21-22 x 11.4 mm, obliquely united to the column, obliquely oblong-elliptic, apex obtuse, 8-veined. **Petals** 18-20 x 5-6 mm, free, partly spreading, spatulate, apex rounded, margin entire, lateral margins revolute, 5-veined with a low slightly marked dorsal mid-rib. **Lip** 23-25 x 23-24 mm, united to the column, transversely elliptic-sub-orbicular, base widely cuneate, somewhat concave and widely cup-shaped in natural position; ecallose, the disc with 5 ribs, the lateral pair small, the 3 mid-ribs prominent, clearly elevated, narrow, disappearing at the end of the disc of the lip. **Column** 9.8-10.5 mm long, short, thick, obliquely triangular when seen from the side, apex truncate. **Clinandrium-hood** short, margin slightly undulate. **Rostellum** apical, slit. **Anther** reniform, 4-celled. **Pollinia** 4, lentil-shaped, laterally compressed, sub-equal, pale yellow. **Nectary** prominent, penetrating the pedicellate ovary and forming a scrotum-like vesicle, obliquely sub-rectangular, apex rounded, sides flat, very narrow at the base of the column where the lateral sepals are joined; inner surface papillose. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Antioquia: Mun. San Rafael, Vereda Quebradona, Río Churimo, 1050 m, X 2019, *Tobón 3089*, JAUM! Mun. San Rafael, Reserva Natural La Zafra, 18 XII 2006, *Vélez s.n.*, MEDEL! (digital images of live material, AMO!) Ibid. San Rafael, límites con San Carlos, Vereda Arenales, Reserva Natural La Zafra, 1070 m, 11 XI 2017, *Vélez 6511*, MEDEL!

OTHER RECORDS: COLOMBIA: Antioquia: Mun. Yolombó, received VI 2020, *Mateo Giraldo s.n.*, digital images, AMO!(Photo voucher) Mun. Santa Fé de Antioquia, 860 m, 7 VIII 2020, *López Vargas s.n.*, digital images AMO! Mun. Sabanalarga, La Floresta, 1254 m, *López Vargas s.n.*, digital images, AMO!

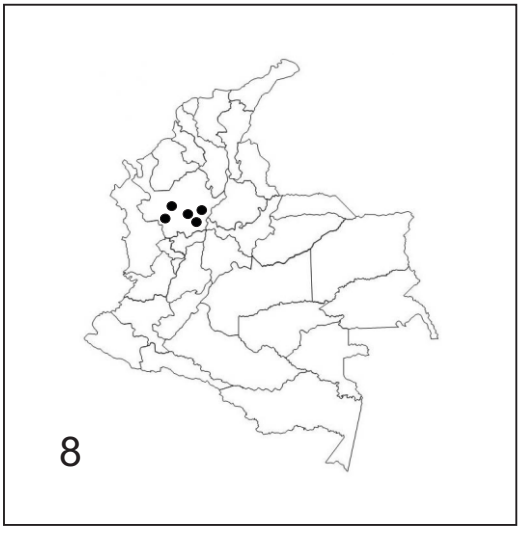
DISTRIBUTION: Presently known only from the northernmost part of the Cordillera Central and Occidental of the Andes, on both sides of the Río Cauca, northwest and east of Medellín; epiphytic at 800-1200 m altitude, and with rainfall of 1300-3000 mm. Flowering in October and November probably much earlier, as the flowers are successive. The two known vicariant populations were probably united before the raise of the Andes. The range of distribution in the Valley of the Río Cauca in Antioquia, is probably restricted to dry forests between La Pintada and the new dam of Ituango (hidroituango). It has not been reported to occur further south because the narrow canyon of the Río Cauca did not permit its extension to the southern valley of the Río Cauca, which has the same climate and similar altitude.

RECOGNITION: *Epidendrum scrotiforme* belongs to the Incomptum group which is characterized by having erect successive lateral growths produced from the middle of the previous growth, few leaves aggregated towards the apex of the stems, a short apical inflorescence with fleshy green to violet-green flowers with short ovaries, and the lip entire to 3-lobed, and the Scrotiformis complex, recognized by the lip lacking any calli but with raised veins, a cuneate base, and a prominent flat oblique nectary vesicle in the middle of the pedicellate ovary. The new species is recognized by the massive nectary which forms a prominent vesicle on the ventral part of the pedicellate ovary, scrotum-like, but flat, obliquely sub-rectangular, the apex rounded, the flowers successive, 3-4 open at a time, green to yellow, and the lip transversely elliptic-sub-orbicular, base widely cuneate, somewhat concave and widely cup-shaped in natural position, ecallose, the disc with 5 ribs, the lateral pair small, the 3-mid-ribs prominent, clearly elevated, parallel, narrow, disappearing at the end of the disc. The lip is reminiscent of *Epidendrum megalopentadactylum* Hágsater & Huayta but the habit of that species is very distinct with long, hanging plants and stems complanate and ancipitose. The shape of the lip of the new species, transversely elliptic, is somewhat reminiscent of *Epidendrum latisegmentum* C.Schweinf. from Peru, but that species clearly has 2 prominent calli on the reniform lip, no prominent vesicle in the pedicellate ovary, and the 3 ribs of the lip are low and wide. There is no other species in the Incomptum group with the base of the lip cuneate, most species are more or less cordate, or at most truncate. There are a few species with a prominent nectary forming a vesicle protruding from the pedicellate ovary, like *Epidendrum pogonochilum* Carnevali & G.A.Romero, but that species has a very different *Dichaea*-like plant, and the nectary is inflated, but not flat.

CONSERVATION STATUS: EN Endangered. The currently known range is 2520 km^2 hence less than 5,000 km^2. There are ongoing efforts in Antioquia to document the diversity or the local flora, but the area is under pressure as forests are being affected the expansion of agriculture and livestock. The proposed risk category is Endangered, as per sub-criteria B1b (ii, iii) applies (IUCN 2012).

ETYMOLOGY: From the Latin *scrotum*, the pouch that covers the testicles, in prominent reference to the shape of the vesicle of nectary.

REFERENCES: Carnevali, G., & G.A. Romero, 2000, *Epidendrum pogonochilum* in **Orchid. Venez.** ed 2, 3: 1133. Domínguez V., E., S. Mesa, E. Santiago & E. Hágsater, 2020, *Epidendrum scrotiforme*, Species Orchidacearum 4: LCDP 5. Hágsater, E., 2006, *Epidendrum latisegmentum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 8: pl. 850. Hágsater, E., & A. Huayta B., 2018, *Epidendrum megalopentadactylum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(2): pl 1683. IUCN, 2012, **Red List Categories and Criteria**: Version 3.1. Second edition, Gland, Switzerland and Cambridge, UK; iv + 32 pp.



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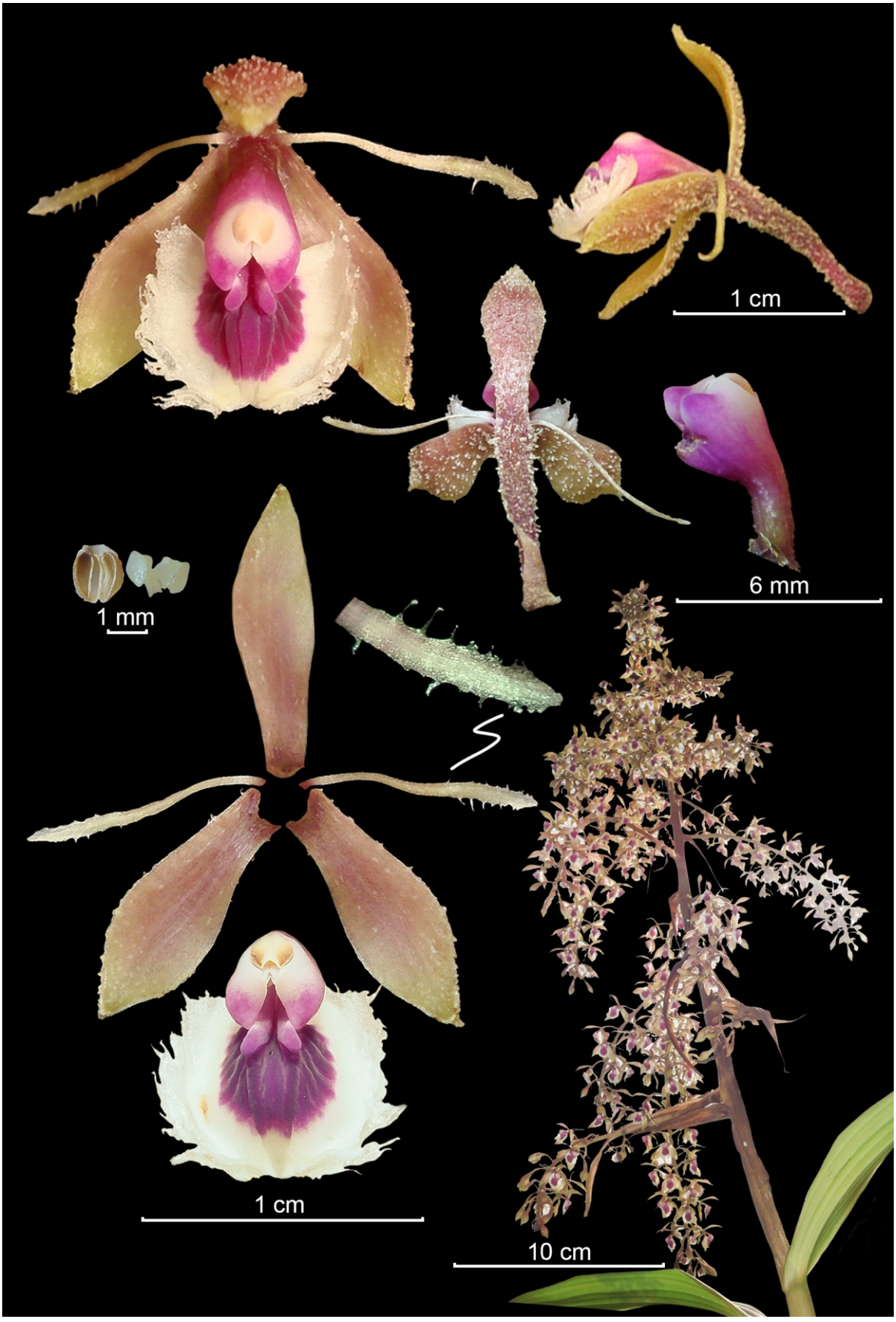
Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1837**



EPIDENDRUM SODIROI Schltr. **Plate 1838**

EPIDENDRUM SODIROI Schltr. Repert. Spec. Nov. Regni Veg. 14: 392. 1916.

Type: ECUADOR: In silvis temperatis ad pagum Gualea, blühend im Juni 1886, ***Aloisio Sodiro S.J. 65.*** Holotype: B, destroyed. Sketch of flower in Schlechter (1930) ex Mansfeld fig. 180. Two specimens with the preceding information are known to exist, one at AMES and the other at Q. However, in both cases the specimens are not only in serious conflict with the protologue, but also do not match with the published illustration. Furthermore, the two specimens correspond to a completely different species, *Epidendrum excisum* Lindl., and so they are excluded from consideration for typification. Neotype (here designated): ECUADOR: Pichincha: km 46 on road from Quito to Santo Domingo, 2000 m, 22 October 1961, ***Calaway H. Dodson & Leonard B. Thien 1043***. Neotype: QCA! Isoneotype: SEL! Not to be confused with *Diothonea sodrioi* Schltr., Repert. Spec. Nov. Regni Veg. 14: 389. 1916. (Basionym of *Epidendrum puberulosum* Hágsater), which are synonymous with *Epidendrum megalospathum* Rchb.f. (Santiago *et. al.* 2015: pl. 1539).

Synonyms: *Epidendrum goodspeedianum* A.D.Hawkes, Orquídea (Río de Janeiro) 18: 170. 1957. Basionym: *Epidendrum muricatum* Rchb.f., Bonplandia 4: 327. 1856. TYPE: "PERU" [ECUADOR], ***William Jameson 39.*** Lectotype (here designated): W-R 49592! Isolectotype: K-Lindl. including sketch of flower by Lindley. Photograph of K specimen at AMES! Partial tracing of specimen at K, (leaf and base of inflorescence with subtending bracts) W-R! Non *Epidendrum muricatum* (Sw.) Poir (1810) = *Dichaea muricata* (Sw.) Lindl., 1833.

Terrestrial or rarely epiphytic, sympodial, caespitose **herb,** 100-300 cm tall. **Roots** ca. 3 mm in diameter, basal, thick, white. **Stems** 60-260 x 1.0-1.7 cm, simple, cane-like, terete, erect, straight; sheaths 6 cm long, non-foliaceous, tubular, smooth; stems take 3 years to mature and flower. **Leaves** numerous, ca. 30, distributed throughout the stem, alternate, articulate, spreading, at a right angle to the stem; sheaths 1-4 x 1-1.9 cm, tubular, minutely striated; blade 14.5-28 x 2.2-6.3 cm, narrowly oblong-elliptic, acute to short-acuminate, somewhat plicate, thin, non-coriaceous, margin entire. **Spathe** lacking. **Inflorescence** 35-40 cm long, apical, paniculate, erect to slightly arching, densely many-flowered; peduncle to 13 cm long, sub-terete, straight, scarcely pilose, with up to 4 bracts 9 cm long, amplexicaul, long-acuminate; rachis up to 37 cm long, sub-terete, densely muricate, provided with 14-16 racemes 6-28 cm long, these themselves branched, the secondary branches shorter, 4-7 cm long, spreading, densely many-flowered, each subtended by a bract 1.5-7 cm long, narrowly triangular, long-acuminate, embracing. **Floral bracts** 2-10 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Ovary** 9-15 mm long, terete, thin, slightly dilated along the apical half, densely muricate. **Flowers** numerous, simultaneous, resupinate, the sepals green to greenish brown, the lip white with disc, calli and column bright red-purple, sometimes pale; fragrance sweet, diurnal. **Sepals** 10-11 x 3-4 mm, spreading, free, fleshy, dorsally densely muricate, narrowly obovate, apex acute, minutely apiculate, apical half slightly concave, 5-veined, margin entire, spreading; lateral sepals slightly oblique. **Petals** 9-11 x 0.7-0.8 mm, recurved or somewhat spreading, free, filiform, apex rounded to acute, 1-veined, basal margin entire, scarce short ciliate towards the apex, somewhat spreading. **Lip** 6-7 x 7-9 mm, united to the column, sub-orbicular, base truncate, apex slightly emarginate in natural position, margin lacerate, involute throughout, impossible to spread without tearing; bicallose, calli small, finger-like, slightly divergent towards the apex; disc very fleshy, provided with 3 parallel, thick ribs, the central rib elongate reaching the apical sinus, with lesser thickened radiating short veins on the sides. **Column** 6-7 mm long, basal half thin, strongly widening from the middle towards the apex, slightly arching. **Clinandrium-hood** reduced margin, entire. **Anther** sub-spherical, 4-celled. **Pollinia** 4, "bird-wing" type, white, strongly laterally compressed, the inner pair smaller; caudicles laminar, smooth, nearly as long as the pollinia. **Rostellum** apical, split. **Lateral lobes of the stigma** half as long as the stigmatic cavity. **Nectary** short, slightly penetrating the pedicellate ovary, not inflated, smooth. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Cordillera Occidental, filo de la Cordillera, cerro sobre el Alto de Mira, (entre El Tabor y Carrizales), 2100-2350 m, 23 X 1943, *Cuatrecasas 22444*, F x2! VALLE x2! **ECUADOR: Azuay:** Sevilla de Oro, ca. 2400 m, 18 IV 1968, *Harling 8429*, GB! **Imbabura:** Río Cenepa km 35, 1900 m, 6 XII 1986, pressed cult. 27 VI 1987, *Hágsater 8975*, AMO! (spirit, slide and illustration) Carretera nueva de Otovalo, Mina Selva Alegre, 2 km arriba de la Mina Selva Alegre, 1940 m, 6 XII 1986, *Hágsater 8979*, AMO! Ibid. pressed cult. 10 XII 1990, *Hágsater 8979,* AMO! **Loja:** Vilcabamba, Parque Nacional Podocarpus. Reserva El Bosque, above San Pedro de Vilcabamba (5 km east of the village) Quebrada Romerillo, 2100 m, 29 XI 1994, *Pedersen 104110*, QCNE! **Napo:** desviación Baeza-Lago Agrio, 2 km antes de Baeza, al margen del Río Papallacta, ca. 1900 m, 4 XII 1986, pressed cult. 10 XII 1990, *Hágsater 8915*, AMO x2! 1.1 km E of Cuyujua, at Río Victoria, 2450 m, 26 III 1972, *MacBryde 1278*, AMES! **Pichincha:** km 18 Nono-Tandayapa, big boulder on left side of road along Rio Alambi, 2110 m, 14 V 1981, *Dodson 10819*, MO! QCA! SEL! Tandapi, km 79 Quito-Sto.Domingo, 1450 m, 23 XI 1984, *Dodson 15460*, MO x2! QCNE! km 45 Quito to Santo Domingo on old road via San Juan and Chiriboga, 2300 m, 3 V 1985, *Dodson 15831A*, MO ex RPSC! Tandayapa-Nono, close to Tandayapa, ca. 1900 m, 26 I 1979, *Harling 11614*, GB! Common on Quito-Santo Domingo road, from Chiriboga, 1900 m, 5 IV 1942, *Haught 3220*, AMES! F! NY! US! Tandapi, Quito-Santo Domingo, 2000 m, III 1983, *Hirtz 838*, SEL! Río Blanco to San Florencio, Santo Domingo de Los Colorados, 1000-1300 m, *Lehmann 6734*, K-Lindl. x2! Nono-Nanegal road, between Nono and Tandayapa, ca. 2000 m, 24 III 1979, *Løjtnant 11325*, AAU x2! GB! 16 km from Nono on road to Tandayapa and Nanegal, 2100 m, 27 XII 1987, *Molau 2226*, GB! QCA! Reserva Florística Ecológica. Río Guajalito, 1800-2000 m, XII 1994, *Rudolph 289*, QCA! between km 37 and 50 along Río Saloya (between Volcán Atacaso and Volcán Pichincha), 1830-2430 m, 22 IV 1943, *Steyermark 52549*, AMES! F x2! km 27 Santo Domingo-Quito, old road to Quito, 1500-2100 m, 12 IV 1984, *Thurston 4115*, AMO! (spirit) **Sucumbios:** Tulcán-La Bonita, km 64.5, 1990 m, 8 VII 1990, *Dodson 18477*, MO! **PERU: Ayacucho:** between El Tambo and Ayna, 7800 ft, 3 I 1975, *Plowman 4701*, AMES! CUZ! U! USM! **Cusco:** La Convención, 3 III 1943, *Vargas 3241*, AMES x2! **Junín:** Satipo, Calabazas, along road to Huancayo, 1700 m, 31 VII 1987, *Bennett Jr. 3987*, USM Carpapata, above Huacapistana, 2700-3200 m, 7 VI 1929, *Killip 24435*, US!

OTHER RECORDS: COLOMBIA: Without locality data, *Ortiz Valdivieso s.n.*, digital image series, AMO! **Putumayo:** Vereda Chorlabí en la vía San Francisco-Mocoa, 2500 m, 27 IV 2008, *Ramiro Medina 621*, digital image series, AMO! (LCDP voucher) Mocoa: Portachuelo, 2300 m, *Barrera Guerrero s.n.*, digital image, AMO! (Photo voucher). **ECUADOR:** Without locality data, *Hirtz s.n.*, slide, AMO!

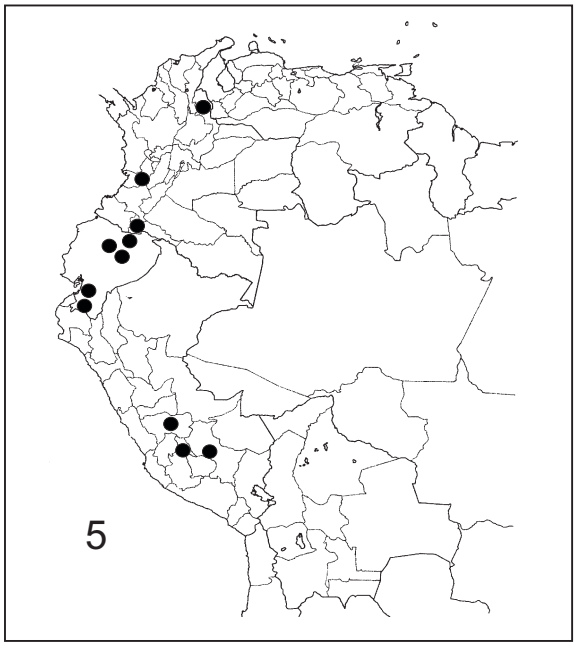
DISTRIBUTION AND ECOLOGY: Ranging from the summit of the Cordillera Occidental in the Valle del Cauca, Colombia, down along the both slopes the cordillera in Ecuador and along the eastern slope of the Cordillera Oriental in central Peru, terrestrial or rarely epiphytic on *Pisidum guava* (*Dodson 15460*), at 1300-2550 (2700-3200) m altitude: Flowering from October to July.

RECOGNITION: *Epidendrum sodiroi* belongs to the Sodiroi Group which is characterized by the tall plants with thick cane-like stems, the leaves slightly plicate, thin, the lip slightly 3-lobed, the margin erose-dentate to fimbriate, the dorsal surface of the sepals and ovary verrucose to muricate. The species is recognized by the dorsally densely muricate sepals, flowers green to greenish brown, the petals with the margin sparse short ciliate towards the apex, with the lip white, the disc of the lip, calli and column with a solid red-purple, the margin lacerate, involute in natural position. *Epidendrum calothyrsus* Schltr. is vegetatively very similar, but the flowers are pale brown, the petals and base of the column green, the lip convex, transversely elliptic, base cordate, the margin dentate and the disc of the lip immaculate. *Epidendrum muricatoides* Hágsater & Dodson has the floral bracts very prominent, floral segments scarcely muricate, flowers ochraceus to green, the petals with an entire margin, and the lip immaculate creamy white, the margin of the lip slightly erose, base cordate. *Epidendrum cesarfernandezii* Carnevali & I.Ramírez has green flowers, petals filiform with the margin entire, and the lip white (sometimes diffusely tinged pink), transversely elliptic, convex, the margin finely fimbriate.

ETYMOLOGY: In honor of Aloisio (Luis) Sodiro, S.J., (1836-1909), a Jesuit priest and botanist who, living in Quito, collected herbarium specimens and sent orchids to Schlechter for identification. Those specimens were destroyed in Berlin fire. His main surviving collection is held in Quito at the QPLS herbarium and some duplicates at BP (Hungarian Natural History Museum, Budapest). Sodiro also described many new species, IPNI (2020) lists 1206 plant names where he appears as an author (including later new combinations) in numerous families but no Orchidaceae. In honor of Dr. Thomas Harper Goodspeed (1887-1966), Professor of Botany and Director of the University of California Botanical Garden (Berkeley) from 1919 to 1957. He Specialized in the genetics of species of *Nicotiana*. He led several expeditions to the Andes of Colombia, Peru, Chile and Argentina and Uruguay.

CONSERVATION STATUS: **NT** Not Threatened. The species is ranges from northern Colombia to central Peru, and is common at least in central Ecuador, plants are large and thus require much space for cultivation, and therefore are of little horticultural interest.

REFERENCES: Bennett Jr., D.E. & E.A. Christenson, 1993, **Icon. Orchid. Peruviarum** pl. 47. Carnevali Fernández-Concha, G., & I. Ramírez-Morillo, 2003, *Epidendrum cesarfernandezii* in Nomenclatural Novelties in the Orchidaceae from Venezuela and Guyana, **Novon** 13(4) 405-418. Dodson, C.H. & P.M. Dodson 1989, Orchids of Ecuador. **Icon. Pl. Trop.** ser. 2, 5: pl. 470. Hágsater, E., & C.H. Dodson, 1993, *Epidendrum muricatoides* in E. Hágsater & G.A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: pl. 161. IPNI, 2020, International Plante Name Index, https://www.ipni.org accessed 4 November 2020. Santiago, E., E. Hágsater & R. Medina, 2020, *Epidendrum megalospathum*, in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): pl. 1539. Schlechter, F. R. R., 1920, *Epidendrum calothyrsus*, in Repert. Spec. Nov. Regni Veg. Beih. 7: 126-127. Schlechter, R., 1930, in R. Mansfeld (ed.), 1929, Blütenanalysen neuer Orchideen, Südamerikanische Orchideen, **Repert. Spec. Nov. Regni Veg., Beih.** 58(1): t. 45, Fig. 180.



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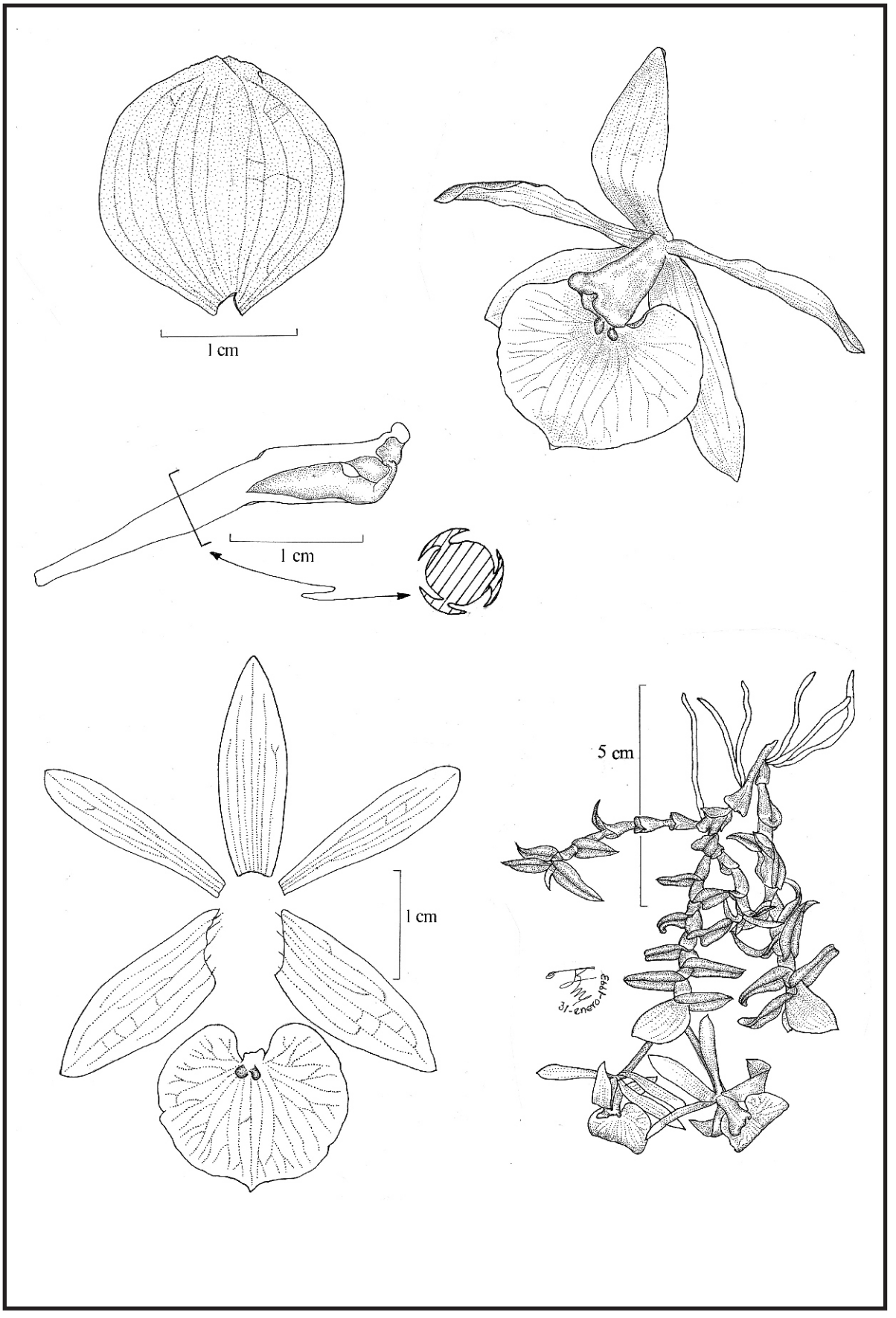


EPIDENDRUM STAHLII Hágsater & E.Santiago **Plate 1839**

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

Type: ECUADOR: [Carchi: Tulcán:] Carchi/Napo: 7.5 km on road El Carmelo-Santa Barbara, 2700 m, 25 March 1985, ***Bertil Ståhl, M. Lindqvist & Marie Lindström 99.*** Holotype: AMES! (Illustration voucher).

Similar to *Epidendrum miradoranum* Dodson & D.E.Benn. but two yellowish white flowers (vs. 1-4 flowers, pale green tinged pink), sepals 20-21 mm long, elliptic, apex not apiculate (vs. sepals 18 mm long, lanceolate to oblong-lanceolate, the apex minutely apiculate), lip 16 x 17.3-17.5 mm, with very small globose calli (vs. lip 17 x 14 mm, with prominent globose calli).

Epiphytic, sympodial, pendent **herb**, to 10 cm long. **Roots** 1 mm in diameter, basal, fleshy, thin. **Stems** 4-8 x 0.15-0.2 cm, simple, cane-like, terete, thin. **Leaves** 7-10, distributed throughout the stem, alternate, spreading, perpendicular to the stem, articulate, subcoriaceous; sheaths 6-8 x 3.0-4.0 mm, infundibuliform; blade 1.5-2.5 x 0.3-0.5 cm, lanceolate, acuminate, margin entire. **Spathe** 1, 15-19 x 18-19 mm (when spread), conduplicate, orbicular, obtuse, apical margin minutely denticulate. **Inflorescence** 3-4 cm long, apical; peduncle 5 mm long, thin, terete, totally hidden within the spathe. **Floral bracts** 4 mm long, much shorter than the ovary, narrowly triangular, obtuse, embracing. **Flowers** 2, simultaneous, resupinate, yellowish white; fragrance not registered. **Ovary** 17-20 mm long, thin at the base, progressively thickened towards the apex, without forming any vesicle, triquetrous, the longitudinal wings "T" shaped in cross section. **Sepals** elliptic, obtuse, margin entire, spreading; dorsal sepal 20 x 6.3 mm, spreading, free, 7-veined; the lateral sepals 20-21 x 7.2-7.4 mm, partly spreading, the apical half reflexed, obliquely united to the column, 5-veined. **Petals** 19.3-19.8 x 4.1-4.6 mm, free, spreading, oblong-oblanceolate, 3-veined, the lateral veins branched near the basal 1/3 thus appearing 5-veined, the apex widely obtuse, rounded, margin entire, spreading. **Lip** 16 x 17.3-17.5 mm, united to the column, entire, orbicular-cordiform, base cordate, apex rounded, minutely apiculate, margin entire, slightly revolute in natural position; bicallose, the calli globose, very small, the disc without any ribs. **Column** 9-11 mm long, thick, the apex turned upwards at the clinandrium, with a pair of truncate lateral wings. **Clinandrium-hood** prominent and fleshy-thickened at the apex. **Nectary** wide, shallow, without penetrating the ovary. **Anther** and **pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Sucumbios: Santa Barbara-La Bonita, ca. 2500 m, 5 III 1974, *Harling 12497*, AMES! GB!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently from northern Ecuador on the border with Colombia, on the Eastern slope of the Cordillera de los Andes, on shrubs, in wet montane forest at 2500-2700 m altitude. Flowering in March.

RECOGNITION: *Epidendrum stahlii* belongs to Megalospathum Group characterized by the caespitose but branching habit, many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathes, resupinate flowers, and the column more or less united to the lip, and the Tigriphyllum Subgroup which is characterized by the plants generally pendent and the leaves ovate to lanceolate, with purple-reddish transversal lines. The new species is recognized by the lanceolate, acuminate leaves 1.5-2.5 x 0.3-0.5 cm, flowers yellowish white, sepals 20-21 mm long, elliptic, not apiculate, and the lip 16 x 17.3-17.5 mm, orbicular-cordiform with a pair of very small globose calli. *Epidendrum miradoranum*, has pale green leaves with transverse pink-purple bands, 1.0-4.0 x 0.3-0.9 cm, up to 4 pale green flowers tinged pink, sepals 18 mm long, lanceolate to oblong-lanceolate, minutely apiculate, and the lip 17 x 14 mm, cordiform with prominent calli. *Epidendrum calacaliënse* Hágsater & Dodson is vegetatively similar but has an acute spathe, the flowers concolor yellow, sepals 10-13 mm long, narrowly ovate, petals linear, acute, and the lip 6.5-7.9 x 10-11 mm, reniform with 2 prominent calli and a mid-rib. *Epidendrum microtigriphyllum* Ocupa, Hágsater & E.Santiago has leaves 1.0-3.0 x 0.4-1.0 cm, ovate-lanceolate, sepals 16.5-18 mm long, and the lip 14 x 18 mm, cordiform-reniform, with a single prominent transverse callus. *Epidendrum nudosabanillense* Hágsater has very small leaves, 0.6-1.0 x 0.4-0.9 cm, pale green flowers tinged purple, sepals 11.2 mm long, and the lip 7.2-10 mm long, cordiform.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: in honor of E. Bertil Ståhl (1957-) who collected in Ecuador in the 1980's; now at Uppsala University, Campus Gotland; specialist in Theophrastaceae, Andean Symplocaceae, Primulales, Flora of Ecuador and Legumes of Ecuador. He is co-editor of the Flora of Ecuador project.

REFERENCES: Dodson, C.H., & D.E. Bennett Jr., 1989, *Epidendrum miradoranum*, **Icon. Pl. Trop.** ser 2, 1: pl. 66. Hágsater, E., 1999, *Epidendrum tigriphyllum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus Epidendrum, Part 2, Icon. Orchid. 3: pl. 387. Hágsater, E. & C.H. Dodson, 2001, *Epidendrum calacaliënse,* in E. Hágsater & L. Sánchez S. (eds.), The Genus Epidendrum, Part 3, **Icon. Orchid.** 4: pl. 424. Ocupa H., L, E. Hágsater & E. Santiago, 2020, *Epidendrum microtigriphyllum,* in E. Hágsater & E. Santiago (eds.), The Genus Epidendrum, Part 14, **Icon. Orchid.** 18(1): pl. 1824. Hágsater E., 2020, *Epidendrum nudosabanillense*, in E. Hágsater & E. Santiago (eds.), The Genus Epidendrum, Part 14, **Icon. Orchid.** 18(1): pl. 1829.

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

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020. Plate 1839**

EPIDENDRUM TRAPEZIINOCTURNUM Bar.-Colm. & Hágsater **Plate 1840**

EPIDENDRUM TRAPEZIINOCTURNUM Bar.-Colm. *et* Hágsater, *sp. nov.*

Type: COLOMBIA: Amazonas, Leticia, vía Leticia-Tarapacá km 22, in secondary growth forest, 108 m, complete plant with mature capsules 21 April 2020, ***Andrés A. Barona-Colmenares & Lewis Pinedo 5604***. Holotype: COAH! (botanical voucher, dissected flower voucher and LCDP). Digital images AMO!

Similar to *Epidendrum spruceanum* Lindl. but the ovary much longer, 120-122 mm long, longer than the sepals (vs. 37-45 mm long, much shorter than the sepals), sepals 96-97 mm long (vs. 65-66 mm long), and the column longer, 22-25 mm long (vs. 17 mm long).

Epiphytic, sympodial, caespitose, **herb**, 30-47 cm tall including the inflorescence. **Roots** 3-4 mm in diameter, basal, fleshy. **Stems** 30-45 x 0.3-0.7 cm, simple, cane-like, laterally compressed, ancipitose towards the apex, straight, completely medium green. **Leaves** 5-7, distributed along the apical half of the stem, ascendent, coriaceous and with the largest leaf at the apex; foliar sheaths 5.8-6.1 cm long, laterally compressed, strongly ancipitose and minutely striated longitudinally; blades 13.5-15.0 x 4.2-4.8 cm, length:width 3:1, oblong, apex bilobed, minutely mucronate, venation and dorsal keel evident, medium green on both sides. **Spathe** lacking. **Inflorescence** apical, racemose to pluriracemose, producing one flower at a time per raceme, if two, then from different racemes; peduncle 3.8 cm long, conspicuous, rachis 12-16 mm long. **Floral bracts** 7-8 x 2-3 mm, much shorter than the ovary, embracing, triangular, acuminate. **Ovary** 120-122 x 5.0-7.5 mm, slightly shorter than the apical leaf, not inflated, unornamented. **Flowers** successive, resupinate, autogamous, occasionally cleistogamous, sepals and petals bright green, lip and calli white, with the apical half of mid-lobe tinged greenish, column creamy white; fragrance not evident diurnally. **Sepals** 96-97 x 5-6 mm, slightly spreading, linear-lanceolate, acuminate, 11-veined, margin entire, revolute. **Petals** 95-97 x 2 mm, partly spreading, linear-lanceolate, acuminate, 5-6 veined, margin entire, revolute. **Lip** 60-81 x 16-17 mm, united to the column, 3-lobed, base cuneate, margin entire, spreading; bicallose, the calli laminar 4 x 1 mm, rounded, prominent, divergent, a low mid-rib reaching the apex of the mid-lobe; lateral lobes 36-37 x 5.4-7.0 mm, semi-lanceolate, basally cuneate and apically long-acuminate, surface smooth, separated from the mid-lobe by deep, narrow sinus; mid-lobe linear-triangular, 68-81 x 1.5-1.8 mm. **Column** 22-25 x 4 mm, slightly arching, dilated towards the oblique apex. **Clinandrium-hood** slightly surpassing the body of the column, 3-dentate. **Anther** obovoid. **Pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes** of the stigma reduced. **Nectary** deep, penetrating 3/4 the length of the ovary, unornamented. **Capsule** 107-120 mm long; pedicel ca. 38 mm long, body 55-60 x 24 mm, the body displaced somewhat beyond the middle, with a short apical beak ca. 22 mm long.

DISTRIBUTION AND ECOLOGY: Exclusively known from one collection in the Upper Amazon basin near the town of Leticia in southernmost Colombia at 100 m altitude. Understory epiphyte in secondary growth upland rainforest. Flowering in December and January.

RECOGNITION: *Epidendrum trapeziinocturnum* belongs to the Nocturnum Group, which is characterized by the sympodial, caespitose plants, cane-like stems, the short, racemose or pluri-racemose inflorescence without spathe, the large star-shaped, successive flowers, with similar sepals and petals. The new species is recognized by medium large plants up to 47 cm tall, medium green, the flattened stems, ancipitose above the middle, with large leaves 13.5-15.0 x 4.2-4.8 cm, oblong, length:width 3:1, distributed along the apical half of the stems, the large flowers bright green with lip and calli white, column creamy white, sepals 96-97 x 5-6 mm, lateral lobes of the lip, semi-lanceolate, basally cuneate and apically long-acuminate, mid-lobe of the lip linear-triangular, 68-81 mm long, and the capsule with the body the body displaced somewhat beyond the middle. *Epidendrum spruceanum* Lindl. occurs in the Amazon basin of Brazil and Peru below 200 m altitude; it is recognized by its relatively longer and narrower leaves, 8.0-17.5 x 2.0-4.5 cm, shorter ovary, 37-45 mm long, sepals [30]48-70 mm long, lateral lobes of the lip hemi-lanceolate, apex narrowly rounded, and the body of the capsule centered. *Epidendrum ancipitinocturnum* Hágsater & J.M.P.Cordeiro has dark green plants, to 33 cm tall excluding the inflorescence, the stems and underside of the leaves tinged purple, the upper side of leaves dark green, stems laterally compressed, ancipitose, leaves 4.6-14.0 x 2.5-4.8 cm, ascendent, coriaceous, elliptic, apex bilobed, ovary [75]90-115 mm long, flowers large for the group, sepals pale brown to pale yellow green, petals pale yellow-green, lip white, column creamy white, green towards the base, calli white to pale yellow, sepals 67-84 x 4-9 mm, margins revolute so as to become tubular, lip 50-53 x 17-19 mm; lateral lobes 21-28 x 6-8 mm. *Epidendrum angustilobum* Fawc. & Rendle is widely distributed in the Antilles, Colombia, Venezuela, the Guianas, and occurs as a rare species in Costa Rica and Panama, in wet forests from 500 to 2000 m altitude; this species exhibits smaller and narrower dark green leaves 8-12 x 2-7 cm, sepals 42-65 mm long, lateral lobes of the mid-lobe obliquely ovate triangular, acute and yellow calli. *Epidendrum macroophorum* Hágsater & Dodson occurs in the Pacific slope of the Andes from Colombia to southern Ecuador at 100-2600 m altitude; this species is easily recognized by its larger dark green plants, canes up to 128 cm long, longer and wider leaves, 9.5-20 x 2.3-7.0 cm, the much longer ovary, 220-280 mm, sepals 62-78 mm long, and semi-ovate and rounded lateral lobes. *Epidendrum carpophorum* Barb.Rodr. from Rio de Janeiro state has shorter, terete stems, 30 cm tall, dark green leaves, smaller flowers, sepals 40-41 mm long, and a lip 36 x 21 mm, the lateral lobes semi-ovate, apex acute.

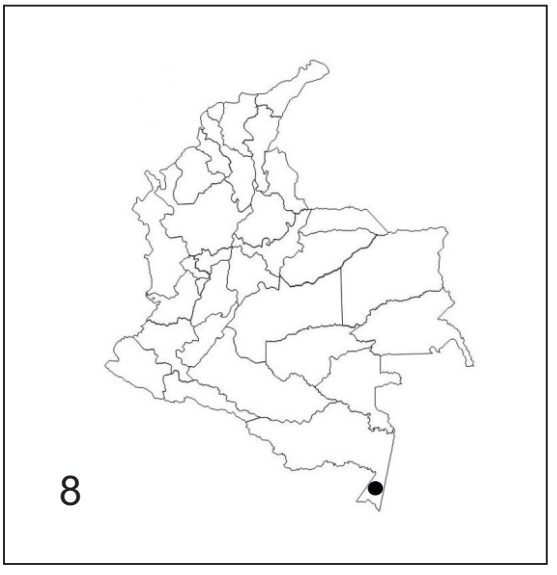
NOTES: In cultivation the plant produced three successive flowers and none fully extended the sepals and petals, and thus this may be an indication of the entity being autogamous. In the Nocturnum Group, the relative length of the ovary to the length of the sepals is a distinguishing feature, as is the overall size of flowers and relative length/width of the leaves and the position of the body of the capsule relative to the entire length of the ovary, usually centered, but sometimes displaced towards the apex or towards the base; the shape of the lip is nearly always similar. *Epidendrum carpophorum* as described in Sánchez & Hágsater 2010 is a composite description and has to be reevaluated, the description here given is based solely on the type.

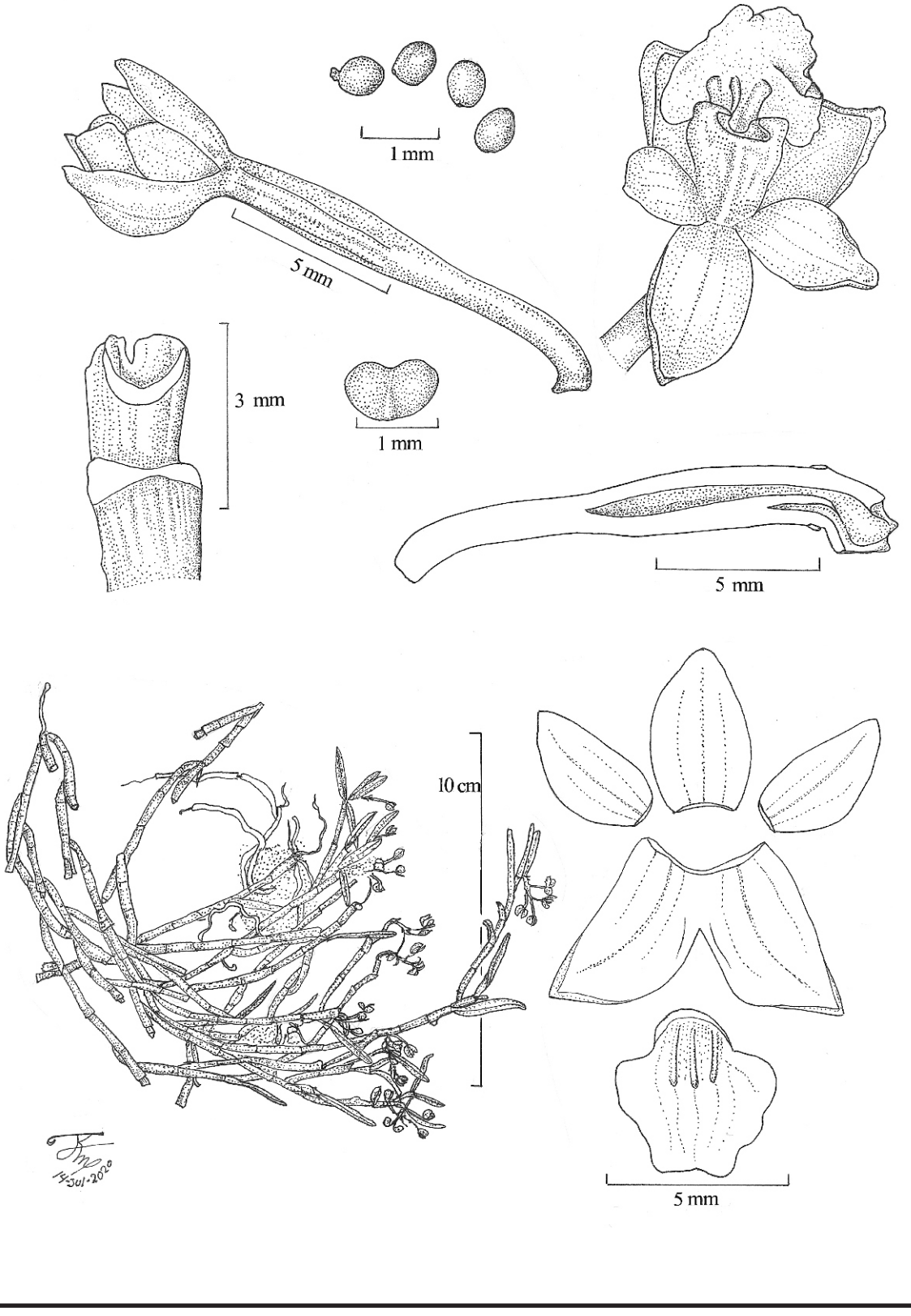
CONSERVATION STATUS: DD. Data deficient. Known from a single collection in the Upper Amazon River basin from Colombia near Leticia, at about 100 m altitude. Possibly widespread in this vast area.

ETYMOLOGY: In reference to the general name of the area in Colombia where the type was collected (Amazon Trapezium), and "nocturnum" for the group to which the species belongs.

ACKNOWLEDGEMENTS: Collections supported by and deposited at the Colombian Amazonian Herbarium (COAH) of the Instituto Amazónico de Investigaciones Científicas Sinchi in Bogotá.

REFERENCES: Hágsater, E., & J.M.P. Cordeiro, 2020, *Epidendrum ancipitinocturnum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum* Part 14, **Icon. Orchid.** 18(1): pl. 1803. Sánchez S., L., & E. Hágsater, 2010, *Epidendrum carpophorum* in: E. Hágsater & L. Sánchez-Saldaña (eds.) The Genus *Epidendrum* Part 9, **Icon. Orchid.** 13: pl. 1313. Sánchez S., L., & E. Hágsater, 2008, *Epidendrum angustilobum* in: E. Hágsater & L. Sánchez-Saldaña (eds.) The Genus *Epidendrum* Part 7, **Icon. Orchid.** 11: pl. 1102. Sánchez S., L., & E. Hágsater, 2015, *Epidendrum spruceanum* in: E. Hágsater & L. Sánchez-Saldaña (eds.) The Genus *Epidendrum* Part 11, **Icon. Orchid.** 15(1): pl. 1561. Hágsater, E. & C.H. Dodson, 1999, *Epidendrum macroophorum* in: E. Hagsater, L. Sánchez-Saldaña & J. García-Cruz (eds.) The Genus *Epidendrum* Part 2, **Icon. Orchid.** 3: pl. 350.





EPIDENDRUM TRAPEZILABIATUM Hágsater & E.Santiago **Plate 1841**

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

TYPE: ECUADOR: Tungurahua: Patate: Leito-Triunfo Road, 3000 m, 25 August 2001, ***Alexander Hirtz, Calaway H. Dodson, Piedad M. Dodson, Harry Zelenko, Rosemary Zelenko 7773.*** Holotype: SEL! (Illustration voucher.)

Similar to *Epidendrum podocarpophilum* Schltr. but the flowers non-resupinate, sepals dorsally unornamented, the lateral sepals connate at base (vs. sepals dorsally papillose, free), petals ovate with margin entire (vs. petals obovate-spatulate with margin erose), lip totally united to column, entire, with 3 laminar, free ribs (vs. lip obliquely united to the column, 3-lobed, with 3 ribs fused at base), and nectary barely penetrating the ovary (vs. nectary penetrating about half of the ovary).

Epiphytic, monopodial, scandent, erect, branching **herb**, ca. 50 cm tall or more. **Roots** 1-2 mm in diameter, produced from the base of the primary stem, fleshy, thin. **Stems** 3.8-12 x 0.2-0.3 cm, simple, cane-like, produced from the sub-apical internodes of the previous stems, thin, straight, the base covered by sheaths 4-10 mm long, tubular, non-foliar. **Leaves** 3-4, distributed towards the apex of the stems, alternate, articulate, sub-coriaceous; sheaths 5-10 x 2.0-3.0 mm, tubular, minutely striated; blade 0.8-3.0 x 0.2-0.3 cm, lanceolate, apex rounded, unequally bilobed, apiculate, margin entire. **Spathe** lacking. **Inflorescence** 1 cm long, apical, racemose, arching-nutant, few-flowered; peduncle 2 mm long, terete, thin, very short; rachis 8 mm long, nearly totally hidden by the floral bracts. **Floral bracts** 2.0-3.5 mm long, much shorter than the ovary, narrowly triangular, acuminate, embracing. **Flowers** 7-10, simultaneous, non-resupinate, pale orange brown; fragrance not registered. **Ovary** 12-13 mm long, thin, not inflated, striated. **Sepals** partly spreading, ovate-elliptic, 3-veined, margin entire, spreading; dorsal sepal 4.4-4.5 x 2.7-2.8 mm, free, apex obtuse; lateral sepals 5.2 x 2.7 mm, connate at base, oblique, minutely apiculate. **Petals** 4.0-4.2 x 2.0-2.2 mm, free, partly spreading, ovate, obtuse, oblique, 3-veined, margin entire, spreading. **Lip** 3.3-3.4 x 4.3 mm, totally united to the column, entire, trapezoid (the base wider than the apex), base and apex truncate, margin sub-entire; ecallose, disc with 3 laminar, parallel ribs reaching the basal 1/3 of the lip. **Column** 2.7-3.2 mm long, thick, straight. **Clinandrium-hood** short, margin entire. **Nectary** shallow, barely penetrating the ovary behind the perianth. **Anther** reniform with a dorsal mid-rib, 4-celled. **Pollinia** 4, lentil shaped. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Tungurhua: Patate: Road Patate to Leito to Llanganates Range, 3000 m, 12 IV 1985, *Hirtz 2498*, MO! Entre Leito y La Cima; Cord. Oriental, 2700-3000 m, 15 XI 1944, *Acosta 9057*, F!

OTHER RECORDS: ECUADOR: Tungurahua: sin localidad, *Hirtz s.n.*, digital copy of color slide, AMO! (Photo voucher.)

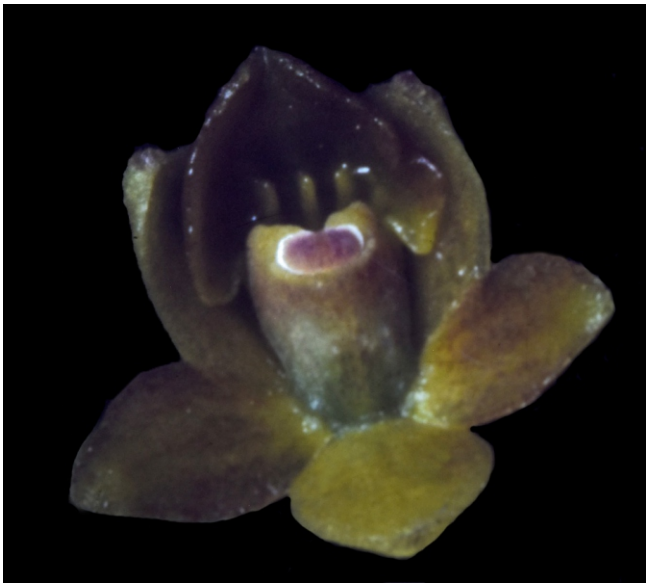
DISTRIBUTION AND ECOLOGY: Known presently from central Ecuador, near the summit of the Easter Cordillera de los Andes, epiphytic at 3000 m altitude. Flowering in August.

RECOGNITION: *Epidendrum trapezilabiatum* belongs to the Diothonea Group and Subgroup which is characterized by the branching plants, linear lanceolate to oblong, bilobed leaves, the racemose, arching-nutant inflorescence, the membranaceous flowers (rarely fleshy), the entire to 3-lobed, ecallose lip with the margin erose without or with 1-10 thin, smooth to erose keels, the column completely to obliquely united to the lip, and the anther reniform. The new species is recognized by the short inflorescences with up to 10, orange-brown small, non-resupinate flowers, the sepals 4.4-5.2 mm long, unornamented, the lateral sepals connate at base, petals 4.0-4.2 x 2.0-2.2 mm, ovate, margin entire, and the lip trapezoid, truncate at base and apex, disc with 3 parallel, free, laminar ribs. *Epidendrum podocarpophyllum* has pale orange, resupinate flowers, the sepals dorsally papillose, free, the petals obovate-spatulate with the margin dentate, and the lip 3-lobed, the base cordate, apex emarginate, disc with 3 fleshy ribs fused at the base. *Epidendrum lophotropis* Hágsater & Dodson also has orange, resupinate flowers, but the lateral sepals are free, dorsally sub-papillose, the petals 5.5 x 3 mm, ovate-rhombic, with the margin erose-dentate, the lip united only along the basal half of the column, 3-lobed, base cordate, apex emarginate, with 7 crested ribs, and a prominent clinandrium-hood. *Epidendrum pseudoglobiflorum* Hágsater & Dodson has up to 20 orange or vermillion red, resupinate flowers, sepals 6.4-7 mm long, the lateral sepals connate at base making the flowers trumpet shaped, and the lip widely sub-orbicular-hexagonal with the margin dentate, apex slightly bi-lobed, the disc with 7 prominent ribs.

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

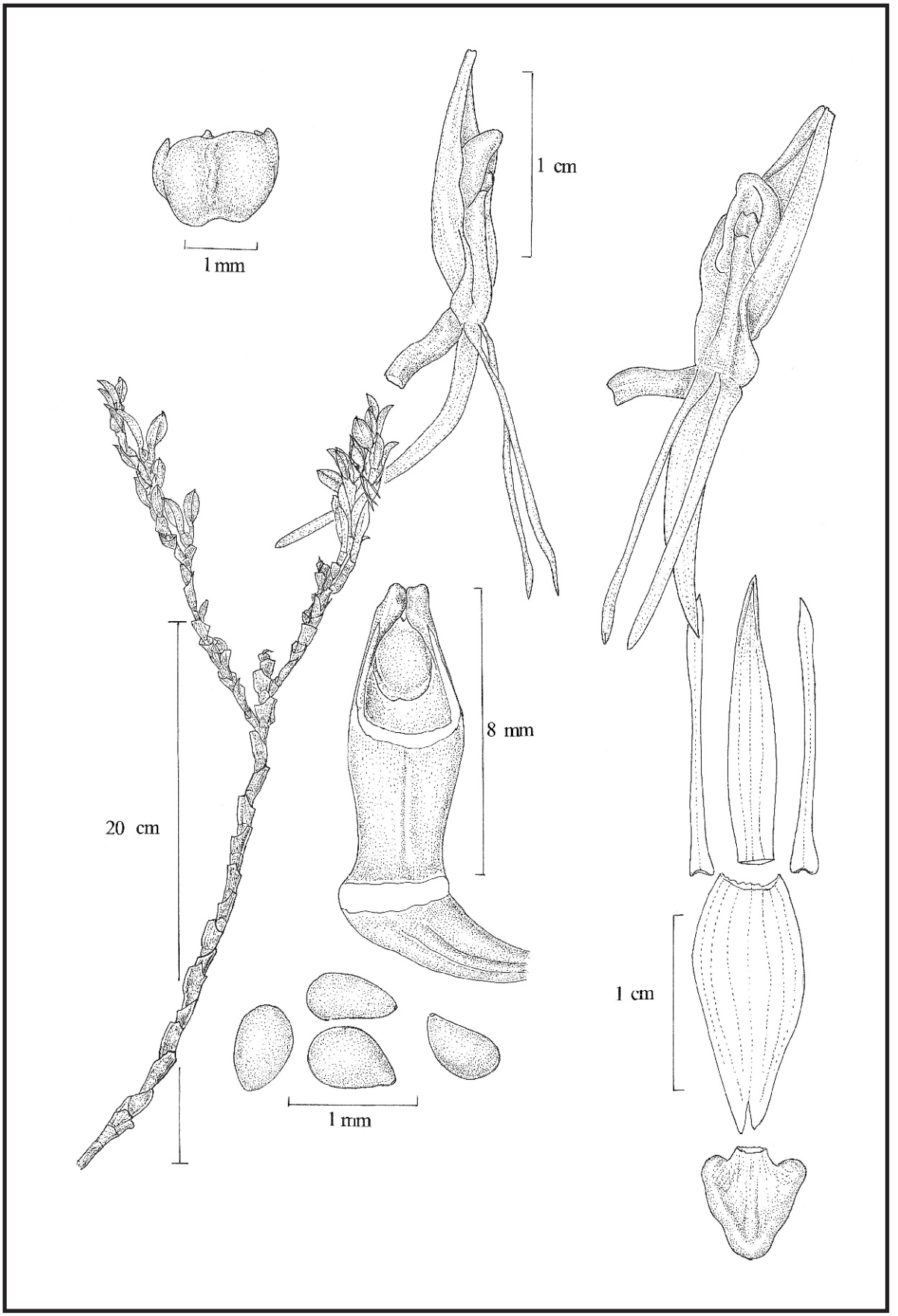
ETYMOLOGY: From the Latin *trapezium*, a trapeze or square with two unequal sides, and the other two side not parallel, and *labiatus*, lip, in reference to the trapezoid-like lip with the basal side wider than the apical margin, and the sides not parallel.

REFERENCES: Santiago, E., 2004, *Epidendrum lophotropis* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: pl. 756. Santiago, E., 2004, *Epidendrum pseudoglobiflorum* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: pl. 780. Santiago E. & Hágsater E., 2009, *Epidendrum podocarpophilum* in E. Hágsater & L. Sánchez S. (eds.) The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: pl. 1277.



Authors: E. Hágsater & E. Santiago **Illustrator: R. Jiménez M.** **Photo: A. Hirtz** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1841**



EPIDENDRUM TROXALIS Luer **Plate 1842**

EPIDENDRUM TROXALIS Luer, Selbyana 5(3-4): 385. 1981.

Type: ECUADOR: Loja: epiphytic in cloud forest near the pass north of Loja, ca. 3000 m, 12 February 1978, ***Carlyle A. Luer, Jane Luer & Mario Portilla 2541.*** Holotype: SEL!

Epiphytic, monopodial, seldomly branching, erect **herb**, to 35 cm tall. **Roots** ca. 1 mm in diameter, basal from the primary stem, fleshy, thin. **Stems** primary stem 12-14 x 0.5 cm, secondary stems 2.3-2.6 x 0.25-0.5 cm, a succession of stems produced from the sub-apical internode of the previous stem, scarcely branching, the base of each stem provided with a bract 10-12 mm long, non-foliar and infundibuliform, apex acuminate. **Leaves** numerous on the primary stem, 3 per secondary stem, sub-coriaceous, sub-erect; sheaths 4-7 x 4-7 mm, infundibuliform, minutely striated; blade 2.0-3.0 x 0.5-0.8 cm, elliptic, obtuse, dorsally carinate and minutely apiculate, margin entire. **Spathe** lacking. **Inflorescence** sub-sessile, 1-flowered, produced from the apex of the stem opposite the apical leaf, peduncle 1-2 mm long. **Floral bract** not seen. **Flower** solitary, yellow tinged pale purple, petals yellow to pink, lip yellow; fragrance not registered. **Sepals** margins entire, spreading; dorsal sepal 16.3-21 x 2.6-3.0 mm, strongly reflexed and somewhat curled backwards below the middle, free, narrowly elliptic, 3-veined, acute; lateral sepals 15-21 mm long, adnate and parallel to the column and connate, forming a synsepal 6.5-10 mm wide, narrowly ovate, concave, boat-shaped, the column and lip held within, apex bifid, forming a pair of widely triangular teeth, acute, apiculate. **Petals** 15.6-17.0 x 0.75-1.3 mm, free, reflexed and straight, aligned and opposite to the column-lip, not parallel to the dorsal sepal which is recurved further back, linear-oblong, base slightly widened, apex acute, 1-veined, margin entire, spreading. **Lip** 5-6 x 6-8 mm, united to the basal 2/3 of the column, fleshy, entire, sub-orbicular to triangular with the corners rounded when spread, concave in natural position, cymbiform, the sides embracing the column without covering it; ecallose and without ribs, margin entire. **Column** 8-9 mm long, thick, straight. **Clinandrium-hood** reduced, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent. **Nectary** not seen. **Capsule** 15-16 x 6-7 mm, ellipsoid; pedicel much reduced, body 15-16 x 6-7 mm; apical neck short, perianth persistent.

OTHER SPECIMENS: ECUADOR: Loja: in cloud forest at the pass 54 km north of Loja, 3000 m, 12 II 1978, *Luer 2542*, SEL! south of the pass north of Loja, 3100 m, 30 IX 1982, *Luer 8243*, SEL! At the pass north of Loja, 3150 m, 17 III 1980, *Luer 9555*, SEL! Laguna de Banderillas, 3200 m, 22 III 2002, *Merino E-1262*, LOJA! **Morona-Santiago:** Área de Bosque Vegetación Protectora Tambillo, 3050 m, 12 III 2001, *Suin 835*, AMO! (Illustration voucher) HA! Ibid. 2900 m, 7 IX 2001, *Suin 1061*, HA!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Endemic to southern Ecuador in the border area between Loja and Morona Santiago, along the summit of the Cordillera de los Andes, at 2900-3200 m. This unusual species climbs in the shelter of dense, scrubby vegetation in high altitude cloud forest. It was found growing with another unusual creeping species, *Pleurothallis schizopogon* Luer. Flowering from September to March.

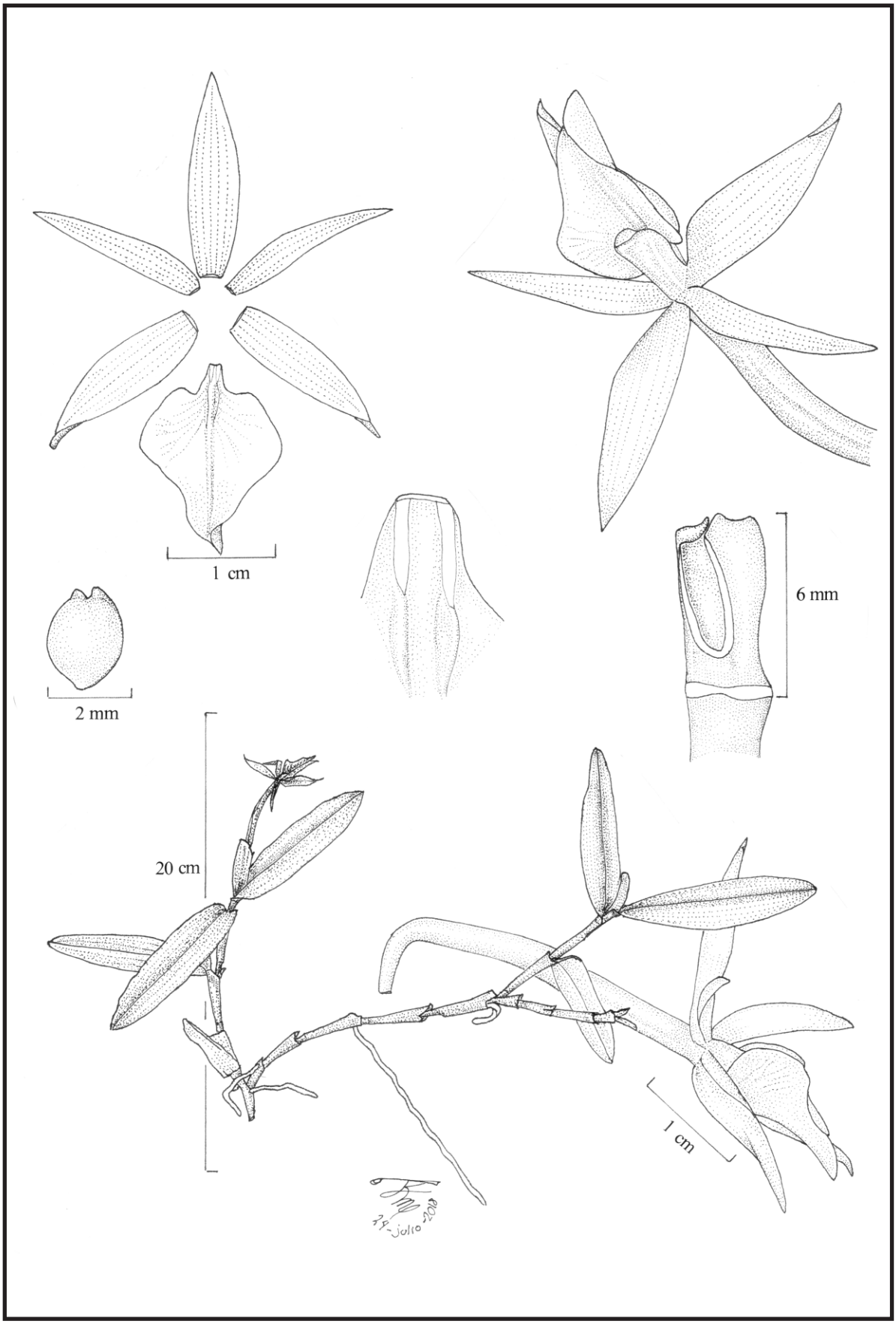
RECOGNITION: *Epidendrum troxalis* belongs to the Piperinum Group which is recognized by the monopodial, short, branching habit, filiform petals, and entire, ecallose lip. The species is recognized by the short, 3-leaved secondary stems, leaves 2-3 x 0.5-0.8 cm, elliptic, inflorescence a single flower, yellowish purple with the lip yellow, the dorsal sepal linear-oblong, slightly reflexed, lateral sepals fused forming a synsepal, apically bifid, and the lip sub-orbicular to triangular, base slightly cordate. *Epidendrum piperinum* Lindl. has bush-like, pendent, stems 2.5-38 cm long, with 9 or more leaves, 0.7-1.6 x 0.3-0.6 cm, oblong to oblong-elliptic, flowers greenish yellow, petals always parallel to the dorsal sepal, spreading to slightly reflexed, lateral sepals partly spreading, obliquely united to the column, but not fused, and the lip triangular, base strongly cordate. *Epidendrum neudeckeri* Dodson & Hágsater has plants 100 cm tall, numerous leaves 2.5-9.0 x 0.9-20 cm, elliptic, flowers yellowish green, sepals 10.5-13 mm long, free, and the lip triangular-ovate, base truncate.

CONSERVATION STATUS: DD. Data deficient. The real range of distribution is unknown, until now the species has been collected in three limited locations. The Área de Bosque Vegetación Protectora Tambillo is protected by the local community.

ETYMOLOGY: From *Truxalis* Fabricius (Arthropoda, Acrididae), a genus of Locusts, in reference to the grasshopper-like flowers.

REFERENCES: Dodson, C.H., & P.M. Dodson, 1989, *Epidendrum piperinum* Lindl., Orchids of Ecuador, **Icon. Pl. Trop.** ser 2, 5: pl. 481. Dodson, C.H., & E. Hágsater, 1994, *Epidendrum neudeckeri*, **Orquideología** 19(2): 145. Luer, C.A., 1981, *Epidendrum troxalis*, a new species from Ecuador (Orchidaceae), **Selbyana** 5(3-4): 385. Santiago, E., & E. Hágsater, 2010, *Epidendrum neudeckeri*, The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: pl. 1360. Santiago, E., & E. Hágsater, 2020, *Epidendrum piperinum*, The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1831.

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



EPIDENDRUM TRULLATIGEMINIFLORUM Hágsater, E.Santiago & D.Trujillo **Plate 1843**

EPIDENDRUM TRULLATIGEMINIFLORUM Hágsater, E.Santiago & D.Trujillo, *sp. nov.*

Type: PERU: Huánuco: ca. 46 km NNE of Huánuco, road to Tingo María, E slope Carpish Pass, 2600 m, 14 July 1981, ***Michael O. Dillon 2598.*** Holotype: USM! Isotypes: MO! (Illustration voucher). SEL!

Similar to *Epidendrum geminiflorum* Kunth but the flowers yellow-green to orange (vs. green or greenish yellow), the lip sub-entire and trullate in general outline (vs. lip clearly 3-lobed, the lateral lobes sub-orbicular and mid-lobe widely triangular, sub-acute).

Terrestrial, sympodial, scandent **herb** ca. 50-100 cm long. **Roots** 2-3 mm in diameter, at the base of the stems, scarce, terete, thin, white. **Stems** 17.0-21.5 x 0.5-0.6 cm, simple, cane-like, produced from a middle internode of the previous stem, terete at base and somewhat laterally compressed at the apex; base covered by sheaths 2.0-3.0 cm long, tubular, non-foliar, grey to brown when fresh, becoming scarious and fibrous with age. **Leaves** 3-5, aggregate towards the apex of each stem, articulate, alternate; sheaths 1.0-3.0 x 0.5-0.6 cm, tubular, infundibuliform when dry, minutely striated; blade 5.0-8.9 x 1.0-2.2 cm, oblong-elliptic, obtuse, apex unequally bilobed, coriaceous, margin entire, spreading. **Spathe** 1, 1.5-2.7 x 0.6-0.7 cm, tubular at base, apex conduplicate, obtuse. **Inflorescence** 7 cm long including the flowers, apical, racemose, 2-flowered, erect; peduncle 1.5-2.0 cm long, totally hidden within the spathe; rachis very short. **Floral bracts** 6-7 mm long, much shorter than the ovary, deltoid, acute, embracing. **Flowers** 2, opening in close succession, open together, non-resupinate, erect, fleshy, yellow green to orange; fragrance not registered. **Ovary** 30-45 mm long, terete, thin at base and slightly inflated ventrally towards the apex. **Sepals** spreading, free, oblong-elliptic, acute, 7-veined, the lateral veins short, margin entire, spreading; dorsal sepal 19.0 x 5.0 mm; lateral sepals 17.0-18.0 x 4.0-4.9 mm, aristate. **Petals** 16.5-18.0 x 3.0 mm, free, spreading, narrowly lanceolate, acuminate, 3-veined, with a pair of smaller outer veins, margin entire, spreading. **Lip** 15.6-16 x 13 mm, united to the column, trullate in general outline, base sub-cordate, corners widely rounded, widest below the middle, with the basal outer margins truncate, the apical half and somewhat widened near the apex which is acuminate and somewhat conduplicate in natural position, margins entire, spreading, bicallose, the calli thin, somewhat laminar, parallel, about 1/3 the length of the lip, with a long low laminar mid-rib nearly reaching the apex of the lip. **Column** 6 mm long, thin, straight. **Clinandrium-hood** short, margin entire. **Anther** sub-spherical, 4-celled. **Pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: PERU: Huánuco: San Pedro de Carpish, 2515 m, 21 II 2006, *Trujillo 260*, SEL! Digital images, AMO! (Photo voucher)

DISTRIBUTION AND ECOLOGY: Known presently from two collections from a single locality in Huánuco, central Peru, at 2500-2600 m altitude. Flowering in February and July.

RECOGNITION: *Epidendrum trullatigeminiflorum* belongs to the Geminiflorum Group, characterized by simple, sympodial, scandent, straggling habit, the semi-ovate spathe, the erect stems with 3-10 coriaceous leaves, and few non-resupinate flowers, and the lip with laminar calli, disc flat. The species is recognized by the vigorous growth, large orange flowers, the sepals 17.0-19.0 mm long, petals lanceolate, and the lip entire and trullate, somewhat narrowly cordate at the base, widest near the middle. It closely resembles *Epidendrum geminiflorum* Kunth which has green to greenish yellow flowers, where the lip clearly is widest at the base and it has two small sub-orbicular lateral lobes, the mid-lobe being widely triangular and sub-acute. *Epidendrum cuencanum* Schltr. has greenish white flowers, a cordiform lip, widest near the base, and the leaves widely elliptic to 4.3 cm wide. *Epidendrum azuayense* Hágsater & E.Santiago has smaller, orange colored flowers, the sepals 13-18 mm long and a widely cordiform lip. *Epidendrum geminiochraceum* Hágsater & E.Santiago also has orange flowers but these are larger, the sepals are 21-23 mm long, and the lip is clearly 3-lobed, the lateral lobes hemi-orbicular, and has two, very prominent spathes at the base of the inflorescence.

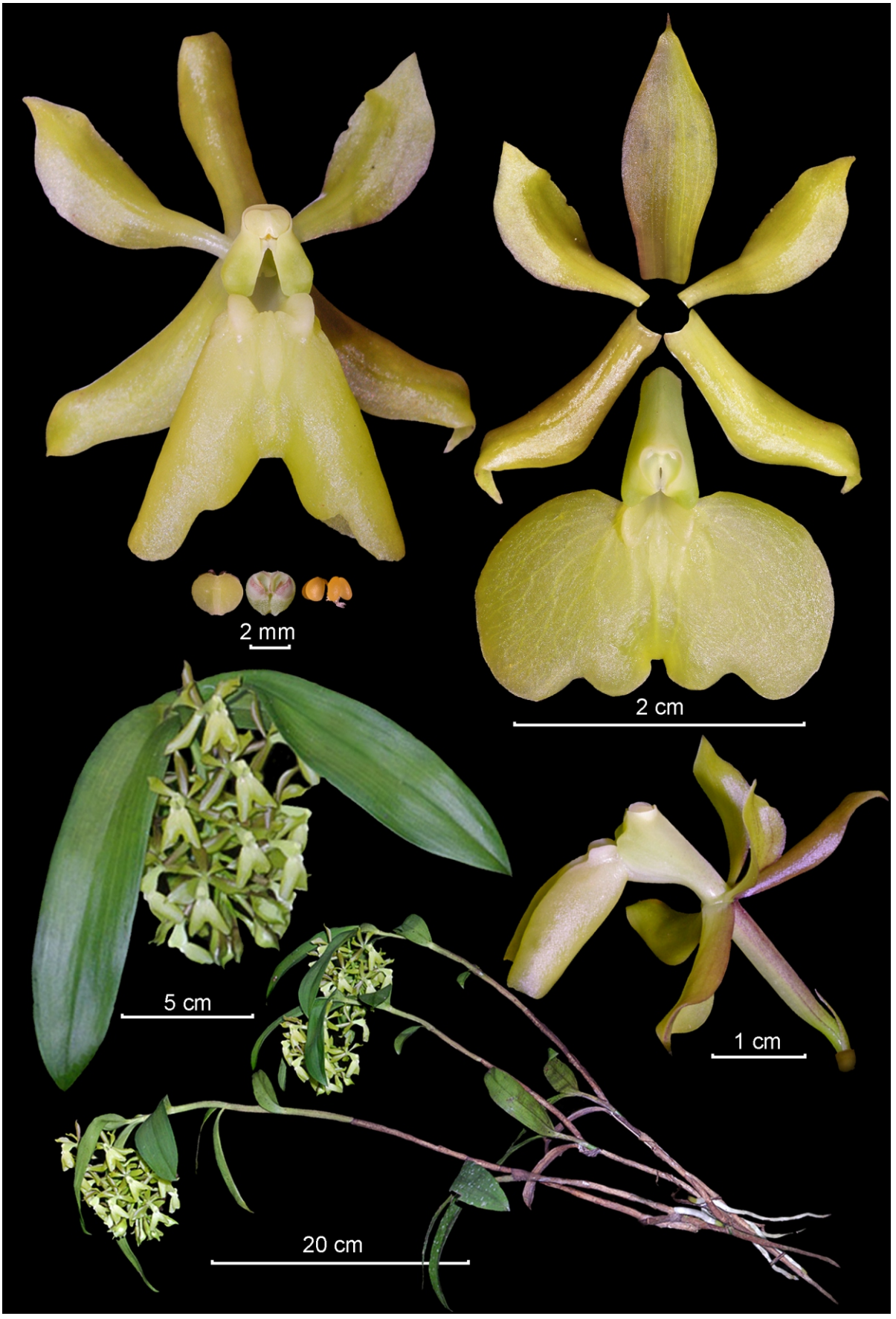
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *trullatum*, trowel-shaped, trullate, in reference to the lip shape, *geminis*, twins, and *flos*, flower, thus the trullate lipped two-flowered *Epidendrum*.

REFERENCES: Hágsater, E., & E. Santiago, 2019, *Epidendrum azuayense* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1706. Santiago, E., & E. Hágsater, 2019, *Epidendrum cuencanum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1716. Santiago, E., & E. Hágsater, 2019, *Epidendrum geminiflorum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1724. Hágsater, E., E. Santiago & R. Medina, 2019, *Epidendrum geminiochraceum* in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1725.

Authors: E. Hágsater, E. Santiago & D. Trujillo **Illustrator: R. Jiménez M.** **Photo: D.Trujillo** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1843**



EPIDENDRUM ULCUMANOAE Hágsater, G.Gerlach & L.Valenz. **Plate 1844**

EPIDENDRUM ULCUMANOAE Hágsater, G.Gerlach *et* L.Valenz., *sp. nov.*

Type: PERU: Pasco: Oxapampa: Chontabamba: Camino a Yaupi, sector la Suiza, cercanías del Ulcumano Lodge, 2227 m, VII 2020, ***Luis Valenzuela Gamarra & Günter Gerlach, Roger Zehnder & César Rojas 38149***, Holotype: HOXA! Isotype: USM! Digital images of pretype AMO! HOXA! (LCDP voucher).

Similar to *Epidendrum rimarachinii* Hágsater, but the flowers yellowish green (vs. flowers green with lip brown), sepals 18-19 mm long, proportionately longer, acuminate (vs. sepals 13-15 mm long, sub-acute), lip 3-lobed, obreniform in general shape, lateral lobes of the lip sub-orbicular 7.2 x 15 mm, (vs. lateral lobes of lip 9.0 x 16.5 mm, transversely obovate, wider towards the apex), and column 13 mm long (vs. column 11 mm long).

Terrestrial, sympodial, erect, scandent **herb**, 50-300 cm tall, the new stems arising from a sub-apical internode of the previous stem. **Roots** 2.5-5 mm in diameter, from the base of the stems, simple, thick. **Stems** 12-40 x 0.4-0.6 cm, erect, simple, cane-like, thin, terete, new stem arising from the middle of the previous stem. **Leaves** 2-5, aggregate towards the apical quarter of the stem, recurved, alternate, base embracing the stem; sheaths 0.7-4.0 x 0.3-0.5 cm, tubular, striated; blades 3.4-14 x 0.9-3.3 cm, the lowest one much smaller, oblong to elliptic, acute, sub-coriaceous, green, concolor. **Spathe** lacking. **Inflorescence** 6.5-11.7 cm long, apical, racemose, densely flowered; peduncle 1.7-2.4 cm long, rachis 2.3-8.0 cm, arching, nutant. **Floral bracts** 4-8 mm long, much shorter than the ovary, triangular, acute, embracing. **Flowers** 7-20, opening in succession, until most open at the same time, resupinate; sepals and petals olive green to yellow tinged somewhat brown, lip and calli pale yellowish green, column green, anther cream colored; fragrance not perceptible. **Ovary** 17-24 mm long, slightly inflated ventrally nearly throughout, thin, terete. **Sepals** free, partly spreading, fleshy, 5-veined, acute, margins entire, revolute; dorsal sepal 18-19 x 6.4 mm, elliptic, acute, the apex long apiculate, revolute in natural position; lateral sepals 19 x 9.0 mm, obliquely oblanceolate, somewhat falcate, acute, revolute in natural position. **Petals** 14-15 x 5.4 mm, free, nearly spreading, oblanceolate, acute, somewhat falcate, fleshy, 5-veined, margin entire, spreading. **Lip** 14.5 x 25 mm, united to the column, 3-lobed, obreniform in general outline, when spread widest in the middle, lateral margins strongly revolute in natural position, thus apron-like, base slightly cordate, mid-lobe receded, i.e. lateral lobes somewhat longer than the mid-lobe at the apex; bicallose, calli laterally compressed, in front of the sides of the column, conspicuous, and three parallel low ribs running down the middle, the mid-rib somewhat thickened along the basal half; lateral lobes 7.2 x 15 mm, transversely semi-orbicular, divergent; mid-lobe 2.4 x 10 mm, slightly receded, formed by two small, semi-orbicular lobes, 4.4 mm in diameter, with a deep sinus in the middle. **Column** 13 mm long, thickened towards the apex, truncate. **Clinandrium-hood** reduced, margin entire. **Anther** cordiform-sub-spherical, 4-celled. **Pollinia** 4, obovoid, slightly laterally compressed, especially on the inside of each pair; caudicles short, soft and granulose; viscarium semi-liquid. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** not seen, but from the ventrally inflated pedicel of the flower, presumably long, thin, nearly reaching the base of the pedicel, thin. **Capsule** not seen.

OTHER SPECIMENS: PERU: Pasco: Oxapampa: Huancabamba: Camino Cueva blanca-Lanturachi, borde de carretera, 2200 m, 19 VIII 2004, *Rojas 3211*, HOXA! (photocopy of specimen). La Suiza, 2327 m, 5 VIII 2009, *Vásquez 36248*, USM! Sector Suiza baja, 2196 m, 28 V 2009, *Velita 35*, HOXA! Sector Suiza baja, 2203 m, 12 VIII 2009, *Velita 138*, HOXA! (sterile).

OTHER RECORDS: PERU: Pasco: Oxapampa, Chontabamba, *Eduardo de la Cadena Mori s.n.*, digital images received 24 V 2020 from *Federico Rizo*, AMO! (Photo voucher).

DISTRIBUTION AND ECOLOGY: Known presently only from central Peru, Pasco around Oxapampa, at around 2200-2327 m altitude in open places, roadsides, as a terrestrial, scandent, erect herb. Flowering in July-August.

RECOGNITION: *Epidendrum ulcumanoae* belongs to the Incomptum group which is characterized by the successive lateral growths produced from the middle of the previous growth, the few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy green to violet-green flowers with short ovaries, and the lip entire to 3-lobed. The species discussed here are peculiar in the recessed mid-lobe of the lip, which is surpassed by the lateral lobes of the lip at its apex. The species is recognized by the sepals and petals olive green to yellow tinged somewhat brown, lip and calli pale yellowish green, with long, apiculate sepals 18-19 x 6.0-9.0, falcate, oblanceolate petals 15-17 x 5 mm, and the obreniform lip 14 x 25 mm, widest at the middle, the lateral lobes semi-orbicular, with a slightly receded mid-lobe, itself formed by a pair of semi-orbicular lobules, the lip with the lateral margins revolute so as to appear apron like in natural position. It is very similar to *Epidendrum rimarachinii* Hágsater which has sepals about half as wide as they are long, 13-15 x 6-9 mm, petals oblanceolate, 3-veined, 13-15 x 3-4 mm, and a lip 13-15 x 22-23 mm, 3-lobed, obreniform in general outline, lateral margins strongly revolute in natural position, base cordate, bicallose, lateral lobes 9 x 16.5 mm, transversely obovate, wider towards the apex; mid-lobe 2.5 x 6.5 mm, receded, formed by two small, semi-orbicular lobes, with a deep sinus in the middle. *Epidendrum posticorevolutum* Hágsater, A.Cisneros & Edquén is similar in having a receded mid-lobe of the lip but the flowers are smaller, green with a dark brown lip, sepals 15 x 0.8 mm, petals 13 x 4 mm, oblanceolate, with apex obtuse, and lip 13 x 27, widest towards the apex. *Epidendrum chisquillense* Hágsater, Edquén & Cisneros is similar but has smaller plants, flowers green concolor, sepals 3-vained, 16.5-16.9 mm long, with narrower petals 3.6 mm wide, a smaller lip, about 9.5 x 18.6 mm, 2-lobed.

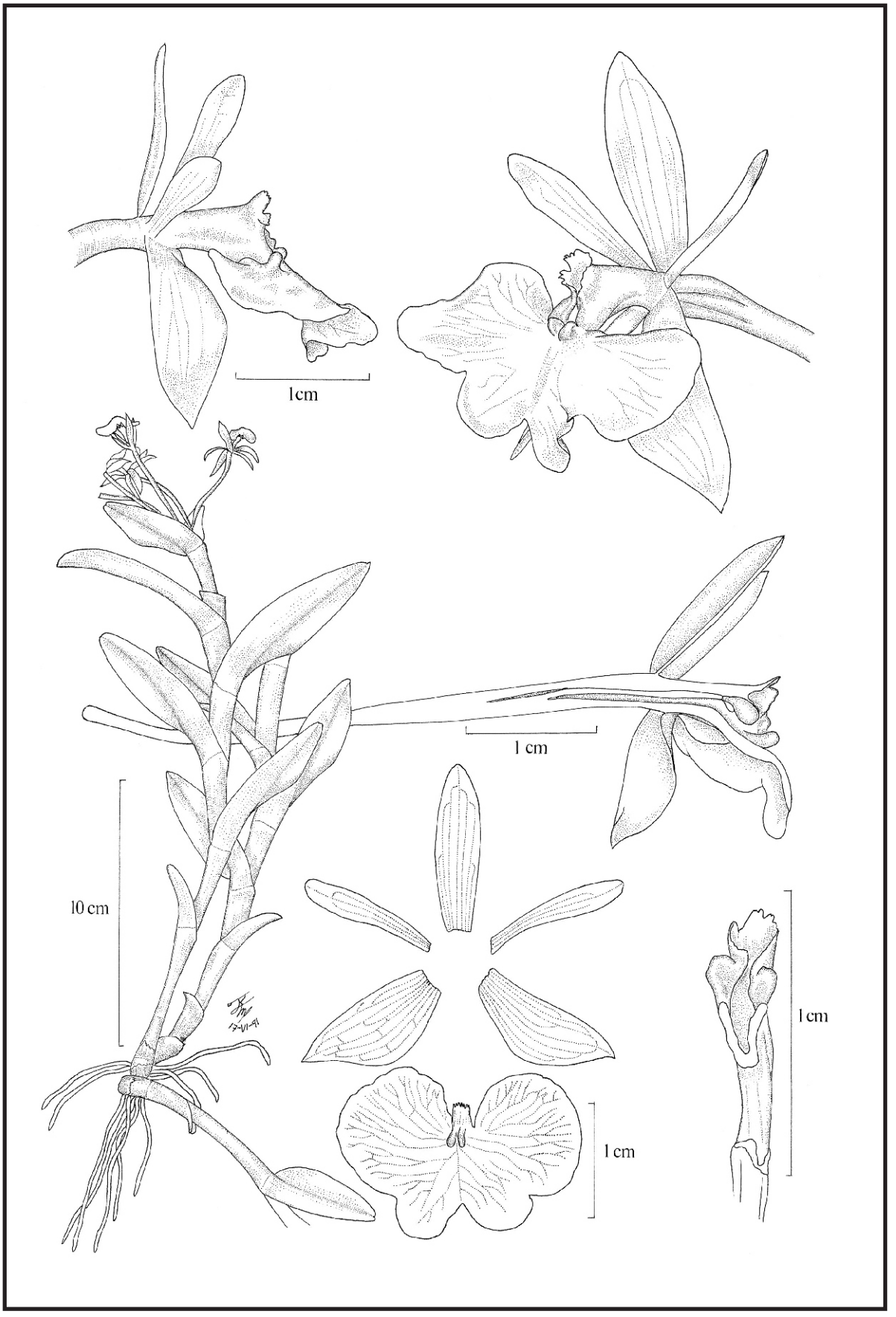
CONSERVATION STATUS: DD. Data deficient. Presently known from a small area around Oxapampa, Pasco. Found near a privately protected area.

ETYMOLOGY: In reference to the Ulcumano Lodge, founded as a private conservation project by Eduardo de la Cadena, where the species has been collected. Named after a the Ulcumano tree, *Retrophyllum rospigliosii* (Pilg.) C.N.Page, a species of conifer in the family Podocarpaceae. It is a large evergeen tree native to the montane rainforests of the Andes of Bolivia, Colombia, Ecuador, Peru and Venezuela.

REFERENCES: Hágsater, E., 2019, *Epidendrum rimarachinii* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 13, **Icon. Orchid.** 17(1): pl. 1750. Hágsater, E., J.D. Edquén O. & A. Cisneros, 2020, *Epidendrum chisquillense* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1806. Hágsater, E., A. Cisneros & J.D. Edquén O., 2020, *Epidendrum posticorevolutum* in E. Hágsater & E. Santiago (eds.) The Genus *Epidendrum*, Part 14, **Icon. Orchid.** 18(1): pl. 1832.

Authors: E. Hágsater, G. Gerlach & L. Valenzuela **LCDP: G. Gerlach & A. Cisneros** **Photo: E. de la Cadena** **Editors: E. Hágsater & E. Santiago**

Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1844**



EPIDENDRUM UMBELLIFERUM J.F.Gmel. **Plate 1845**

EPIDENDRUM UMBELLIFERUM J.F.Gmel., Syst. Nat. ed. 13[bis], 2(1): 65. 1791.

Type: JAMAICA: without locality, ***Olof Swartz s.n***. Lectotype* (here designated): UPS 21551! Isolectotype: BM000823783! The specimen on the bottom half of the sheet, marked "2. Jamaica, Swz."; mounted together with "1. Jm. St. Christophon, Fr. Mayer" BM000046292!

Synonyms: *Epidendrum umbellatum* Sw., Prodr. Veg. Ind. Occ. 121. 1788, *nom. illeg.* Type: Jamaica: without locality, ***Olaf Swartz s.n.*** Lectotype* (here designated): UPS 21551! Isolectotype: BM000823783! *Epidendrum caribiorum* Ackerman & Acev.-Rodr., Smithsonian Contr. Bot. 98: 633. 2012, superfluous replacement name, based on *Epidendrum umbellatum* Sw.

The earliest available name for this species is *Epidendrum umbelliferum*, as *Epidendrum umbellatum* G.Forst. had been previously validly published by G. Forster in Fl. Ins. Austr. 60. 1786, for a species from Madagascar, in 1786 [=*Cirrhopetalum umbellatum* (G.Forst.) Reinw. ex Hook. & Arn., Bot. Beechey Voy. 71. 1832. Accepted name = *Bulbophyllum longiflorum* Thours (WCSP)]. Non *Epidendrum umbellatum* Vell., Fl. Flumin. Icon. 9: t. 23. 1831. = *Malaxis excavata* (Lindl.) Kuntze (WCSP). Non *Epidendrum umbellatum* Buch.-Ham. ex Lindl., Gen. Sp. Orchid. Pl. 222. 1833. = *Gastrochilum dasypogon* (Sm.) Kuntze (WCSP).

Epiphytic, sympodial, caespitose **herb**, 14-41 cm tall. **Roots** 1-2 mm in diameter, basal, fleshy, thin. **Stems** 9-33.5 x 0.2-0.8 cm, simple, cane-like, sinuous, laterally compressed, without being ancipitose, flexuous. **Leaves** 4-11, equally distributed along the stem; sheaths 1.5-3.8 cm long, somewhat laterally compressed, smooth; blade 3.8-8.6 x 1.3-2.5 cm, lanceolate to widely elliptic, apex retuse, unornamented, succulent, dorsally carinate, green, margin entire. **Inflorescence** apical, from mature growth, sub-umbellate, flowers only once, sessile. **Floral bracts** 8-10 x 3-4 mm, shorter than the ovary, ovate, apex rounded. **Flowers** 4-6, resupinate, simultaneous, green; fragrance not registered. **Ovary** 25-49 x 1.5-2.5 mm, somewhat inflated along the apical half, terete, unornamented. **Sepals** glabrous, spreading, free, sub-coriaceous, elliptic, acute, prominently keeled, margin entire, revolute; dorsal sepal 13.2-15.4 x 2.5-3.5 mm, 5-veined, with the lateral veins bifurcate; lateral sepals 11.5-15.5 x 4.5-6.0 mm, oblique, 7-veined. **Petals** 11-14 x 2.3-3.0 mm, spreading, narrowly oblanceolate, apex acute, sub-coriaceous, 3-veined, margin entire, spreading. **Lip** 12-14 x 19-21 mm, united to the column, 3-lobed, coriaceous, margin entire; bicallose, the calli sub-globose, prominent; lateral lobes 5-7 x 10-12 mm, semi-orbicular; mid-lobe 3-4 x 9-10 mm, bilobed, the lobes semi-orbicular. **Column** 8-12 x 2.0-3.2 mm, straight to somewhat arcuate. **Clinandrium-hood** 1.5-2.0 mm long, prominent, entire, margin erose. **Anther** sub-spherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal; caudicles soft and granulose, somewhat longer than the pollinia; viscarium viscous, translucent. **Rostellum** subapical, slit. **Lateral lobes of the stigma** covering 1/2 of the stigmatic cavity. **Nectary** penetrating 1/2 of the ovary, unornamented. **Capsule** sub-globose, body 25-26.7 x 25 mm.

OTHER SPECIMENS: CUBA: Guantánamo: Pico Cordero, 1000-1300 m, 13 V 1971, *Bisse 18956*, HAJB! Cuchillas de Toa, 22 III 1972, *Bisse 22866,* HAJB x2! Los Naranjos-Loma de Buenavista, 21 I 1977, *Bisse 33786,* HAJB x2! Sierra de Nipe, Loma de la Mensura, 31 X 1977, *Bisse 35791,* HAJB! Los Naranjos-Cuchilla 9 III 1982, *Bisse 48056,* HAJB x2! **Oriente**: Sierra de Nipe, 600-700 m, 16 X 1941, *Acuña 3229,* HAC! Sierra del Cobre, 25 IX 1935, *Acuña 9793,* HAC! Loma del Gato, 10 VII 1936, *Acuña 11278,* HAC! Copas de Collanter, *Acuña 11436,* HAC! Pico Turquino, 1 VIII 1935, *Acuña 13891,* HAC! La Gran Piedra, 29 X 1959, *Acuña 21254,* HAC! Pico Galano, 1 I 1954, *Alain 3794,* HAC! Cuchilla de la Sierra del Frijol, 1 I 1954, *Alain 3797,* HAC! Loma del Gato, *Clement 494,* HAC! US! La Coronita, Florida Blanca, 1 IV 1957, *Clemente 5275,* HAC! Cieneguita, 28 II 1896, *Combs 2,* AMES! Pico Sombrero, Sierra Trinidad, 19 VII 1953, *Dressler 1337,* MO! US! Daiquirí, La Gran Piedra, ca. 1000 m, 28 X 1916, *Ekman 8097,* S! Sierra de Nipe, Loma Mensura, 725 m, 15 X 1919, *Ekman 9921,* S! Loma de La Quijada Bayate de Monte Ruz, 23 II 1955, *López 1458,* HAJB! Alto de la Valenzuela, 4800-5000 ft, 5 IV 1955, *López 2063,* HAJB! Pinalón, Alto de la Valenzuela, 11 VIII 1955, *López 2283,* HAC! HAJB! (Illustration voucher) Monteverde, Guantánamo, 30 XII 1960, *López 2491,* HAC! HAJB! La Perla, 28 XII 1919, *Hoiram 2669,* HAC! NY! Oriente, *Hoiram 10949,* HAC! Loma del Gato, 1 XII 1935, *Hoiram 14016,* AMES! HAC! US! San Pedro de Castillo, Maisi, 1 IX 1938, *Matos 18558,* AMES! HAC! Bella Vista-Monte Libano, 1 I 1907, *Maxon 4271,* US! María Tomasa, La Bayamesa, 25 IX 1989, *Risco s.n.,* HAC x2! Sierra Nipe, Woodfred, 10 XII 1909, *Shafer 3145,* AMES! La Perla-Santa Ana, 660 m, 14 II 1911, *Shafer 8608,* AMES! NY! La Perla, *Shafer 8659,* NY! La Mansión, 28 I 1971, *Stuchlik s.n.,* PR! Gran Piedra, 10 X 1983, *Vasiljev s.n.,* AMO! Monte Verde, *Wright 72,* P! W-R! Cuba Orientali, *Wright 642,* BR! HAC! P! Ibid. 1 VII 1856, AMES! G x2! Ibid. 7 IX 1857, HAC x2! Ibid. 1 I 1860, BM! Monte Verde, 1 I 1860, *Wright 1483,* W-R! Ibid. *Wright 1498,* G! Ibid. *Wright 1690,* G! **Pinar del Río:** Valley of Taco-Taco, 1 I 1953, *Liogier 2750,* AMES! **Santa Clara:** Las Lagunas, Buenos Aires, ca. 2500 ft, 5 XII 1928, *Jack 6880,* AMES! Buenos Aires, Trinidad Hills, 2500-3500 ft, 24 VII 1930, *Jack 8109,* AMES! Ibid. *Jack 8110,* AMES! Lomas de Trinidad, *León 18499,* HAC! Sierra de Gavilanes, 1 IV 1916, *León 66217,* HAC! Lomas de Banao, 1 II 1920, *Luna 258,* NY! **Santiago de Cuba:** Caldero-Pico Cuba, 1600-1750 m, 23 VII 1984, *Alvarez 54919,* HAJB! **JAMAICA:** Mt. Manys, *without collector 143,* E! Manchester, Fairfield, 3 IX 1908, *Britton 3160,* NY! Mandeville, 15 II 1910, *Brown 31,* NY! Ibid. *Brown 178,* NY! Without locality, *Morris 524,* NY! Silver Hills, 4000 ft, Il 1908, *Harris 7865,* BM! F! Mocho Mts., Thompson, ca. 2000 ft, 4 IV 1952, *Proctor 6513,* IJ! Mosely Hall Cave, Blackstonedge, ca. 2000 ft, 12 XII 1952, *Proctor 7480,* IJ! ½ mi NW of Christiana, *Proctor 10580,* IJ! Bog Hole, Corner Shop, 1700 ft, 31 VII 1967, *Weaver 1266,* AMES! **HAITI:** St. Michel de L'Atalaye, La Lome, ca. 900 m, 2 VI 1927, *Ekman 8337,* K! S! US! Mornes des Cammissaires, 1500 m, 13 XII 1944, *Holdrige 2053,* AMES! F! NY! **DOMINICAN REPUBLIC:** Puerto Plata: Navarrete, 950 m, X 1981, *Dod 861*, Herb. Dod! San José de Ocoa, Bejucal at Río del Canal, 1000 m, 12 III 1929, *Ekman 11888*, S! Barahona: Polo; Sierra de Bahoruco, Bella Vista, camino de Polo a Enriquillo, 1315 m, 23 XI 2016, *Fragoso-Martínez 472*, JBSD! digital images, AMO! (Photo voucher) Barahona, 900 m, 10 X 1910, *Krug 672,* AMES! Prov. La Vega, Jarabacoa, 3000 ft, 15 IV 1981, *Zanoni 12586,* MO! NY! Prov. La Vega, Jarabacoa, 3100 ft, 13 IV 1982, *Zanoni 19980,* NY! Sierra de Baoruco, 1000 m, 22 V 1984, *Zanoni 30123*, NY! **PUERTO RICO:** Bandera, 14 VII 1915, *Stevens 8258,* NY! **ST. KITTS-NEVIS:** Molyneaux Estate, 8 IX 1901, *Britton 330,* NY! St. Christopher, *Euphrasén s.n.,* S! **MONTSERRAT:** Soufrière, 8 II 1907, *Shafer 691,* F! US! **GUADALOUPE:** Without locality, 1 I 1854, *Perrotet s.n.,* BM! **DOMINICA:** Mt. Joy to abandoned L'Improvue State, 400 m, 19 II 1940, *Hodge 1260,* AMES! **MARTINIQUE:** Without locality, 12 XII 1962, *Botata 6154,* P! St. Pierre, 1 II 1868, *Hahn 86,* BM! **SAINT LUCIA:** Gimie, Piton, Troumassée, 1300-1400 ft, 22 XI 1960, *Proctor 21616,* AMES! Mt. Durocher, Patience, 1050 ft, 15 V 1984, *Slane 120,* AMES! **GRENADA:** St. George's, 1 II 1906, *Broadway 1852,* AMES x2! F!

DISTRIBUTION AND ECOLOGY: Widespread in West Indies from Cuba to St. Lucia and Grenada. Growing epiphytic, in cloud and rain forests, from 330 to 1500 m altitude. Flowering throughout the year, mainly from May to September.

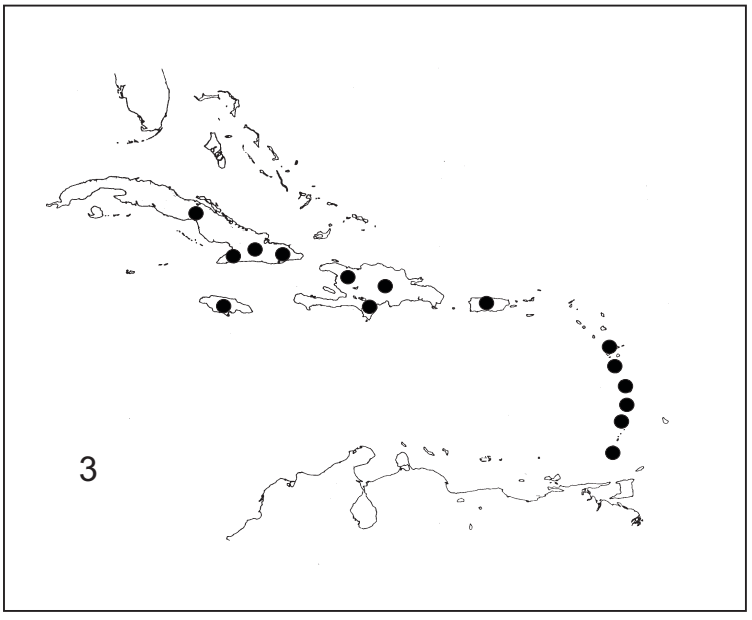
RECOGNITION: *Epidendrum umbelliferum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, the apical inflorescence, sessile, rarely with a short peduncle, one-flowered to umbellate, without spathaceous bracts, fleshy, and the green to yellowish green rarely white flowers. The species can by recognized by its vigorous plants, wide, sinuous laterally compressed stems, without being ancipitose, succulent leaves, 4-6 flowers, 3-lobed lip, bilobed mid-lobe of the lip with semi-orbicular lobes. *Epidendrum difforme* Jacq., has less vigorous plants with strongly flattened, straight, ancipitose stems, coriaceous leaves, and a sub-quadrate, revolute mid-lobe of the lip, and is restricted to the islands of Montserrat, Guadeloupe, Dominica, Martinique, Sta. Lucia, St. Vincent and Trinidad and Tobago, and is found only in the Lesser Antilles. *Epidendrum panegyricum* Hágsater & L.Sánchez has ancipitose stems, 2-3 simultaneous, pale green flowers, a trapezoid, 3-lobed lip with elliptic lateral lobes and a very small mid-lobe; it is endemic to Dominica. Other species of the Difforme group in the Antilles have terete or only slightly compressed stems, thought the flowers may be similar; the section of the stem is a consistent important distinguishing character.

***NOTES:** Gmelin (1791) copied Swartz's (1788) descriptions of *Epidendrum* species word for word, the only exception is that Swartz indicated the country of origin in all his species, mostly Jamaica, where he lived in 1784-86, as well as the citation of Jacquin's publication where appropiate. Gmelin instead of citing the country of origin cited the corresponding Swartz or Jacquin original publications. In the case of *Epidendrum umbelliferum* instead of citing Swartz's publication for *E. umbellatum*, he copied the text, changing Swartz's *"E. difforme"* Jacq. am. t. 136. Jamaica" for "Jacq. Stirp. Amer. t. 136?". Thus, it is evident that Gmelin recognized that *Epidendrum umbellatum* Sw. was illegitimate due to the earlier *Epidendrum umbellatum* G.Forst, and instead included a new name *E. umbelliferum* based on the Swartz material from Jamaica. *Epidendrum umbelliferum* must be considered a new name for *E. umbellatum* Sw., and is based on the same type material, the Swartz specimen. The question mark included by both Swartz and Gmelin clearly indicates that the Jacquin plate 136 is not the basis for the description, and therefore cannot be used as a type. Ames, Hubbard & Schweinfurth (1934) discussed what they called Three Polymorphic Alliances in *Epidendrum* but did not recognize that Gmelin gave Swartz's species a new name, and rather took Lindley's opinion that *E. umbellatum* was the same as *E. difforme.* They stated that Gmelin's description "is so inadequately described that it is difficult to interpret…" no relation is made to the Swartz illegitimate name. Mújica & González (2015), in their checklist of orchids from Cuba, did recognize that *E. umbelliferum* Sw. is a synonym of *E. umbelliferum* and has priority over *E. caribiorum* but incorrectly stated the type as Jacquin's plate 136. We thus propose to recognize the original Swartz material at UPS as the Lectotype for both *Epidendrum umbellatum* Sw. and *Epidendrum umbelliferum* J.F.Gmelin. A second damaged Swartz specimen at the BM was annotated by E.A. Christenson in 1996 as the "holotype" (of *E. umbellatum* Sw.). The other specimen mounted on the upper half of the same sheet, that of Fr. Mayer from "St. Christophon", (today known as St. Kitts) is in better condition and was annotated by J.D. Ackerman in 1987 as the type specimen of *Epidendrum umbellatum* Sw. "= *Epidendrum difforme* Jacq." However, these are two distinct species that have been lumped since Lindley under *Epidendrum difforme* by most authors. When Sánchez & Hágsater (2010) published the Icon of this species under *E. umbellatum*, we were not aware of the nomenclatorial difficulties which have come to light since then, but the identity of the species was correct.

CONSERVATION STATUS: NT Not Threatened. Widespread in West Indies, very abundant in south-eastern Cuba and many islands.

ETYMOLOGY: From the Latin *umbella*, sunshade, parasol, and *-fer*, producing or carrying, in reference to the parasol-shaped inflorescence.

REFERENCES: Ackerman, J.D., & P. Acevedo Rodríguez, 2012, *Epidendrum caribiorum* in P. Acevedo-Rodriguez & M.T. Strong (eds.), **Catalogue of the Seed Plants from the West Indies, Smithsonian Contr. Bot.** 98: 633. doi.org/10.5479/si.0081024X.98.1 Ames, O., F.T. Hubbard & C. Schweinfurth, 1934, Three Polymorphic Alliance, **Bot. Mus. Leafl.** 2(4): 41-71. Hágsater, E., & L. Sánchez S., 1999, *Epidendrum panegyricum* in E. Hágsater & L. Sánchez S. (eds). The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: pl. 365. Fawcett, W., & A.B. Rendle, 1910, **Flora of Jamaica. 1: Orchidaceae**, p. 88. Garay, L.A., & H.R. Sweet, 1974, **Flora of the Lesser Antilles-Orchidaceae**, Arnold Arboretum, Harvard University, p. 133. Gmelin, J.F., 1791, Syst. Nat. ed 13[bis] 2(1): 65. Mújica, E., & E. González, 2015, A new checklist of orchids species from Cuba, **Lankesteriana** 15(3): 240. http://dx.doi.org/10.15517/lank.v15i3.22613 Sánchez S., L. & E. Hágsater, 2013, *Epidendrum difforme* in E. Hágsater & L. Sánchez S. (eds). The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 8: pl. 827. Sánchez S., L., & E. Hágsater, 2010, *Epidendrum umbellatum* in E. Hágsater & L. Sánchez S. (eds). The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 13: pl. 1396. Schultes, R.E., 1960, **Native Orchids of Trinidad and Tobago.** Pergamon Press. pp. 286. WCSP: **World Checklist of Selected Plant Families**, wcsp.science.kew.org (accessed 11 October 2020). Swartz, O., 1788, **Prodr. Veg. Ind. Occ.**: 121.



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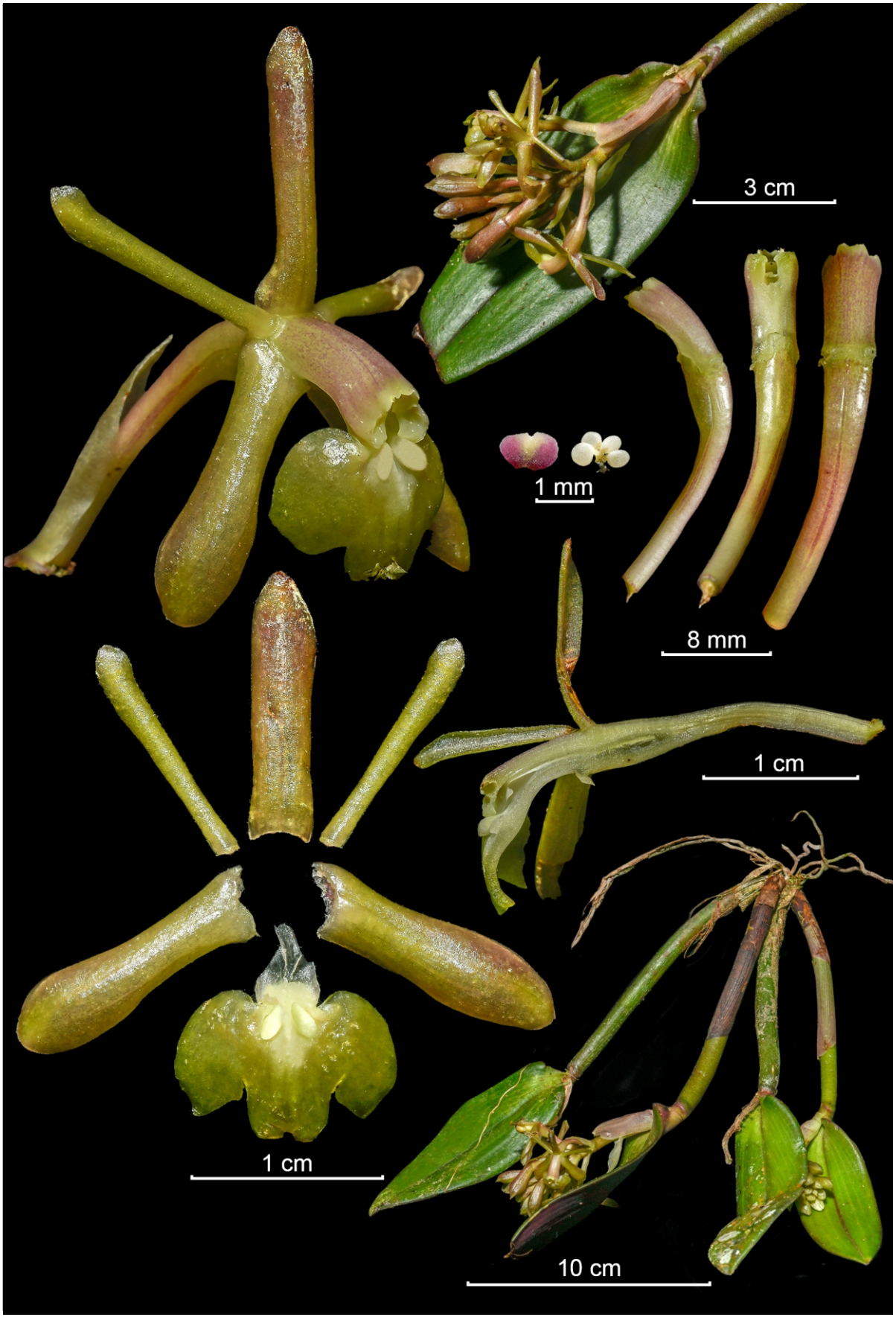
Herbario AMO **Ciudad de México, MÉXICO** **ICONES ORCHIDACEARUM 18(1). 2020.** **Plate 1845**



EPIDENDRUM UNIFOLIATUM Schltr. **Plate 1846**

EPIDENDRUM UNIFOLIATUM Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9: 95. 1921.

Type: PERU: Loreto; [San Martín:] bei Moyobamba, ***Dr. Serfin Filomeno s.n.***, B (destroyed). Figure 478 (Schlechter, 1929). Neotype here designated: Peru: San Martín: Rioja, Distrito Pardo Miguel Naranjos, sector Venceremos, 1791 m, 28 enero 2020, ***José Dilmer Edquén Oblitas 1964***, USM! digital photos, AMO! (LCDP voucher).

Epiphytic, sympodial, caespitose, short **herb**, 9-20 cm tall. **Roots** 1-2 mm in diameter, basal, thin, fleshy, white. **Stems** 8-10.8 x 0.2-0.9 cm, simple, thickened, suberect, terete; covered by two tubular, evanescent, sheaths 3.2-4.0 x 0.4-0.8 cm, (lacking in old stems), smooth, striated when dry. **Leaf** 1, apical, articulate, dark green, the veins marked pale green, with a short petiole, 0.2 cm long; blade 3.5-10 x 1.5-3.5 cm, elliptic, flat, apex obtuse, bilobed, margin entire, involute when dry. **Spathe** 16-35 x 5-8 mm, tubular, linear-oblong, slightly inflated at the middle, apex acute, covering the whole of the peduncle. **Inflorescence** 5.0-7.7 cm long, apical, racemose, sub-corymbose, slightly arched, few-flowered, flowering only once; peduncle 1.3-3.5 x 0.2 cm, terete; rachis 1.8-2.2 cm long, thin, terete, slightly arching. **Floral bracts** 5-14 x 2-4 mm, shorter than the ovary, triangular. **Ovary** 12-19 mm long, thin, not inflated, smooth. **Flowers** 8-20, successive, several open at one time, lip always towards the rachis, pale ochre-colored, the column slightly pink, or lead-green. **Sepals** spreading, free, ovate-elliptic, obtuse, 5-veined, short apiculate, margin entire, somewhat revolute; dorsal sepal 9.5-14.3 x 3.7-5.0 mm; lateral sepals 10.3-14.8 x 4.4-6.0 mm. **Petals** 9.0-13 x 2.2-2.4 mm, spreading, free, linear-lanceolate, acute to rounded, with an in incospicuous keel at the apex, 3-veined, margin entire. **Lip** 5.5-8.0 x 8.0-11.7 mm, united to the column, 3-lobed, base cordate, margin entire, spreading; bicallose, the calli laterally compressed, divergent; disc with a low keel that ends at the base of the mid-lobe; lateral lobes 3.3-3.9 x 5.2-6.5 mm, semi-ovate; mid-lobe 2.2-3.3 x 2.2-4.2 mm, sub-quadrate to cuneate, emarginate. **Column** 5-9 mm long, arched, short, thick. **Clinandrium-hood** prominent, without surpassing the body of the column, margin erose. **Rostellum** apical, slit. **Anther** reniforme, the surface minutely papilose, pink, 4-celled. **Pollinia** 4, lentil-shaped, creamy white, cuadicles soft and granulose, short, viscarium semi-liquid. **Nectary** penetrating 1/3 of the ovary, inflated ventrally at the apex of the perianth. **Capsule:** ellipsoid, 3.7-4.0 x 0.9-1.0 cm, pedicel 6-7 mm long, teret; body 1.9-2.2 x 0.9-1.0 cm, apical neck 1.1-1.4 cm long.

OTHER SPECIMENS: PERU: Amazonas: Luya: Longuita: Área de Conservación Privada Huiquilla, Bosque Montano, 2950 m, 14 VI 2009, *Chocce 5021*. Herb. Chocce at USM. (illustration AMO!) Digital images of pretype, AMO! ca. 12-18 km trail E of La Peca in Serrania de Bagua, 1800-1950 m, 14 VI 1978, *Gentry 22924*, USM! Chachapoyas; Kuelap fortress, 3000 m, 16 V 2001, *Henning 253,* USM! Chachapoyas: Molinopampa, 2400-2500 m, 23 III 2011, *Dalström 3461*, USM, (deposited 2015, possibly under *Dalström 3462*), digital photo of live material and herbarium specimen, AMO! (Photo voucher.) **Cajamarca:** Estrella Divina, San Ignacio, 2300 m, *Carpio 368*, MOL! Prov. Cutervo; km 10 desde San Andrés hacia Socota, bosque propiedad de Vitelo Díaz, 2500 m, 19 IV 1988, *Díaz y Baldeón 2809*, MO! (illustration, AMO!) SEL!

OTHER RECORDS: PERU: Amazonas: Distrito Longuita, 2861 m, 22 I 2010, *Chocce 5025*, digital photo, AMO! Abra Patricia, Huembo, Fundo Alto Nieva, *Li 6*, digital photo AMO! Leimebamba, 3000 m, 16 XII 2014, *Salas s.n.*, digital photo AMO! Without locality data, *Torres s.n.*, digital image AMO! **San Martín:** Moyobamba, *Olórtegui s.n.*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Known from northern Peru, from the regions of Amazonas, Cajamarca and San Martín, on both sides of the Marañón river, on the Cordillera Oriental as well as the Cordillera Occidental of the Andes at 2500-3000 m altitude. Epiphytic on tree trunks in montane forest. Flowering from April to June.

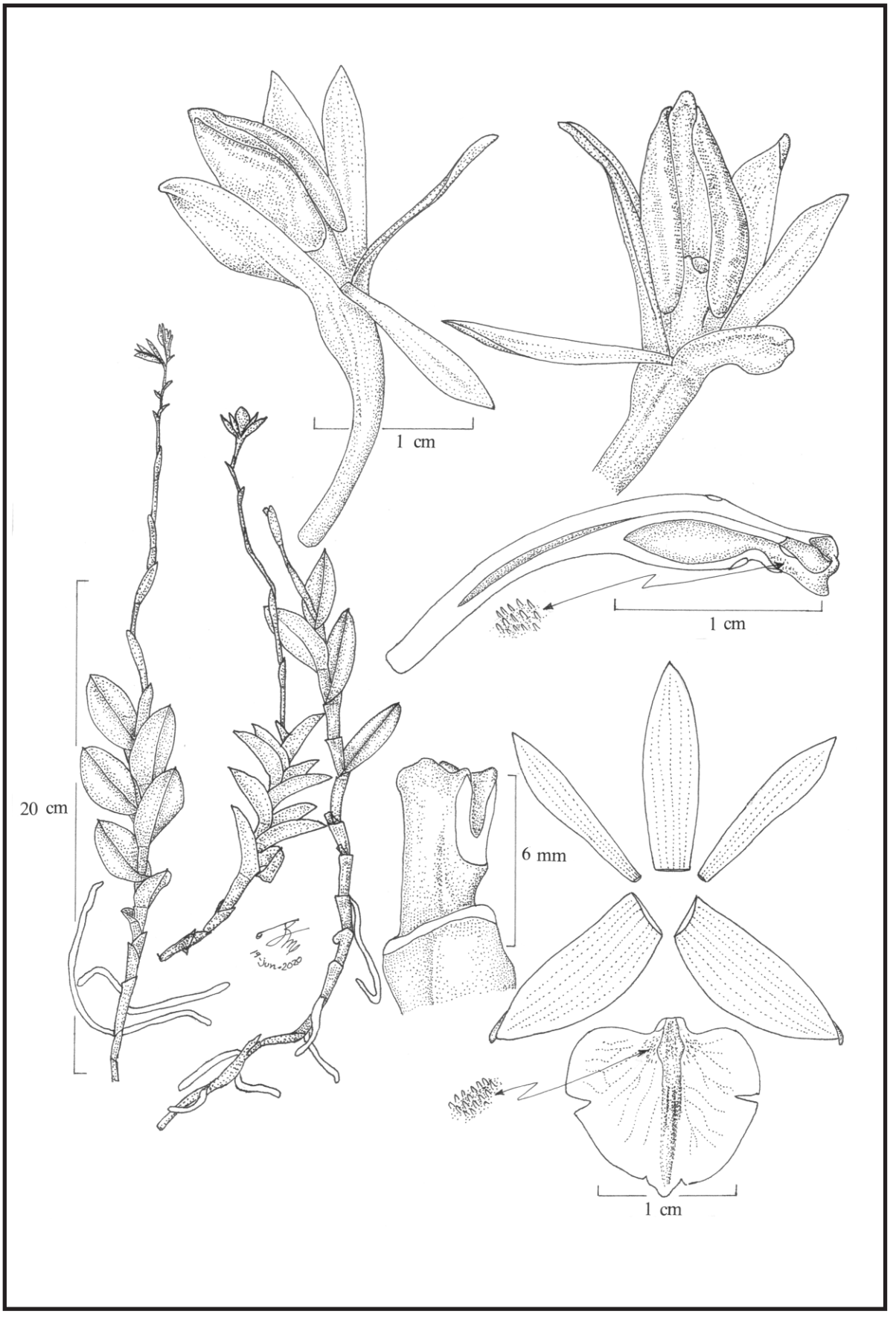
RECOGNITION: *Epidendrum unifoliatum* belongs to the Jajense Group, which is recognized by the short, caespitose plants with thickened, terete stems, apical leaves and sub-umbellate inflorescence subtended or not by a small spathe, the flowers with a trident-like, 3-lobed lip, with a pair of calli. The species is easily recognized by the long, terete, one-leaved stems, with a apical sub-corymbose inflorescence on an elongate peduncle, nearly totally covered by a tubular spathe, the whole inflorescence about half as long as the leaf, the petals 3-veined, the lip with obtuse to emarginate lobes. Specimens have been identified as "*Malaxis*" and as *E. jajense* Rchb.f., the latter differs in the much shorter stems, the very short inflorescence, without any spathe, the acute apex of the 3 lobes of the lip, the one-veined petals, and the more slender column.

CONSERVATION STATUS: DD. Data deficient. In the regions of Amazonas, Cajamarca and San Martin where a dozen collections have been made in various places.

ETYMOLOGY: From the Latin, *unus*, one, and *folia*, leaf, in reference to the single leaf per stem, typical of this species.

ACKNOWLEDGMENT: Neotype collected by José Dilmer Edquén Oblitas under permit N°006-2018-SERNANP-BPAM-JBPAM. Diversidad y distribución de orquídeas, en bosque no intervenido, parches o fragmentos y paisajes agro-intervenidos, en el Bosque de Protección Alto Mayo.

REFERENCES: Santiago, E., & E. Hágsater, 2020, *Epidendrum jajense*, in E. Hágsater & E. Santiago (eds.), **Icon Orchid.** 18(1): pl. 1815. Schlechter, R., 1929, *Epidendrum unifoliatum* in R. Mansfeld (ed.), Figürenatlas zu den Orchideenfloren der südamerikanischen Kordillerenstaaten, Repert. Spec. Nov. Regni Veg., Beih. 57(6-10): t. 122, fig. 478.



EPIDENDRUM VILLENAE Hágsater & E.Santiago **Plate 1847**

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

Type: PERU: Cajamarca: Prov. San Ignacio: Distr. Huarango: Cordillera Huarango, El Romillero. Bosque primario sobre suelo de arenisca blanca en la cresta de la Cordillera, 2370 m, 17 julio 2005, ***Eric Rodriguez, E. Alvites I. & S. Arroyo 2896***. Holotype: USM! Isotypes: HUT, SEL! (Illustration voucher).

Similar to *Epidendrum indanzense* Hágsater & Dodson but the flowers lilac with the lip white (vs. flowers green, the lip lighter green), petals 14.5 x 2.8 mm, linear-oblanceolate (vs. petals 15 x 3.5 mm, narrowly elliptic), and the lip 12.8 x 14.4 mm, widely sub-cordiform, bicallose with a wide, raised band down the middle to about the middle of the lip (vs. lip 10 x 9 mm, cordiform and ecallose, without ribs).

Terrestrial and lithophytic, sub-caespitose, sympodial **herb**, 25-35 cm tall including the inflorescence. **Roots** 2-3 mm in diameter, produced along the elongate rhizome, sometimes from the lower leafy part when leaves have fallen off, simple, fleshy, thick, white. **Stems** 11-30 cm long, erect, produced from a middle internode of the previous stem below the leaves, rhizomatous part 4-9 x 0.2-0.5 cm, the leafy part 8-18 x 0.4-0.6 cm, straight to sinuous, rigid, somewhat laterally compressed; rhizomatous part with thin, striated sheaths that disintegrate quickly. **Leaves** 7-10, distributed throughout the stems, 2.0-5.0 x 1.4-2.4 cm, widely elliptic 2:1-3:1, apiculate, a low dorsal keel running the length, conduplicate at the base, very fleshy, rigid and brittle, green on both sides to dark green above, dark purple beneath. **Spathe** lacking. **Inflorescence** 12-19 cm long, apical from mature stem, distichous, peduncle 10-16 x 0.2 cm, sinuous with 3-4 tubular bracts spaced along its length, bracts 5-25 x 2-6 mm, progressively smaller; rachis slightly sinuous, flowering in succession one flower developing at a time, distance between flowers up to 7 mm, progressively shorter distally. **Floral bracts** 2-6 mm long, triangular, acuminate, embracing, progressively shorter. **Ovary** 17.5 mm long, terete, inflated behind the perianth. **Flowers** successive, one developing at a time, sometimes several buds present in different stages of development, non-resupinate, lilac, the lip white with very pale lilac hue, column lilac, anther white with very pale lilac hue; fragrance none. **Sepals** partly spreading, elliptic, acute, fleshy, margin entire, spreading; the dorsal sepals 14.8-15.6 x 4.0 mm, 5-veined, the lateral sepals 14.8-15.6 x 5.6 mm, 7-veined, slightly oblique, minutely apiculate. **Petals** 14.5 x 2.8 mm, sub-parallel to the column in natural position, linear-oblanceolate, acute, 3-veined, margin entire, spreading. **Lip** 12.8 x 14.4 mm, entire, widely sub-cordiform, the lateral margins involute in natural position and thus boat-shaped, loosely embracing the apex of the column, apex obtuse, apiculate, margin entire; disc with short pubescence, bicallose, the calli laminar and divaricate with a wide raised band down the middle to about the middle of the lip, the base somewhat canaliculate. **Column** 6-7 mm long, straight, the apex dorsally curves slightly upwards. **Clinandrium-hood** short, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** penetrating the ovary behind the perianth, inflated, pubescent opposite the stigmatic cavity. **Anther** ovoid, apex truncate. **Pollinia** not seen. **Capsule** ellipsoid, pedicel thin, apical neck short and thick.

OTHER SPECIMENS: PERU: Cajamarca: San Ignacio: Huarango: Quebrada El Mirador, 2200 m, 13 III 2000, *Calatayud 458*, CUZ! MO.

OTHER RECORDS: PERU: Amazonas: Yambrasbamba-El Progreso, 30 XII 2019, *Velázquez s.n.* digital images, AMO! Prov. Rodríguez de Mendoza, Distrito Vista Alegre, 3200 m, Hort. Agro Oriente, XI 2017, *Villena s.n.* Digital images. (Photo voucher).

DISTRIBUTION AND ECOLOGY: Known presently from the Cordillera Huarango, an Andean Tepui of compacted sandstone (arenisca), south to the District of Vista Alegre in the department of Amazonas, and the province of Rodríguez de Mendoza, a range of some 200 km in length; terrestrial or lithophytic among mosses at 2200-3200 m altitude. Flowering from March to November, probably much longer.

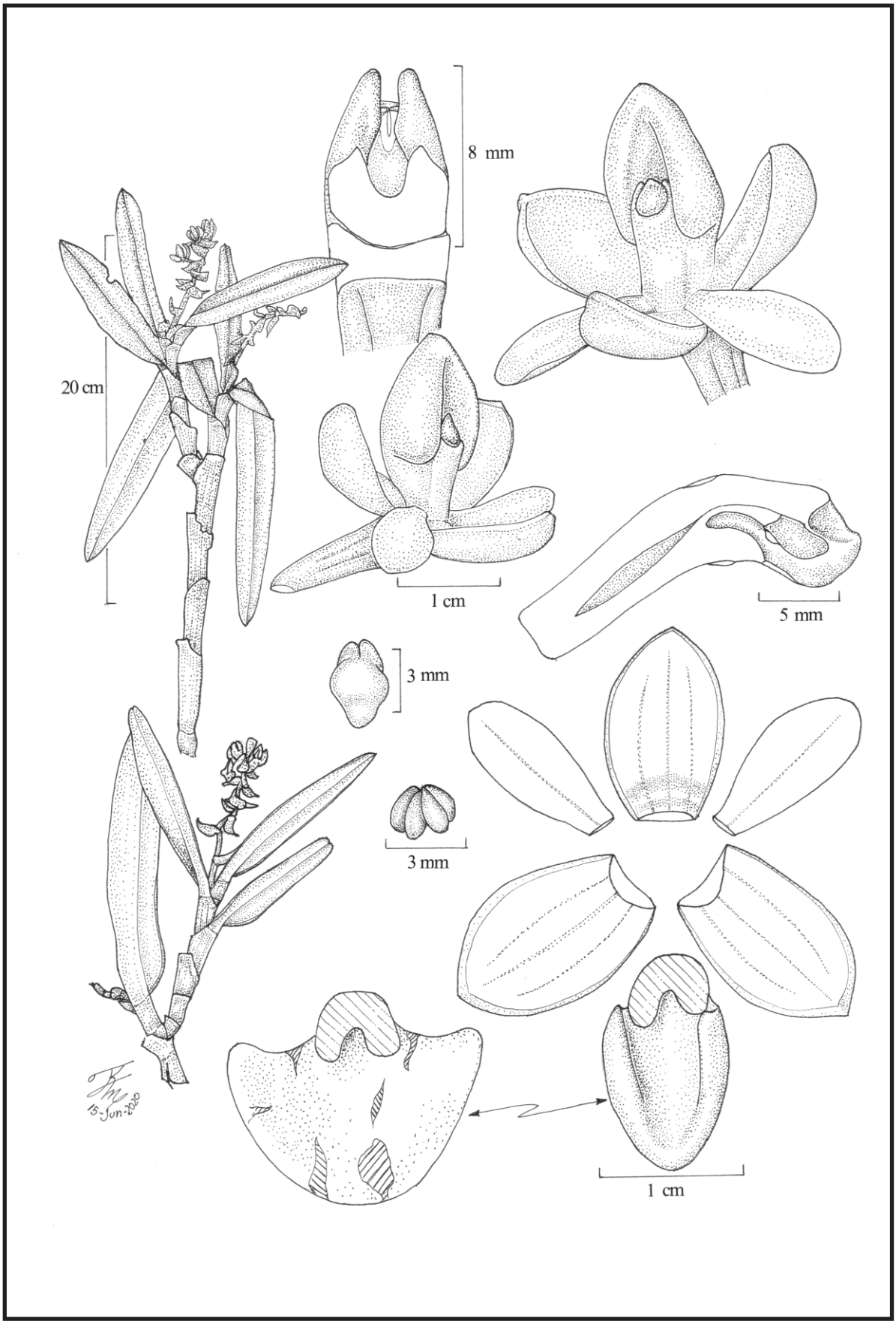
RECOGNITION: *Epidendrum villenae* belongs to the Indazense Group which is recognized by the sympodial, sub-caespitose plants with laterally compressed stems and very rigid leaves, the elongate peduncles of the inflorescence covered by tubular bracts, and a very short rachis with successive flowers similar to those of the Macrostachyum group. The new species is recognized by the fleshy, very brittle, widely elliptic leaves, the lilac flowers with the lip white and the lip lateral margins involute and boat-shaped but sub-cordiform when spread, the calli laminar, small, with a laminar band running down the middle to the apex of the lip. *Epidendrum indanzaense* known presently only from Ecuador, has green flowers with the lip a lighter green and the lip cordiform when spread, ecallose and without ribs.

CONSERVATION STATUS: VU. Vulnerable. Known presently from a range of some 200 km in northern Peru, from the Cordillera de Huarango south to the District of Vista Alegre, to the east of the Río Mayo-Chinchipe bordering with Ecuador, and in the upper basin of the other Río Mayo, in the Department of San Martín, affluent of the Río Huallaga.

ETYMOLOGY: In honor of Biol. Janette Karol Villena Bendezú (1973-), who brought this species originally to our attention. Her father, Renato Villena Ruiz, founded Agro Oriente Viveros in 1980, also known as Orquídeas Amazónicas. Karol studied biology at the Universidad Ricardo Palma and has brought new focus to the company, propagating a number of interesting local species in two localities to grow both warm and cold climate species. They have plants of this species under cultivation.

ACKNOWLEDGMENT: Holotype was exported with CITES Export Permit Number Peru 10013, 11 August 2007, Received MO 30 August 2007.

REFERENCE: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum indanzense*, in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, **Icon. Orchid.** 2. pl. 147.



EPIDENDRUM XYLOSTACHYUM Lindl. **Plate 1848**

EPIDENDRUM XYLOSTACHYUM Lindl., Bot. Reg. 31: 70. 1845.

Type: COLOMBIA: Nouvelle Grenade, Mariquita: [Tolima:] versant du Tolima, Peñón du Pan de Azúcar, fleurs d'un blanc verdâtre, 1000 toises [fathoms=1800 m], février 1843. ***Jean Jacques Linden 1280***, Holotype: K 885305! (The specimen on the right; the specimen on the left, marked Peru, *Jamieson*, is from Ecuador and corresponds to *Epidendrum brachystelestachyum* Hágsater & E.Santiago, including the contents of the envelope). Sketch of holotype at W-R 5844! Isotypes: (sterile stem with a leaf) BR 13083090! W 50010! The plant and contents of the envelope. The flower on the card marked "Hb. Lindley 241, *Epidendrum xylostachyum*, ***Jamieson***", appears to be part of the holotype, not Jamieson.

Terrestrial, monopodial, branching above, **herb**. **Roots** not seen. **Stems** cane-like, terete, erect, branching above when mature, main stem not seen, branches 11-21 x 0.9-1.7 cm. **Leaves** on the main stem not seen, ca. 7 on the branches, distributed throughout, alternate, articulate, sub-erect, coriaceous; sheath 1.7-5.0 x 0.9-1.7 cm, tubular, striated; blade 6.8-16.2 x 2.4-3.5 cm, oblong-elliptic, apex rounded, margin entire. **Spathe** lacking. **Inflorescence** ca. 7.7 cm long (probably longer on the main stem), apical, short, flowering only once, racemose, erect, compact, densely few-flowered. **Floral bracts** 7-17 x 13-22 mm (when spread), wide and prominent, decreasing, longer than the ovary (but not as long as the flower), cymbiform, conduplicate, widely ovate, oblique, apex acute, slightly uncinate, the lower bracts spaced along the rachis, the apical bracts progressively imbricating, margin entire. **Ovary** 12-13 mm long, totally hidden within the floral bract. **Flowers** ca. 12, non-resupinate, very fleshy, greenish white, fragrance not registered. **Sepals** free, spreading, widely oblong-elliptic, apex rounded to obtuse, very fleshy, 3-veined, concave, margin entire; dorsal sepals 9.3-13.7 x 8.1-8.3 mm; lateral sepals 13.2-15 x 8-9.5 mm. **Petals** 10.8-12.9 x 4.8-5.4 mm, free, spreading, widely oblong-obovate, apex rounded, 1-veined, margin entire. **Lip** 11.4-12.5 x 17.6-18 mm, cymbiform in natural position, embracing the apex of the column, when spread widely cordiform, apex rounded, very fleshy; ecallose, without ribs. **Column** 9-10 mm long, straight, thick, erect in natural position. **Clinandrium-hood** reduced; margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** very small, about ¼ the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, unornamented. **Anther** ovoid, apex sub-obtuse, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Antioquia: Municipio de Caicedo, vereda La Anocozca, sector Alto de la Virgen camino hacia Abriaquí, 3401 m, 6 IV 2013, *Alzate 5009*, HUA! Ibid. 7 IV 2013, *Alzate 5018*, HUA! Ibid. *Alzate 5040*, HUA! San José de la Montaña, Vereda El Congo, Lagos del Congo, 3230 m, 10 II 2012, *Alzate 4306*, HUA! Cerro del Padre Amaya, *Ospina 4*, JAUM! Parque Natural Nacional Las Orquídeas, 29 IV 1990, *Ramírez 3846*, JAUM! MEDEL! Camino al paramo de Belmira, 2800 m, 1 IV 2017, *Vélez 6348*, MEDEL! (Illustration and Photo voucher) Cerro del Padre Amaya, 2990 m, 18 III 1987, *Zarucchi 4800*, SEL!

OTHER RECORDS: COLOMBIA: Antioquia: Páramo de Sabanas a unos 15 km de Belmira, 3600 m, 26 VI 2025, *Zapata s.n.*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: known presently only from Antioquia and Tolima departments, terrestrial at 2800-3600 m altitude. Flowering from February to April.

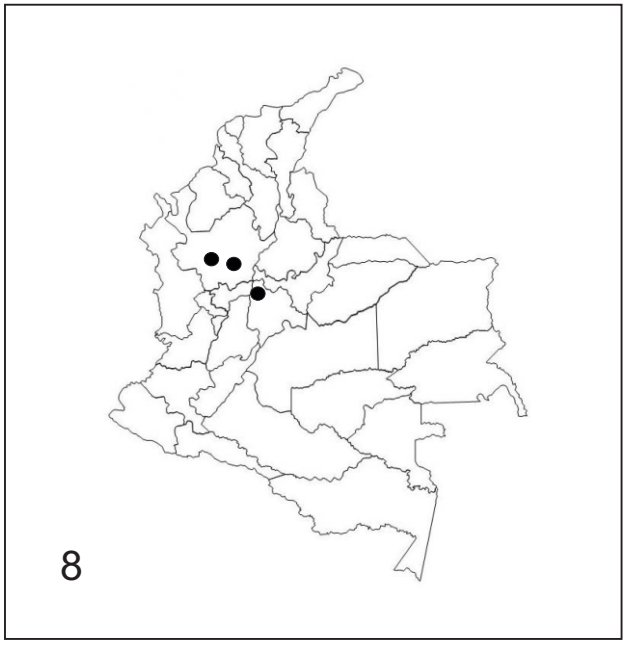
RECOGNITION: *Epidendrum xylostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, erect racemose inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the oblong-elliptic leaves, those of the branches 6.8-16.2 x 2.4-3.5 cm, inflorescence short and dense, the floral bracts very prominent, 7-17 x 13-22 mm, widely ovate and oblique, with the apex uncinate, the flowers greenish white tinged reddish purple, and the sepals oblong-elliptic, the laterals 13.2-15 x 8.0-9.5 mm, petals 10.8-12.9 x 4.8-5.4 mm, oblong-obovate. *Epidendrum macrostachyum* Lindl. has much longer inflorescences, lax-flowered, 16-30 cm long, flowers the color of ripe olives, floral bracts triangular, acute, narrower, 8.0-18 x 5.0-14 mm, sepals elliptic to narrowly ovate-elliptic, 11.0-11.5 x 5.0-6.0 mm, and the petals linear-oblong, much narrower that the sepals. *Epidendrum ariasii* Hágsater & Dodson has elliptic-lanceolate leaves, 4-11 x 1.4-2.3 cm, flowers reddish orange, an inflorescence dense and many-flowered, 10-15 cm long, and sepals obovate with the apex rounded to sub-acute, 14 x 9.6-10.4 mm, petals widely spatulate 13.2 x 8.0 mm, slightly narrower than the sepals. *Epidendrum erikae* Hágsater & E.Santiago has lilac-rose flowers, oblong-lanceolate leaves 9-17 x 2.0-5.0 cm, a longer inflorescence, 7-13 cm long, 15-20 successive flowers, and sepals 14-16 mm long. *Epidendrum megalophyllostachyum* Hágsater, E.Santiago & Rodr.-Martínez has much larger elliptic leaves, 10-18 x 3.0-5.0 cm, apex acute, an inflorescence 14-18 cm long, lax-flowered, bracts spaced along the rachis, longer than the ovary, triangular ovate, 10-25 x 10-20 mm, sepals 18-20 x 9.0-12 mm, and flowers pale green to green-yellow.

NOTE: The type indicates an altitude of 1000 toises [fathoms=1800 m], however all the specimens we have seen correspond to the Department of Antioquia at altitudes at 2800-3600 m. In addition, although the type registers the color as greenish white, all the specimens we have seen and report indicate the color as greenish yellow tinged purple. Otherwise the floral and vegetative morphology correspond to the type.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek , wood, and , ear of corn, in modern botany a spike, in reference to the hard, woody appearance of the inflorescence.

REFERENCES: Hágsater, E., & C.H. Dodson, 2004, *Epidendrum ariasii*, in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: pl. 707. Hágsater, E., & E. Santiago, *Epidendrum erikae,* 2015, in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): pl. 1521. Hágsater, E., E. Santiago & L. Rodríguez Martínez, 2018, *Epidendrum megalophyllostachyum*, in E. Hágsater & E. Santiago (eds.), The Genus *Epidendrum*, Part 12, **Icon. Orchid.** 16(1): pl. 1642. Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum*, in E. Hágsater & L. Sánchez (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: pl. 1454.



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