

ICONES ORCHIDACEARUM

Fascicle 15(1)
THE GENUS EPIDENDRUM
Part 11
“Species New & Old in Epidendrum”

Eric Hágsater

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ICONES ORCHIDACEARUM

Fascicle 15(1), plates 1501 to 1568

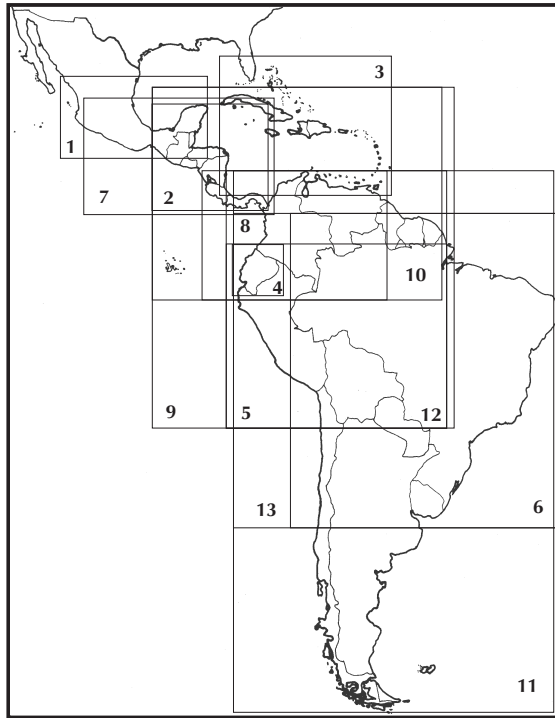
THE GENUS EPIDENDRUM Part 11

“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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THE GENUS *EPIDENDRUM*

Part 11

Species New & Old in *Epidendrum*

Foreword

Last year Roberto González Tamayo (13 November 1940 - 23 January 2014) passed away in Guadalajara, Jalisco. He dedicated most of life to studying the orchids of western Mexico, especially in the state of Jalisco, and without doubt has been the most thorough researcher in that part of Mexico. Very reserved by nature, he did however, especially in his earlier years share his material with others, but always held to his own opinion. Fortunately, his notes and illustrations are to be deposited at the Herbario AMO, where they will be available for research. His deep knowledge of the field, however, is something nobody will be able to rival, as he lived for many years in the field, in a time when there were no paved roads, and unfortunately, many of the forests where he lived have been heavily disturbed if not lost forever. We dedicate this issue to him.

It has been nearly two years since we published volume 14 of the Icones series, and as many new species have been since discovered, we have felt obliged to put them in print, even if, due to a rigorous editorial revision policy, we are not able to have the full one hundred plates as has been the custom up to now. The digital copy is made available as soon as the printed copies are mailed.

In this issue, 39 species new to science are proposed, in addition to 2 new names and a new combination, from the following countries: Mexico, Guatemala, El Salvador, Colombia, Ecuador, Peru, Bolivia, and Venezuela. Twenty-five authors and co-authors have participated, as well as 17 illustrators and 42 photographers.

In spite of having now published the second volume of Orchids of the Department of Valle del Cauca (Colombia), authored jointly by Marta Kolanowska, Eric Hágsater, Dariusz L. Szlachetko, Elizabeth Santiago Ayala and Luis Sánchez Saldaña (Koeltz Scientific Books, 2014), we continue to find new species in that part of Colombia, they have been included here.

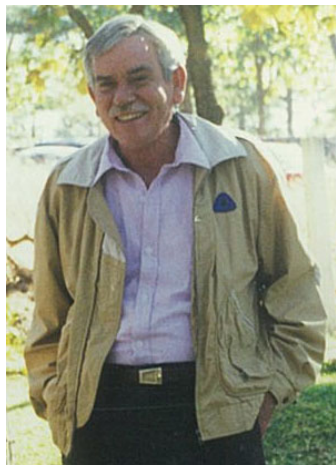
With this issue we have covered nearly all of the species of the *Macrostachyum* Group in *Epidendrum*, comprising now 46 published species, which had been hitherto lumped under *Epidendrum macrostachyum* Lindl. This group of species is Andean, from Bolivia north to Colombia and adjacent Venezuela, with a couple of species in the higher mountains of Panamá and Costa Rica. Being mostly very similar, the species are best recognized by a combination of the shape of leaves, color of flowers, shape of petals and lip, and the size of the floral bracts. A key to the identification of this group of species will be uploaded to the site of the herbarium AMO at www.herbarioamo.org. There are at least another three species from Venezuela which are being worked on by other authors.

Since joining various groups of orchid lovers in Facebook, we have received numerous digital images of *Epidendrum* species, some of which we publish here. It is proving a wealth of new information, facilitating the exchange of information, and amazingly the discovery of new species. It serves to demonstrate how sharing information between amateurs, orchid lovers and taxonomists can boost the knowledge of an area of biodiversity to the benefit of all.

Eric Hágsater

Mexico City, May 2015.

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JORGE ROBERTO GONZÁLEZ TAMAYO (1940-2014)

It was by a twist of fate that Roberto was born in Mexico City on November 13, 1940. When he was one year of age his parents moved to La Barca, Jalisco, and later to Guadalajara. In high school, one of his teachers, Amancio Rodríguez had a personal collection of wild orchids. When in flower, he would take them to the classroom, where his students could enjoy them. It was there that Roberto became interested in these fascinating plants. However, it was Dr. Salvador Rosillo de Velasco, a medical doctor deep into orchid collecting who was responsible for the basis of his taxonomic work. Back then, some 50 native were known from the state of Jalisco, and knowledge of orchids was hard to come by. Today over 500 native species are known for Jalisco alone. Roberto would later come in contact with Professor Luz María Villareal de Puga, at the Universidad de Guadalajara, and she in turn introduced him to Dr. Jerzy Rzedowski, of the Escuela Nacional de Ciencias Biológicas, who then introduced Dr. Rogers McVaugh, the general editor of *Flora Novo-Galiciana*. They all, with great enthusiasm, gave him their moral support, to continue his work on the orchids. It was thanks to that, that he decided to quit a brilliant career in chemical engineering having earned a degree in 1964.

We frequently hiked around Mascota and San Sebastián del Oeste, areas which were poorly known from a botanical standpoint, and still rich in orchids. On one occasion he met the priest of Mascota, who enquired what it was that drew his interest to such remote places. Upon knowing of his interest in orchids and his purpose, he told Roberto that in reality it was around Cuale where he could find the rarest and most attractive species. After scouting the area and confirming it, he moved from

Guadalajara to the Sierra de Cuale in 1969, to the town of Talpa de Allende. He lived there for thirteen years, and he had the opportunity to study his beloved orchids in their natural habitat. At the time it was only possible to reach the area by mule-track from two places: Puerto Vallarta and Talpa. Falling ill or having an accident was a high risk to be considered, as the only way to a doctor was to be carried to either place, often with disastrous consequences. Child mortality, due mostly to maternal ignorance and lack of medical services, were everyday facts. This situation touched his most sensitive fibers, to the point that he dedicated much of his time to social work to better the quality of life of the inhabitants of the area through the planting and care of fruit trees, breeding and maintaining hogs, and promoting new roads. It was from that time that he had his best memories, his botanical expertise, and a deep knowledge of the feelings and thoughts of country folk. It left an enduring impression which was always reflected in his comments.

Since 1960 González Tamayo has been recognized for his botanical collections, the number of specimens easily surpasses four thousand, and has contributed to herbaria in various institutions, such as the National Polytechnic Institute (ENCB), the National Herbarium (MEXU), the Instituto de Ecología del Bajío (IEB), Herbario AMO, the University of Michigan (MICH), and the University of Wisconsin. But the most outstanding is the herbarium of the Instituto de Botánica, Universidad de Guadalajara (IBUG), founded by Dr. Luz María Villareal de Puga, where González Tamayo was most active. Some of his collections led to the description of species new to science, and several have been dedicated to him. Others have served to extend the known range of species, and still others wait for specialists to take interest in them, and eventually find still more novelties.

In the 70's and 80's he worked closely with Ed W. Greenwood in Oaxaca and Eric Hágsater in Mexico City, often publishing jointly. During those years he would communicate often with the team at the Herbario AMO, and sometimes visited and prepared illustrations from the material collected in southern Mexico. Roberto first visited the Herbario AMO in February 1987, and was present at the inauguration of the new facilities in January 2002.

His contribution to the formation of new botanists, sometimes inadvertently for persons working alongside him, is unquestionable. For many of the researchers on the Instituto de Botánica, González Tamayo always had time available to attend to our questions and doubts, and to revise their manuscripts. His experience was passed along to us in a natural form, in the shape of ingenious phrases, punctuated often by words that could otherwise sound offensive. At one time or another, we have all asked for his advice, and have never been let down. He always presented his points of view in a peculiar way, sufficient to channel our own thoughts.

Thanks to his innate ability, and to the discipline acquired throughout his life, he was a born leader. He founded the *Boletín del Instituto de Botánica*, now known as *IBUGANA*. As editor his efforts have made this publication known internationally. He published ten volumes with thirty issues and 137 articles. He was also editor of *Colección Flora de Jalisco*, which has seen sixteen volumes published, three edited by him.

He dedicated his work to the study of Mexican orchids. Convinced of his work, he would say it was research that "someone would eventually do, and it turned out to be me, but it could well have been any other". The detail and tenacity, with which he developed his orchid studies, were near the point of being pathologic. A decade ago he had published 65 articles and 16 scientific notes. They can be recognized by his peculiar style. He described over 50 species new to science, nearly all dedicated to Mexican researchers. He also produced some 65 new combinations, and 8 new genera, including *Hagsatera*, *Luzmaria*, *Netzahualcoyotlia* and *Gracielanthus*. The importance of the description and publication of genus *Hagsatera* in 1974, can be found in the fact that since 1825 no Mexican botanist had proposed a new genus in the family of the Orchidaceae, that is for some 150 years. (in January 2015 "R.González" is cited in 188 citations as author or co-author of new genera, species or new combinations in The International Plant Name Index).

On the other hand, his penchant for scientific botanical illustration, led him to prepare more than 900 illustrations of Mexican orchids. Over one hundred of those illustrations were used to illustrate volume 16 of the *Flora Novo-Galiciana*, corresponding to the Orchidaceae, published in 1985. Rogers McVaugh sought the advice of González Tamayo to be able to finish the volume. It later became clear that the *Flora* would have to be updated, and McVaugh asked González Tamayo to make the appropriate additions and corrections, which would have led to doubling the number of species dealt with.

During his later years he published often with Dariusz Szlachetko and his team in Gdansk, Poland, producing many new genera and combinations, especially in terrestrial orchids around *Malaxis* and *Habenaria*, where he focused his attention.

The many years he lived in the Sierra de Cuale molded his character and made him detest and flee from noise and the bustling life of urban civilization, as well as anything which would imply meetings and ceremonies. He was, however, named Professor Emeritus at the Instituto de Botánica, University of Guadalajara, in October 2004. Unfortunately, his last years in Guadalajara, with progressive glaucoma which made him practically blind at the end, closed him off from communication with others, except for his closest collaborators. In 2009 he was awarded the "Premio Estatal de Ciencia y Tecnología" for 50 years of research in orchids, and his contributions to the knowledge of the flora of the State of Jalisco.

In 2010 he produced and published the first volume of *Las Orquídeas del Occidente de México*, together with his long-time collaborator, Lizeth Hernández Hernández, a work of 40 years. This first volume covers the genera *Cypripedium*, *Habenaria*, *Platanthera*, and *Coenoemersa*, and includes 27 new species to science, and the new genus *Coenoemersa* R. González & L. Hernández. There were to be five volumes to cover the whole family. A second volume is in preparation by the co-author, but no plans have been made for its publication.

Roberto González Tamayo was undoubtedly the most prolific orchid researcher for western Mexico. The many new species he proposed in his later years are generally questioned by other students of the orchid flora of Mexico as perhaps too much of a splitter. Recognizing five species previously running under the name *Cypripedium irapeanum* from western Mexico, seems excessive. Roberto used both ecological and morphological features to separate them. His first-hand knowledge of these plants in the field was unique, and therefore it is a challenge for other orchid taxonomists to question or recognize his opinions. In any case, his 950 illustrations and 1061 descriptions, as well as several thousand color slides are an asset for present and future orchid research, especially from western Mexico. They are to be deposited at the Herbario AMO, where they will be digitalized and made available for future research.

[Based on a biographical sketch written by Servando Carvajal on occasion of Roberto González being named Professor Emeritus, October 2004.]

Eric Hágsater, Mexico City, May 2015.

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Index

Appendix 1: Additional information to texts of Plates	I-IV
Appendix 2: Corrections to earlier volumes, new name & publication dates	V
<i>Epidendrum albopropinquum</i> Hágsater & E.Santiago*	1501
<i>Epidendrum angustatum</i> (T.Hashim.) Dodson	1502
<i>Epidendrum bangii</i> Rolfe	1503
<i>Epidendrum birostratum</i> C.Schweinf.	1504
<i>Epidendrum borealistachyum</i> Hágsater, E.Santiago & C.Fernández*	1505
<i>Epidendrum bothryanthum</i> M.R.Miranda, F.J. de Jesus, Chiron & Hágsater*	1506
<i>Epidendrum brachyoothistachyum</i> Hágsater & E.Santiago*	1507
<i>Epidendrum brachyrhodochilum</i> Hágsater & E.Santiago*	1508
<i>Epidendrum brachystelestachyum</i> Hágsater, E.Santiago & Reina-Rodr.*	1509
<i>Epidendrum cardiostachyum</i> Hágsater & E.Santiago*	1510
<i>Epidendrum ceticaudatum</i> Rincón-González, Villanueva & E.Santiago*	1511
<i>Epidendrum chilcalorum</i> Hágsater, Reina-Rodr. & Rodr.-Martínez*	1512
<i>Epidendrum chotaense</i> Chocce-Peña, Hágsater & Vega-Vera*	1513
<i>Epidendrum coordinatum</i> Rchb.f.	1514
<i>Epidendrum cornurepens</i> Hágsater, H.Ferrer & L.Sánchez*	1515
<i>Epidendrum coricoense</i> Schltr.	1516
<i>Epidendrum cuchibambae</i> F.Lehm. & Kraenzl.	1517
<i>Epidendrum deltastachyum</i> Hágsater & E.Santiago*	1518
<i>Epidendrum dermatanthum</i> Kraenzl.	1519
<i>Epidendrum erectum</i> Brieger & Bicalho	1520
<i>Epidendrum erikae</i> Hágsater & E.Santiago*	1521
<i>Epidendrum erythropachychilum</i> Hágsater & E.Santiago*	1522
<i>Epidendrum spiritu-santense</i> Dodson & R.Vásquez	1523
<i>Epidendrum evelynae</i> Rchb.f.	1524
<i>Epidendrum excelsum</i> C.Schweinf.	1525
<i>Epidendrum findlingiae</i> Hágsater, Dalström, Ruíz-Pérez*	1526
<i>Epidendrum incahuamanii</i> Collantes & Hágsater*	1527
<i>Epidendrum incapachychilum</i> Hágsater & E.Santiago*	1528
<i>Epidendrum ixilum</i> Hágsater, Archila & Chiron*	1529
<i>Epidendrum jorge-warnerii</i> Karremans & Hágsater	1530
<i>Epidendrum jose-alvarezii</i> Hágsater, Gut.-Peralta & Nauray*	1531
<i>Epidendrum lagotis</i> Rchb.f.	1532
<i>Epidendrum libiae</i> Hágsater, García Lopera & Est.Domínguez*	1533
<i>Epidendrum lilijae</i> Foldats	1534
<i>Epidendrum lizethae</i> Hágsater, Rincón-Useche & L.Sánchez*	1535
<i>Epidendrum macphersonii</i> Hágsater & E.Santiago*	1536
<i>Epidendrum macuchiense</i> Hágsater & E.Santiago*	1537
<i>Epidendrum magnibracteum</i> Kraenzl.	1538
<i>Epidendrum megalospathum</i> Rchb.f.	1539
<i>Epidendrum montserratense</i> Nir	1540
<i>Epidendrum morganii</i> Dodson & Garay	1541
<i>Epidendrum mormontoyi</i> Collantes & Hágsater*	1542
<i>Epidendrum moronense</i> Dodson & Hágsater	1543
<i>Epidendrum munchiquense</i> Hágsater, E.Santiago & García-Revelo*	1544
<i>Epidendrum notostachyum</i> Hágsater & E.Santiago*	1545

<i>Epidendrum ochoae</i> Collantes & Hágsater*	1546
<i>Epidendrum odontostachyum</i> Hágsater & E.Santiago*	1547
<i>Epidendrum oldemanii</i> Christenson	1548
<i>Epidendrum pachyphilum</i> Kraenzl.	1549
<i>Epidendrum porphyrostachyum</i> Hágsater & E.Santiago*	1550
<i>Epidendrum pseudodiforme</i> Hoehne & Schltr.	1551
<i>Epidendrum puracestachyum</i> Hágsater & E.Santiago*	1552
<i>Epidendrum ramiro-medinae</i> Hágsater & L.Sánchez*	1553
<i>Epidendrum recurvitopalostachyum</i> Hágsater & E.Santiago*	1554
<i>Epidendrum rhodochilum</i> Schltr.	1555
<i>Epidendrum rostrigerum</i> Rchb.f.	1556
<i>Epidendrum rugulosum</i> Schltr.	1557
<i>Epidendrum sarcostachyum</i> Hágsater, E.Santiago & E.Becerra*	1558
<i>Epidendrum scutella</i> Lindl.	1559
<i>Epidendrum sigmostachyum</i> Hágsater, E.Santiago & D.Trujillo*	1560
<i>Epidendrum spruceanum</i> Lindl.	1561
<i>Epidendrum stenobractistachyum</i> Hágsater & E.Santiago*	1562
<i>Epidendrum sumacostachyum</i> Hágsater & E.Santiago*	1563
<i>Epidendrum taguatingense</i> (Brieger & Bicalho) Hágsater, Meneguzzo & L.Sánchez	1564
<i>Epidendrum tridens</i> Poepp. & Endl.	1565
<i>Epidendrum tripetaloides</i> Hágsater & E.Santiago*	Appendix 2
<i>Epidendrum tumuc-humaciense</i> (Veyret) Romero & Carnevali	1566
<i>Epidendrum vigosi</i> Hágsater & E.Santiago*	1567
<i>Epidendrum zongoincomptum</i> Hágsater & E.Santiago*	1568

APPENDIX 1: Additional information to texts of plates

EPIDENDRUM BOREALISTACHYUM Hágsater, E.Santiago & C.Fernández Plate 1505

OTHER SPECIMENS: **COLOMBIA:** **Cauca:** [Huila:] Santa Leticia, 2100-2300 m, 6 IX 1961, *Fernández 5888*, COL! Pitalito, carretera vía Villalobos, 2300 m, 27 XII 1978, *Morales 41*, COL! **Boyacá:** Sierra Nevada del Cocuy, river below Báchira, ca. 2050 m, 21 VIII 1957, *Grubb 664*, COL! K-L! **Santander:** near La Corcoba, 2830 m, 19 VII 1965, *Barkley 36264*, AMES x2! Pamplona a Bucaramanga, Páramo de Berlín, 2800-3600 m, 30 I 1969, *García-Barriga 19988*, AMES! COL! East of Bucaramanga toward Berlín, 2950 m, 3 XI 1981, *Luer 6571*, SEL! Carretera hacia Páramo “El Almorzadero”, *Ospina 776*, JAUM x2! Bucaramanga, 8000 ft, 1 V 1948, *Sandeman 6086*, K-L! **Tolima:** Manizales und Fresno, 2900 m, *Renz 8646*, RENZ! **ECUADOR:** **Napo:** km 117-134, Quito-Tena, beyond Cosanga at Cordillera de Guacamayo, 1900-2100 m, *Dodson 18195*, MO! AMO (spirit)! Rd Archidona to Baeza, 44 km N of Archidona, 1800 m, 27 I 1991, *Neill 9766*, AMO! **PERU:** **Huánuco:** Carpish, pasando el túnel, 15 I 1987, *Díaz 2236*, CM! MO! SEL! USM x2! Carpish, 2700-2750 m, 11 XI 1964, *Ferreyra 16156*, USM! Huanuco-Tingo María, 1 km before Carpish tunnel, 2680 m, 2 II 1985, *Todzia 2725*, MO! (illustration, AMO) **Pasco:** Sector Chacos, 2700-2800 m, 14 III 2005, *Arias 212*, MO! P.N. Yanachaga-Chemillén, Sector Chacos, 2800 m, 3 XII 2004, *Becerra 337*, MO! 14 km E of main Oxapampa-Villa Rica, 2450 m, 2 III 1982, *Gentry 35957*, MO! Oxapampa; Cordillera Yanachaga, road over shoulder of Cerro Pajonal to Villa Rica, 12 km SE of Oxapampa, 2300-2500 m, 9 X 1982, *Foster 9088*, NY! MOx3! USM! Oxapampa, San Alberto, 2700-2730 m, 13 IX 1995, *La Torre 1206*, USM! Sector Grapanazu, límite Parque Nacional Yanachaga-Chemillén, 2210 m, 15 X 2003, *Rojas 1798*, MO! Oxapampa, sector Chacos Pajonal, 2100 m, 3 VI 2004, *Rojas 2670*, MO! Abra-Villa Rica, 2400m, 7 VI 2004, *Rojas 2705*, AMO! Huancabamba, Sector Grapanazu, 2273 m, 14 X 2003, *Salinas 771*, USM! Los Chacos near Oxapampa, 2550 m, 11 V 1982, *Smith 1541*, MO! USM! Río Boqueira, ca km 26 km from Oxapampa vía Río Yamaquizu, 1840 m, 3 VI 1982, *Smith 1799*, F! USM! Oxapampa, trail to Summit of Cordillera Yanachaga via Río San Daniel, 3150-3300 m, 12 VII 1984, *Smith 7708*, MO! Dist. Huancabamba, Parque Nacional Yanachaga Chemillén, sector San Daniel, en la trocha Erica, 2363 m, 25 II 2008, *Vásquez 33661*, AMO! USM! Oxapampa, Milpo, 2950-3100 m, 31 X 2009, *van der Werff 22906*, AMO! **VENEZUELA:** **Táchira:** Pregonero, 2500 m, 20 I 1948, *Renz 4549*, RENZ! Gebiet oberhalb Queniquea, 1800 m, 25 VIII 1949, *Renz 5845*, RENZ! Umgebung von Las Delicias, Gebiet der Passhöhe, 1800 m, 30 VI 1951, *Renz 7123*, RENZ!

OTHER RECORDS: **ECUADOR:** Without locality, *Hugo Medina s.n.*, digital image, AMO! **Napo:** entre Baeza y Archidona, *Gerlach 402*, digital image, AMO! **COLOMBIA:** **Boyacá:** Cordillera Oriental, vertiente oriental, Mun. Pajarito, vereda Corinto, 2400 m, *Farfán s.n.*, digital image, AMO! **Putumayo:** El Salado de Balsayaco, *Medina 824*, digital image, AMO! **Santander:** without locality, photo, pg. 101, published as *Epidendrum macrostachyum* Lindl. (López Toscano, 2011) **PERU:** **Pasco:** P. N. Yanachaga, *Becerra s.n.*, digital image, AMO! Oxapampa, R. *Fernandez s.n.*, digital images, AMO! **VENEZUELA:** **Táchira:** Zumbador-Quenequea road, 2500 m, *Dunsterville 1104*, illustration (C), AMES!, published as *Epidendrum macrostachyum*, (Romero-González & Carnevali, 2000). Páramo de Guarín, 4 VII 2013, *Fernández s.n.*, spirit and digital image, AMO! Andrés Bello; cerca de Los Teques, 5 VII 2013, *Fernández s.n.*, digital image AMO! (photo voucher).

EPIDENDRUM MEGALOSPETHUM Rchb.f.

Plate 1539

OTHER SPECIMENS: **COLOMBIA:** Without data, W-R 28239! **Antioquia:** Mpio. Jardín: Vereda Ventanas, 2700-2900 m, 30-31 X 1987, *Luteyn 11839*, NY! Carretera Boquerón-Palmitas, ca. 2300 m, VI 1966, *Ospina s.n.*, JAUM! **Boyacá:** Boavita, 3000 m, 2 X 1991, *Etter 898*, COL! **Cauca:** Tablazo über Popayán, 2200 m, 11 III 1884, *Lehmann 3743*, G! **Cundinamarca:** La Calera, 3027 m, 15 IV 2006, *Arévalo 535*, COL! Valle Río Tehuascá 2900 m, 9 VII 1972, *Cleef 4832*, COL! U! Chía, 2640 m, VI 1996, *Cortés 722*, COL! Páramo de Guasca, 2840 m, 2 VI 1940, *Cuatrecasas 9444*, F! US! Chicó, 2800-3000 m, 14 VI 1939, *Cuatrecasas 5496*, COL! US! Vía La Calera Mundo Nuevo, 3000 m, 10 V 1995, *Fernández 12595*, MO! La Calera, 3000 m, 20 VII 1998, *Fernández 16616*, COL! Gutiérrez a Fosca, 2120-2400 m, 15 XI 1962, *García-Barriga 17538*, AAU x2! AMES! NY! US! Chocontá, 2750 m, 17 III 1996, pressed cult. 22 VIII 1997, *Hágsater 11487*, AMO! Zipaquirá, 2780 m, V 1943, *Huertas 1175*, COL! Laguna Chingaza, 3100 m, 2 V 1974, *Idrobo 6980*, COL! Chocontá, 2900 m, 5 VIII 1981, *Lozano 3758*, COL! Above Gutiérrez, 2700 m, 19 V 1984, *Luer 10375*, MO! Quebrada del Chicó, 2700-3000 m, 30 IV 1945, *Schneider 45*, S! Usaquén, 2700-3000 m, 24 VI 1943, *Schneider 45/1*, COL! Quebrada de EL Chicó, 2700-2800 m, 30 IV 1945, *Schneider 45/2*, COL! Zipacón, 2700 m, 10 VI 1962, *Schmidt 113*, COL! **Quindío:** Salento, 2600-2900 m, 9 V 1990, *González 2134*, COL! **Nariño:** Corregimiento de El Encano, 2800 m, 11 VI 1988, *Benavides 9893*, COL! Laguna de La Cocha, 3000 m, *Escobar 5340*, AMO! (specimen, spirit and slide, AMO! (illustration voucher, photo published by Escobar (1994)). Bei Pasto, 9000 ft, 17 X 1878, *Lehmann s.n.*, W-R 69328! **Putumayo:** between Laguna La Cocha and Páramo de Tábano, 2800-3000 m, 1 VI 1946, *Schultes 7835C*, AMES x2! **Tolima:** [Nevado de] Ruiz, Tolima, *Schmidtchen s.n.*, W-R 11168! (illustration, AMO!) **ECUADOR:** Without locality, *Sodiro s.n.*, QPLS x 2! NE Ecuador, R. Santiago, 2600 m, *André 440*, K-L! **Pichincha:** Pululahua, 2800 m, *Hirtz 1318*, AMO! Mt. Coturco, *Sodiro s.n.*, QPLS! **Chimborazo:** vall. Pallatanga, IX 1891, *Sodiro s.n.*, P! **VENEZUELA:** **Táchira:** cabeceras del Río Quinimarí, 2500-2630 m, 11 I 1968, *Steyermark 100718*, AMES! VEN!

OTHER RECORDS: **ECUADOR:** Without locality, *Hirtz 1291*, slide, AMO! (photo voucher). **COLOMBIA:** **Putumayo:** vereda La Cumbre, Valle de Sibundoy, 2300 m, 23 I 2014, *R. Medina 347*, digital image, AMO! **Tolima:** Ibagué, escuela el salto, 3200 m, M. *Rincón 350*, digital image, AMO! **VENEZUELA:** [Trujillo:] Los Pantanos, above Jajó, ca. 7500 ft, *Bergold s.n.*, published illustration (Garay & Dunsterville, 1965); cited by Foldats (1970) as from the state of Mérida. **Táchira:** Without locality, *Speckmaier s.n.*, digital photos, AMO! Páramo de Tamá, 2500 m, *Dunsterville 58* “type B” illustration, in part, AMES! VEN! (mounted on *Steyermark & Dunsterville 98294*=*E. rhodochilum* (Schltr.) Hágsater & Dodson).

OTHER SPECIMENS: COLOMBIA: Antioquia: km 1-2 from highway on road to Briceño, 1900 m, 25 XI 1988, *McPherson 13267*, U! **Cauca:** P. N. Munchique, El Tambo, Vereda La Romelia, La Gallera, 1500 m, 25 VII 1993, *Barbosa 8685*, COL! MA! Mun. El Tambo, [Munchique], 2300 m, 2 III 1884, *Lehmann 3628*, G! LE! Corr. La Romelia, km 75 vía a la Gallera, 1700-2000 m, 29 I 1995, *Ruíz 346*, COL! **Chocó:** San José del Palmar, Cerro del Torrá, vertiente nororiental, arriba del heliopuerto, ca. 1920 m, 8 I 1984, *Silverstone-Sopkin 1626*, CUV! **Huila:** Parque Nacional Cueva de los Guácharos y Cerro Punta, flanco Huilense del Cerro, 2760 m, 3 VIII 1972, *Cleef 5025*, COL! U! **Putumayo:** Mocoa, Corregimiento de San Antonio, vereda Alto Campucana, camino entre La Finca La Mariposa y El Alto La Sierra, 1500-1670 m, 20 IV 1994, *Betancur 5373*, MO! Corregimiento de San Antonio, vereda Alto Campucana, Finca La Mariposa, 1350-1420 m, 20 IV 1994, *Fernández 11283*, COL! **Valle del Cauca:** West Andes above Cali, 1800-2000 m, *Lehmann 6836*, AMES! K! Alto Galápagos, *Moreno 242*, ICESI! **ECUADOR:** Equateur et au Pérou, *M. Vidal-Sénèze s.n.*, P x4! **Loja:** Yangana-Valladolid, km 12, 2300 m, 2 VIII 1997, *Lewis 3412*, LOJA! QCNE! **Napo:** Reserva Ecológica Antisana; Comunidad Shamato, 1700 m, 24 IV 1998, *Clark 5125*, MO! QCNE! Reserva Ecológica Antisana, sector Guacamayos, 1700-1800 m, 1 V 1998, *Clark 5479*, MO! QCNE! Cosanga, km 112 Quito-Tena, 1850 m, 17 VI 1983, *Dodson 14008*, MO! SEL! km 11 Baeza to Tena, 1800 m, 30 VI 1985, *Dodson 15905*, MO! QCA! QCNE! SEL! Baeza, km 99 or road from Quito to Baeza, 1840 m, 29 V 1986, *Dodson 16436*, AAU! MO! QCNE! RPSC! SEL! Cordillera de los Guacamayos, 2100 m, 19 V 1991, *Gudiño 1406*, LOJA! MO! QCNE! Cotundo, Quito-Tena, 1400 m, III 1983, *Hirtz 851*, SEL! Baeza, 2000 m, 21 V 1986, *Huttel 763*, QCNE! Carretera entre Baeza y Archidona, Faldas al Sur de la Cordillera de Guacamayos, 1700 m, 17 VI 1983, *Palacios 7362*, QCNE! **Morona-Santiago:** km 80 Cuenca-Gualaquiza, 1250-1400 m, 1 VII 1982, *Dodson 13180*, MO! QCA! SEL! US! Cordillera Central del Condor, ridge top above Banderas, near disputed Ecuador-Peru border, 1350 m, 17 VII 1993, *Gentry 79990*, F! MO! QCNE! Campamento Achupalla, Cordillera del Condór, 15 km E of Gualaquiza, 2100 m, 22 VII 1993, *Gentry 80316*, AMO! QCNE! General Plaza (Limón)-Gualaceo road, km 18-20 from Limón, 2200-2250 m, 12 VI 1979, *Løjtnant 14640*, AAU! GB! QCA! Cordillera de Cutucú, western slopes along a trail from Logroño to Yaupi, 2000 m, XI 1976, *Madison 3558*, SEL! Bosque Protector Tambillo, Parroquia San Miguel de Cuyes, 2500 m, I 1998, *Suin 261*, QCNE x2! **Pastaza:** between Mangayacu and Puente Quile, ca. 1100 m, 31 III 1956, *Asplund 20086*, AMES! G! K! NY! P! US! Z! Shell Mera, 900 m, 3 IV 1956, *Asplund 20103*, NY! Hda. San Antonio Baron von Humboldt, 2.5 km N de Mera en carretera Baños-Puyo, 1050-1300 m, 27 II 1985, *Dodson 15618*, MO! Mera, ca. 1100 m, 25 V 1968, *Harling 10191*, AMES! GB! 8 km al NE de Mera, sobre carretera al Río Pastaza, 1300 m, 15 III 1985, *Neill 5746*, QCNE! **Pichincha:** km 92, Quito to Santo Domingo, 1200 m, 31 I 1963, *Dodson 2205*, AAU! F! QCA! SEL! km 70 Quito to Santo Domingo, on old road below Chiriboga, 1400 m, *Dodson 3806*, AAU! F x2! SEL! Old road Santo Domingo-Quito, Chiriboga, ca. 1500 m, 8 V 1968, *Harling 9234*, GB! Santa Rosa de Toachi, entering at km 7 or highway Sto. Domingo to Quevedo, 1300 m, 10 III 1990, *Hirtz 4680*, MO! km 22 Santo Domingo-Quito, old road to Quito, 1500-2100 m, pressed cult. 11 IV 1984, *Thurston T-3404*, AMO x3! **Tungurahua:** Río Topo, 3 VI 1968, *Harling 10083*, GB! **Zamora-Chinchipec:** Carretera Yangana-Valladolid, km 13, 2350 m, 30 VII 2000, *Álvarez 2790*, LOJA! NY! MO! QCNE! Cuenca del río Tundayme, carretera hacia el destacamento Militar Cóndor Mirador, 1500 m, 12 XII 2000, *Cerna 388*, QCNE! Yangana to Valladolid, pasando el puerto, km 27.3, 8180 ft, 10 IX 1999, *Hágsater 12311*, AMO! (illustration and photo voucher) QCNE! COL! CUCV! CUZ! Los Encuentros to río Machinaz at NW base of Cordillera del Condor, 1350-1650 m, 18 V 1988, *Hirtz 3772*, MO! Road Loja-Zamora, ca. 2300 m, 17 IV 1973, *Holm-Nielsen 3753*, AAU. **PERU:** Peruvia, cult in Chili, *Haenke 2499*, F! **Amazonas:** Condorcanqui, Cordillera del Condor, la cima del "tepui" Cerro Machinaza, cabeceras del Río Camainas, tributario al oeste del Río Cenepa, 2150 m, 21 VI 1994, *Beltrán 1145*, USM! road from Moyobamba to Pomacocha, between km 345 and 355, 6200 ft, 5 II 2002, *Christenson 2007*, F! USM! **Cajamarca:** San Ignacio, Cordillera Huarango, El Romelio, 2300 m, 31 III 1956, *Asplund 2867*, USM! San Ignacio, Dist. Huarango; Alrededores del Caserío Palma, 1640 m, 29 IV 2006, *Ortiz 1435*, MO! **Pasco:** Dist. Chontabamba. Sector la Suiza Vieja, 2067 m, 8 IV 2005, *Arias 350*, MO! Oxapampa, Abra Villa Rica, 2260 m, 5 VII 2005, *Becerra 1043*, MO! Sector Abra-Villa Rica, 2365 m, 24 IV 2004, *Rojas 2270*, AMO! Oxapampa, Río Boquería, ca. 26 km form Oxapampa vía Río Yamaquiza, 1840 m, 3 VI 1982, *Smith 1800*, F! MO! USM! Huancabamba, P. N. Yanachaga-Chemillén, sector San Daniel, 2363 m, 23 II 2008, *Vásquez 33616*, AMO! Ibid., 25 II 2008, *Vásquez 33657*, USM! Oxapampa, Palmazu, Cooperativo Navarra, 2000 m, 5 III 1986, *van der Werff 8365*, MO! USM! Ibid. *van der Werff 8402*, F! MO! SEL! USM! La Suiza Nueva, 2210 m, 6 V 2005, *van der Werff 19760*, AMO!

OTHER RECORDS: COLOMBIA: Chocó: Cerro Montezuma, Cordillera Occidental, vertiente W (hacia el Chocó) en el límite de los departamentos de Chocó y Risaralda, *Calderón-Franco s.n.*, digital image, AMO! Without locality data, *Ortiz Valdivieso 454*, illustration, HPUJ! **Valle del Cauca:** carretera a San José del Palmar, antes del Alto Galápagos, 2000 m, published as *Epidendrum carnosiflorum* C. Schweinf. (Escobar, 1994), photo by Juan Felipe Posada, *Escobar 5425*, slide, AMO! Alto Galápagos, *Moreno 242*, digital image AMO! (photo voucher) **PERU: San Martín:** Distr. Pardo Miguel, Rioja, Alto Mayo, habitat of *P. kovachii*, ca. 1800 m, 16 I 2009, *Collantes FE 1168*, photos AMO!, flower in liquid, to be deposited at USM.

OTHER SPECIMENS: **COLOMBIA:** **Cauca:** Minas Inza, *Lehmann sub Herb. Kew 517*, K-L! Paletará in direction of Hacienda Valencia, VIII 1964, *Kapuler 226*, COL! Anden von Popayán, 2500-3000 m, 1906, *Lehmann sub Herb. Kew 457*, K-L! Guanacas, *Lehmann, Herb. Kew 474*, K-L! *Ibid.*, *Lehmann sub Herb. Kew 513*, K-L! Páramo de Moras, 3000 m, 9 X 1982, *Lehmann 2067*, G! Paramo de Barbillas, SE of Popayán, 3070 m, 27 VII 1978, *Luer 3031*, SEL! **Cundinamarca:** Guasca, Oberstes Guaviotal, 2900 m, 17 VIII 1941, *Renz 3943*, RENZ! Paramo de Guasca, zwischen Guasca und Gachetá, 2800 m, 28 VIII 1955, *Renz 8494*, RENZ! **Boyacá:** Ventaquemada, km 106 de carretera Bogotá-Tunja, 2920 m, XII 1972, *Ortiz Valdivieso 599*, HPUJ! **Nariño:** prope Pasto, 2900 m, *André 2886*, K-L x2! Near Laguna La Concha, along main road from Pasto to Mocoa, 25 VI 1960, *Garay 48*, AMES! COL! über Pueblo Laguna, bei Pasto, 9000 ft, 19 X 1878, *Lehmann s.n.*, W-R 69326! **Putumayo:** [Nariño:] San Francisco, La Siseria, 2800 m, 3 IV 1983, *Ortiz Valdivieso s.n.*, HPUJ! **ECUADOR:** Without locality data, *Lehmann s.n.*, W-R 69321! *Ibid. Sodiro s.n.*, BP 65893! **Carchi:** along road Tulcan-Maldonado, 3300 m, 4 IV 1984, *Dalström 713*, SEL! E of Gruta La Paz, 3200 m, 13 IX 2004, *Hirtz 9015*, AMO! above Maldonado W of Tulcan, ca. 1700-2000 m, 21 II 1978, *Luer 2662*, SEL! **Imbabura:** Huara and Inza, 2800-3000 m, VI 1886, *Lehmann 6293*, K-L! **Tungurahua:** Valle de Chaupe, above Baños, 2200 m, 24 VI 1975, *Luer 497*, SEL! **PERU:** Without locality data, *Callally s.n.*, CUZ! **Amazonas:** Cerros Calla Calla, 48 km above Balsas on the road to Leimebamba, 3100 m, 30 V 1964, *Hutchison 5457*, UC! Leimebamba, 1 VI 2010, *Trujillo 435*, MOL! Calla Calla slopes, near Leimebamba-Balsas, 2900-3100 m, 9 VI 1962, *Wurdack 1251*, AMES! K-L! S! US! USM! **Cusco:** Lares, Rayampata, 3052 m, 18 II 2004, *Valenzuela 2663*, MO! Machu Picchu, WinayWayna, 7 III 1999, *Nauray 405*, CUZ! Acjanacu, Vargas 19968, CUZ! F! NY! Sta. Rosa, a 20 km Quillabamba, Vargas 20274, CUZ! **VENEZUELA:** **Táchira:** Zumbador and Queniquea, 2900 m, 20 VIII 1949, *Renz 5794*, RENZ! **Mérida:** Palmira und Timotes, 3000 m, 12 XII 1948, *Renz 5033*, RENZ! Cruz de Mora und El Molino, 2700 m, 12 XI 1949, *Renz 6098*, RENZ!

OTHER RECORDS: **COLOMBIA:** Without data, *Epidendrum scutella*, photo, (Ortiz & Uribe 2007). without locality, *plate 29*, (Mutis, 1985). **Cundinamarca:** La Calera, Mundo Nuevo, 2800-2900 m, 20 VIII 2006, *Farfán s.n.*, digital photos, AMO! **Boyacá:** Ventaquemada, km 106 de carretera Bogotá-Tunja, 2920 m, XII 1972, *Ortiz Valdivieso 599*, slide and illustration, AMO! **Nariño:** Bosques altoandinos del Alto Río Guamuez, 2700 m, Pardo s.n., digital photos, AMO! (photo voucher) **ECUADOR:** Without data, as *Epidendrum epicattleya*, Ecuagenera, digital photo. **Chimborazo:** Guamote-Macas, 2800 m, VIII 2004, *Sánchez s.n.*, digital photos, AMO! **Napo:** km 73 Quito-Baeza, 6 VI 1983, 7000-10000 ft, *Thurston 3005*, slide, AMO! **PERU:** **Amazonas:** Leimebamba, 1 VI 2010, *Trujillo 435*, digital photo, AMO! **Cusco:** Santuario Histórico de Machu Picchu, El Palomar, *Collantes s.n.*, digital photos, AMO! Lares, Manto, *Calatayud s.n.*, digital photos and illustration, AMO! (illustration voucher). Machu Picchu, WinayWayna, 7 III 1999, *Nauray 405*, illustration published in Icon. Orchid. Peruv. pl. 654, 2001. Machu Picchu, Vargas s.n., photo published (Christenson, 2003). **Huancavelica:** Huacholpa, *Collantes s.n.*, digital images, AMO! **VENEZUELA:** Photos published (Romero, 1998) as *E. scutella* pg. 82-83, and as *E. praetervisum* Rchb.f. pg. 77.

EPIDENDRUM TRIDENS Poepp. & Endl.

Plate 1565

OTHER SPECIMENS: **VENEZUELA:** **Amazonas:** Sierra Parima, Simarawochi, Río Matacuni, 795-830 m, 18 IV 1973, *Steyermark 107081*, VEN! Cerro Duida, al N de La Esmeralda, ca. 1200 m, 1 II 1975, *Tillet 752-300*, VEN! **Bolívar:** Auyantepuí IX 1937, *Cardona 246*, VEN! Auyantepuí, 1200 m, 17 VIII 1968, *Foldats 7167*, VEN! Auyantepuí, 2200 m, 10 IX 1958, *Pannier 1820*, AMES! VEN! NE of Luepa, 800-1200 m, 6 III 1962, *Steyermark 91*, VEN! Gran Sabana, cabeceras del Río Apogua, 1350-1400 m, 21 XII 1970, *Steyermark 104189*, VEN! Sierra Pakaraima: cabeceras del Río Paragua (Aguapira), 1400 m, 4 V 1973, *Steyermark 107309*, VEN! **ECUADOR:** **Azuay:** Hort. Cuenca, Ecuagenera, *Hágsater 12291*, AMO! **Loja:** plants cultivated in the Predesur Collection at Vilcabamba, 25 VII 1985, *Dodson 16083*, MO! MO! Loja to Zamora, km 31.9, pasando hidroeléctrica San Francisco, 5380 ft, 11 IX 1999, *Hágsater 12337*, AMO! (illustration voucher) MO! QCA! Zalapa Alto, IV 1983, *Vivar 1776*, LOJA! **Morona-Santiago:** Misión Bomboiza, ca. 700-800 m, 29 IX 1967, *Sparre 19182*, S! Morona Cordillera del Cutucú, Asociación Shuar Sevilla, Cerro Nashipe, 1453 m, 18 V 2002, *Suin 1952*, MO! QCNE! **Napo:** Near Baeza, 1900 m, 23 II 1982, *Luer 7008*, SEL! **Pastaza:** Puyo, 1000 m, IV 1983, *Hirtz 949*, SEL! Veracruz (Indillama), 24 VI 1968, *Lugo 44*, AMES! GB! Hacienda San Antonio del Baron von Humboldt, km 2 al NE de Mera, 1300 m, 27 II 1985, *Palacios 105*, QCNE! **Tungurahua:** Near río Topo on road from Baños to Puyo, 1100 m, 6 III 1963, *Dodson 2350*, SEL! Volcán Tungurahua, 2300 m 17 XII 1880 *Lehmann 291*, W-R! **Zamora-Chinchipe:** Loja to Zamora, 1950 m, *Dalessandro 451*, MO! Loja to Zamora km 20, 2200 m, 26 VII 1985, *Dodson 16104*, RPSC! Yangana to Valladolid, cerca de Valladolid, 6000 ft, 10 IX 1999, *Hágsater 12321*, AMO! F! QCA! Cordillera del Cóndor, Los Encuentros, Machinaza, 1500 m, *Hirtz 3737*, MO! Road from Chuchumbeza to Tundeimi in the Cordillera de Cóndor, 1450-1650 m, 21 V 1988, *Hirtz 3841*, RPSC! Loja-Zamora km 37, 1750 m, 18 IV 1973, *Holm-Nielsen 3770*, AAU! Loja-Zamora, km 39, 1600-1650 m, 21 IV 1973, *Holm-Nielsen 4033*, AAU! AMES! 21.5 km W of Zamora, 1620 m, 22 VII 1971, *MacBryde 638*, AMES! QCA! **PERU:** Without locality, *Bennett 57*, MOL! *Ibid. Bennett 3669*, MOL! *Ibid. Ruíz & Pavón s.n.* MA! **Amazonas:** Bongará near Pedro Ruiz, 2200 m, VIII 1979, *Königer 24/1*, SEL! Bongará, Dist., Yamborasbamba, viaje al puente Vilcaniza, 1840-2020 m, 9 VII 1999, *Sánchez-Vega 10028*, AMO! F! **Ayacucho:** Aina, between Huanta and Río Apurímac, 750-1000 m, 7 V 1929, *Killip 23169*, US! **Cajamarca:** Chota, Cedropata, 2000 m, 20 VII 1993, *Sánchez 819* F! San Ignacio Huarango, Nuevo Mundo, 1140 m, 11 III 2000, *Calatayud 425*, CUZ! San José de la Alianza, Rinconada, 2200 m 18 III 2009, *Vásquez 242*, MOL! **Cusco:** Paucartambo, Mirador, Unión-Cosñipata, 1750 m, *Moscoso 760*, CUZ! Paucartambo, San Pedro-Cosñipata, 1480 m, *Moscoso 1113*, CUZ! Paucartambo, San Pedro-Cosñipata, 1480 m, *Moscoso 1112*, CUZ! Quispicanchis, Río Arazá, between Pan de Azúcar and Quince mil Airport. 292 km from Cusco, 643 m, 10 VIII 1991, *Núñez 14065*, MO! Marcapata, Murayaca, Quispicanchis, 1685 m 6 XI 2006, *Villafuerte 620*, CUZ! **Huánuco:** Leoncio Prado, La Alcantarilla, Tingo María, 650 m, 6 VII 1984, *Fernández 385*, USM! Carpish entre Huánuco y Tingo María, 2800-2900 m, 6 II 1950, *Ferreira 6713*, AMES! UC! USM Carpish pass, Tingo María side, 2000 m, 18 VII 1964, *Hutchison 5977*, UC! US! Carpish, km 453, 2500 m, 7 V 1976, *Plowman 6070*, AMES! San Pedro de Carpish, Mirador, *Ridoutt s.n.*, USM! Chinchao-Carpish, 2400 m, *Woytkowski 5024*, MO! **Junín:** Chanchamayo, La Merced, Quebrada del Carmen, 850 m, 6 V 1984, *Fernández 305*, USM! Chanchamayo, El Refugio, San Ramón, 800 m, 16 V 1984, *Fernández 318*, USM! Tarma, Agua Dulce, 1900 m, 16 III 1948, *Woytkowski 35478*, MO! **Loreto:** Coronel Portillo, Divisoria, entre Tingo María y Pucallpa, 1500-1600 m, 28 II 1947, *Ferreira 1677*, USM! **Pasco:** Chontabamba, La Suiza Nueva, 2190-2200 m, 7 I 2005, *Arias 70*, MO! Oxapampa, Sector San Alberto, P.N. Yanachaga-Chemillén, 2100 m, 18 III 2005, *Ortiz 507*, MO! Oxapampa, Huancabamba. Localidad Grapanazu, Sector San Daniel, P.N. Yanachaga-Chemillén, 2236 m, 10 VII 2004, *Perea 1476*, MO! Oxapampa, Chontabamba valley, 23 km W of Oxapampa 1900 m, 26 I 1984, *Smith 5881*, MO! USM! Huancabamba, P.N. Yanachaga-Chemillén, Sector Quebrada Yanachaga. 1700-2265 m, 17 II 2004, *Vásquez 29534*, USM! **Puno:** Alrededores Sandía, 2250 m, 5 II 1964, *Vargas 15149*, CUZ! **San Martín:** Cordillera Azul, Coronel Portillo, Tingo María on highway to Pucallpa, near Divisoria, ca. 1600 m, 17 XI 1949, *Allard 21786*, AMES! US! **BOLIVIA:** Cochabamba: Chapare: Km 90 on the road to Villa Tunari, 1880 m, 12 V 1979, *Vásquez 127*, (Herb. Vasq., xerox of illustration at AMO!)

OTHER RECORDS: **PERU:** Without locality, *Ruíz & Pavón 1282*, JBM! (illustration by Isidoro Pulgar) **San Martín:** Moyobamba above Naranjo at km 468 along Olmos-Moyobamba road, 1020 m, 9 XII 1990, *Bennett 4800* USM, illustration, Icon. Orchid. Peruv. t. 51, 1993. Bosque de Protección Alto Mayo, I 2015, *Collantes s.n.*, digital images AMO! (photo voucher).

OTHER SPECIMENS: COLOMBIA: Vaupés: Río Kuduyarí, Savannah Yapobodá, 4 IX 1956, *Barclay 546*, AMES! Río Kubiyú, 350-400 m, 30 VI 1958, *García-Barriga 16046*, AMES! COL! *Ibid. 16062*, COL! **VENEZUELA:** Carapas, 1680 m, 1 I 1925, *Tate 245*, US! **Bolívar:** Cumbre de Auyantepuy, 180 m, 5 II 1988, *Delascio 13608*, MO! Near El Puají, Río Cabass and Salto, 800-900 m, 3 XI 1985, *Liesner 19419*, MO! Piar, Chimantá Massif, Torono-tepuí, north facing slopes of summit above valley of Caño Mojado, 2030-2150 m, 21 II 1955, *Steyermark 1026*, AMES! NY! **Amazonas:** Atures, caño Piedra, 115 km al SE de Puerto Ayacucho, 1500 m, 1 IX 1989, *Fernández 6000*, MO x2! Cerro Sipapo (Paráque), Near Savanna Camp, 1500 m, 6 XII 1948, *Maguire 27551*, AMES! Atures, Areniscas del Cerro Cuao, caño Cabeza de Manteco, 73 km al SE de Puerto Ayacucho, 1580 m, 1 IX 1989, *Sanoja 3106*, MO! Río Negro, Cerro Aratitiope, aprox. 70 km SSW de Ocamo, 990-1670 m, 24 II 1984, *Steyermark 130061*, MO! U! **BRAZIL: Amazonas:** Plateau of N massif of Serra Aracá, southern extreme of Northern mountains of Serra Aracá, 1200 m, 16 II 1984, *Prance 29101*, MG! Margens do Rio da Serra Aracá, 30 I 1978, *Rosa 2320*, MC! **GUYANA:** Kanuku Mts., Nappi Mt., 960 m, 10 XI 1987, *Jansen-Jacobs 844*, CAY! U! Pakaraima Mts., Mt. Aymatoi (sandstone), 1150 m, 17 X 1981, *Maas 5814*, MO! Ux2! **SURINAM:** Tafelberg, 5 VI 1943, *Geyskes 993*, U! Talouakem-Inselberg-Monts Tumuc-Humac, 700 m, 31 VII 1993, *Granville 11912*, AMO! (illustration voucher). Lucie River, 2 km N of Lucie River, 2 km W of Oost River, 225 m, 6 IX 1963, *Irwin 55417*, U! Sipaliwini, East creek branch of Lisa Creek, 26 VI 1998, *Lohmann 161*, MO! Tafelberg, Savanna No. 1, vicinity Camp. No.1, 3 VIII 1944, *Maguire 24217*, AMES! F! K-L! U! US! Base south escarpment, Arrowhead Basin, 625 m, 26 VIII 1944, *Maguire 24434*, AMES! F! K-L! NY! U! Lucie River, 2 km N of Lucie Camp, 2 km W of Oost River, 225 m, 8 VII 1963, *Maguire 54003*, U! Upper Litanie R., top of Knopoiamoi, 12 VIII 1937, *Rombouts 812*, U! Along border near source of Litanie River, 8 XI 1937, *Rombouts 889*, AMES! HB! U! Ca. 2 km from Upper Lucie River, along line to Wilhelmina Mts. 9 VIII 1963, *Schulz 10371*, K-L! U! **FRENCH GUIANA:** Tumuc-Humac, Frontière Brésil-Surinam, le sommet du Paloulouinéenpeu, ca. 707 m, 2 VIII 1972, *Granville 1078*, CAY x2! P! U! Tumuc-Humac, sommet de la borne frontière Guyane-Brésil, N l. Savanne sur rocher au sommet, 590 m, 26 VIII 1972, *Granville 1401*, CAY x2! Layon Point de Trijonction-Mitaraka, km 7.5; Mission pluridisciplinaire Muséum/Orstom dans la région des Tumuc-Humac (frontière Brésil-Guyane Française-Surinam), 500 m, 6 VIII 1972, *Sastré 1582*, CAY! Petit Mitaraka, 2 km N Mitaraka N, versant E; Mission pluridisciplinaire Muséum/Orstom dans la région des Tumuc-Humac (frontière Brésil-Guyane Française-Surinam), 500 m, 9 VIII 1972, *Sastré 1622*, CAY!

OTHER RECORDS: VENEZUELA: Without locality, drawing by Dunsterville published in *Lindleyana* 11(4): 248 "B", K-L x2! **Bolívar:** Gran Sabana, Luepa, 1361 m, *Hágsater 14494*, (purple colored plants) photo, AMO! **SURINAME:** Talouakem-Inselberg, Monts Tumuc-Humac, *Granville 11912*, flowers in spirit, AMO! color photo, AMO! (photo voucher)

APPENDIX 2: Corrections to earlier volumes of *Icones Orchidacearum*

Correction to plate *EPIDENDRUM CARPOPHORUM*, *Icon. Orchid.* 13: t. 1313. 2010.

The type is incorrectly cited as from BRAZIL: [Santa Catarina.] à la Serra do Mar, près Rodeio... The locality is found in the state of Rio de Janeiro, and thus:

Type: BRAZIL: [Rio de Janeiro:] à la Serra do Mar, près Rodeio [presently the municipality of Engenheiro Paulo de Frontin]; *Barbosa Rodrigues s.n.* Holotype: AMES! (original water color). Plate published by Sprunger et al, (Eds.) in *Icon. Orchid. Brésil* 4: t. 32. 1996. Watercolor copy at K-L!

Correction to plate *EPIDENDRUM DENDROMACROOPHORUM*, *Icones Orchid* 14: t. 1422. 2013.

In Recognition: *Epidendrum dendroaggregatum* is an unpublished name, substitute for *Epidendrum aggregatum* Lindl.

Correction to plate *EPIDENDRUM MINUS*, *Icon. Orchid.* 13: t. 1358, 2010. The heading and first two paragraphs should be substituted for:

EPIDENDRUM BAHIENSE Rchb.f., *Hamb. Gartenzeit* 15: 53. 1859.

Type: BRAZIL: Bahia. *Schiller*. W-R 42385! *Nomen* in Schiller, *Cat. Orch. Samml.* 29. 1857. (Locality is doubtful, as Consul Schiller sent plants from many places, and this one was cultivated by Stange before being sent to Reichenbach).

Synonyms: *Epidendrum nocturnum* Jacq. var. *minus* Cogn., *Bull. Soc. Roy. Bot. Belg.* 43: 323. 1909. Type: PERU: Loreto; Cerro de Escaler, 1300 m, March 1903, *E. Ule 6689*. Holotype: BR! Isotype: HBG, photo at NY! Xerox at AMO! *Epidendrum minus* (Cogn.) Hágsater, in Jørgensen, M., et al., *Catalogue of the Vascular Plants of Ecuador*, *Monogr. Syst. Bot. Missouri Bot. Gard.* 75: 956. 1999.

New name:

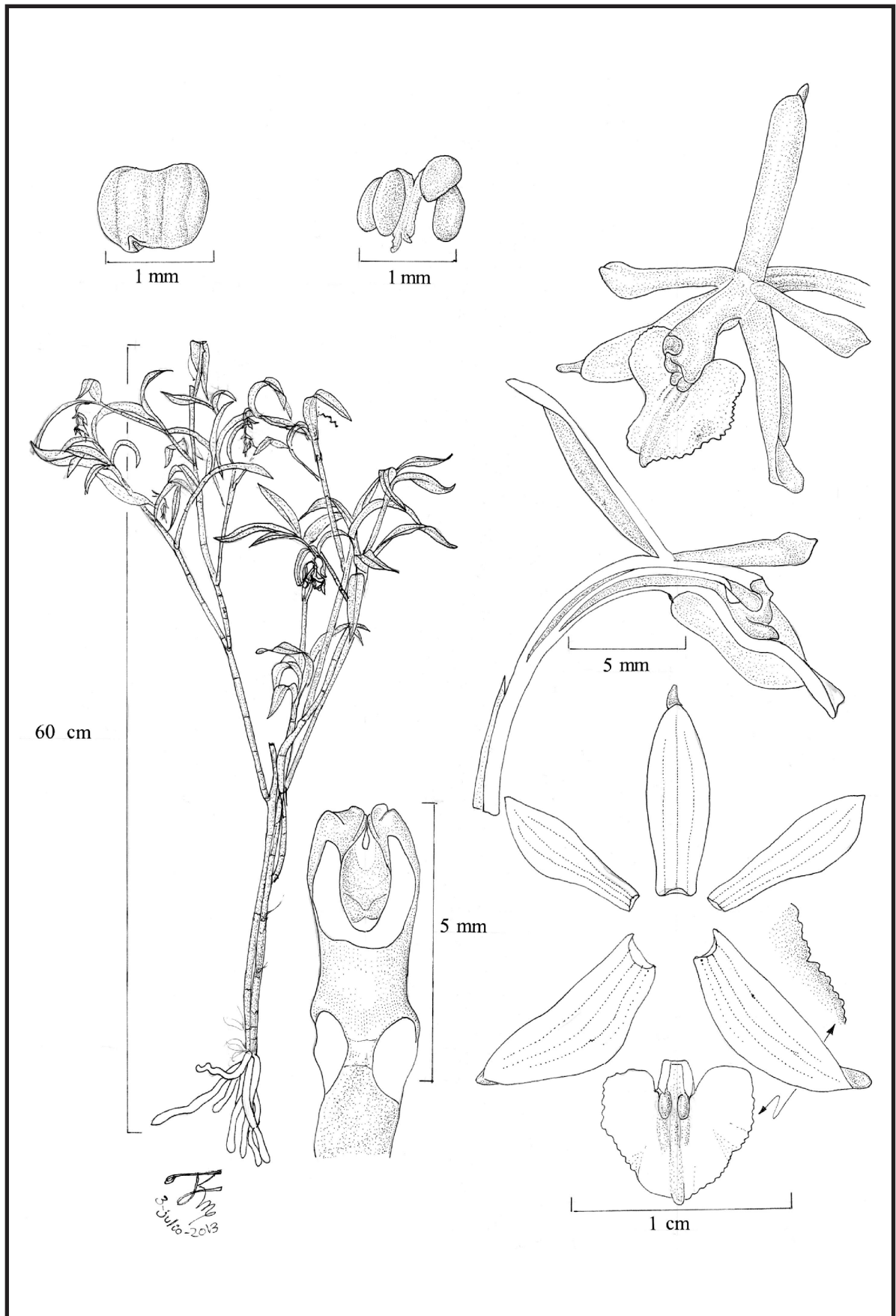
The name *EPIDENDRUM TRIPETALUM* Hágsater & E.Santiago, was proposed in *Icon. Orchid.* 9: t. 997. 2007. Unfortunately there is a validly published earlier homonym and thus requires a new name for the species based on Heller's collection, thus:

EPIDENDRUM TRIPETALOIDES Hágsater & E.Santiago, *nom. nov.* Replaced synonym: *Epidendrum tripetalum* Hágsater & E.Santiago, *nom. illeg.*, *Icon. Orchid.* 9: t. 997. 2007. Type: NICARAGUA: Zelaya: Mt. Munsin [Matagalpa: Cerro Musún], 1300 m, 5 II 1971, *Alfonse H. Heller 11687*. Holotype: SEL 9556! (mounted with an illustration by Heller) Isotype: SEL 3431! Illustration and personal notes by Heller, SEL!, xerox at AMO! (Illustration based on Heller's illustration.). Non *Epidendrum tripetalum* Sessé & Mociño, *Fl. Mexic.* 205-206. 1894.

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) is published on 26 May 2015



EPIDENDRUM ALBOPROPINQUUM Hágsater & E.Santiago

Plate 1501

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

Type: MEXICO: Puebla: On road Tehuacán-Orizaba, at km 17 & 20, flowers nearly ivory white, fragrant of hyacinths, ca. 1700 m, 1 VI 1936, **Karl Erik Magnus Östlund 5861**. Holotype: AMO! (Illustration voucher). Isotypes: AMES! CAS! MEXU! US!

Similar to *Epidendrum propinquum* A.Rich. & Gal. but the flowers white, column shorter, petals spatulate-oblongate and oblique, and nectary penetrating about 1/3 of the ovary and forming a small vesicle behind the perianth. The flowers are strongly fragrant of hyacinth.

Epiphytic, monopodial, erect, branching herb 40-50 cm tall, forming a shrub. **Roots** 4.0-5.5 mm in diameter, basal from the primary stem, very fleshy, nearly as thick as the stem. **Stems** primary stem 25-30 x 0.3-0.5 cm, erect, ascending; branches 3-17 x 0.2-0.35 cm, produced generally from the apical and sub-apical internodes, just below the leaves, terete, thin, straight, unequal in size, the distal ones gradually smaller; all with non-foliar sheaths 5-60 mm long, tubular, papiraceous, fibrous, disappearing with age. **Leaves** 2-4, aggregate towards the apex of the stems, articulate, alternate, similar in size and shape; sheaths 3-25 mm long, tubular, minutely striated; blade 4.5-10.0 x 0.6-1.3 cm, lanceolate, acute, thin, grass-like, dorsally carinate. **Spathe** lacking. **Inflorescence** 3.0-3.5 cm long, apical, racemose, distichous, nutant, laxly few-flowered, short, flowering only once; peduncle 1.1-1.7 cm long, filiform, short, without bracts; rachis 1.3-2.0 cm long, filiform, fracti-flex. **Floral bracts** 3-5 mm long, much shorter than the ovary, triangular-filiform, long acuminate, embracing. **Ovary** 7-13 mm long, terete, thin, slightly inflated behind the perianth, unornamented. **Flowers** 5-8, simultaneous, resupinate, ivory-white, immaculate, the apex of the column turning yellowish with age, anther white or sometimes dirty lilac along a central vertical band; fragrance strong, sweet, pleasant, of *Hyacinthus sp.* **Sepals** 9.5-12 x 2.5-3.3 mm, spreading to slightly reflexed, free, narrowly elliptic, obtuse, dorsally keeled, the keel extending beyond the blade of the sepal, 3-veined, margins entire, revolute; the lateral sepals slightly oblique. **Petals** 8.4-11.0 x 1.5-2.5 mm, free, spreading to reflexed, spatulate-oblongate, obtuse, 3-veined, oblique, and obliquely united to the base of the column, margin entire, revolute. **Lip** 6-7 x 6-7 mm, united to the column, entire, slightly convex, cordiform, base cordate, apex rounded, mucronate, margins erose; bicallose, the calli small, subglobose, parallel, disc provided with tree thin, parallel ribs, the lateral pair short, just in front of the calli, disappearing at the middle of the blade, the central rib elongate, reaching the apex of the lip. **Column** 5 mm long, straight, thin, apically dilated. **Clinandrium-hood** reduced, margin entire. **Anther** sub-reniform, truncate at the base and apex, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, somewhat longer than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/3 of the stigmatic cavity. **Nectary** penetrating about 1/3 of the ovary, slightly inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: MEXICO: Puebla: Zacapoaxtla; Apulco, 1600 m, 13 VI 2003, *Mora 505*, AMO! **Oaxaca:** Santa Ana Cuauhtemoc, El Aguacate, 1373 m, *Juárez 1758*, IBUG! Huajuapán de León, *Israel Oliver sub Hágsater 14542*, AMO! (Illustration, AMO!) **Veracruz:** Sta. Rita, Sierra de Chiconquiaco, 1310 m, 16 VII 1967, *Nevling 16*, AMES! MEXU! 55 km NE of junction of Hwy 140 and road to Misantla, 22 VII 1978, *Poole 1552*, MEXU! Chiconquiaco, Landeroy Cos, 1800 m, 14 VII 1973, *Ventura 8632*, AMO! XAL. Acatlán, 1700 m, 2 VI 1975, *Ventura 11523*, AMO! CHAPA, ENCB! MEXU! **EL SALVADOR: Santa Ana:** Cerro Montecristo, Los Planos, 2000 m, 25 VIII 1977, *Hamer 592*, AMO! (illustration, AMO!).

OTHER RECORDS: MEXICO: Sin localidad precisa, posiblemente de Puebla o Veracruz, cult. *Guzmán Roldan s.n.*, digital photo, AMO! **MEXICO: Puebla:** Cuetzalan, ca. 1600 m, Jardín Botánico Xoxotic de Cuetzalan, digital photo, AMO! Cuetzalan, Xocoyolo, 1490 m, 10 VI 2012, *Álvarez s.n.*, hort. Jardín Botánico Xoxotic, photos, AMO! (photo voucher). Zona poblana del Pico de Orizaba, Chichiquila, 2010, *J.Sánchez s.n.*, digital photo AMO!

DISTRIBUTION AND ECOLOGY: Ranging from central Mexico, in the Sierra Madre Oriental, at lower altitudes around the Pico de Orizaba, in the state of Puebla and neighboring Veracruz, in the Sierra de Chiconquiaco, and nearby in Oaxaca, and Cerro Montecristo at the border between Guatemala, El Salvador and Honduras. Usually in pine-oak or liquidambar cloud forests at 1300-1800 [2000] m altitude. Flowering from April to August. The species appears to be sympatric with *E. propinquum*.

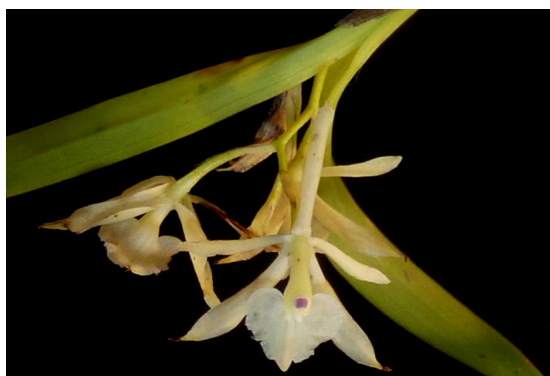
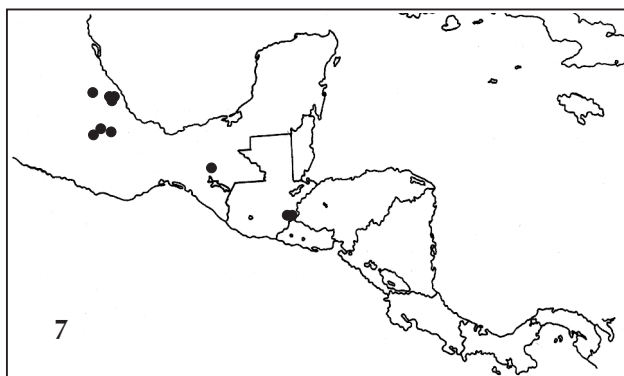
RECOGNITION: *Epidendrum albopropinquum* belongs to the Magnoliae Group which is characterized by the sympodial growth mode, sometimes with branching stems, membranaceous to sub-coriaceous leaves, delicate, relatively small flowers, the lip bicallose, with few to many ribs on the disc of the lip, and the predominantly Mexican Propinquum Subgroup which is characterized by the bush-like habit with thin stems, membranaceous leaves, racemose, few flowered compact, inflorescence, and the mostly yellow or pale green flowers. The species is recognized by the thin, grass-like leaves, ivory-white, immaculate flowers, strongly, pleasantly fragrant of *Hyacinthus sp.*, the column short, straight, (ca 5 mm long), the nectary penetrating 1/3 of the ovary, calli sub-globose. It is very similar to *Epidendrum propinquum*, which has an identical vegetative habit, but its flowers are pale green, often with purple dots forming a ring around the disc of the lip or even spotting the whole flower, fragrance very weak, the column longer (ca. 7-9 mm long), and the nectary barely penetrating the ovary; calli laterally compressed. It has been confused in with *Epidendrum ledifolium* A. Rich. & Gal., which is now known under the earlier synonym, *Epidendrum lignosum* Lex., and has thick leathery leaves, narrower and apically rounded, the flowers are greenish yellow to apple-green, concolor or marked with reddish, the apex of the column and anther reddish or purple; usually fragrant, of "medicinal ointment" during day-time. *Epidendrum skutchii* Ames, F.T.Hubb. & C.Schweinf. often has taller plants, to 120 cm, with linear-lanceolate, acute, grass-like leaves, and apical inflorescence 4.5-6 cm long, with radiating, fleshy-thickened veins on the disc of the lip. *Epidendrum eduardo-perezii* Hágsater & E.Santiago has shorter plants with green flowers, sepals and petals tinged purple, the lip red-purple with multiple evident greenish ribs, column 8 mm long, green at base and purple at the apex, calli laminar and divergent.

NOTE: It is amazing to find a widespread new species in Mexico, a well botanized country, and which has been confused with another, and not detected earlier, as it is basically distinguished by the color and strong, pleasant fragrance. The species had been detected by Fritz Hamer in El Salvador, and correspondence with the first author came and went, without identifying how it was different from *E. propinquum* (see Cervantes et al. 2002); Hamer (1981) included it as *E. ledifolium* (his illustration shows a strongly arched column). Ames & Correll (1952) indicate that *Epidendrum ledifolium* has "yellow-green or ivory white flowers, fragrant of hyacinth"; the ivory-white, fragrant flowers refer to the new species, and is taken from Östlund 5861, as the material cited (Steyermark 31688, Fl) is sterile, and the description corresponds to *E. propinquum*.

CONSERVATION STATUS: DD. Data deficient. Widespread and apparently frequent in the wet forests of the State of Puebla and neighboring Veracruz.

ETYMOLOGY: From the Latin *album*, white, and *propinquus*, close by, neighboring, in reference to the similarity of this species to *Epidendrum propinquum*, but with white flowers.

REFERENCES: Ames, O., and D. S. Correll, 1952, *Epidendrum ledifolium* in Orchids of Guatemala, *Fieldiana: Bot.* 26(1): 340. Cervantes, L., E.Hágsater & M.Soto, 2002, *Epidendrum propinquum* in Hágsater, E. & M. Soto (eds.), Orchids of Mexico, Part 2, *Icon. Orchid.* 5: t. 579. Hágsater, E., 1980, *Epidendrum Mexicana Pollardiana 7*; El Complejo *Epidendrum propinquum*, *Orquídea (Mexico City)* 7(4): 313-333. Hágsater, E., & Santiago, E., 2008, *Epidendrum eduardo-perezii* in E. Hágsater & L. Sánchez, (eds.), The Genus *Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1126. Hamer, F., 1981, *Epidendrum ledifolium*, in *Las Orquídeas de El Salvador*, 3, suppl.: 100-101, 261. Santiago, E., & E. Hágsater, 2008, *Epidendrum lignosum* in E. Hágsater & L. Sánchez, (eds.), The Genus *Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1138.



Authors: E. Hágsater & E. Santiago

Illustrator: R. Jiménez M.

Photo: R. Álvarez

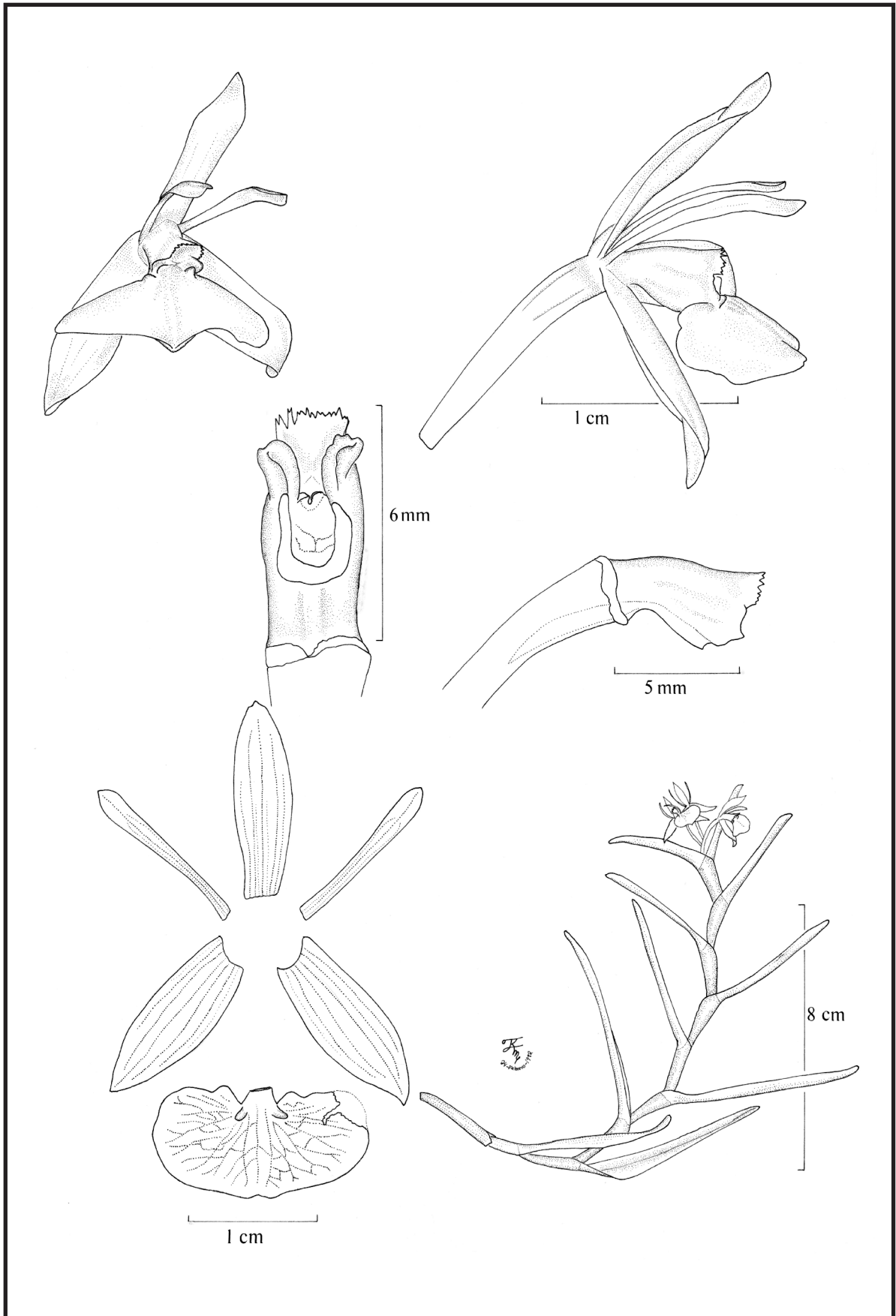
Editors: E. Hágsater & L. Sánchez S.

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México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1501



EPIDENDRUM ANGUSTATUM (T.Hashim.) Dodson

Plate 1502

EPIDENDRUM ANGUSTATUM (T.Hashim.) Dodson, Cat. Flow. Pl. Gymn. Peru; Monogr. Syst. Bot. Missouri Bot. Gard., 45: 1257. 1993.

Basionym: *Neolehmannia difformis* (Jacq.) Pabst var. *angustata* T. Hashim., Ann. Tzukuba Bot. Gard., 4: 2. 1986. Type: PERU: Pasco: Oxopampa; Quebrada Honda near Sogormo, along the road in "selva alta" zone, alt. 1100 m, 27 March 1985. **M. Nakata 586, cult. in TBG (acc. no. 54725)**. Holotype: TNS (not seen).

Synonyms: *Neolehmannia angustata* (T.Hashim.) T.Hashim., Bull. Natl. Sci. Mus. B 16 (1): 25. 1990.

Epidendrum zamorense Hágsater & Dodson, Icon. Orchid. 2: t. 199. 1993. Type: ECUADOR: Napo: below Rio Hollín on road Cotundo to Coca, 800 m, 15 January 1988, **David Neill sub Calaway H. Dodson 17389**. Holotype: MO! (Illustration voucher).

Epiphytic, sympodial, caespitose **herb**, [5]8-21 cm tall including the inflorescence. **Stems** 4-18 x 0.1-0.3 cm, simple, cane-like, terete, slightly flexuous. **Leaves** [3]9-11, distributed throughout the stems, ascendant; foliar sheath 1.5-1.7 cm long, tubular, unornamented; blade 2-8 x 0.4-1.0 cm, narrowly oblanceolate, apex rounded, smooth, sub-coriaceous, canaliculated, light green. **Spathes** lacking. **Inflorescence** apical from mature stem, sessile, sub-corymbose, flowering only once. **Floral bracts** 1.2-1.5 x 1.0-1.3 mm, much shorter than the ovary, triangular, acute, amplexicaul. **Flowers** 3-4, simultaneous, resupinate, pale green; fragrant. **Ovary** 15-25 x 4-5 mm, terete, not inflated, unornamented. **Sepals** 10-14.5 x 4.5-5.4 mm, spreading, free, glabrous, sub-coriaceous, narrowly elliptic, acute, 5-veined, margin entire, slightly revolute. **Petals** 10-14.5 x 1.5-1.6 mm, partly spreading, free, linear-oblanceolate, obtuse, membranaceous, 3-veined, margin entire, spreading. **Lip** 6.0-7.4 x 10.0-16.7 mm, united to the column, entire, transversely reniform, base cordate, apex slightly retuse to acute, margin entire, sub-coriaceous; bicallose, calli small, conical, somewhat divergent. **Column** 5.0-7.4 x 1.0-1.2 mm, thick, straight to slightly arched. **Clinandrium-hood** prominent, entire, margin dentate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose; viscidium viscous, translucent. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** 1/3 the length of the stigmatic cavity. **Nectary** deep, penetrating about 1/2 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Caquetá: Florencia, El Paraíso, 800 m, 1 VI 1971, *Valdivieso 461*, HPUJ! (Illustration, HPUJ!) **ECUADOR: Morona-Santiago:** Zamora-Cenepa, river Zamora, 1100 m, 26 VII 1960, *Dodson 144*, MO! SEL! Road from Limón to Cuenca, near Gualaquiza, 1000 m, 28 III 1985, *Hirtz 2404*, MO! **PERU: Cusco:** Quispicanchis: Quincemil Hills around Río Aranza between Pan de Azúcar and Quincemil airport, 292 km from Cusco, 643 m, 10 VIII 1991, *Núñez 14089*, MO! **USM! Puno:** Carabaya, Valle de San Gabán, 1100 m, 07 II 1967, *Vargas 18854*, AMES! **CUZ!**

OTHER RECORDS: ECUADOR: Zamora-Chinchipe: El Pangui, hort. Ecuagenera, ca. 1000 m, 27 I 2004, *Lester Lapo, Ecuagenera sub Hágsater 14053* (Digital photo AMO! Flowers in spirit AMO!) (Photo voucher).

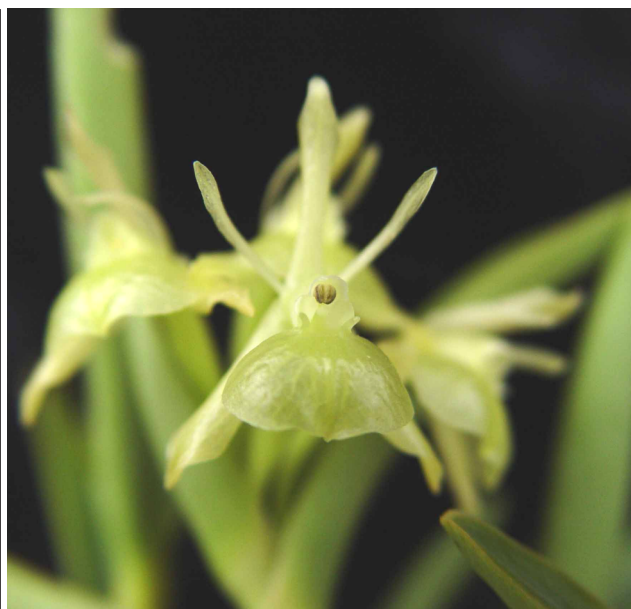
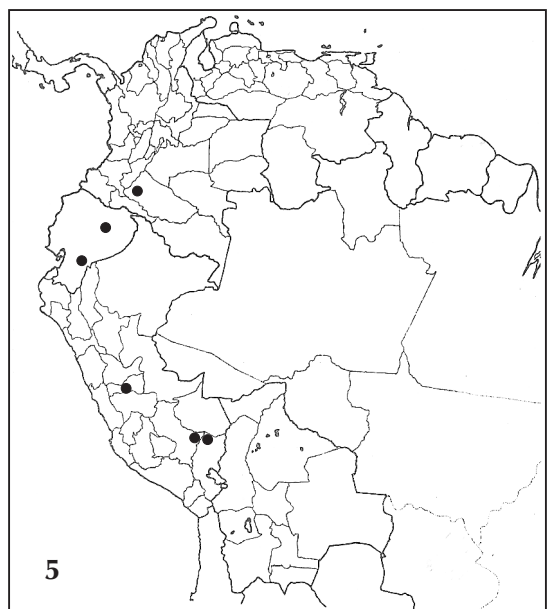
DISTRIBUTION AND ECOLOGY: Known from southern Colombia, Ecuador to southern Peru, along the Amazon slope of the Cordillera Oriental of the Andes. Epiphyte at 600-1100 m altitude. Flowering from January to August.

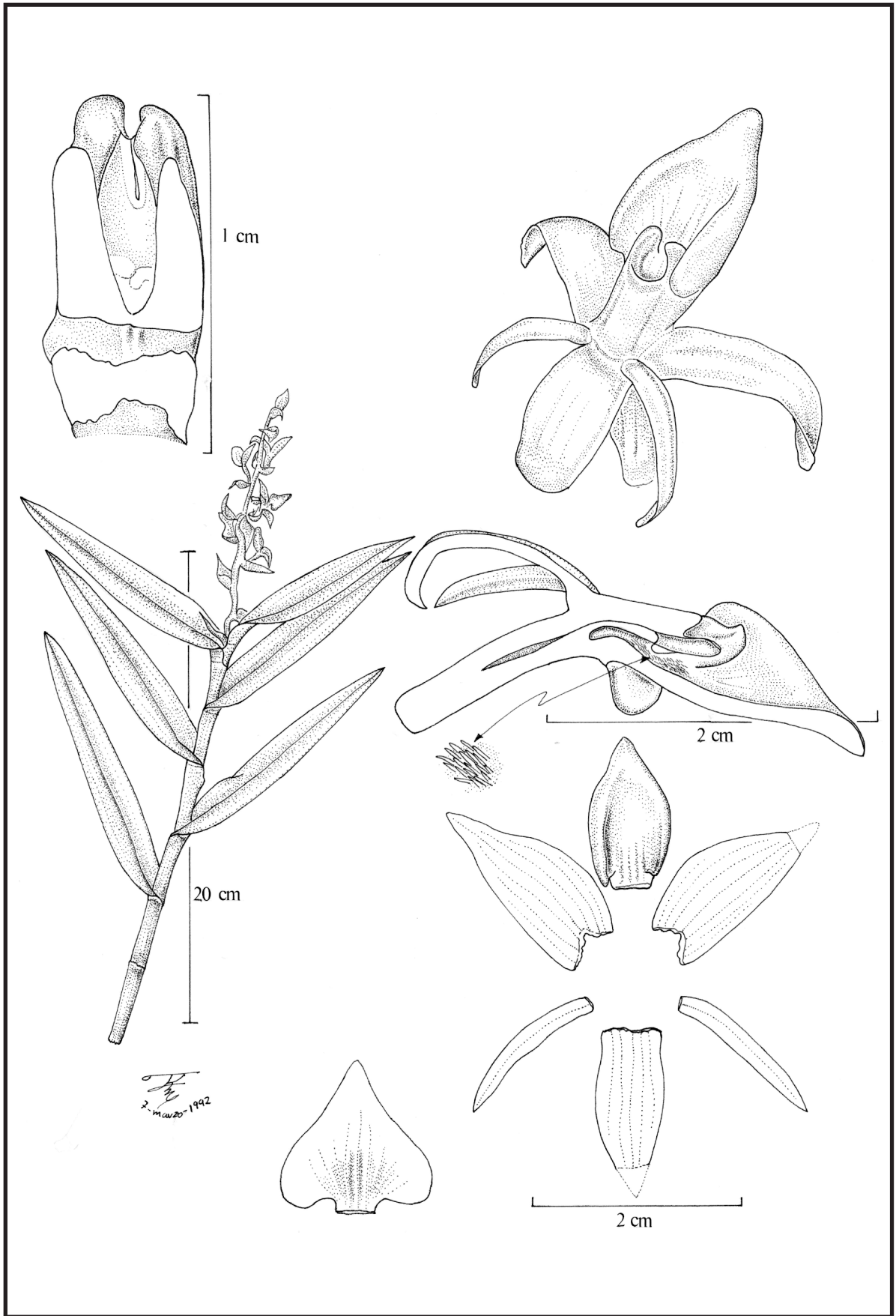
RECOGNITION: *Epidendrum angustatum* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy light green to glaucous leaves, apical inflorescence without the spathaceous bract, sessile, rarely with a short peduncle, one-flowered to corymbose, fleshy, and flowers green to yellowish-green, rarely white. The species is recognized by the terete stems, leaves ascendant, narrowly oblanceolate, 0.4-1.0 wide, canaliculate, sub-coriaceous, the inflorescence with 3-4, pale green flowers, sepals and petals 10-14 mm long, lip reniform, retuse to acute, margin entire, calli conical, somewhat divergent, column straight to slightly arched with the clinandrium-hood dentate. Other species which have narrow, oblong leaves include *Epidendrum chanchamayodiforme* Hágsater & L.Sánchez, endemic to Peru, has short plants, 6-8 cm tall, leaves 0.5-0.7 mm wide, flat, ancipitose stems, a single flowered inflorescence, lip 3-lobed, calli sub-globose, disc with 3 ribs that reach the middle of the lip. *Epidendrum linearidiforme* Hágsater & L.Sánchez is known from Surinam and the French Guyana, plants are 7-9 cm tall, leaves 0.4-0.6 mm wide, flat, inflorescence is single flowered, lip 3-lobed, calli sub-globose. *Epidendrum schistostemum* Hágsater, S.Laube & L.Sánchez is endemic to Panama, plants are 7-9 cm tall, leaves 0.3-0.5 wide, inflorescence single flowered, flowers small, sepals 8.4-9.0 mm long, lip cordiform, calli small, sub-globose, column has prominent lateral wings, separated from the lip by deep basal sinuses.

CONSERVATION STATUS: DD. Data deficient. Widespread; rarely collected, and found at altitudes where collections are scarce.

ETYMOLOGY: From the Latin *angustus*, narrowed or narrow, in reference to the relatively narrow leaves of this species when compared to those of *Epidendrum difforme* Jacq.

REFERENCES: Hágsater, E. & L. Sánchez S., 1999, *Epidendrum chanchamayodiforme*, in E.Hágsater & L.Sánchez S. (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 322. Hágsater, E., & L. Sánchez S., 1999, *Epidendrum linearidiforme*, in E.Hágsater & L.Sánchez S. (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 346. Hágsater, E., Laube, S. & L. Sánchez S., 2008, *Epidendrum schistostemum*, in E.Hágsater & L.Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1177.





EPIDENDRUM BANGII Rolfe

EPIDENDRUM BANGII Rolfe, Bull. New York Bot. Gard. 4: 451. 1907.

Type: BOLIVIA: *Miguel Bang* 1963. Holotype: K! Isotypes: AMES x2! E! F 163799! F 77914! G x2! LE! M! MICH! NY x3! US 814285! (Illustration voucher) US 33006! W! Z!

Epiphytic or terrestrial, monopodial, branching herb, ca. 70 cm tall. **Roots** not seen. **Stems** branching when mature, cane-like, erect, the primary stem not seen, branches 15-18 x 0.3-0.9 cm. **Leaves** of the main stem not seen, 5-6 on each branch, distributed along the apical half, articulate, alternate, unequal in size; sheaths 10-40 x 4-10 mm, tubular, minutely striated, rugose; blade 5-14 x 1.3-2.4 cm, narrowly lanceolate, acute to acuminate, grass-like, the veins clearly marked on both sides, underside somewhat glaucous, upper-side deep green, margin entire, slightly revolute. **Spathes** lacking. **Inflorescence** 5-14 cm long, apical, racemose, erect, flowering only once, laxly few-flowered, apparently more or less distichous and the flowers second, all facing the same side; peduncle 5-10 mm long, sub-terete, thin, straight to slightly flexuous. **Floral bracts** 11-22 x 7-12 mm, prominent, longer than the ovary, ovate to ovate-lanceolate, acuminate, amplexicaul. **Flowers** 6-15, the majority open simultaneously, non-resupinate, fleshy, distributed in a helicoid along the rachis; purple-green to greenish brown to greenish yellow, lip and column basally reddish; fragrance none. **Ovary** 9-10 x 3 mm, terete, thin, striated longitudinally, not inflated. **Sepals** free, acuminate, margin entire, spreading; dorsal sepal 14-16 x 5-7 mm, spreading, oblong-lanceolate, 5-veined; lateral sepals 16-18 x 6-8 mm, partly spreading, narrowly ovate, oblique, 7-veined, dorsally with a low keel thickened at the apex. **Petals** 13-15 x 2 mm, spreading, linear, oblique, acuminate, 1-veined, dorsally with a low keel; margin entire, spreading. **Lip** 10-14.5 x 10-14.5 mm (when spread), united to the column, fleshy, entire, cordiform, apex obtuse, ecallose; cymbiform in natural position, embracing the apex of the column without covering it, margin entire, spreading. **Column** 8-10 mm long, thin, straight, apex with a pair of obliquely rounded wings, the apex turned upwards. **Clinandrium-hood** reduced, margin entire. **Anther** not seen. **Pollinia** 4, obovoid, laterally compressed. **Lateral lobes of the stigma** small, occupying 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: BOLIVIA: La Paz: Nor Yungas, Chuspipata, 27 VII 1957, *Cañiguera 811*, LPB! Chuspipata, Sendero Chojllapata, 2900 m, 3 III 2006, *Jiménez 3836*, LPB! Ibid. 3370 m, 20 VII 2005, *Miranda 806*, LPB! **PERU: Amazonas:** Chachapoyas, carretera Chachapoyas-Moyobamba, 2200 m, 6 XI 2001, *Fernández 17*, USM! **Cuzco:** La Convención, 7 VII 1968, ca. 2700 m, *Dudley 10851*, MO! Cururpampa-Callapa, P. N. del Manú, 1200-3000 m, IV 2001, *Nuñez 28108*, CUZ! **Huánuco:** Chinchao, Caserío San Pedro de Carpish, alrededor del tunel de Carpish, 3040 m, 11 II 2002, *Beltrán 5146*, USM! Ibid. 2770-2820 m, 1 V 2005, *Salinas 1001*, USM! **Pasco:** Dist. Oxapampa, P. N. Yanachaga-Chemillén, Sector San Daniel, 3260 m, 22 IV 2007, *Monteagudo 13743*, AMAZ*, AMO! HOXA, HUT, MO, MOL, USM. Ibid. Trail to summit of Cordillera Yanachaga via Río San Daniel, 2700-3000 m, 13 VII 1984, *Smith 7799*, MO! USM! Ibid. Sector Chacos, 2471 m, 24 I 2004, *Vásquez 28880*, MO! USM. Ibid. 2471 m, 24 I 2004, *Vásquez 28925*, MO! USM. Ibid. Sector Abra Yanachaga, 2900 m, 20 VIII 2004, *Vásquez 30455*, MO! Ibid. Sector Abra Esperanza, 2650 m, 28 II 2007, *Vásquez 31983*, AMAZ, AMO! HOXA, HUT, MO, MOL, USM. Ibid. 2650 m, 28 II 2007, *Vásquez 32024*, AMO! HOXA, MO, USM **ECUADOR: Loja:** Yangana to Valladolid, 8460 ft, 10 IX 1999, *Hågsater 12302*, AMO! **Morona-Santiago:** km 55, Cuenca-Limón, 2800 m, 29 XI 1984, *Dodson 15428*, MO! QCA!

OTHER RECORDS: BOLIVIA: without locality data, *I. Jiménez s.n.*, digital image, AMO! (photo voucher) **La Paz:** Parque Nacional Cotapata y alrededores, http://fm2.fieldmuseum.org/plantguides/guide_pdfs/361-12.pdf photo 51 as *E. macrostachyum*. **PERU: Cajamarca:** Jalca, Santa Cruz, Pulán, 2900 m, *Santa Cruz Cervera s.n.* digital image, AMO! **Pasco: Pasco:** P. N. Yanachaga-Chemillén, *Becerra s.n. (sp. 43 [27])*, digital photos AMO!

DISTRIBUTION AND ECOLOGY: Presently known from southern Ecuador (Loja) to western Bolivia, along the upper slopes of the Cordillera Oriental of the Andes, epiphytic and terrestrial at 2200-3370 m altitude. Flowering from November to July.

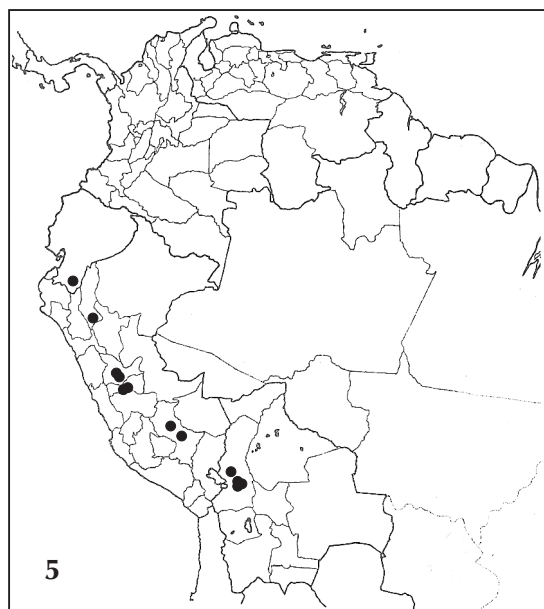
RECOGNITION: *Epidendrum bangii* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the narrowly lanceolate leaves 5-14 x 1.3-2.4 cm, short inflorescence (5-14 cm long) with the rachis straight to slightly flexuous, basically distichous, the flowers second, the 6-15 flowers generally greenish purple or greenish yellow, with the lip sometimes reddish towards the base, large lateral sepals (16-18 x 6-8 mm), the apex of the floral segments acuminate, petals linear, 1-veined, oblique, and the lip narrowly triangular with the base cordate. *Epidendrum dermatanthum* Kraenzl., has linear-oblong leaves 8.5-18 x 1.5-4 cm, flowers of similar size but reddish brown, petals linear-lanceolate, 3-veined. *Epidendrum rostrigerum* Rchb.f. has oblong elliptic leaves 4-9 x 2-3 cm, the inflorescence with a straight rachis has up to 22 flowers similar in color but smaller, sepals 9-11 mm long, the apex of the anther surpassing the apex of the column, and the lip lunate, nearly semi-orbicular. *Epidendrum macrostachyum* Lindl. has elongate, pyramidal inflorescences (ca. 16-30 cm long), flower the color of ripe olives, black-brown, sepals 11.0-11.5 x 5-6 mm, the apices of the floral segments obtuse, petals oblong, and the lip widely cordiform.

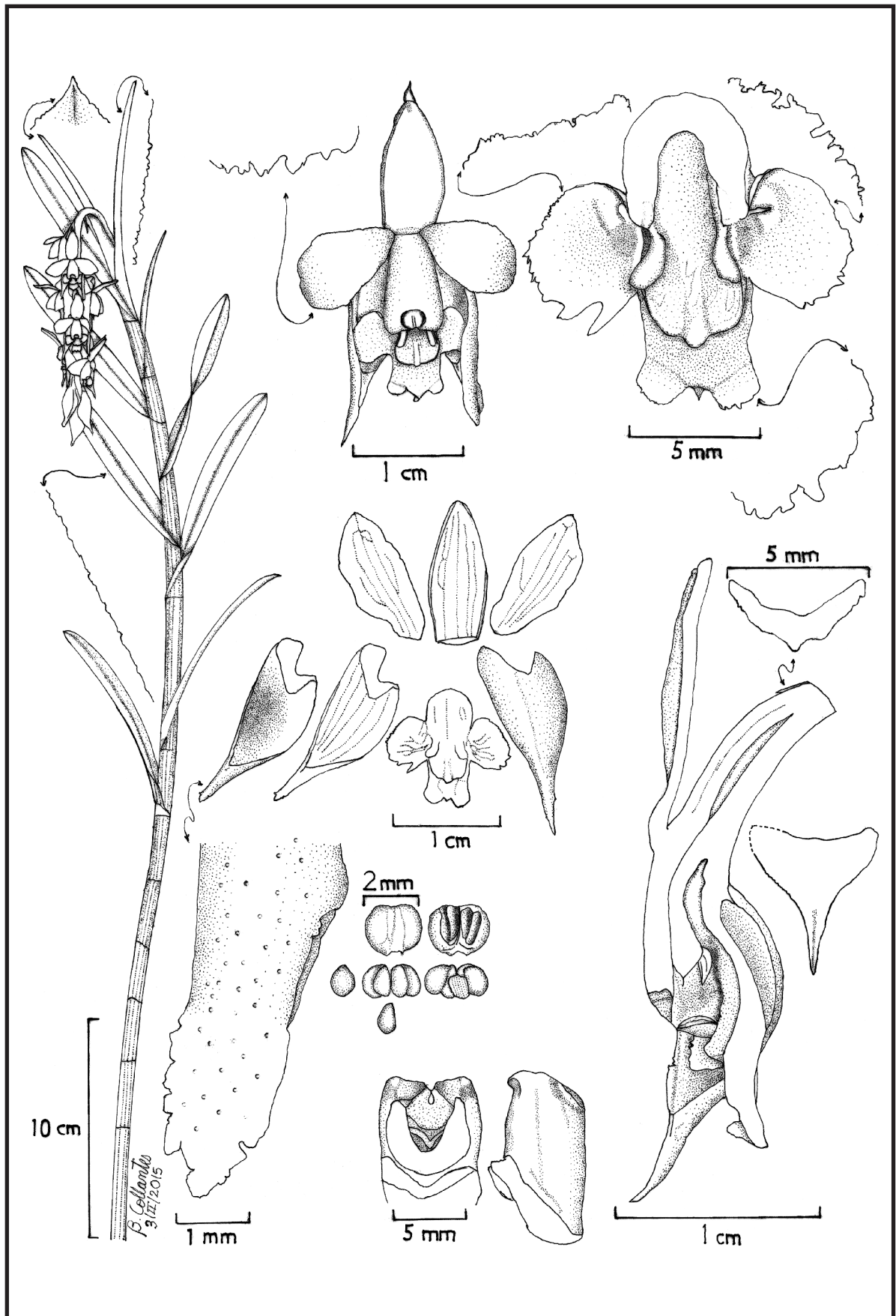
NOTES: *Specimens seen are marked as !, when not marked they are cited from Tropicos database. This species was considered as a synonym of *E. macrostachyum* by Vásquez & Ibsch, 2004, together with other good species; none of the photographs correspond to this species. Schweinfurth (1959) placed it as a synonym of *E. rostrigerum*.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Miguel Bang (1853-1895), Danish gardener and botanist, trained at the Kew Gardens, who emigrated to Bolivia and collected orchids extensively there between 1883 and 1895 when he died in Bala, Bolivia (Funk & Mori, 1989). He collected together with and for Henry H. Rusby, particularly *Solanum* (Ochoa, 2001). His collections are lodged mainly at US, NY, E, G, K, LE, M, MO, PR, W, WU, Z.

REFERENCES: Funk, V.A., & S.A. Mori, 1989, A Bibliography of Plant Collectors in Bolivia. *Smithsonian Contr. Bot.* 70: 8. Ochoa, C.M., 2001, *Las papas de Sudamérica: Bolivia*; International Potato Center; 535 pp. Schweinfurth, C., 1959, Orchids of Peru, *Fieldiana, Bot.* 30(2): 507. Vásquez, R., & Ibsch, 2003, *Orquídeas de Bolivia* 2: 125. Santiago, E. & E. Hågsater, 2013, *Epidendrum macrostachyum* in E. Hågsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1454. Santiago, E. & E. Hågsater, 2015, *Epidendrum dermatanthum* in Hågsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1519. Santiago, E. & E. Hågsater, 2015, *Epidendrum rostrigerum* in Hågsater, E., & L. Sánchez Saldaña, (eds.) *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1556.





EPIDENDRUM BIROSTRATUM C.Schweinf.

EPIDENDRUM BIROSTRATUM C.Schweinf., Bot. Mus. Leafl. 11: 83, t. 13. 1943.

Type: PERU: Cusco; Prov. Urubamba, Phuyupata-Tuncapata, 3200 m, epiphyte in wet forest, 6 August 1942, [Julio] César Vargas Calderón 2927. Holotype: AMES 61745! Isotype: CUZ!

Terrestrial and epiphytic, caespitose, sympodial herb, to 100 cm tall. **Stems** ca. 100 x 0.7-0.8 cm, simple, cane-like, the lower half covered by non-foliar tubular sheaths. **Leaves** 7-12, distichous; sheaths 4.5-5.5 x 0.7-0.8 cm, tubular striated; blade 6.5-13 x 1.3-1.5 cm, sub-erect, articulate, oblong-elliptic, sub-acute, mucronate, sub-coriaceous, margin irregularly crenulate, spreading. **Spathes** lacking. **Inflorescence** 14.5 cm long, apical, flowering only once, racemose, arching-nutant, dense. **Floral bracts** 5.5-7 mm long, the basal ones lunate, short, apex mamillate; the distal bracts transversely sub-deltate, caudate. **Flowers** up to 14, opening in succession from the base of the raceme towards the apex, eventually all open at once; sepals purple-green to green, petals pink to olive-green, the apices creamy-green to cream colored, the base pink to dark fuchsia, lip yellowish pink to pink-green; thickened disk pink to dark fuchsia, column creamy, anther creamy, the center pale green; ovary creamy green to green, or dark fuchsia; fragrance not registered. **Ovary** 10 x 3 mm, short, thin, not inflated, unornamented. **Sepals** margin entire; dorsal sepal 12-16 x 5-6.5 mm, free, reflexed, oblong-lanceolate, sub-acute, 3-veined, the lateral veins branching; lateral sepals 15-20 x 6 mm, partly spreading, obliquely united to the column, hemi-ovate, concave, apex prominently aristate, complanate and densely papillose, 5-6 veined. **Petals** 12-14 x 6 mm, free, slightly reflexed, oblong-ovate, sub-acute, margin minutely crenulate-dentate, 3-veined, the lateral veins branching. **Lip** 9-10 x 11-13 mm, united to the column, deeply 3-lobed, spreading; bicallose, calli elongate, divergent, disc with a sub-quadrate-ovate thickened plate, apex semi-circular to tongue-shaped, with a longitudinal rib in the middle terminating in a conspicuously mamillate process or absent; lateral lobes of the lip 5.0-6.5 x 4 mm, dolabriform, sub-orbicular, entire to somewhat lacinate, margin entire to irregularly crenulate; mid-lobe 5 x 5 mm, porrect, bilobed, hemi-circular to sub-quadrate, apex with a triangular tooth-mucro in the middle, thus the apex appears as more or less tri-dentate. **Column** 7.7-10.0 x 6.0-6.5 mm, short, thick, ventrally sub-quadrate, dorsally oblong, apex truncate. **Clinandrium-hood** reduced, margin entire. **Anther** sub-reniform, 4-celled. **Pollinia** 4, sub-equal, outer pair widely obovoid, convex/flat, inner pair widely obovoid, convex/flat. **Rostellum** apical, foramen ovate. **Lateral lobes of the stigma** prominent, delta shaped. **Nectary** tubular, arcuate, only penetrating as far as the perianth; unornamented. **Capsule** not seen.

OTHER SPECIMENS: BOLIVIA: La Paz: Nor Yungas, PN-ANMI Cotapata, Sendero Chojllapata, 3275 m, *Sivila 113*, LPB. **PERU: Apurímac:** Abancay; Ampay, 3200-3600 m, 5 IX 1949, Vargas 8394, AMES! CUZ! **Cusco:** Machu Picchu, Wenner Gren ruins [Wiñayhuayna], 3400-3600 m, 5 VIII 1942, Metcalf 30765, AMES! MO! UC! Machu Picchu, slopes of Altillero, 3110 m, 11 VI 1982, Peyton 520, MO! Ibid. 3020 m, 13 VI 1982, Peyton 582, MO! Machu Picchu, entre tunel y Ch'akicocha, 3650 m, *Tupayachi 4995*, CUZ! **Huancavelica:** Tayacaja; Distr. Huachocolpa; Paraje Chaupimonte, 3300 m, 16 VI 1999, R: Suárez & C. *Alegría sub León 3061*, USM! Tayacaja; Distr. Huachocolpa; Paraje Chaupimonte, 3300 m, 16 VI 1999, M. León M & B. *Collantes 3061*, MOL x5! (illustration and photo vouchers).

OTHER RECORDS: PERU: Cusco: Machu Picchu, photo, Ramírez s.n., AMO! **Huancavelica:** Bosque Amaru, León y Collantes 3061, digital image, Collantes, AMO! (Collantes, 2014).

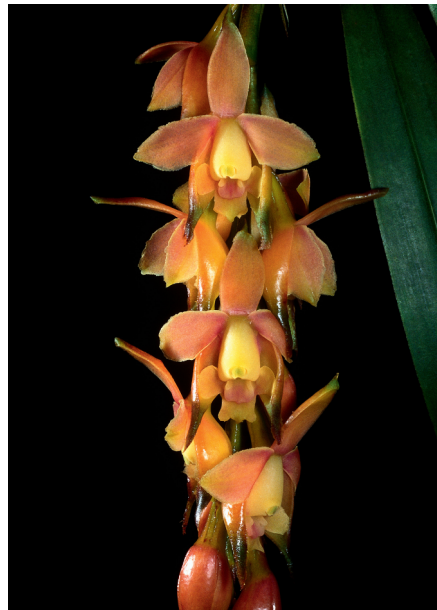
DISTRIBUTION AND ECOLOGY: Ranging along the Andes from Huancavelica and Cusco, Peru to La Paz in Bolivia. Terrestrial in *Sphagnum* in Machu Picchu, epiphytic in elfin cloud forest dominated by *Weinmannia microphylla* and *Clusia* in Bolivia, and on *Clusia* in Huancavelica; at 3000-3650 m altitude. Flowering from June to September.

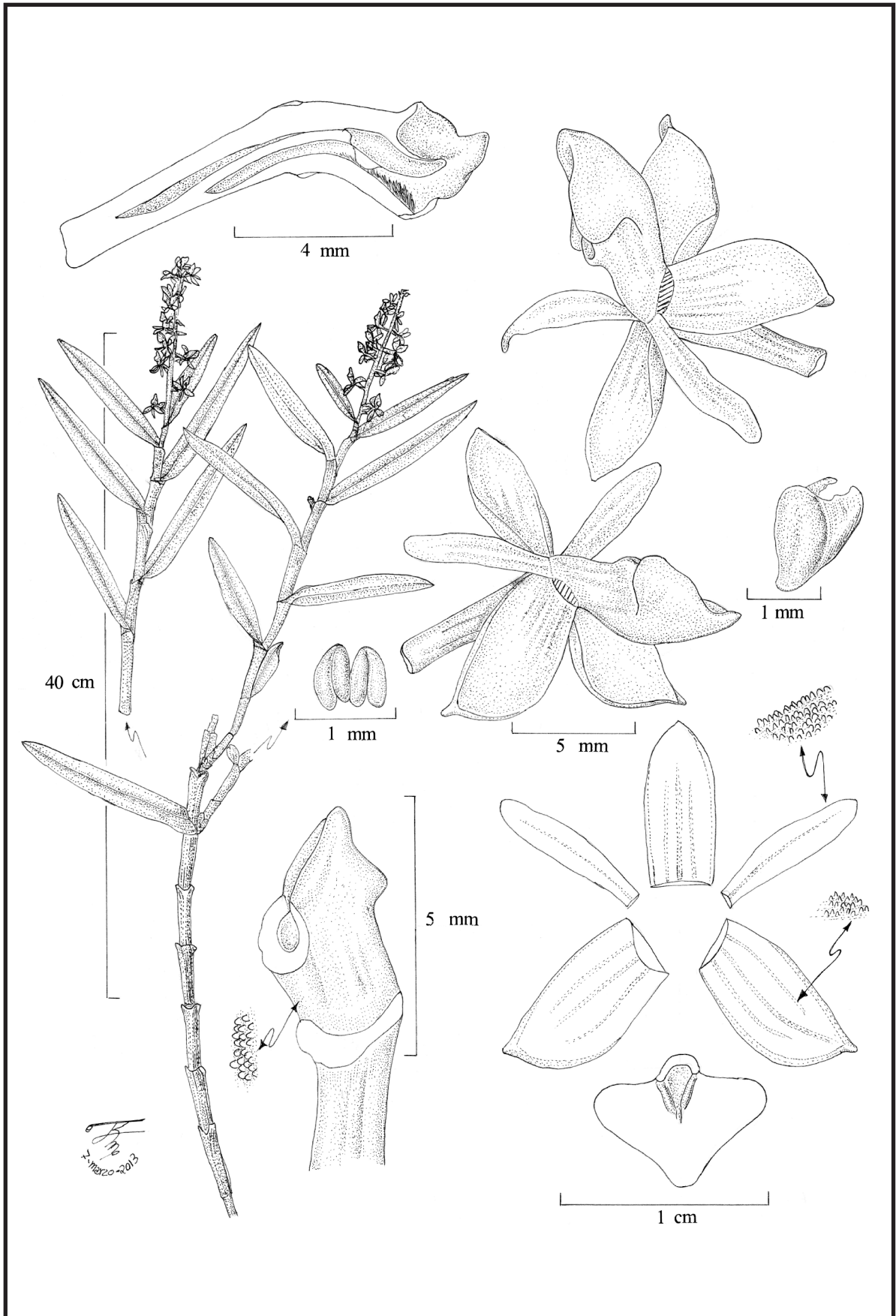
RECOGNITION: *Epidendrum birostratum* belongs to the *Aristisepalum* Group, which has a caespitose habit, simple stems, sub-coriaceous leaves, an arching-nutant, racemose inflorescence without spathaceous bracts, a thickened disc on the 3-lobed lip, and especially the lateral sepals which are apically prominently aristate-complanate, 15-20 mm long. The species is recognized by the has leaves 6.5-13 x 1.3-1.5 cm, the lip with dolabriform-rounded lateral lobes, mid-lobe as long as the lateral lobes, cuneate, sub-quadrate, the apex sinuou-truncate, 3-dentate; disc with the thickened plate sub-quadrate-ovate, basal flowers open first. *Epidendrum incahuamanii* Collantes & Hágsater has linear-lanceolate leaves 2.5-15 x 0.3-0.9 cm, lateral lobes dolabriform-sub-elliptic, oblique, the disc thickened into a semi-circular plate, traversed by a prominent mid-rib extending to the apex of the mid-lobe 2.5 x 6 mm, semi-circular, apex usually retuse; apical flowers open first. *Epidendrum aristisepalum* Hágsater & Dodson from southern Ecuador has similar leaves 6-14.5 x 0.7-1.1 cm, but the ecallose lip has a sub-orbicular mid-lobe with the disc thickened into 3 prominent longitudinal ribs. *Epidendrum jalcaense* Chocce-Peña, Dalström, Hágsater & J.Arnaiz has wider leaves, 4.7-6.6 x 1.0-1.5 cm, bright orange flowers with a wide, 4-lobed, ecallose lip, with 5 thickened ribs on the disc.

ETYMOLOGY: From the Latin *rostrum*, beak, in reference to the lateral sepals which are parallel to the lip and rostrate, thus appear next to the lip as two-beaked.

ACKNOWLEDGMENT: We wish to thank Iván Jiménez Pérez of La Paz, Bolivia for his help in studying the material at LPB, and providing digital images of the live flowers.

REFERENCES: Chocce-Peña, M., S. Dalström, E. Hágsater & J. Arnaiz, 2013, *Epidendrum jalcaense*, in E. Hágsater & L. Sánchez S., (eds.), The Genus *Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1446. Collantes M., B., 2014, **Huancavelica, Amaru, Paraíso de Orquídeas**, Lima, Perú, 338 pp. Collantes, B., & E. Hágsater, 2015, *Epidendrum incahuamanii*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1527. Hágsater, E., & C.H. Dodson, 2001, *Epidendrum aristisepalum*, in E. Hágsater & L. Sánchez S., (eds.), The Genus *Epidendrum*, Part 3, *Icon. Orchid.* 4: t. 412. Jiménez Pérez, Iván, 2011, Registros nuevos de orquídeas de los bosques montanos de Bolivia, *Ecología en Bolivia* 46(1): 57-61.





EPIDENDRUM BOREALISTACHYUM Hágsater, E.Santiago & C.Fernández

EPIDENDRUM BOREALISTACHYUM Hágsater, E.Santiago et C.Fernández sp. nov.

Type: VENEZUELA: Táchira: inter Betania, Villa Páez et Delicias, 2200-2300 m, 14 November 1976, **André Charpin & F. Jacquemoud, AC 13336**. Holotype: AMO! (illustration voucher).

Similar to *Epidendrum macrostachyum* Lindl. but the leaves shorter and narrower, the inflorescence few-flowered and lax, the flowers smaller, grayish lilac, lip white, the floral bracts small and narrowly triangular, the lip widely triangular, the base truncate and the column bidentate at the apex.

Terrestrial or rarely epiphytic, monopodial, branching **herb**, ca. 75-120 cm tall. **Roots** 1-3 mm in diameter, basal, fleshy, thin. **Stems** main stem 58-80 x 0.6-1.0 cm; branches 23-25 x 0.4-0.65 cm; branching when mature, cane-like, terete at base and slightly laterally compressed towards the apex, erect, straight. **Leaves** ca. 14 on the main stem, distributed throughout, articulate, alternate, partly spreading with respect to the stem, similar in size, green, concolor; sheath 11-40 x 4-10 mm, tubular minutely striated, rugose; blade 9-13 x 1.3-2.6 cm (on the main stem); 5-11 x 0.8-1.5 cm (on the branches), lanceolate, obtuse, margin denticulate towards the apex. **Spathe** absent. **Inflorescence** 9-17 cm long, apical, racemose, flowering only once, pyramidal, the flowers distributed in a helicoid, laxly few-flowered; peduncle 10-15 mm long, terete, green, sometimes scarcely tinged with purple. **Floral bracts** 5-10 x 1.5-3 mm, small, shorter than the ovary (gradually diminishing in size towards the apex of the rachis), narrowly triangular, acute, amplexicaul, green. **Flowers** 11-30, opening in succession but eventually all open at one time, non-resupinate, fleshy, pale grayish lilac, lip white, the column bicolor, base green, deep purple at the apex; fragrance not registered. **Ovary** 7-9 mm long, terete, thin, slightly striated longitudinally, not inflated, green, tinged with purple. **Sepals** free, partly spreading, dorsally scarcely and minutely papillose, elliptic, obtuse, 3-veined, margin entire, spreading; dorsal sepals 8-9 x 3.5-4.5 mm; lateral sepals 9.5-10 x 5.5-6 mm, minutely apiculate. **Petals** 7.5-9 x 1.5-2 mm, free, slightly arching forward, partly spreading, oblong, the apex rounded, 1-veined, minutely papillose, margin entire, spreading. **Lip** 6-8 x 8.3-10 mm, united to the column, very fleshy, entire, widely triangular, base truncate, apex rounded, glabrous, cymbiform in natural position, embracing the apex of the column without covering it, margin fleshy, entire, spreading; disc with a single callus, "V" shaped, with a single very short rib. **Column** 5 mm long, straight, thick, with the apex abruptly turned upwards and with a pair of prominent teeth surpassing the body of the column. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, obovoid, apex obtuse. **Pollinia** 4, obovoid, similar in size and shape. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** shallow, penetrating 1/3 of the ovary, not inflated, pubescent in front of the stigmatic cavity. **Capsule** 32 x 23 mm, ellipsoid; pedicel 2 mm long, very short; apical neck 6 mm long, perianth persistent.

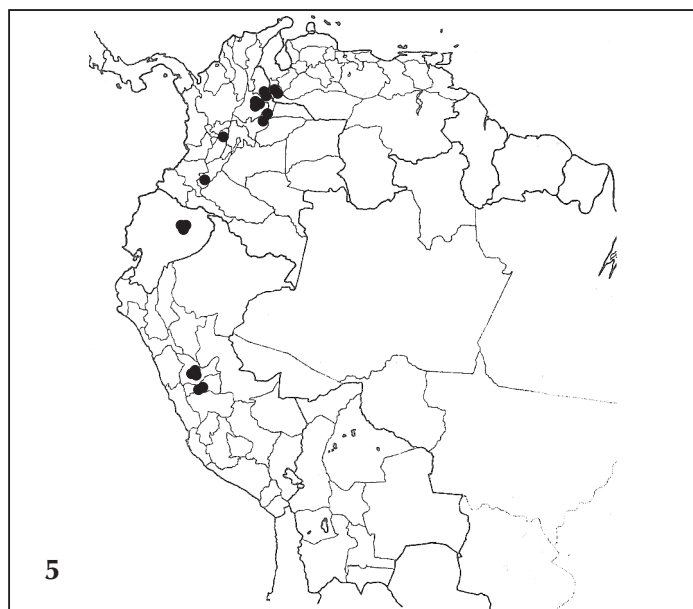
DISTRIBUTION AND ECOLOGY: Widespread along the Cordillera Oriental of the Andes from Venezuela through Colombia, Ecuador and northern Peru; and terrestrial or rarely epiphytic at 1800-3300 m altitude. Flowering throughout the year.

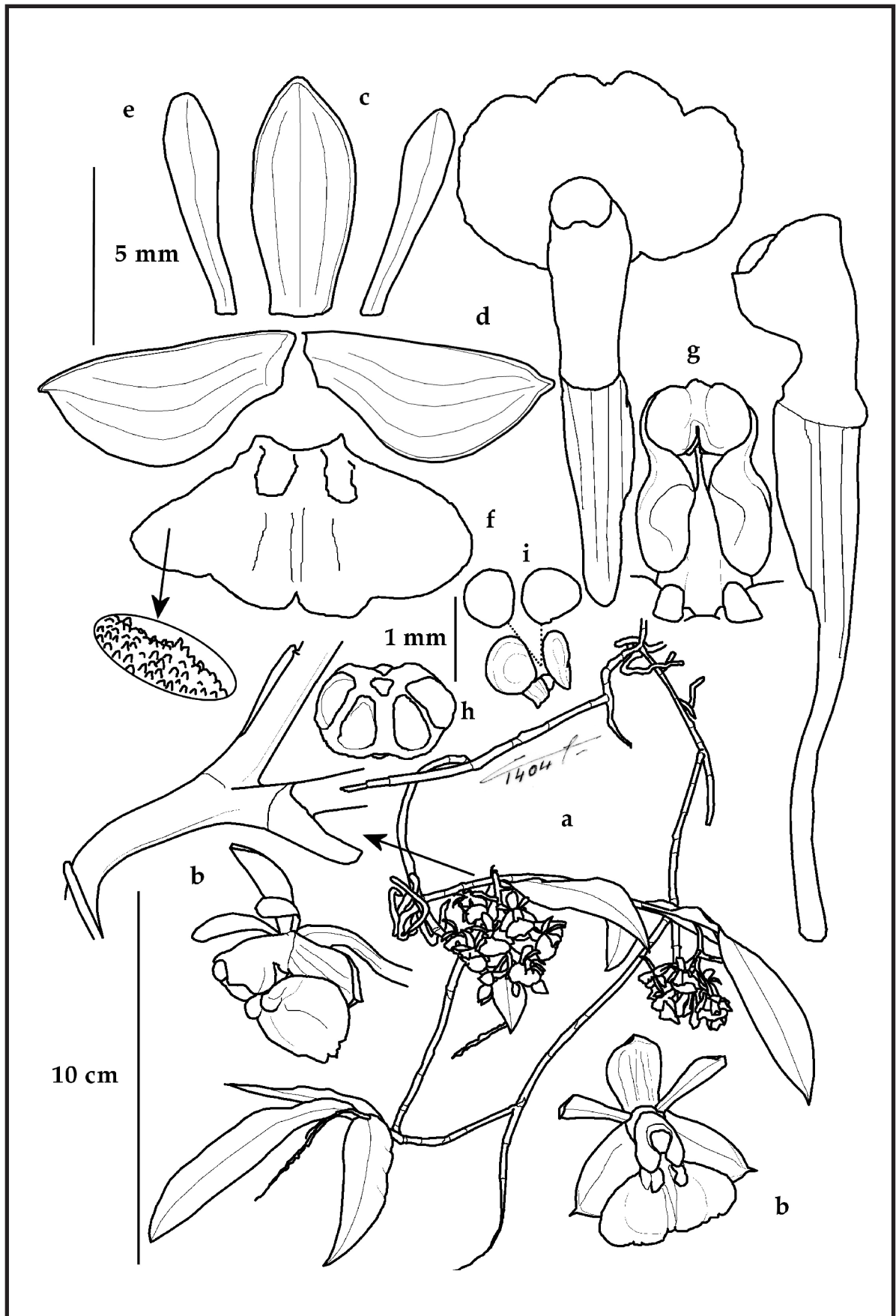
OTHER SPECIMENS AND RECORDS: See appendix.

RECOGNITION: *Epidendrum borealistachyum* belongs to the *Macrostachyum* Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the lanceolate leaves of the main stem 9-13 x 1.3-2.6 cm, erect, short, laxly few-flowered inflorescence with flowers pale grayish lilac, lip white, the column bicolor, base green, deep purple at the apex, small bracts, 5-10 mm long, and the widely triangular lip, base truncate. *Epidendrum macrostachyum* has large plants, to 150 cm tall, leaves elliptic-lanceolate, those of the main stem 12.5-13 x 3.0-3.5 cm, elongate inflorescence, densely many-flowered, flowers dark blackish brown as are ripe olives or ripe red grapes; floral bracts are very prominent and cymbiform, 8-18 mm long, and the lip is widely cordiform, the base cordate. *Epidendrum microcarpum* Hágsater & Dodson is vegetatively very similar, but the inflorescence is much shorter, to 5 cm long, flowers are yellowish green, concolor, somewhat smaller, sepals 6.0-6.5 mm long, and the apex of the column is straight; the lip has a pair of very small, parallel calli. *Epidendrum palaciosii* Hágsater & Dodson has simultaneous, pale purple-brown flowers, sepals 6-8 mm long and are dorsally muricate to minutely echinate, the lip is deltate, strongly pubescent. *Epidendrum notostachyum* Hágsater & E.Santiago, has green to greenish white flowers, sepals dorsally papillose and a short nectary, without penetrating the ovary. There is another species in Trujillo state, Venezuela which is recognized by the narrowly elliptic to elliptic leaves 7.7-13 x 2.0-4.1 cm (on the primary stem), inflorescences cylindrical, densely many-flowered, flowers dorsally lilac tinged wine-red, sepals 8-9 mm long. There is one collection from the Cerro Turimiquire, Steyermark 62591, in Sucre state, growing on sandstone slopes, which appears to be similarly colored, and which we have not been able to study in detail; the locality is very isolated.

ETYMOLOGY: From the Greek βορεϊσ, north, and σταχυς, ear of corn, in reference to the northern distribution of this species within the range of the group, with inflorescences which are reminiscent of ears of corn and constitute the *E. macrostachyum* Group.

REFERENCES: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum palaciosii* in E. Hágsater & G. A. Salazar, (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 171. Hágsater, E., & C. H. Dodson, 2001, *Epidendrum microcarpum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 3, **Icon. Orchid.** 4: t. 458. Hágsater, E. & E. Santiago, 2015, *Epidendrum notostachyum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1545. López, T. H., 2011, **Orquídeas Nativas de Santander**, Litografía La Bastilla, Bucaramanga, Colombia, pg. 101. Romero-González, G. A., & F. G. Carnevali, 2000, **Orchids of Venezuela, an Illustrated Field Guide**, Second Edition. Armitano Editores, Caracas, Venezuela, pg. 251. Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1454.





EPIDENDRUM BOTHRYANTHUM M.R.Miranda, F.J. de Jesus, Chiron & Hågsater

Plate 1506

EPIDENDRUM BOTHRYANTHUM M.R.Miranda, F.J. de Jesus, Chiron et Hągsater, *sp. nov.*

Type: BRAZIL: São Paulo: Caraguatatuba, near the city, 280 m, 06 March 2014, **Marcelo Rodrigues Miranda 1404**.

Holotype: SP 468417! (Illustration & photo voucher).

Similar to *Epidendrum veltenianum* Campacci, but the stems longer, flowers more numerous, smaller, sepals and petals green, lip blackish purple with the calli and disc yellowish, petals apically rounded.

Epiphytic, sympodial, erect **herb**, ca. 40 cm tall, where each new stem originates in a sub-apical internode of the previous stem. **Roots** basal, from the lower stems, thick, fleshy. **Stems** 7-12 x 0.3-0.5 cm, terete, the new stem produced from a sub-apical internode, below the leaves; the basal $\frac{3}{4}$ covered by sheaths 6-24 mm, long, non-foliar, tubular, striated, scarious. **Leaves** 3, aggregate towards the apex of each stem, spreading, similar in size and shape, sub-coriaceous, alternate, articulate; sheath 1.0-1.7 x 0.3-0.5 cm, tubular, striated; blade 5.0-6.5 x 1.3-1.5 cm, narrowly elliptic, apex acute, margin entire, spreading. **Spathes** lacking. **Inflorescence** ca. 3 cm long, shorter than the apical leaf, racemose, the peduncle laterally compressed, with a long, narrow, conduplicate bract near the base. **Floral bracts** 3.5 cm long, shorter than the ovary, triangular, acuminate, amplexicaul, dorsally tinged with blackish purple. **Flowers** ca. 15, simultaneous (only the apical flowers in bud when the rest are fully open), sepals and petals green tinged with blackish purple, lip and column blackish purple, the disc of the lip and calli yellowish; without fragrance. **Ovary** 16 mm long, terete, ventrally inflated, forming a small vesicle behind the perianth, striated. **Sepals** spreading, free, obovate, slightly concave, 3-veined, margin entire, spreading; dorsal sepal 5.0 x 3.0 mm, apex obtuse; lateral sepals 6.0 x 3.2 mm, oblique, apiculate. **Petals** 4.8 x 1 mm, partly spreading, oblanceolate-spatulate, apex rounded, 1-veined, margin entire, spreading. **Lip** 3 x 10 mm, united to the column, base cuneate, slightly 3-lobed, widely elliptic in general shape, convex, surface mate, due to the finely papillose surface, margin entire; bicallose, the calli prominent, obovoid, slightly divaricate; the disc with a low rib that reaches the apex of the blade, with thickened veins that become evident in mature flowers; lateral lobes 4 x 4 mm, hemi-elliptic, apically rounded; mid-lobe 1 x 4 mm, short, transversely rectangular oblong, apically emarginate, and thus forming two small, hemi-elliptic lobes, each lobe 1 x 2 mm. **Column** 5 mm long, slightly arched upwards, constricted at the basal $\frac{1}{3}$, apically rounded. **Clinandrium-hood** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, caudicles short, wide. **Rostellum** sub-apical, split. **Nectary** penetrating $\frac{1}{3}$ of the ovary, thickened into a vesicle. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the type, endemic to São Paulo State, Brazil at 280 m altitude. Epiphytic, in dense shady forest in poor soil near the sea, at 280 m. Flowering in February-March.

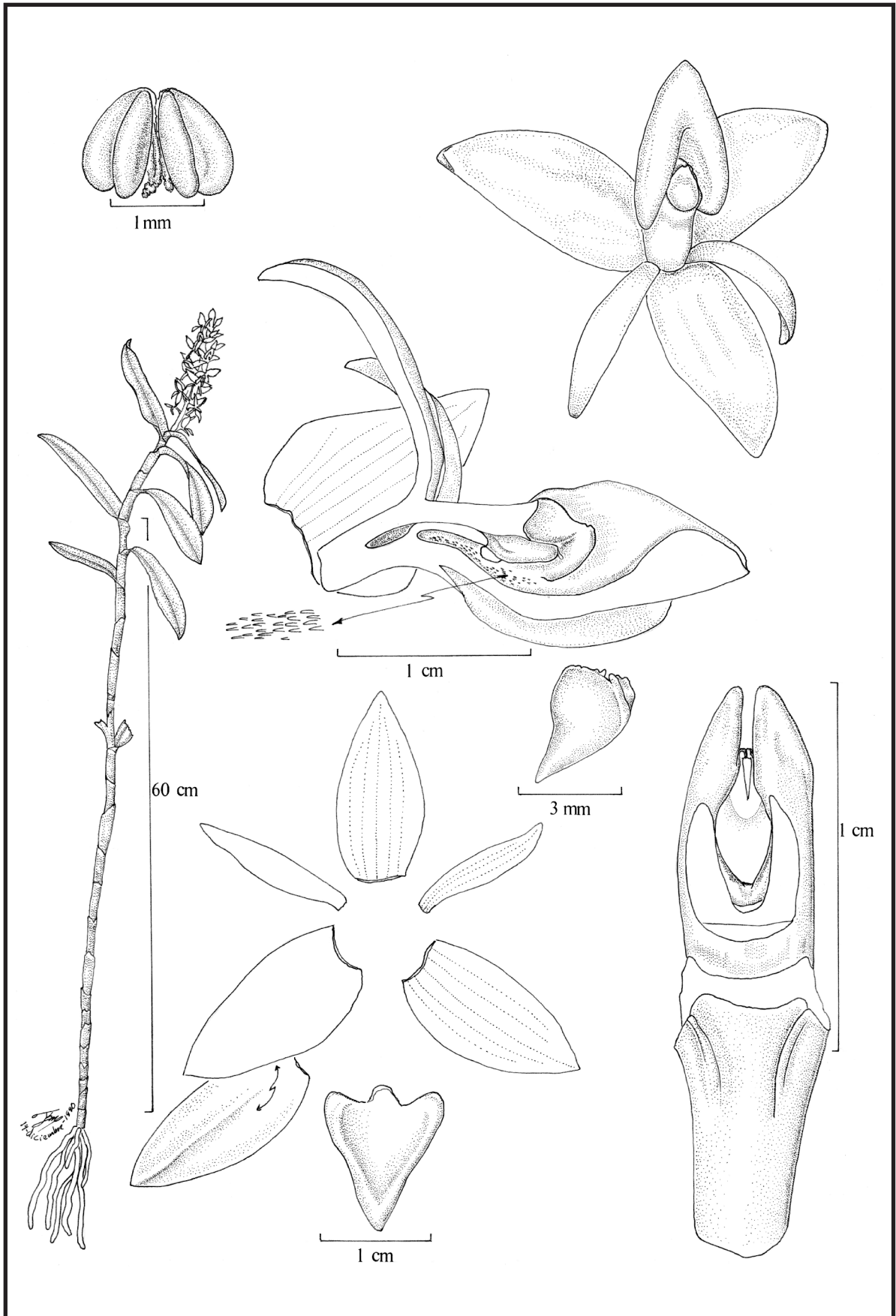
RECOGNITION: *Epidendrum bothryanthum* belongs to the Arbuscula Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, roots generally only from the base of the primordial stem, and the Incomptum Subgroup which has a short apical inflorescence with fleshy yellowish to green to violet-green to black flowers with short ovaries, the lip entire to 3-lobed, and the Proligerum Complex, which has the ovary inflated, forming a vesicle behind the perianth. The species is recognized by the small flowers, sepals 5-6 mm long, the flowers green tinged with blackish purple, and a slightly 3-lobed lip, basally cuneate, the mid-lobe emarginate, bicallose, ovary inflated forming a vesicle behind the perianth. *Epidendrum veltenianum* Campacci (2007) from Espírito Santo, Brazil, has shorter, more compact plants, somewhat larger green flowers, the apex of the column purple, sepals ca. 10 mm long, the lip 7 x 8 mm, lateral lobes semi-orbicular, the ovary only slightly inflated behind the perianth. *Epidendrum ochrochlorum* Barb.Rodr. is green and has larger flowers, sepals 14-15 mm long, acute, the lip is very similar in shape, the base cordate, with the mid-lobe of the lip emarginate and thus bilobed, but the sides of the lip are obliquely revolute, so that in natural position it looks triangular. *Epidendrum proligerum* Barb.Rodr. is also larger, with yellowish green flowers, sepals 12-13 mm long, has the mid-lobe of the lip entire, not emarginate, with the base of the lip cuneate. *Epidendrum jamaicense* Lindl. the successive flowers with a prominent ventral nectary which inflates the ovary over two-thirds its length, 10-15 mm long sepals, acute petals, a reniform, bicallose lip, and a straight thin column, with the enormous stigmatic cavity which occupies the whole length of the column.

CONSERVATION STATUS: **DD.** The species is locally common in the forest where it has been collected, but its habitat is endangered.

ETYMOLOGY: From the Greek βoτρυς, a bunch of grapes, and ανθος, flower, in reference to the small, predominantly blackish purple flowers which are somewhat reminiscent of a small bunch of grapes.

REFERENCES: Campacci, M.A., 2007, *Epidendrum uma nova espécie*, **Boletim CAOB** 68: 86-89.





EPIDENDRUM BRACHYOOHISTACHYUM Hagsater & E.Santiago

Plate 1507

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

Type: ECUADOR: Esmeraldas: km 6.2 camino Lita a San Lorenzo, 670 m, 11 July 1990, pressed cult. 20 December 1990. **Eric Hágsater, Calaway H. Dodson, Daniel Rubio & Nixon Revelo 10636**. Holotype: AMO! (Illustration voucher).

Similar to *Epidendrum humeadorensis* Hágsater & Dodson but the leaves elliptic-lanceolate, rachis straight, sepals obovate to obovate-elliptic, petals oblong, lip narrowly triangular, base sub-cordate, ovary very short, and the apex of the anther rostrate.

Terrestrial, monopodial, branching **herb**, 80-150 cm tall. **Roots** only from the base of the primordial stem, thick. **Stems** branching when mature, cane-like, laterally compressed, erect; the primary stem only partly seen, 0.6-1.2 cm in diameter. **Leaves** numerous, distributed throughout the stems, articulate, alternate, spreading; sheath 7-24 x 6-12 mm, tubular, minutely striated, rugose; blade 9-12.5 x 2.6-3.5 cm, elliptic, sub-acute, margin entire, spreading. **Spathe** lacking. **Inflorescence** 13 cm long, apical, racemose, erect, flowering only once, laxly few-flowered; peduncle 10 mm long, laterally compressed, erect, straight; rachis 12 cm long, laterally compressed. **Floral bracts** 6-12 x 6-10 mm, prominent, slightly longer than the ovary, but never as long as the flower, gradually diminishing in size towards the apex of the rachis; widely ovate, obtuse, embracing. **Flowers** 17, simultaneous, non-resupinate, fleshy, green, the lip greenish yellow; fragrance not recorded. **Ovary** 6 mm long, very short, terete, longitudinally striated, not inflated. **Sepals** 17.3 x 7.8-8.6 mm, free, 5-veined, obtuse, margin entire, spreading; the dorsal sepal spreading, ovate; lateral sepals partly spreading, ovate-elliptic, minutely apiculate, with a low dorsal keel. **Petals** 15 x 3 mm, free, spreading to slightly arched backwards, oblong-elliptic, oblique, acute, 3-veined, margin entire, spreading. **Lip** 12.5 x 11 mm, united to the column, very fleshy, entire, narrowly triangular, base sub-cordate, apex obtuse; callose and without ribs; cymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 9 mm long, straight, wide. **Clinandriumhood** reduced, margin entire. **Anther** 4-celled, ovoid, apex rostrate. **Pollinia** 4, lenticular, similar in size and shape. **Rostellum** sub-apical, slit. **Lateral lobes of the stigmatic cavity** small, $\frac{1}{4}$ the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity, inclined backwards. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Nariño: Altaquer, vía El Diviso-Tumaco, 680 m, 12 III 1985, *Lozano 6944*, COL!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the western slope of the Cordillera Occidental de los Andes in northern Ecuador and southern Colombia; growing terrestrial on road-side bank in very wet forest, at 670-680 m altitude. Flowering in March to July.

RECOGNITION: *Epidendrum brachyothistachyum* belongs to the Macrostachyum Group, Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally callose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the large flowers (sepals 17 mm long) green, with the lip greenish yellow, leaves elliptic 9-12.5 x 2.6-3.5 cm, sepals ovate-elliptic, acute, the ovary very short, 6 mm long, and the apex of the anther rostrate. *Epidendrum humeadorensis* Hágsater & Dodson has similar colored flowers but the rachis is flexuous, sepals reflexed and the petals elliptic, the lip truncate at the base, and the anther short, obtuse. *Epidendrum obovatipetalum* Hágsater & Dodson, while vegetatively similar, has white flowers tinged purple, sepals rounded apically, ovary 10-11 mm long, and the apex of the anther short and rounded, the lip triangular with the base truncate. *Epidendrum ariasii* Hágsater & Dodson, has elliptic-lanceolate leaves 1.4-2.3 cm wide, sepals obovate, apex rounded, 14 mm long, flowers are successive and reddish orange, the ovary 14-19 mm long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek βραχυ, short, ωθηκη, ovary, and σπαχυς, ear of corn; in reference to the very short ovary that distinguishes this species from others of the Macrostachyum Group, compared to the size of the flower.

REFERENCES: Hágsater, E. & C. H. Dodson 1993, *Epidendrum obovatipetalum* Hágsater & Dodson, E. Hágsater & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 163. Hágsater, E. & C. H. Dodson 1999, *Epidendrum humeadorensis* Hágsater & Dodson, E. Hágsater, L. Sánchez Saldaña & Javier García-Cruz (eds.), *The Genus Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 335. Hágsater, E. & C. H. Dodson 2004, *Epidendrum ariasii* Hágsater & Dodson, E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 707.



Authors: E. Hágsater & E. Santiago

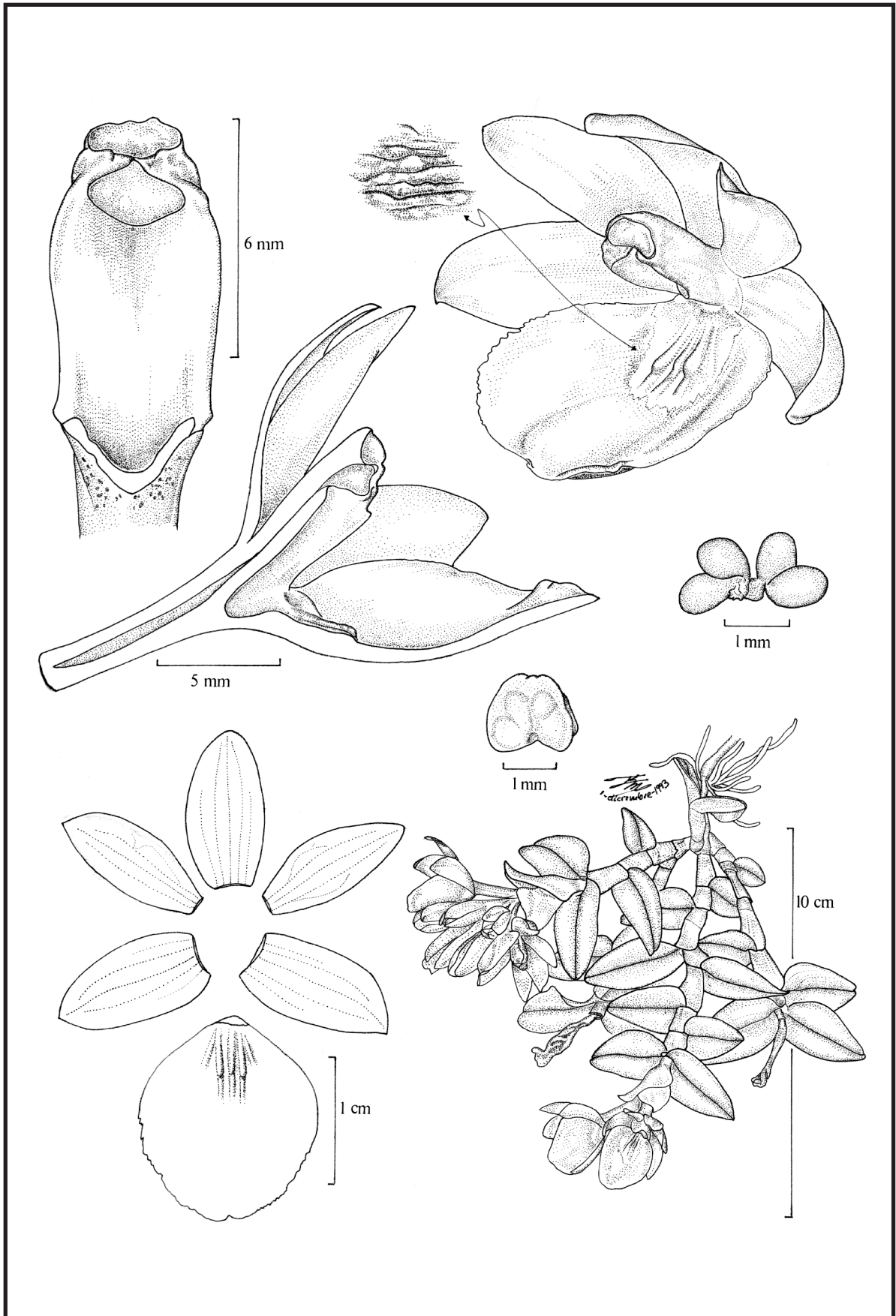
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1507



EPIDENDRUM BRACHYRHODOCHILUM Hągsater & E.Santiago

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

Type: COLOMBIA: Cundinamarca: Fusagasugá, 1 November 1975, pressed cult. 9 December 1993, *J. & L. Orchids sub Eric Hágsater 11386*. Holotype: AMO! (illustration voucher).

Similar to *Epidendrum rhodochilum* (Schltr.) Hágsater & Dodson, but the plants and flowers smaller, inflorescence generally subtended by two spathes, the lip with 3 parallel ribs all the same size and length, the lateral pair bifurcate at the base and thus appearing as 5 ribs, the lateral ribs very short, divergent.

Epiphytic, caespitose, sympodial, pendent **herb**, 7.5-13 cm long. **Roots** 1 mm in diameter, basal, fleshy, thin. **Stems** 3.5-7 cm long, simple, cane-like, laterally compressed, straight, though branching from the base, the stems produce new stems from an indeterminate internode. **Leaves** 5-9, distributed throughout the stems, distichous, alternate, succulent; sheaths 8-12 mm long, infundibuliform, minutely striated, ancipitose; blade 0.9-2.5 x 0.7-1.4 cm, articulate, ovate, apex tridentate, the mid-point aristate, apical margin somewhat erose. **Spathes** generally 2, 9-20 x 8-12 mm (in conduplicate position), wide, semi-orbicular, oblique, conduplicate. **Inflorescence** 4.0-4.6 cm long, apical, flowering only once, pendent; peduncle totally hidden within the spathe. **Flowers** 4-5, resupinate, simultaneous, greenish, the ovary and dorsal surface of the sepals minutely dotted with reddish dots, the lip deep burgundy-red except for the greenish ribs on the disc of the lip, without fragrance. **Floral bracts** small, much shorter than the ovary triangular, acute, embracing. **Ovary** 9-10 mm long, terete, slightly dilated behind the perianth, slightly striated. **Sepals** 11-12 x 5-6 mm, partly spreading, free, elliptic, 5-veined, margin entire, spreading; dorsal sepal apically rounded; lateral sepals obtuse, oblique. **Petals** 11-12 x 5 mm, partly spreading, elliptic-sub-ovate, somewhat oblique, 3-veined, with the lateral veins short branched, apex obtuse, margin entire, spreading. **Lip** 12-16 x 12-14 mm, free, sub-orbicular-obovate, the base somewhat cuneate, minutely papillose throughout, margin along the apical half denticulate; calli lacking, substituted 3 parallel ribs all the same size and length, the lateral pair bifurcate at the base and thus appearing as 5 ribs, the lateral ribs very short, divergent. **Column** 7 mm long, straight, ventrally somewhat wider towards the apex. **Clinandrium-hood** prominent, without surpassing the body of the column, margin entire. **Rostellum** not seen. **Lateral lobes of the stigma** not visible, stigmatic cavity transversely elliptic, wide and short. **Nectary** very short, wide, barely penetrating the ovary, smooth, forming a small ventral vesicle behind the perianth. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, sub-equal; caudicles soft and granulose, shorter than the pollinia. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Without locality data, *Escobar s.n.*, slide, AMO! **Risaralda:** Cordillera Central, vertiente occidental; Hoya del Río Otún, 3000 m, 27 XI 1946, *Cuatrecasas 23319*, F! US! **VALLE!** **Cauca:** Bei Corrales, Puracé, 8000 ft, 18 V 1878, *Lehmann s.n.*, W 69279! um Corrales, Ostgehänge bei Central-Andes von Popayán, 2500-2800 m, *Lehmann 6714*, K! **Cundinamarca:** La Calera, 2900 m, 22 VI 1947, *Haught 5753*, COL! US! **Putumayo:** Valle de Sibundoy, 3 km E San Francisco, 2400 m, 21 VI 1963, *Bristol 1128*, AMES!

OTHER RECORDS: COLOMBIA: without data, *G. Escobar s.n.*, color transparency, AMO! Ibid. *Sociedad Colombiana de Orquideología*, digital image. **Putumayo:** San Francisco, vereda Minchoy, 2000 m, 18 VI 2006, *Medina 377*, AMO! (photo voucher). **VENEZUELA: Táchira:** Mun. Rafael Urdaneta, 1950 m, *Fernández 71*, photo published as *Epidendrum megalospathum* (Fernández, 2003).

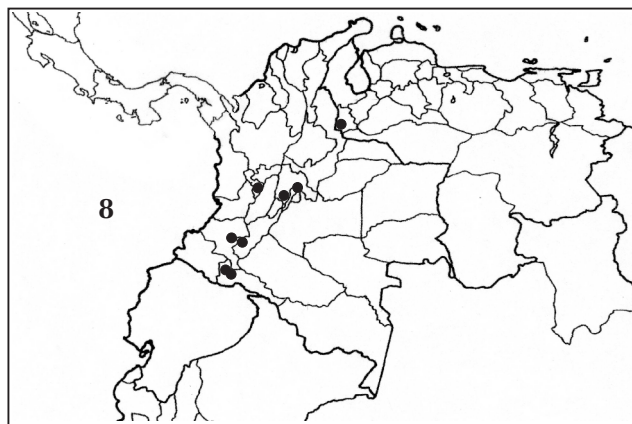
DISTRIBUTION AND ECOLOGY: Known from the Cordillera Central, and along the Cordillera Oriental de los Andes in Colombia and bordering Venezuela; epiphytic at 1950-3000 m altitude. Flowering from May to November.

RECOGNITION: *Epidendrum brachyrhodochilum* 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 spathaceous bracts, resupinate flowers, the column more or less united to the lip; the Megalospathum Subgroup has the calli substituted by long, low ribs. The species is recognized by its short plants (7.5-13 cm long), sepals elliptic, 11-12 mm long, lip with 3 parallel ribs all the same size and length, the lateral pair bifurcate at the base and thus appearing as 5 ribs, the lateral ribs very short, divergent, column widened towards the apex, peduncle and rachis of the inflorescence totally hidden within the spathes. *Epidendrum rhodochilum* (Schltr.) Hágsater & Dodson has longer plants (15-24 cm long), sepals ovate-oblong, 15-17 mm long, the lip with three low, narrow ribs in place of the calli, the disc minutely pubescent. *Epidendrum megalospathum* Rchb. f., which is found sympatric with the new species, has a more elongate inflorescence, sepals oblong to oblong-elliptic, 15-18 mm long, petals lanceolate, acute, the lip ovate, base cuneate, with two lower ribs in the middle forming a "V" shaped structure, and then minutely papillose. The flowers of this small group of species are somewhat similar to *E. arevaloi* (Schltr.) Hágsater, though the plant habit of the latter species is typical of *Diothonea*.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, βραχυς, short, ροδο, rose, rosy, and χειλος, lip, in reference to this species being a shorter version of *Epidendrum rhodochilum*, and both being recognized by burgundy-red color of the lip.

REFERENCES: Fernández, C., 2003, *Epidendrum megalospathum*, in *Orquídeas Nativas del Táchira*, pg. 85. Santiago, E., & E. Hágsater, 2015. *Epidendrum megalospathum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1539. Santiago, E., & E. Hágsater, 2015. *Epidendrum rhodochilum*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1555.



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Illustrator: R. Jiménez M.

Photo: R. Medina

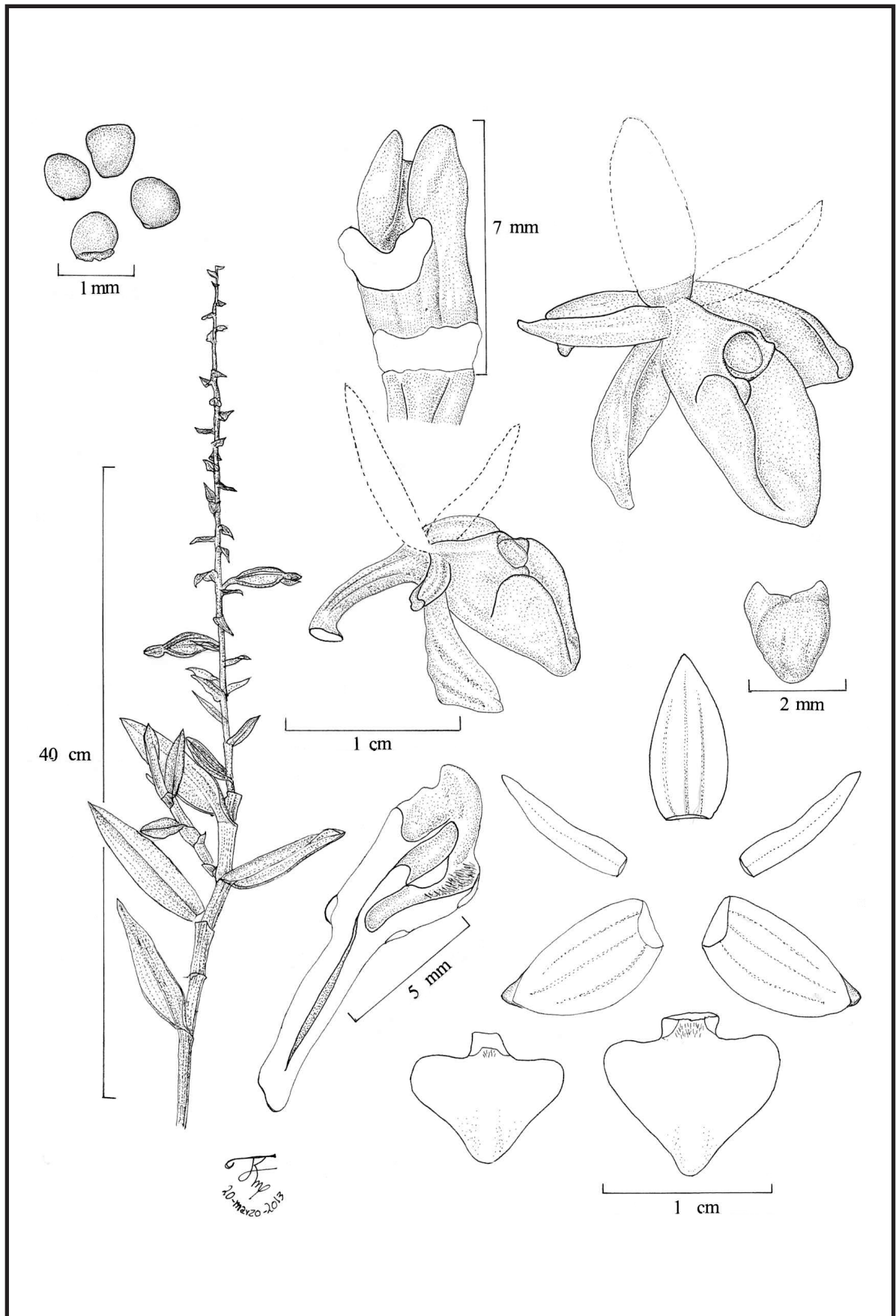
Editors: E. Hágsater & L. Sánchez S.

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México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1508



EPIDENDRUM BRACHYSTELESTACHYUM Hågsater, E.Santiago & Reina-Rodr.

Plate 1509

EPIDENDRUM BRACHYSTELESTACHYUM Hágsater, E.Santiago et Reina-Rodr., *sp. nov.*

Type: ECUADOR: Morona-Santiago: Camino Gualaico-Limón ca. km 24, después del puerto del paso de la Cordillera, 3100 m, 21 Noviembre 1988, **Eric Hágsater, Calaway H. Dodson, Norris H. Williams, Mark Whitten & Fred G. Thompson 9625**. Holotype: AMO! (illustration voucher!). Isotypes: AMES! QCNE! SEL!

Similar to *Epidendrum macrostachyum* Lindl. but the petals linear-triangular, sub-acute, lip triangular with the base truncate, ecallose, the column short and thick throughout; flowers are black, but the entire lip is olive-green.

Lithophytic or terrestrial, monopodial, branching **herb**. **Roots** 2 mm in diameter, basal, and at the base of some branches, terete, thin. **Stems** branching when mature, cane-like, terete, erect; the primary stems not seen in full, 0.9-1 cm in diameter; branches 17-20 x 0.5-0.7 cm. **Leaves** numerous on the primary stem, 7-10 on the branches, distributed throughout the stems, articulate, alternate, partly spreading, unequal in size, those on the primary stem larger, than those of the branches; sheaths 20-45 x 8-11 mm, tubular, minutely striated and rugose; blade (of the primary stem) 8.5-12 x 2.0-2.5 cm, (of the branches) 5-11 x 1.1-2.4 cm, lanceolate-elliptic, obtuse, margin entire, slightly revolute. **Spathes** lacking. **Inflorescence** to 31 cm long (on the primary stem), ca. 15 cm long on the branches, apical, racemose, rarely paniculate, with a smaller second raceme, erect or nearly so, flowering only once, pyramidal, many-flowered, sub-dense; peduncle 30 mm long, terete, erect, straight, provided in the middle with a single bract 4 x 1 cm, prominent, similar to the leaves; rachis 12.5-28 cm long, terete. **Floral bracts** 4-25 x 4-7 mm, prominent, slightly longer than the ovary, but never as long as the flower, gradually smaller in size towards the apex of the rachis, triangular, acute, embracing. **Flowers** 22-33, successive, about half of them open at one time, non-resupinate, fleshy, black with the lip olive-green, and the column tinged purple; without fragrance. **Ovary** 12 mm long, terete, thin, longitudinally striated, not inflated. **Sepals** 10 x 4.5-5.0 mm, free, 3-veined, margin entire, spreading; the dorsal sepal slightly reflexed, ovate, apex acute; lateral sepals partly spreading, elliptic, slightly oblique, obtuse, minutely apiculate, with a low dorsal keel. **Petals** 9 x 1.8 mm, free, spreading, linear-triangular, sub-acute, 1-veined, margin entire, spreading. **Lip** 8 x 10 mm, united to the column, very fleshy, entire, triangular, base truncate, apex sub-obtuse; ecallose and without ribs, pubescent in front of the column, cymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 7 mm long, straight, thick. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, the apex rounded. **Pollinia** 4, obovoid, similar in size and shape. **Rostellum** sub-apical, slit. **Lateral lobes of the stigmatic cavity** prominent, occupying 2/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity, reclining towards the back of the nectary. **Capsule** ellipsoid, 5 x 1.2-1.4 mm; pedicel 7-10 mm long, body 2.5-2.8 x 1.2-1.4 cm, apical neck 10 mm long.

OTHER SPECIMENS: COLOMBIA: Nariño: Pasto: Corregimiento El Encano, Sector Las Juntas, Vereda Santa Isabel, 2600-2800 m, 19 IX 2014, *Suárez et al. 1810*, FMB! (voucher of digital photos taken by F. Pardo, photo voucher, AMO!) **ECUADOR:** "PERU" without locality, *Jameson s.n.*, K 000885704! **Azuay:** Road Gualaico-Limón, km 13, 3200-3300 m, *Harling 22723*, AMES! GB! QCA! **Morona-Santiago:** km 56 Cuenca-Gualaquiza, 1 VII 1982, *Dodson 13173*, MO! QCA! SEL! US! km 55 Cuenca-Limón, 2800 m, 29 XI 1984, *Dodson 15479*, MO! QCA! QCNE! km 55, Cuenca-Limón, 2800 m, 29 XI 1984, *Dodson 15480*, MO! Road Cuenca to Gualaquiza, km 28, 3150 m, 16 II 1986, *Embree 13*, MO! QCNE! Road Cuenca to Limón via Gualaico, 3400 m, 16 II 1986, *Hirtz 766*, MO! E of Ave Maria pass toward Limón, 2900 m, 17 IX 1980, *Luer 5462*, SEL! Area de Bosque Vegetación Protectora Tambillo, 3160 m, 14 III 2001, *Suin 856*, QCNE! Road Gualaico-El Limón. From the pass towards El Limón, 3200-3400 m, 8 II 1989, *van der Werff 10539*, MO! QCNE! SEL x2!

OTHER RECORDS: ECUADOR: Without locality, *H. Medina s.n.*, digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Known presently from the summit of the Cordillera Oriental of the Andes in southern Ecuador, and southern Colombia, lithophytic or terrestrial, along roadside banks, growing at 2700-3400 m altitude in high montane páramo, with *Odontoglossum odoratum* Lindl., and in Colombia páramo dominated by *Espeletia hartwegiana*, *Festuca andicola*, *Calamagrostis effusa*, *Blechnum loxense*, *Drymis granadensis*, and *Hedyosmum cumbalense* as well as orchids of the genera *Pleurothallis*, *Acronia*, *Telipogon*, *Elleanthus*, *Lepanthes*, *Stelis*, *Brachionidium*, and *Fernandezia* among others; in Colombia annual precipitation of 1073 mm, mean average temperature 12.4°C (Puerres station). Flowering in February, March, July, September and November.

RECOGNITION: *Epidendrum brachytelestachyum* belongs to the *Macrostachyum* Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the elongate, laxly many flowered inflorescence, up to 31 cm long, flowers black with lip olive-green, sepals 10 mm long, petals linear-triangular, apex sub-acute, lip triangular with the base truncate, ecallose, the column short and thick throughout, anther ovoid, apex rounded. *Epidendrum macrostachyum* Lindl. is vegetatively very similar, as is the color of the flowers, but the petals are linear-oblong, with the apex sub-obtuse, the lip widely cordiform, base cordate, bicallose, with a low rib in the disc, column is thin, and the anther obtuse at the apex. *Epidendrum munchiquense* Hágsater, E.Santiago & García-Revelo has a similar inflorescence, but the flowers are orange to wine-red, with the ventral surface of the tepals grayish green, sepals 14-18 mm long, and the petals oblong, acute.

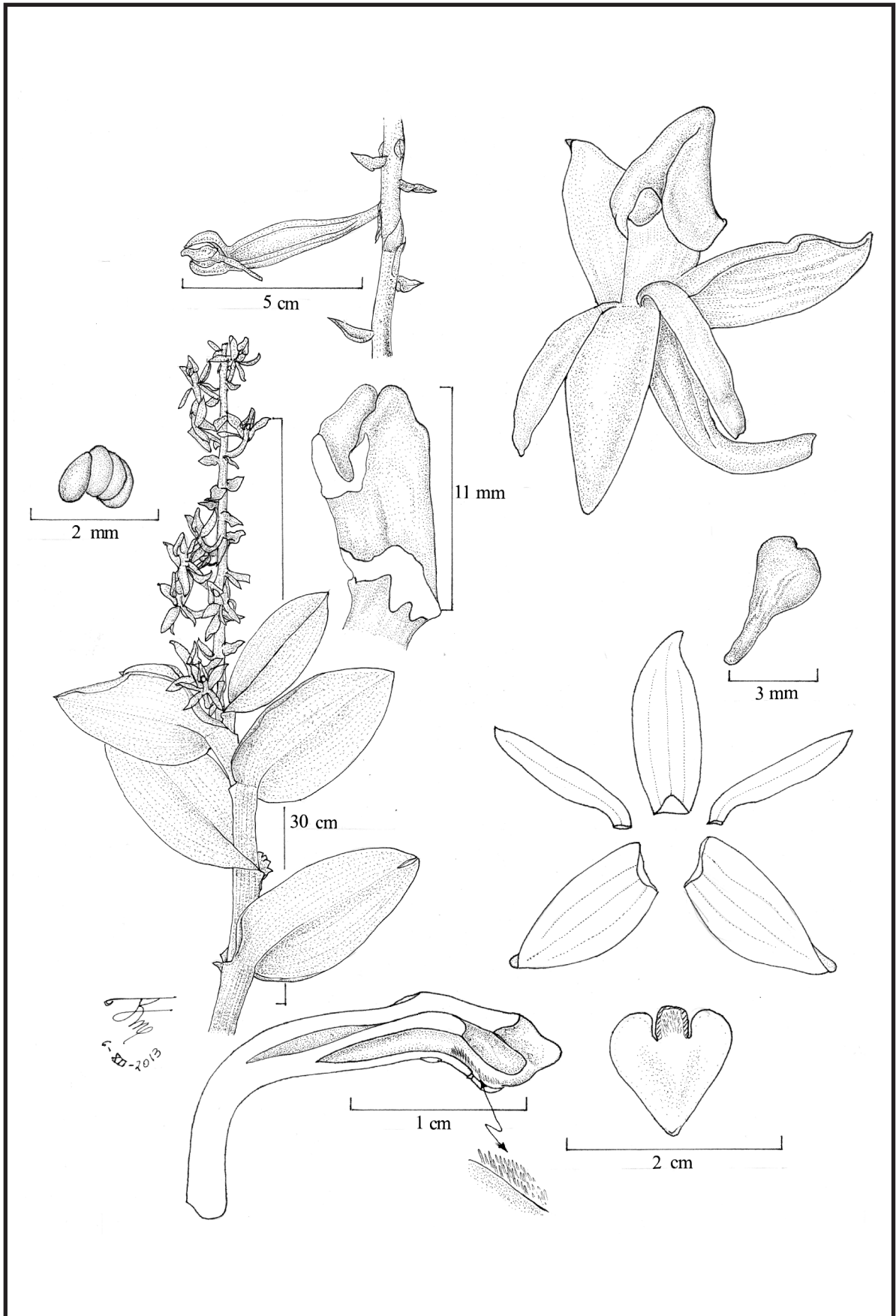
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek, βραχυσ, short, στηλη, column, and σταχυς, ear of corn, in reference to the relatively short column of this species of the *Macrostachyum* group.

ACKNOWLEDGEMENT: We wish to thank the Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Bogotá, Colombia for the use of the digital image taken by Federico Pardo.

REFERENCES: Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in Hágsater, E., & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1454. Hágsater, E., E. Santiago & S. García Revelo, 2015, *Epidendrum munchiquense* in Hágsater, E., & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1544.





EPIDENDRUM CARDIOSTACHYUM Hágsater & E.Santiago

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

Type: ECUADOR: [Sucumbios:] Napo-Pastaza: Santa Bárbara de Sucumbios, 10 km E of Santa Barbara, 10-15 February 1959, **Gunnar Harling 4113**. Holotype: S! (Illustration voucher)

Similar to *Epidendrum rostrigerum* Rchb.f. but the flowers much larger, inflorescence laxly many-flowered and elongate, leaves elliptic and the lip clearly cordiform.

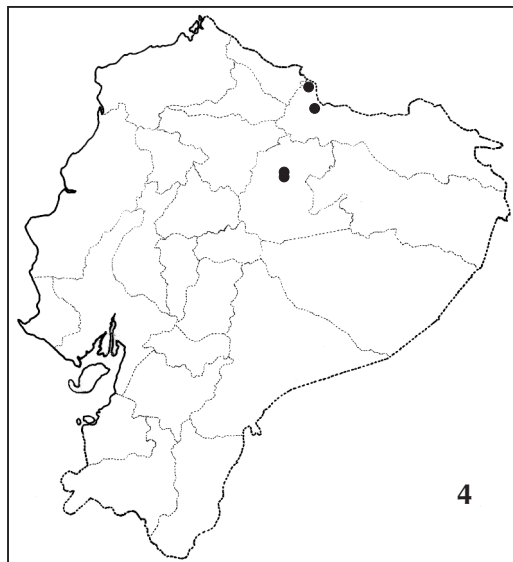
Epiphytic or terrestrial, monopodial, branching **herb**, 70-100 cm tall. **Roots** not seen. **Stems** branching, cane-like, terete, erect; the main stem 100 x 0.6-1.2 cm; branches 25 x 0.4-0.7 cm; the base covered by non-foliar, tubular sheaths. **Leaves** numerous, distributed throughout of the stems, 4-8 persistent on the apical portion of the main stem and the branches, articulate, alternate, partly spreading, similar in size and shape (except for the apical leaf which is somewhat smaller), sheaths 13-46 x 8-14 mm, tubular, striated, rugose; blade on the main stem 8-11.7 x 3-5 cm, of the branches 3.5-8.5 x 1.2-2.3 cm, elliptic, obtuse, apical margin denticulate. **Spathes** lacking. **Inflorescence** 22-23 cm long (of the main stem), 10-14 cm long (of the branches), apical, racemose, erect, straight, flowering only once, laxly, many-flowered; peduncle 1 cm long, rachis 13-22 cm long, terete, gradually thinner towards the apex, straight. **Floral bracts** 6-12 x 5-7 mm, prominent (though slightly shorter than the ovary), ovate-triangular, acute to acuminate, amplexicaul. **Flowers** 20-30 on the main stem, 10-13 on the branches; simultaneous, non-resupinate, fleshy, waxy yellow or more or less orange; fragrance not registered. Ovary 12-18 mm long, terete, straight to slightly arched, longitudinally striated, not inflated. **Sepals** 16-17 x 5-8 mm, narrowly elliptic, acute, slightly aristate, 3-veined, margin entire, spreading; dorsal sepal free, spreading; lateral sepals obliquely united to the column, partly spreading, with a low dorsal keel. **Petals** 14-16 x 2-3 mm, free, spreading, linear-oblong, somewhat falcate near the base, obtuse, 1-veined, margin entire, spreading. **Lip** 10-13 x 10-13 mm, united to the column, entire, deeply and clearly cordiform, base deeply cordate, apex sub-obtuse and very fleshy; ecallose, and without ribs, scarcely pubescent at the base, cymbiform in natural position, but easily spread without braking, embracing the column, margin entire. **Column** 9-11 mm long, slightly arching upwards at the clinandrium-hood, thick, with a pair of rounded wings, apex of the clinandrium rounded. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex rostrate, slightly surpassing the apex of the column. **Pollinia** 4, ovoid, similar in size and shape, caudicles not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, 1/3 de length of the stigmatic cavity. **Nectary** slightly penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity. **Capsule** 55 x 9 mm, (apparently not totally developed), ellipsoid, green; body 37 x 9 mm; pedicel 8 mm long; apical neck 10 mm long.

OTHER SPECIMENS: ECUADOR: Napo: Baeza-Tena, 2 km después de Cosanga, 1990 m, 4 XII 1986, **Hágsater 8839**, AMO! (Illustration AMO!) Cordillera de Guacamayo, to 5 km S of Ave María Pass at 31 to 36 km on road Baeza to Tena, 2000 m, 4 XII 1986, **Dodson 16647**, AMES! MO! QCNE! SEL! [Sucumbios:] km 40 from El Carmelo on road towards La Bonita, ca. 5 km below La Alegría, ca. 2350 m, 8 IV 1979, **Løjtnant 11905**, AAU!

OTHER RECORDS: None seen.

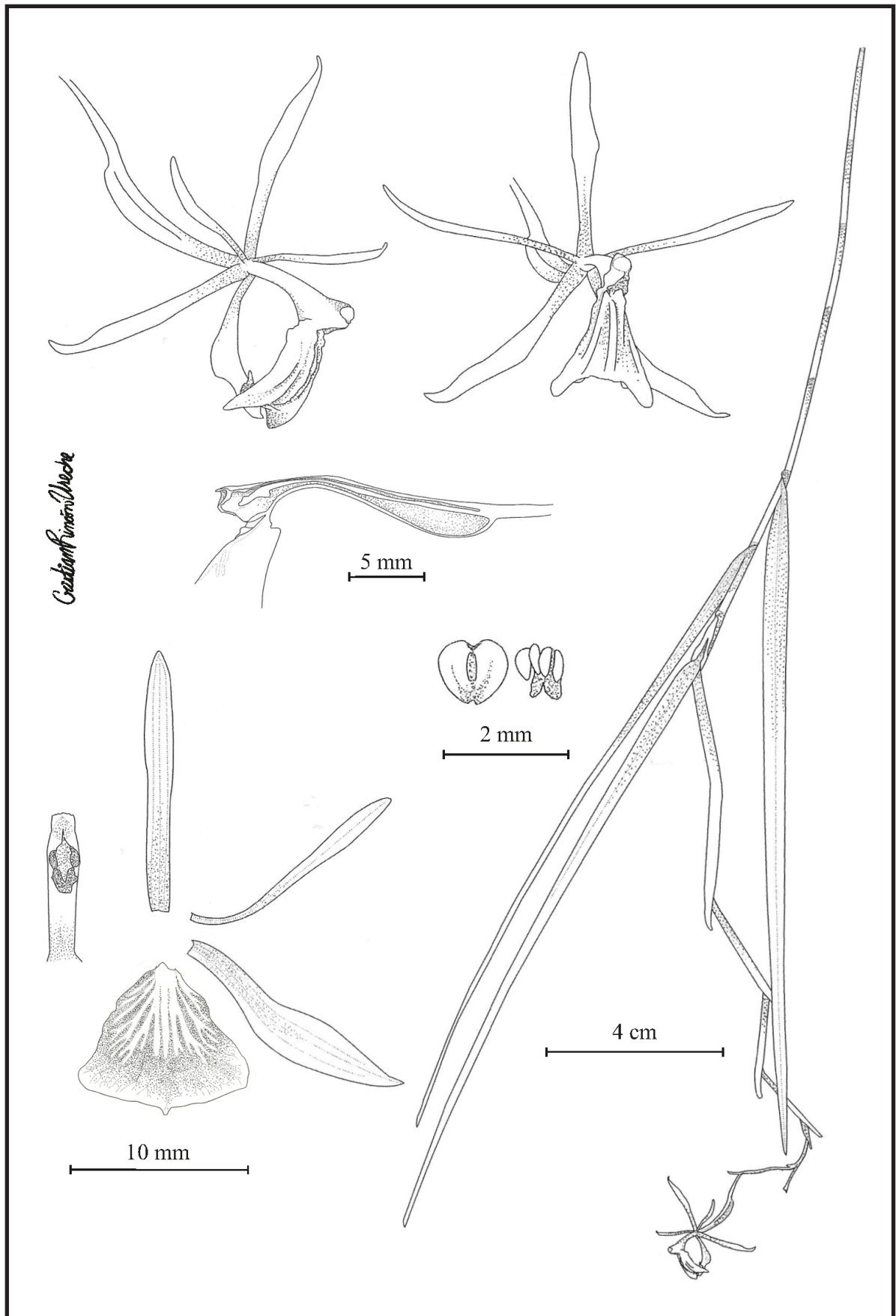
DISTRIBUTION AND ECOLOGY: Known presently from the Amazon slope of the Cordillera Oriental in northern Ecuador (Napo, Sucumbios) bordering on Colombia, epiphytic or terrestrial at 1900-2350 m altitude. Flowering in December, April.

RECOGNITION: *Epidendrum cardiostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the elliptic leaves (those of the main stem 8-11.7 x 3.5-5 cm), elongate inflorescence, 22-23 cm long, with the flowers clearly spaced, simultaneous, sepals 16-17 x 5-8 mm, and the lip clearly cordiform, with the margin entire. *Epidendrum rostrigerum* has oblong-elliptic leaves (those of the main stem 4-9 x 2-3 cm), inflorescence 13 cm long, the flowers closely spaced, sepals 9-10 x 3-4 mm, and the lip lunate, nearly semi-orbicular, with the margin minutely crenate. *Epidendrum probosantherum* Hágsater is vegetatively very similar but the leaves of the main stem narrower (9-11.8 x 2.9-3.3 cm); the inflorescence very short, densely few-flowered, 10-11 cm long; sepals 10-12 x 3-4 mm, and the lip widely triangular with the base truncate. *Epidendrum macrostachyum* Lindl. has lanceolate-elliptic leaves (12.5-13 x 3.0-3.5 cm), an elongate, densely flowered inflorescence up to 30 cm long, flowers successive, sepals 11.0-11.5 x 5-6 mm, and the lip widely cordiform with the base only slightly cordate; the flowers are the color of ripe, black olives.



ETYMOLOGY: From the Greek καρδία, heart and σταχυς, ear of corn, in modern botany a spike, in reference of the clearly heart-shaped (cordiform) lip which distinguishes this species of the Macrostachyum Group.

REFERENCES: Santiago, E. & E. Hágsater, 2013, *Epidendrum macrostachyum* Lindl., E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1454. Hágsater, E. 2010, *Epidendrum probosantherum* Hágsater, E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1378. Santiago, E. & E. Hágsater, 2015, *Epidendrum rostrigerum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, **Icon. Orchid.** 15(1): t. 1556.



EPIDENDRUM CETICAUDATUM Rincón-González, Villanueva & E.Santiago

EPIDENDRUM CETICAUDATUM Rincón-González, Villanueva et E.Santiago, sp. nov.

Type: COLOMBIA: Valle del Cauca: Bajo Calima; ca. 80 m, ca. 28 °C, 20 March 2014, **Milton Rincón González 114-145-189**. Holotype: TOLI! (illustration and photo voucher). Isotype: COL!

Similar to *Epidendrum hellerianum* A.D.Hawkes, but the flowers smaller, with the lip entire, bell-shaped, sepals falcate and the column curved.

Epiphytic, sympodial, caespitose **herb**, 18-30 cm long. **Roots** 1-2 mm in diameter, basal, fleshy. **Stems** 15-18 x 0.1-0.16 cm, cane-like, terete along the basal half, somewhat laterally compressed along the apical half, thin, arching, rarely erect; the lower region covered by non-foliar sheaths, 10-16 x 1.0-1.5 mm, tubular, somewhat laterally compressed. **Leaves** 4-8, distributed along the apical half of the stem, inserted at a 45° angle; sheaths tubular, somewhat laterally compressed, progressively shorter; blade 80-150 x 2.5-3.5 mm, linear-lanceolate, apex acuminate, margin entire, adaxial surface deep green, abaxial surface glaucous. **Inflorescence** 15-22 cm long, apical, arching, racemose, producing new racemes over several years and thus pluri-racemose, lax, few-flowered: peduncle 10-18 cm long, filiform, zig-zag, provided with 4-8 bracts 2-3.5 x 0.1-0.2 cm, laterally compressed, ancipitose, partly imbricating near the apex, grayish, unequal in size, progressively shorter; rachis 1.5-2.5 cm long, filiform, slightly sinuous. **Floral bracts** 1 mm long, much shorter than the ovary, ovate, embracing. **Ovary** 8-12 x 0.75-2.5 mm, ventrally inflated along the apical $\frac{3}{4}$, smooth, nearly translucent. **Flowers** 3-10, successive, developing one at a time, resupinate, ovary pale pink, sepals and petals pale pink, lustrous, lip white, column pink; without fragrance. **Sepals** free, 3-veined, margin entire, revolute; dorsal sepal 13 x 1.8 mm, spreading to slightly reflexed, linear-oblongate, apex sub-acute; lateral sepals 13.7 x 2.2 mm, slightly reflexed, narrowly oblongate, oblique, slightly falcate, apex acuminate. **Petals** 13.2 x 1.1 mm, spreading, slightly arching forward in natural position, linear-oblongate, apex sub-acute, 1-veined, margin entire, slightly revolute. **Lip** 6.2 x 9.6 mm, united to the column, convex in natural position, bell-shaped, base cuneate, apex truncate, minutely apiculate, apical half strongly revolute, margin slightly erose; bicallose, the calli low, erect, thin, parallel; disc provided with 3 central ribs, thick, parallel, straight, of equal length, disappearing towards the $\frac{2}{3}$ of the lip, the lateral veins branching into 3 ramified branches, terminating at the apical $\frac{3}{4}$ of the lip. **Column** 8 x 1.2-2.5 mm, slightly arched, thin at the base, thickened towards the oblique. **Clinandrium-hood** short, margin denticulate. **Anther** widely cordiform, apex notched, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, slightly longer than the pollinia. **Lateral lobes of the stigma** small. **Nectary** penetrating about $\frac{3}{4}$ of the ovary, forming a prominent, elongate ventral vesicle, smooth, with liquid inside.

OTHER SPECIMENS: None seen.

OTHER RECORDS: COLOMBIA: Valle del Cauca: Bajo Calima, 70 m, *Lozano Useche s.n.*, digital image series, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the pacific coastal plain of Colombia, the Chocó, near Buenaventura, at about 80 m altitude. Flowering in March, probably throughout the year.

RECOGNITION: *Epidendrum ceticaudatum* belongs to the Physinga Group which is characterized by to 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, the lip entire and the ovary with a prominent vesicle. The species is recognized by the bell-shaped lip, apex truncate, minutely apiculate, petals 13.2 x 1.1 mm long, lateral sepals slightly falcate, 13.7 x 2.2 mm long, slightly arched column of 8 mm long. It is closely resembles *Epidendrum hellerianum* which has a 3-lobed lip, and larger flowers, petals 30 x 2 mm, lateral sepals linear 25-30 x 3-4 mm, column straight of 15-17 mm long.

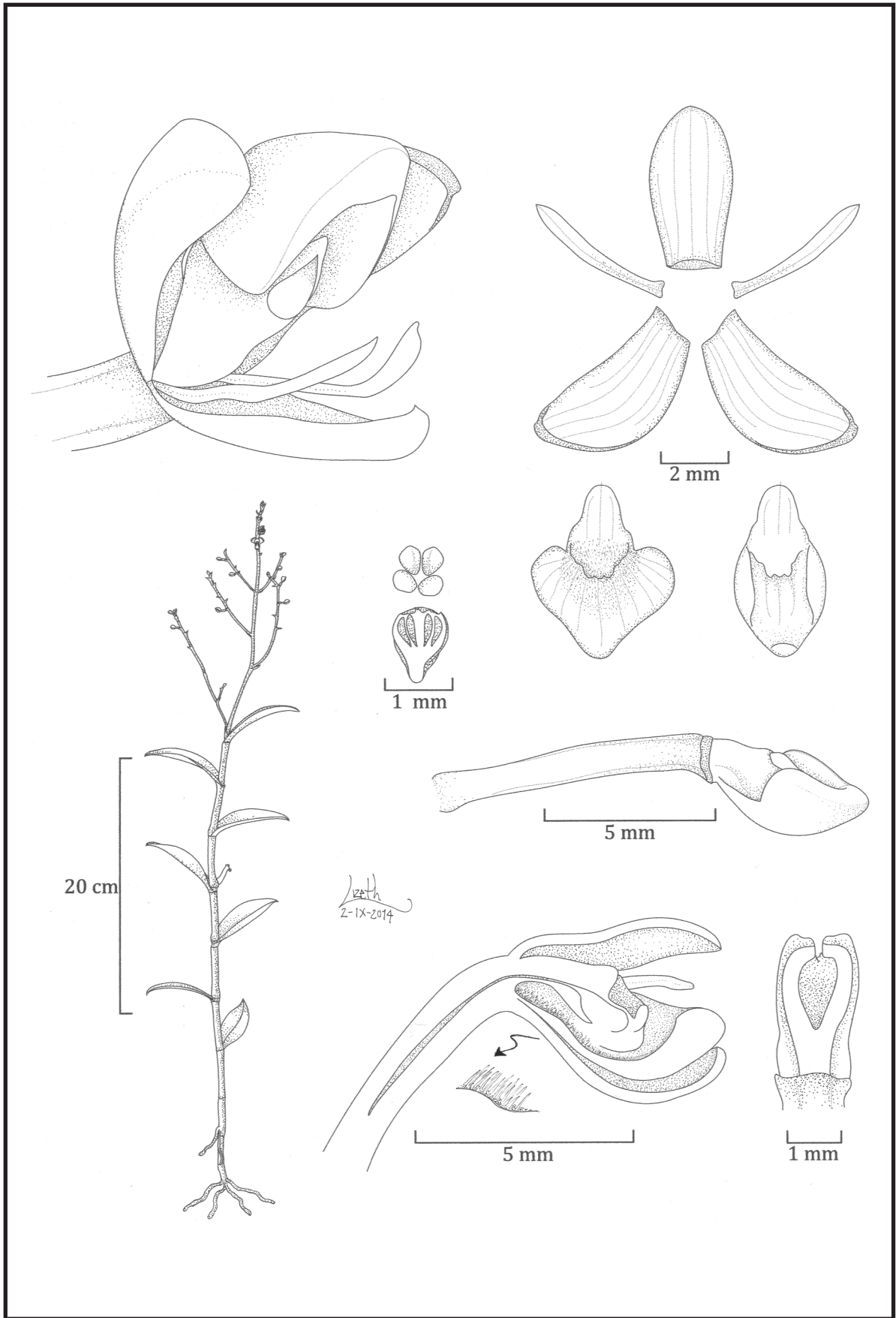
CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: from Latin *cetis*, cetacean, pertaining to whales, and “caudatum” tail, due to the lip reminiscent of the tail of whales.

ACKNOWLEDGEMENTS: We thank the staff at the Herbario AMO for the initial collaboration in the identification of the species; the Faculty of Forestry of the Tolima's University, particularly to Dr. Omar Melo who has supported this work and Dr. Cyril Nelson for collaboration in the etymology of the species.

REFERENCES: Hamer, F., 1983, *Epidendrum hellerianum*, Orchids of Nicaragua, Part 2, **Icon. Pl. Trop.** 8: pl. 718. 1982.





EPIDENDRUM CHILCALORUM Hágsater, Reina-Rodr. & Rodr.-Martínez

Plate 1512

EPIDENDRUM CHILCALORUM Hágsater, Reina-Rodr. et Rodr.-Martínez, *sp. nov.*

Type: COLOMBIA: Valle del Cauca: [Mun. Dagua], corregimiento San José del Salado, 1800-1900 m, 2 Agosto 2014, **Lizeth Rodríguez-Martínez 163**. Holotype: VALLE! (illustration voucher). Digital images of pretype: AMO! (photo voucher).

Similar to *Epidendrum pilcuense* Hágsater, but differs in having an elliptic foliar blade half as long, the apex obtuse, sepals 5-veined, narrower petals, lip larger 5 x 4 mm, longer than wide, embracing the apex of the column without covering it completely, and the callus apically tri-lobulate.

Terrestrial, monopodial, erect **herb**, 43-53 cm tall. **Roots** 1.0-1.5 mm in diameter, basal, thin, distributed along the basal nodes of the erect stem. **Stem** 36 x 0.48 cm, few branched above when mature, erect, straight, terete, thin (in the type, a single branch is developing opposite the middle leaf). **Leaves** 7, distributed throughout the primary stem, articulate, patent, spreading, similar in size and shape, green, concolor; sheaths 2-4 cm long, tubular, minutely striated; rugose, brown-purple; blade 4.4-6.5 x 1.4-2.0 cm, elliptic, apex obtuse, margin entire, spreading. **Inflorescence** 18 cm long, apical, paniculate, occasionally racemose, erect, laxly-flowered; peduncle 0.9-1.2 x 0.25 cm, short, terete, thin and straight; the base provided with a bract 9 mm long, lanceolate, apex acute, embracing; rachis 17 x 0.2 cm, very slightly flexuous, greenish brown; racemes 3.5-9.7 cm long, generally 5, with 3 a 11 flowers laxly spaced along the rachis. **Floral bracts** 3-5 x 1.6 mm, much shorter than the ovary, triangular-lanceolate, apex acuminate, embracing, spreading, brown. **Flowers** de 11 a 31, successive, 1-3 open at one time, non-resupinate, sepals externally fuchsia-wine-red, internally, pale pink, petals pale pink, lip and column pinkish white; without fragrance. **Ovary** 11.2 x 1.2 mm, terete, thin, striated, fuchsia colored. **Sepals** 4.7 x 2.2-2.7 mm, partly spreading, free, fleshy, concave, 5-veined, margin entire, spreading; dorsal sepals oblong-obovate, apex rounded; lateral sepals oblong-elliptic, oblique, slightly falcate. **Petals** 4.6 x 0.4 mm, partly spreading, free, concave, linear, oblique, apex acute, 1-veined, margin entire, spreading. **Lip** 5 x 4 mm, united to the column, cymbiform in natural position, cordiform when spread, slightly 3-lobed (the lobes separated by very shallow, wide sinuses), fleshy (thicker towards the apex), embracing the apex of the column in natural position without covering it, margin entire; with hirsute trichomes towards the callus and the base of the lateral lobes; disc with a single, laminar callus, the apex 3-lobulate; lateral lobes 1.18 x 2.16 mm, semi-orbicular; mid-lobe 1.27 x 2 mm, widely triangular, apex narrowly rounded. **Column** 3 mm long, short, slightly arched near the base, deflexed towards the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex acute; 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** short, without penetrating the ovary, profusely pilose opposite the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Dagua, San José del Salado, El Chilcal, 1880 m, 31 VIII 2013, *Lopera* 496, CUVCI! Ibid. 1850 m, 1 IX 2013, *Reina-Rodríguez* 1720, CUVCI!

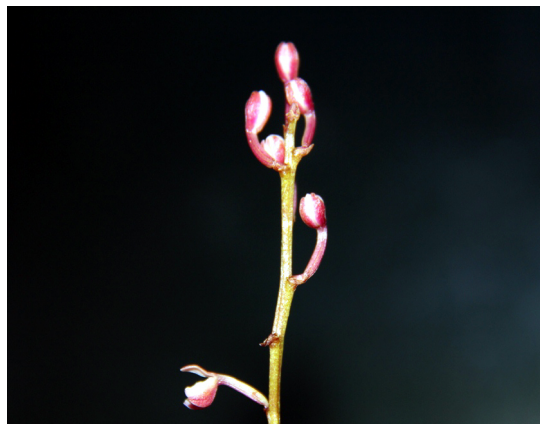
DISTRIBUTION AND ECOLOGY: Known presently only from the Cordillera Occidental in southern Colombia, on the ridge separating the basins of the Río Dagua and Río Anchicayá, at an altitude of 1800-1900 m. Observed in flower between August and September, during the transition from the dry period to the rainy season. All collections were made in the same locality, on the side draining to the Río Dagua. Growing fully exposed to the sun, along the edge of the forest and pastures, as part of the secondary vegetation. Annual mean precipitation is 2,000 mm, with constant fog in the early morning and late afternoon. Mean temperature is 17 °C, slopes are steep (50-75%). Nearby forests are 25 m tall. The habitat is constituted by Melastomataceae, Rubiaceae, Orchidaceae, Ericaceae, Solanaceae and Euphorbiaceae. The more abundant genera were *Palicourea*, *Psychotrya*, *Miconia*, *Solanum*, *Cavendishia* and *Clusia* and the dominant species: *Otoba lehmannii*, *Ladenbergia oblongifolia*, *Myrsine coriacea*, *Saurauia scabra*, *Alchornea latifolia*, *Ficus tonduzii*, *Ficus andicola*, *Meriania nobilis*, *Clusia* sp., *Miconia* sp. and *Schefflera* sp.

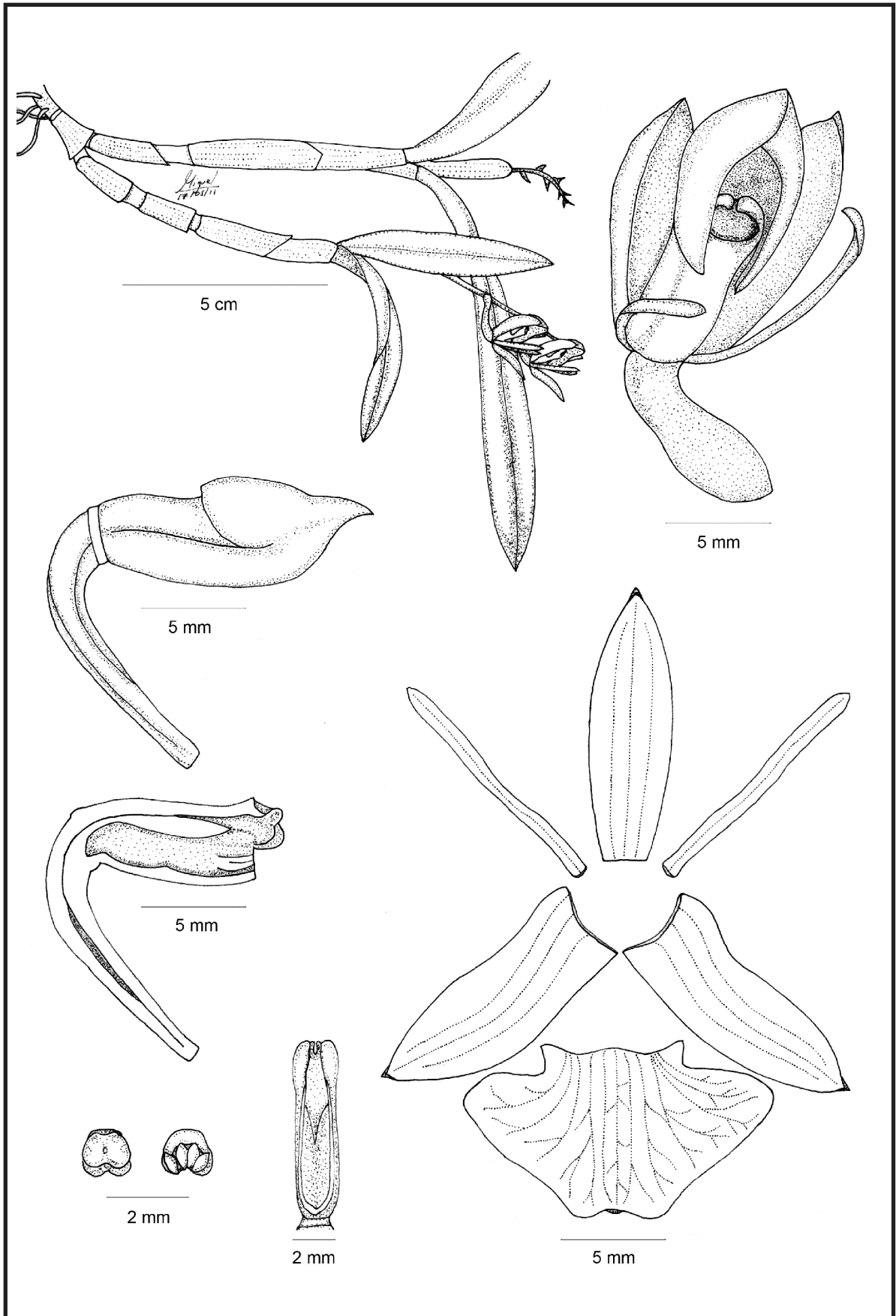
RECOGNITION: *Epidendrum chilcalorum* belongs to the Pilcuense Group which is recognized by the thin, monopodial stems, branching above when mature, sheaths rugose, inflorescence apical, erect, paniculate, lax-flowered, lacking any spathe, small flowers, and sub-entire to deeply 3-lobed, fleshy lip embracing the apex of the column, 1-callose, the disc of the lip and floor of the nectary opposite the stigmatic cavity pilose. The species is recognized by the elliptic leaves 4.4-6.5 cm long, the color of the flowers, the sepals externally fuchsia-wine-red, internally pink, the column and lip pinkish-white; the sub-entire, cordiform lip wider than long, with a single, laminar callus, the apex 3-lobulate, and the 5-veined sepals, apically rounded. *Epidendrum pilcuense* Hágsater & Dodson, has lanceolate leaves about twice as long (9-12 cm long), yellowish white flowers with purple punctuation, and ochre-yellow, deeply 3-lobed lip smaller, 3.5 x 4.5 mm, callus entire, rounded, and sepals 3-veined, acute. *Epidendrum grayi* Hágsater & Dodson has similar sized linear-lanceolate leaves, pale orange colored flowers, deeply 3-lobed lip, bilobed callus, and the sepals 3-veined, obtuse.

CONSERVATION STATUS: DD. Data deficient. The main threat in this area is the selective extraction of wood, the spreading of the cattle grazing frontier, and the plantation of pines and *Eucalyptus*. However, the species is apparently a colonizer, as it was found in disturbed areas of secondary vegetation.

ETYMOLOGY: In honor of the inhabitants of the town of El Chilcal, Municipality of Dagua, Valle del Cauca, Colombia, who have welcomed the decree designating the area as Public Protected Area, as well as several private reserves of NGO's, a new conservation alternative in Colombia. These declarations will contribute to the conservation of the Flora and Fauna of this territory.

REFERENCES: Hágsater, E. & C. H. Dodson. 1993, *Epidendrum grayi* in Hágsater, E., & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 137. Hágsater, E. & C. H. Dodson. 1993, *Epidendrum pilcuense* in Hágsater, E., & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 173.





EPIDENDRUM CHOTAËNSE Chocce-Peña, Hágsater & Vega-Vera

Plate 1513

EPIDENDRUM CHOTAËNSE Chocce-Peña, Hågsater et Vega-Vera, *sp. nov.*

Type: PERU: Cajamarca: Chota: Querocoto: parte alta del cerro Paja Blanca, 2628 m, 26 de febrero de 2011, **Miguel Chocce-Peña, Nanette Vega, R. Cabrera y A. Cabrera 5919**. Holotype: USM! (Illustration voucher). Isotype: HEPLAME! Digital images of pretype; AMO! (Photo voucher).

Epidendri latorreorum Chocce, Hågsater et Dalström simile sed caulibus longioribus, 2 foliis, floribus minoribus et luteis, labello integro.

Epiphytic, sympodial, caespitose, **herb**, growing horizontally on tree trunks, up to 21 cm tall. **Roots** basal, thin, 1 mm in diameter. **Stems** horizontal, somewhat hanging, simple, cane-like, thickened, 7-9 x 0.5-0.7 cm, covered by 2-4 tubular sheaths. **Leaves** 2, aggregate at the apex of the stem, unequal, fleshy-succulent; sheaths 5-25 x 5-7 mm, imbricated, minutely striated; blade oblong-lanceolate, 5.3-13.1 x 0.8-1.6 cm, acute, margin entire, with an apical, dorsal keel, dark green, somewhat tinged purple. **Spathaceous bracts** 1, 18-24 x 5-6 mm, conduplicate, apex rounded, partly hidden by the upper leaf-sheath. **Inflorescence** apical, 2-6 cm de largo, from the mature stem, flowers only once, racemose; peduncle terete. **Floral bracts** 1-4 mm long, much shorter than the ovary, triangular. **Flowers** 3-7, successive, 3-4 open at one time, non-resupinate, secund, always on the underside of the rachis, bright yellow, concolor, ovary green. **Ovary** 15 mm long, terete, striated, not inflated, strongly curved towards the apex, so as to form a hook together with the column, and ensuring the flowers are non-resupinate, though secund. **Sepals** partly spreading, elliptic-lanceolate, acute, with a dorsal, apical keel, 3-veined; dorsal sepals 12 x 4 mm, lateral sepals 12 x 4.5 mm, oblique. **Petals** 11.7 x 0.8 mm, partly spreading, linear, obtuse, 1-veined, margin entire, spreading. **Lip** united to the column, entire, 8 x 15 mm, trapezoid, about twice as wide as it is long, the corners rounded, base truncate, apex truncate, slightly retuse, concave in natural position and embracing the apex of the column without covering it, margin entire, ecallose. **Column** 9 x 2 mm, straight, thick. **Clinandrium-hood** reduced, margin entire. **Anther** reniform apex truncate, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles granulate; viscidium semi-liquid. **Rostrum** apical, slit. **Lateral lobes of the stigma** short. **Nectary** wide, rounded, not surpassing the perianth, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: **Cajamarca:** Chota: 10 V 2012, *Huamantupa s.n.*, digital images of live flowers, AMO! Norte de Cajamarca, 2200-2800 m, 14 II 2013, *Nauray s.n.* (digital image, AMO!)

DISTRIBUTION AND ECOLOGY: Known only from the collections in the Province of Chota, Cajamarca Department, Northern Peru. Epiphytic on tree trunks in montane forest, at 2600-2700 m altitude. Flowering from February to May.

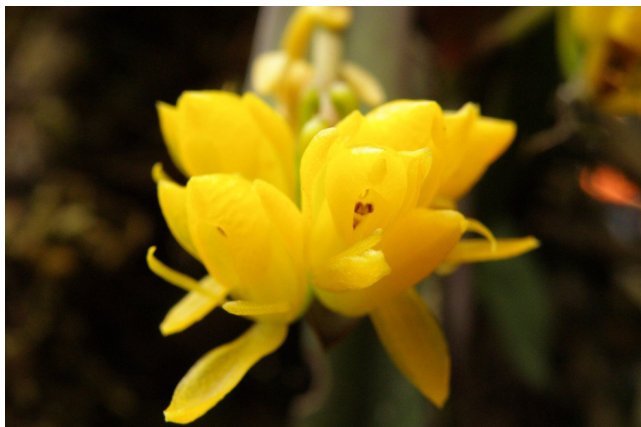
RECOGNITION: *Epidendrum chotaense* belongs to the *Kockii* Group which is characterized by the caespitose habit, with 1-2 fleshy-succulent leaves, 1-2-spathaceous bracts, flowers resupinate or not, with a prominent 3-lobed or entire lip. The species is recognized by the 2, unequal, long, narrow, succulent leaves, small, secund flowers (sepals 12 mm long), always on the underside of the rachis, with the ovary strongly arched to form a hook with column, bright yellow-colored, the lip trapezoid when spread, but concave in natural position, embracing the column to nearly cover it. *Epidendrum latorreorum* has similar plants, but with one leaf and its flowers are non-secund, larger, greenish copper colored and the lip 3-lobed, the ovary only slightly curved. *Epidendrum kockii* Hågsater & Dodson has two leaves, but its stems shorter, flowers larger, resupinate, brown with a burgundy-red, large, wide, obreniform lip bicallose.

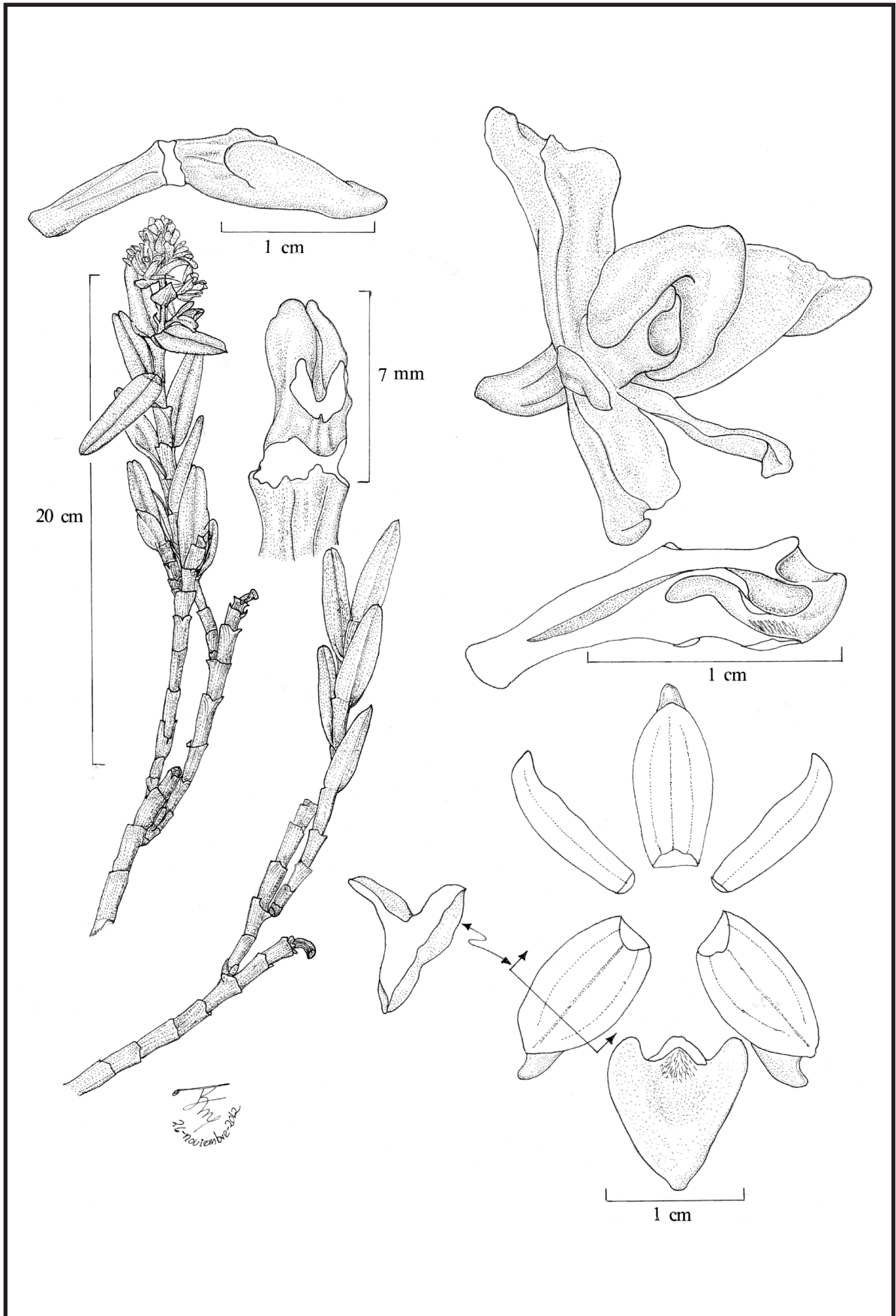
CONSERVATION STATUS: DD (data deficient). Uncommon in montane forest where the type was collected.

ETYMOLOGY: In reference to the province where the type was collected, Province of Chota, Cajamarca Department.

ACKNOWLEDGEMENTS: We thank the staff at the San Marcos Herbarium (USM), AMEC (Perú) S.A. and Río Tinto Minera Perú Limitada S.A.C. for their support.

REFERENCES: Chocce, M., E. Hågsater & S. Dalström, 2009, *Epidendrum latorreorum* in E. Hågsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1259. Hågsater, E., & C. H. Dodson, 1999, *Epidendrum kockii* in E. Hågsater L. Sánchez & J. García-Cruz (eds.), *The Genus Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 343.





EPIDENDRUM COORDINATUM Rchb.f.

EPIDENDRUM COORDINATUM Rchb.f., *Linnaea* 41: 7. 1876.

Type: COLOMBIA: [Antioquia:] Medellín, *Regel s.n.* Holotype: W-R 50011!

Terrestrial, monopodial, branching **herb**, 100 cm tall. **Roots** not seen. **Stems** branching when mature, cane-like, terete, erect, straight; the primary stem 90-95 x 1.0-1.3 cm; branches 13-19 x 0.4-0.7 cm. **Leaves** numerous on the primary stem, 5-8 on the branches, articulate, alternate, sub erect with respect to the stem, similar in size and shape, coriaceous; sheaths 5-17 x 4-6.5 mm, tubular, minutely striated, rugose; blade 9-11 x 1.5-2.3 cm (on the primary stem); 2.5-10.5 x 0.9-1.6 cm (on the branches); lanceolate, apex rounded, minutely apiculate, margin entire, entire to revolute in herbarium specimens. **Spathe** lacking. **Inflorescence** to 14 cm long on the primary stem; 5-10 cm long on branches; apical, racemose, erect to arching, flowering only once, few flowered, sub dense; peduncle 7 mm long, terete, straight; rachis straight. **Floral bracts** 7-16 x 5-9 mm, prominent, slightly longer than ovary, gradually smaller towards the apex of the rachis, narrowly ovate-lanceolate, acuminate, amplexicaul. **Flowers** ca. 11, successive, non-resupinate, very fleshy, pale yellow to green; distributed in a helicoid; fragrance not registered. **Ovary** 13 mm long, terete, thick, longitudinally striated, not inflated. **Sepals** 12-13.7 x 5.8-6.8 mm, free, 3-veined, partly spreading, elliptic, sub obtuse, uncinata, with a high, prominent dorsal keel, margin entire, spreading. **Petals** 12 x 3.1 mm, free, partly spreading, oblong, apex acute, falcate towards the apex, 1-veined, margin entire, spreading. **Lip** 11 x 10.3 mm, united to the column, entire, deltate-cordiform, base cordate, apex obtuse, very fleshy; ecallose, without ribs, base pubescent, cymbiform in natural position, embracing the apex of the column without covering it, margin entire, spreading. **Column** 7 mm long, thick, straight, the apex directed somewhat upwards, with a pair of lateral, rounded wings. **Clinandrium hood** reduced, margin entire. **Anther** and **pollinia** not seen. **Rostellum** sub apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, strongly pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Antioquia: Mun. Sonsón, vereda Chaverras, vertiente de la quebrada El Padre Sánchez, al NE de La Paloma, 2900-3000 m, 18 VIII 1992, *Callejas 10601*, NY! (illustration voucher).

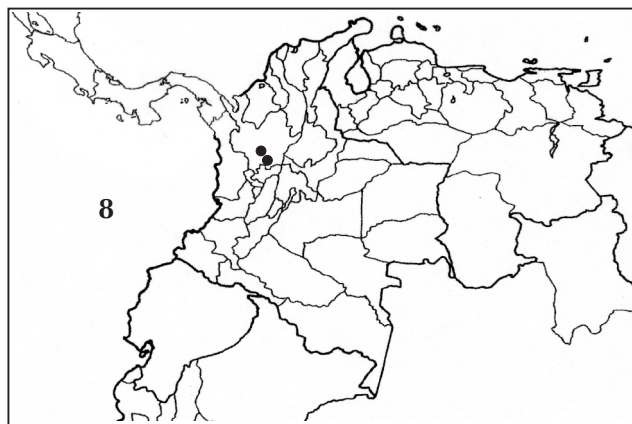
DISTRIBUTION AND ECOLOGY: Known only from Antioquia, northern Colombia, along the Cordillera Occidental; terrestrial at 2900-3000 m altitude. Flowering in August.

RECOGNITION: *Epidendrum coordinatum* belongs to the *Macrostachyum* Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose 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 lanceolate leaves apically rounded, the inflorescence is 5-14 cm long, few-flowered, rachis straight, the floral bracts narrowly ovate-lanceolate and the sepals with a high, very prominent dorsal keel, the apex uncinata. *Epidendrum chondrochilum* F.Lehm. & Kraenzl. is vegetatively similar, but the rachis is clearly flexuous, the floral bracts are widely ovate (all similar in size), sepals apiculate, petals oblanceolate. *Epidendrum xylostachyum* Lindl. has oblong to oblong-lanceolate leaves, the inflorescence is 7-13 cm long, and the flowers are densely aggregate, floral bracts are cymbiform, widely ovate with the apex rounded, sepals minutely apiculate, petals obovate-elliptic. *Epidendrum platystachyum* Hágsater has oblong leaves and a very short, few-flowered inflorescence (1.5-3 cm long), sepals not uncinata, petals oblanceolate, with the apex rounded. *Epidendrum sarcostachyum* Hágsater, E.Santiago & E.Becerra is vegetatively very similar, but only the lateral sepals are very fleshy, the apex obtuse and is not uncinata, column has a pair of apical wings, the upper corner a right angle, the lower corner rounded.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *coordinatio*, coordinated, arranged.

REFERENCES: Hágsater, E., 2004, *Epidendrum platystachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 7, *Icon. Orchid.* 7: t. 776. Hágsater, E., & E. Santiago, 2015, *Epidendrum sarcostachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t.1558.



Authors: E. Santiago & E. Hágsater

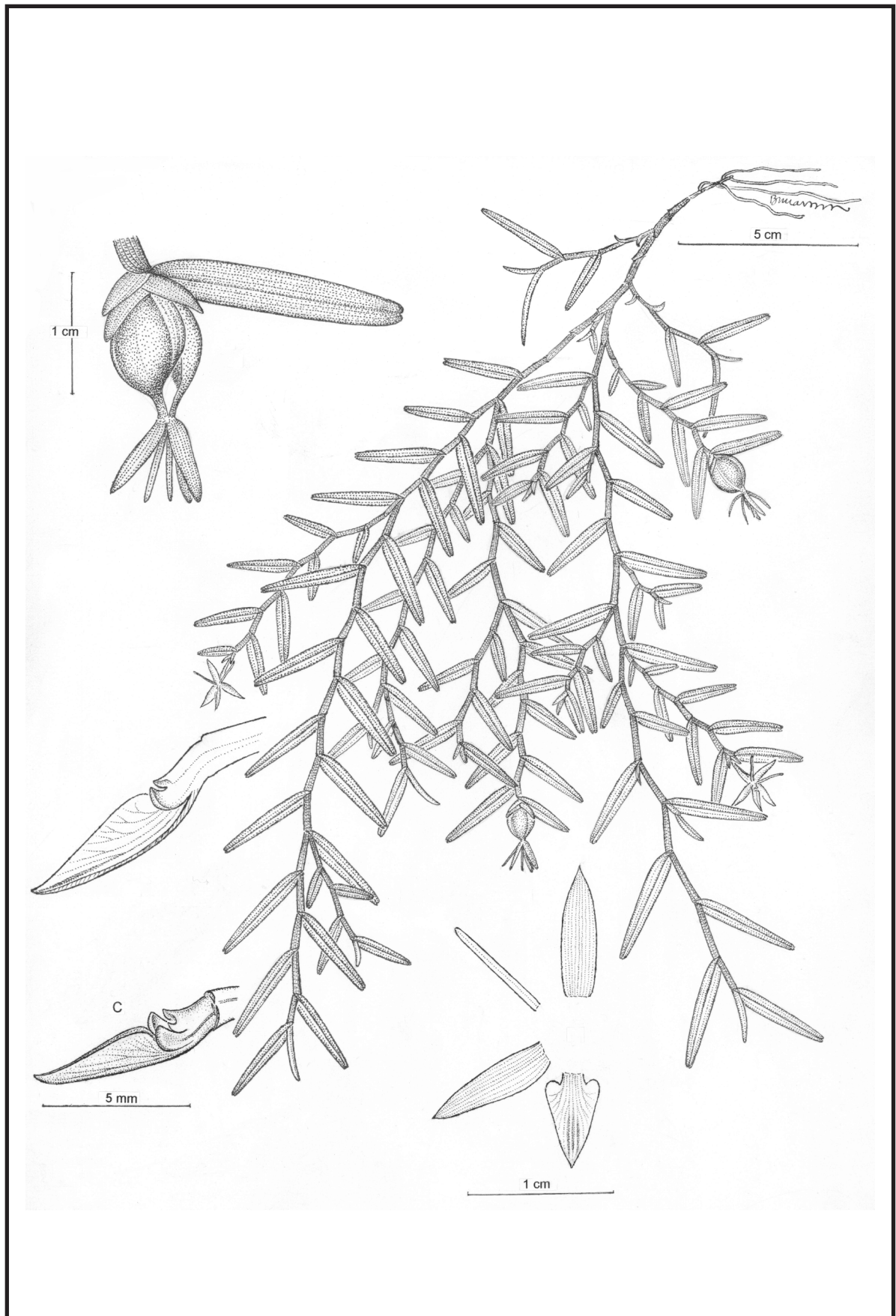
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1514



EPIDENDRUM CORNUREPENS Hágsater, H.Ferrer & L.Sánchez

Plate 1515

EPIDENDRUM CORNUREPENS Hágsater, H.Ferrer et L.Sánchez, *sp. nov.*

Type: VENEZUELA: Amazonas: Departamento de Río Negro: Cerro La Neblina, Expedition Camp VII, 00° 50'N, 65° 58'W, 1800 m, 29 November 1984, **William R. Anderson 13418**. Holotype: VEN 203676! (Illustration voucher)
Isotypes: CAS 876502! F 2095404! MICH! VEN 338122!

Similar to *Epidendrum repens* Cogn. but the stems and leaves longer, flowers larger, lip with three low thickened veins along the apical half, column with a pair of falcate wings at the apex.

Epiphytic, monopodial, pendent, branching **herb**, ca. 60 cm long. **Roots** 0.7 mm in diameter, basal, only from the primary stem, thin. **Stems** branching, primary stem ca. 27-60 x 0.3 cm, secondary stems 9-20 x 0.3 cm, tertiary flowering stems 4.5-6 x 0.2 mm; flexuous, the tertiary flowering branches produced from the intermediate nodes of the primary and secondary stems, thin, terete at base, laterally compressed towards the apex; covered basally by scarios sheaths, 1.1-1.6 x 0.2-0.3 cm, becoming fibrous with age. **Leaves** numerous on the primary and secondary stems, 6-8 on the flowering stems; distributed throughout the stems, distichous, unequal in size, the basal ones smaller, those of the flowering branches smaller than those of the primary and secondary stems; sheaths 0.8-1.0 x 0.4 cm, tubular, laterally compressed, minutely striated; blade: primary and secondary stems: 2.0-3.4 x 0.35-0.4 cm, flowering stems: 1.0-1.9 x 0.35-0.4 cm; narrowly ovate to lanceolate, apex narrowly bilobed, emarginate, coriaceous, margin entire, spreading. **Spathes** lacking. **Inflorescence** apical, single flowered, peduncle 1-2 mm long, reduced, covered by 2 imbricating bracts, similar to the floral bracts. **Floral bracts** 6.5-7.0 mm long, shorter than the ovary, ovate, acute, conduplicate, membranaceous. **Flower** single; color and fragrance not registered. **Ovary** 11-13 mm long, not inflated, terete, unornamented. **Sepals** 8-9 x 2.0-2.2 mm, spreading, free, narrowly elliptic-oblong, acute, unornamented, 8-9-veined, margin entire, spreading; lateral sepals slightly oblique. **Petals** 8 x 0.5 mm, spreading, free, linear, apex rounded, 1-veined, margin entire, spreading. **Lip** 6.0-6.5 x 3.5-3.7 mm, united to the column, entire, triangular narrowly cordate, base slightly cordate, apex acute; ecallose, with 3 low, parallel thickened veins along the apical half. **Column** 2 mm long, straight, thick, with a pair of falcate, prominent wings at the apex. **Clinandrium-hood** short, margin entire. **Anther, nectary and lateral lobes of the stigma** not seen. **Capsule** 9-11 x 7-9 mm, globose, pedicel reduced, apical neck 1.3-1.6 mm long, perianth persistent, as are the bracts of the inflorescence.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from Cerro Neblina (Serra da Neblina), an area enclosed within Parque Nacional de la Serranía de la Neblina (Venezuela) and Parque Nacional do Pico da Neblina (Brazil), in the southern and northern portions of Venezuela and Brazil states of Amazonas respectively; the collecting site is most likely in Venezuela. Epiphytic at 1800 m altitude. Flowering and fruiting in November.

RECOGNITION: *Epidendrum cornurepens* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Repens Subgroup, which has strictly pendent plants, with small leaves less than 3.4 cm long. The species has long plants, up to 60 cm long, with an evident primary and secondary stems, and short flowering branches; leaves on the primary and secondary stem are 2.0-3.4 cm long, while those of the flowering branches are 1.0-1.9 cm long, inflorescence has a single flower, sepals 8-9 mm long, lip 6.0-6.5 mm long, triangular narrowly cordate, apex acute, and the column has a pair of falcate, prominent apical wings. It is very similar in vegetative structure and flowers to *Epidendrum repens* Cogn. which is widely distributed from Mexico to northern Venezuela and the Lesser Antilles, and has smaller leaves and flowers, leaves to 2.5 cm long, sepals 6.0-7.2 mm long, the lip 3.0-3.3 mm long, and lacks the evident apical, falcate wings at the apex of the column. *Epidendrum brachyrepens* Hágsater, endemic to middle Central America and the Larger Antilles has short stems, no primary stem, leaves are all small and similar, 6-12 mm long, ovary is arched at the apex, sepals are 7.5-8 mm long, lip 3.8-5.0 mm long, and the column lacks any evident wings. *Epidendrum strobiliferum* Rchb.f., widely distributed throughout the neotropics, has much shorter plants, 20-30 cm long, smaller flowers, 3-5 per inflorescence, sepals 3.4-4.3 mm long, and the lip has a "Y" shaped callus. *Epidendrum luckei* Bock is endemic to the lowlands of the Darien and Chocó regions, and inflorescence has 3-5 flowers, with a tridentate callus on the lip and the anther terminates in a pair of elongate horns.

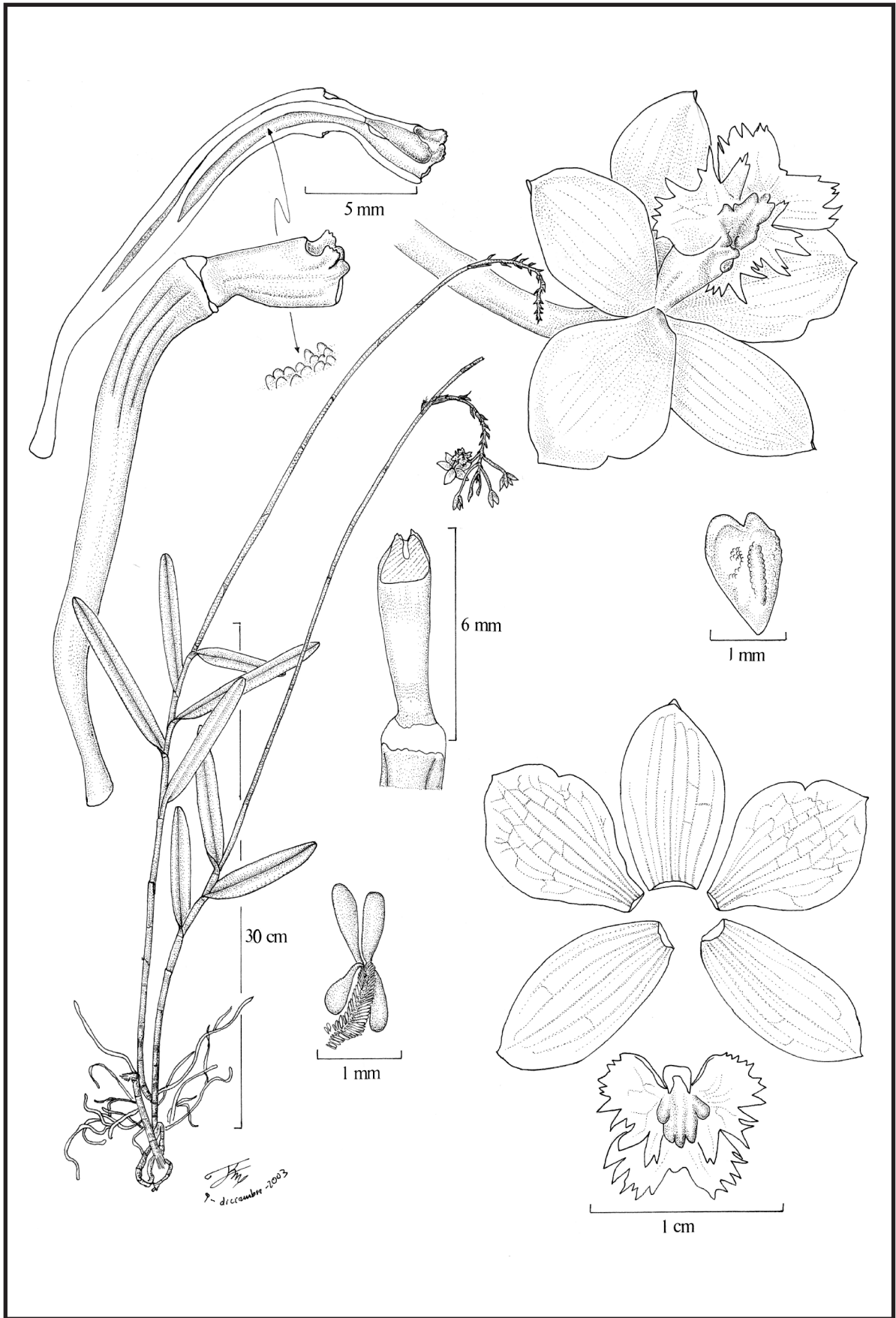
CONSERVATION STATUS: DD: Data deficient.

NOTE: The holotype and isotypes were collected in the context of an expedition to Neblina organized by the "Fundación para el Desarrollo de las Ciencias Físicas, Matemáticas y Naturales" (FUDECI) during the years 1983-1987, under the leadership of Dr. Charles Brewer-Carias.

ETYMOLOGY: From the Latin *cornutus*, horned, and *repens*, creeping, in reference to the characteristic prominent horns at the apex of the column, and the similarity of this species with *E. repens*.

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





EPIDENDRUM COROICOËNSE Schltr.

EPIDENDRUM COROICOËNSE Schltr., Repert. Spec. Nov. Regni Veg. 27: 60. 1929.

Type: BOLIVIA: La Paz: Nord Yungas; Polo-Polo bei Coroico, 1100 m, Oktober 1912, **Otto Buchtien 3692**. Holotype: B, destroyed. Lectotype, here designated, US 1399557! (Illustration voucher.) Isotypes AMES x2! US!

Epiphytic, caespitose, sympodial, erect **herb**, 60-65 cm tall. **Roots** 0.5-1 mm in diameter, fleshy, thin. **Stems** 17-26 x 0.22-0.32 cm, simple, cane-like, terete, thin, straight. **Leaves** 5-10, distributed throughout the stem, alternate, sub-erect; sheaths 1.5-3.8 x 0.22-0.32 cm, tubular, minutely striated when dry; blade 6-11.5 x 0.9-1.8 cm, coriaceous, smooth, oblong-elliptic, about 7 times longer than wide, apex rounded, slightly bilobed, margin entire. **Spathe** lacking. **Inflorescence** 36.5-38 cm long, apical, racemose, producing new racemes with time from the apical nodes of the elongate peduncle, each raceme arching nutant; peduncle 32.5-34.5 cm long, elongate, terete, thin, straight, nearly totally covered by 7-9 acute, tubular sheaths, 2.8-4.9 x 0.16-0.22 cm; rachis 6-7 cm long, terete, thin. **Flowers** 20-30, successive, usually 4-5 open at one time, non-resupinate, red (*lacquer red*), the callus dark yellow. **Floral bracts** 2-7 mm long, much shorter than the ovary, triangular-lanceolate, acuminate, gradually shorter towards the apex. **Ovary** 16-22 mm long, terete, thin, arching towards the apex, smooth. **Sepals** 9.5-10.4 x 4.3-5.3 mm, spreading, free, elliptic to sub-orbicular, sometimes oblique, minutely apiculate, 6-7-veined, margin entire, spreading. **Petals** 9.7 x 6.5 mm, wider than the sepals, spreading, free, elliptic to sub-orbicular, cuneate towards the base, sub-acute, 4-veined, the veins branched from the base appearing 7-veined. **Lip** 7.3 x 8.5 mm, united to the column, 3-lobed, base deeply cordate, distal margins deeply dentate; callus 5-tuberculate, 2 basal and 3 apical tubercles, without keels; lateral lobes 3.6 x 5.8 mm, dolabriform, terminating in a pair of divaricate, narrow, triangular, acute, bifurcate teeth, the lateral lobes overlap with the mid-lobe when spread; lateral lobes 3.6 x 5.8 mm, dolabriform, the distal side terminating in two divergent lobes, apically bifurcate; mid-lobe 3.6 x 7.3 mm, flabellate, forming two some divaricate lobes, apex emarginate, minutely apiculate. **Column** 6 mm long, straight, thin, with a pair of short upturned, truncate wings, the apical margin erose. **Clinandrium hood** reduced, margin entire. **Anther** obovoid, acute, 4-celled. **Pollinia** 4, narrowly obovoid, elongate, laterally compressed, slightly unequal, caudicles formed by tetrads which appear as a pile of roof tiles. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** penetrating nearly 1/2 the ovary, papillate. **Capsule** not seen.

OTHER SPECIMENS: BOLIVIA: La Paz: Nor Yungas: Parque Nacional Cotapata, bajando de Yucupi, 1600 m, 19 X 2006, *F. Miranda 1314* LPB. (digital image, AMO!) **Santa Cruz:** Los Monos, 19 X 1954, *Ira S. Nelson G-132*, AMES! **PERU: San Martín:** near Moyobamba, hort. Moyobamba, rec. via Erica Morón s.n., AMO! (flowers in spirit, digital photographic series, illustration, AMO; photo voucher).

OTHER RECORDS: PERU: Junín: [received XII 2013], *Nauray, s.n.* digital photo, AMO!

DISTRIBUTION AND ECOLOGY: Known from Peru, Amazonas and Junín, and Bolivia, La Paz, surroundings of Coroico and Santa Cruz, in the Amazon slope of the Cordillera Oriental of the Andes, at 1100-1600 m altitude, growing epiphytic. Flowering in October, almost continuously in greenhouse conditions.

RECOGNITION: *Epidendrum coroicoëns* Schltr. belongs to the Amphiglottis Group, Secundum Subgroup which is recognized by the caespitose habit, simple stems, oblong-lanceolate, coriaceous, bilobed leaves and generally elongate peduncle of the erect inflorescence, pluriracemose, the flowers non-resupinate, the callus complicated, plurituberculate. The species is recognized by the narrow leaves, about 6-7 times longer than wide, successive, lacquer-red flowers, the callus dark yellow, sepals about 10 mm long, the petals wider than the sepals, elliptic-suborbicular, the lip square in outline, 3-lobed, the lateral lobes dolabriform, terminating in a pair of divaricate, narrow, triangular, acute, bifurcate teeth, the lateral lobes overlap with the mid-lobe when spread, and the mid-lobe flabellate, bilobed and somewhat divaricate; callus 5-tuberculate, 2 basal and 3 apical tubercles, without keels. *Epidendrum miguelii* Schltr. is very similar, has proportionately wider leaves, about 4 times longer than wide, simultaneous flowers on a solid, thick, erect raceme, the sepals 10-11 mm long, the petals elliptic-rhomboid, somewhat wider than the sepals, and, the callus is concave at the base, "Y" shaped, and ends in a narrow keel which reaches the apical sinus. *Epidendrum tulcanense* Hágsater & Dodson from Ecuador has orange-red colored flowers with a massive white callus formed by 9 unequal tubercles on the isthmus of the lip, the lateral lobes of the lip do not overlap the mid-lobe when spread. *Epidendrum portokali* Hágsater & Dodson, growing epiphytic at about 800 m altitude in eastern Ecuador and at higher altitudes terrestrial, has orange-red flowers with a yellow callus, formed by 7 tubercles, on the isthmus of the lip. All the preceding species have the apical margins of the lip fimbriate in various degrees.

NOTE: This large group of colorful species have gone under the name of *Epidendrum secundum* Jacq., a species endemic to the lesser Antilles, and possibly the lowlands north of the Guyana Shield; it has lilac-pink flowers, with a white callus. Colors are useful in separating species, but care must be taken, as there are numerous hybrid populations throughout South America, especially at medium to higher elevations, with a whole range of colors locally where the hybrids occur.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the locality near which the type was collected, the town of Coroico, province of Nor Yungas, department of La Paz, Bolivia.

REFERENCES: Hágsater, E. & C. H. Dodson. 2004. *Epidendrum portokali* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 778. Hágsater, E. 2013. *Epidendrum tulcanense* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1491.



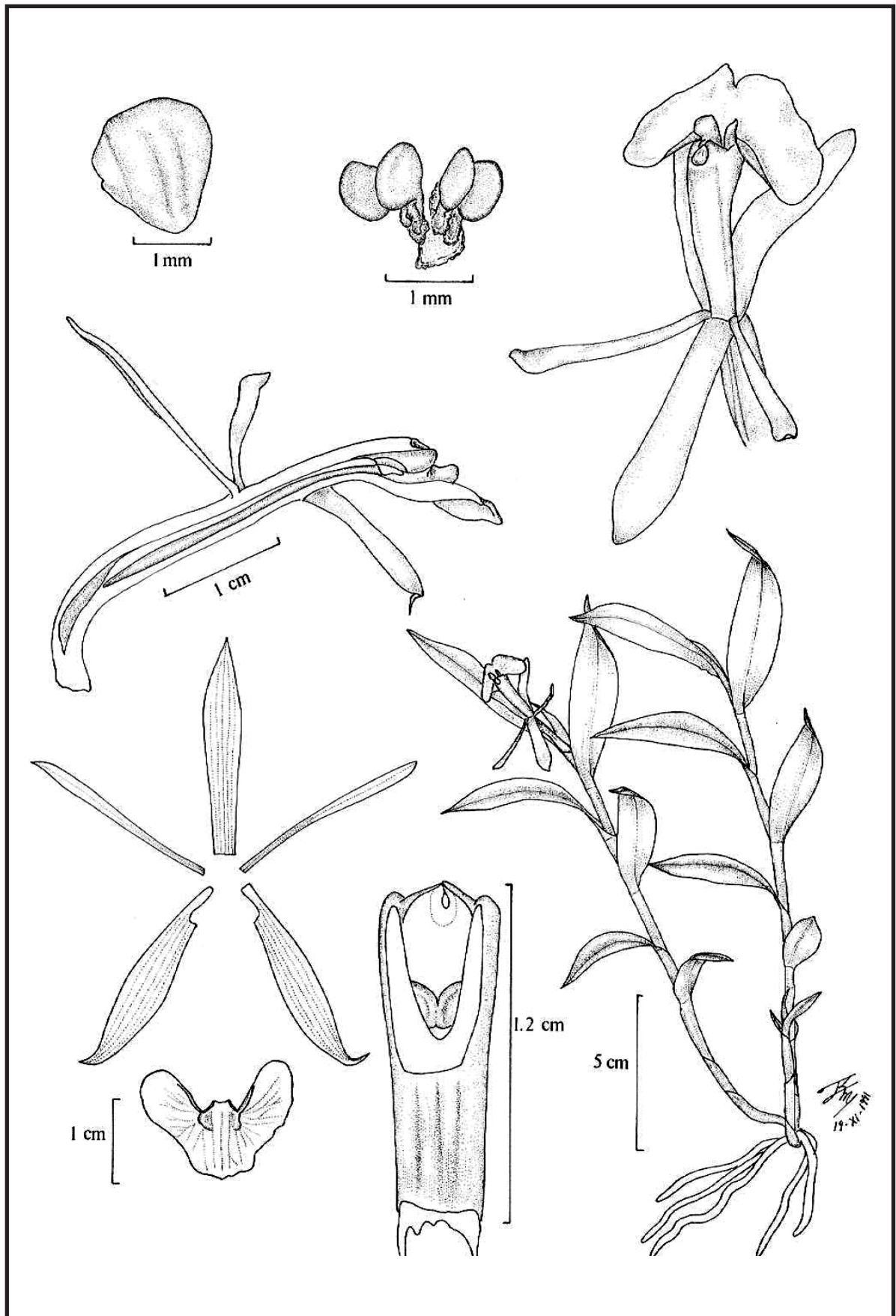
Author: E. Hágsater
Herbario AMO

Illustrator: R. Jiménez M.
México, D.F. MÉXICO

Photo: E. Morón de Abad

Editors: E. Hágsater & L. Sánchez S.

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1516



EPIDENDRUM CUCHIBAMBAE F. Lehm. & Kraenzl.

Plate 1517

EPIDENDRUM CUCHIBAMBAE F.Lehm. & Kraenzl., Bot. Jahrb. Syst. 26: 467. 1899.

Type: ECUADOR: Morona-Santiago: Near Cuchibamba on the eastern slopes of the Andes of Sigisig, 1000-1500 m.

Fredrich Carl Lehmann 8335. Holotype: K-L! Isotype: **Lehmann s.n. H[erbarium]. K[jewensis]. 609**, K-L!

Epiphytic, caespitose, sympodial, erect **herb** 15-27 cm tall. **Roots** 2 mm in diameter, thin. **Stems** cane-like, laterally compressed. **Leaves** 5-8, distributed throughout the stem, unequal, progressively larger; blade 10-64 x 0.3-1.2 cm, obliquely lanceolate, acute, green. **Spathe** 25-33 x 2-3 mm, single, long, narrow, acuminate. **Inflorescence** apical, from the mature stem, racemose, flowering only once; peduncle 1.0-1.5 cm, short, terete. **Floral bracts** 13-20 mm long, similar to the spathe but shorter, long, acuminate. **Flowers** 1-3, successive, one at a time, non-resupinate, pale green turning yellowish; without fragrance. **Ovary** 20-23 mm long, triquetrous, arched near the base. **Sepals** 25-30 x 3.5-5.0 mm, spreading, narrowly elliptic, acuminate, 5-veined, the lateral veins shorter, margin entire, revolute; lateral sepals somewhat arched and connate to the column at the base, apex falcate. **Petals** 15-25 x 1.5-1.7 mm, spreading, linear-oblongate, acute, 3-veined. **Lip** 13 x 18 mm, united to the column, anchor-like, deeply cordate, deeply reniform, mucronate, bicallose; the lateral lobes retrorse, rounded. **Column** 16 mm long, thin, slightly arched. **Clinandrium hood** reduced, entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, nearly as long as the stigmatic cavity. **Anther** ovoid, 4-celled. **Pollinia** 4, sub-equal, lentil-shaped, laterally compressed; caudicles somewhat longer than the pollinia, granulose, in two pairs; viscidium semi-liquid. **Nectary** very deep, penetrating more than half the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Sucumbios: La Bonita, col. 8 VII 1990, pressed in cult., *Hágsater 10594*, AMO! (illustration & photo voucher). COL! MO! QCNE! USM! **Morona-Santiago:** Plan de Milagro, *Harling 24548*, GB! QCA! **Napo:** N. of Baeza, *Luer 3193*, SEL! E. of Borja, *Grubb et al. 1058*, AMES! K-L! **Pastaza:** Río Pastaza, *Camp E-s.n.*, NY! **Zamora-Chinchipe:** Cordillera del Condor, *Höjjer 1185*, SEL! Zamora to Jambuey, *Hirtz et al. 2393*, RPSC! Cordillera del Condor, *Hirtz 3824*, MO!

OTHER RECORDS: COLOMBIA: Putumayo: Valle de Sibundoy, 1900 m, *Medina 335*, digital series, AMO! **ECUADOR: Zamora-Chinchipe:** Zamora to Jambuey, *Hirtz 2393*, slide, AMO!

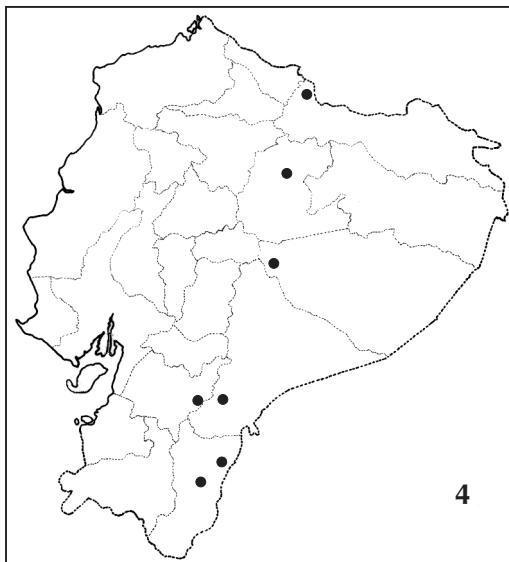
DISTRIBUTION AND ECOLOGY: Along the eastern slopes of the Andes and the Cordillera del Condor in Ecuador, epiphytic in wet mossy forests in well ventilated spots, 1000-2000 m altitude. Flowering throughout the year.

RECOGNITION: *Epidendrum cuchibambae* belongs to the Cuchibambae Group which is recognized by the caespitose habit, apical, sessile inflorescence, but subtended by 2-3 prominent, imbricating, acute spathes, and successive flowers produced one by one. The species is recognized by the large flowers with the lip anchor-shaped, with the large lobes retrorse, the flowers are produced singly in succession and the spathe and floral bracts, are all prominent and acuminate. It is closely related to *Epidendrum siunii* Hágsater & Dodson which has a more square lip, the apex sub-truncate, less deeply cordate and narrower. It is somewhat similar to *Epidendrum whittenii* Hágsater & Dodson, which also has prominent acuminate spathes and successive flowers, but the pendent plant and flowers are smaller, the flowers white to cream colored and do not have the retrorse lobes which give the anchor-like shape. The flowers are somewhat similar to those of *Epidendrum batesii* Dodson, but that species produces branching stems and the lip is smaller, and sub-orbicular in overall shape.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the locality of Cuchibamba [Cuchipamba] where the type was collected.

REFERENCES: Dodson, C. H., 1988, *Epidendrum batesii* in C. H. Dodson & P. Marmol (eds.), *Orchids of Ecuador*, **Icon. Pl. Trop.** 1: t. 73. Hágsater, E. & C. H. Dodson, 2001. *Epidendrum siunii*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 4: t. 490. Hágsater, E. & C. H. Dodson, 1999. *Epidendrum whittenii*, in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 3, **Icon. Orchid.** 3: t. 400.



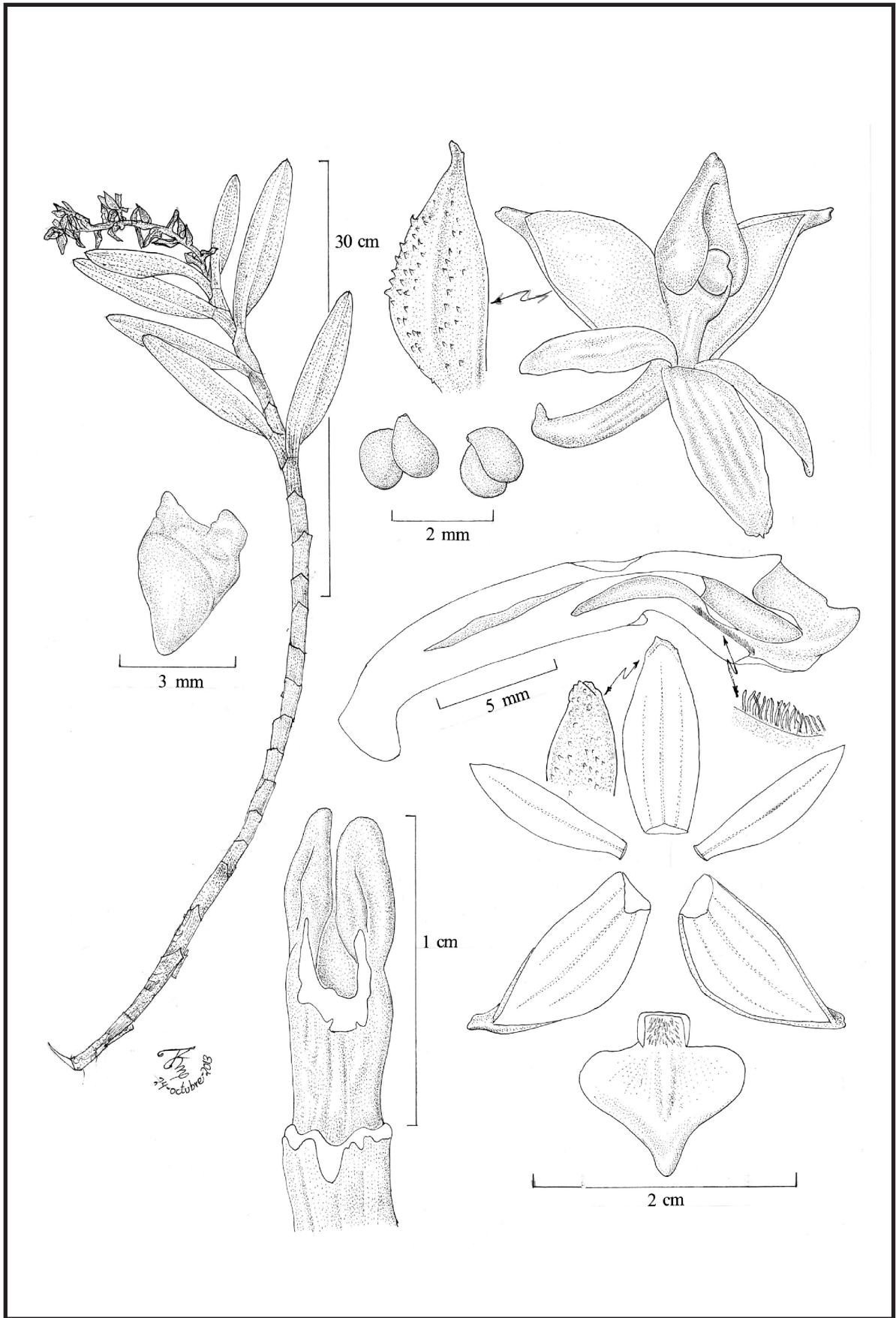
Author: E. Hágsater
Herbario AMO

Illustrator: R. Jiménez M.
México, D.F. MÉXICO

Photo: E. Hágsater

Editors: E. Hágsater & L. Sánchez S.

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1517



EPIDENDRUM DELTASTACHYUM Hágsater & E.Santiago

Plate 1518

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

Type: ECUADOR: Tungurahua: Cordillera de Llanganates, valley of Río Sangarinas (Desaguadero), Río San José, 3100-3200 m, 19 October 1939, **Erik Asplund 9783**. Holotype: S! (Illustration voucher). Isotypes: G! US!

Similar to *Epidendrum dermatanthum* Kraenzl. but the leaves narrowly elliptic, apically obtuse, flowers green with brown tinge, turning orange-brown at maturity, sepals dorsally echinate, petals oblong-elliptic, lip deltate with the base truncate.

Epiphytic, monopodial, branching **herb**, ca 70 cm tall. **Roots** not seen. **Stems** ca. 25-67 x 0.7-1.1 cm, branching when mature, cane-like, terete, slightly arching; base covered by sheaths 3-4 cm long, tubular, scarioso and becoming fibrous with time. **Leaves** numerous on the main stem, 6-8 persistent at the apex, articulate, alternate, partly spreading; sheath 23-35 x 7-11 mm, tubular, striated, rugose; blade 6.5-12 x 1.4-2.5 cm, narrowly elliptic, obtuse, margin entire, slightly revolute. **Spathe** lacking. **Inflorescence** 12 cm long, apical, slightly arching, flowering only once, helicoid, sub-dense; peduncle 0.5 cm long, sub-terete, straight; rachis 11.5 cm long, terete. **Floral bracts** 10-18 x 8-10 mm, prominent, somewhat longer than the ovary gradually diminishing in size towards the apex of the rachis, triangular, acute, amplexicaul. **Flowers** 18-21, simultaneous, non-resupinate, very fleshy, green tinged with brown, turning orange-brown at maturity, base of the lip and column green; fragrance not registered. **Ovary** 12-14 mm long, terete, thick, longitudinally striated, not inflated. **Sepals** 15-17 x 6-7 mm, elliptic, 3-veined, dorsally echinate, margin entire, spreading; dorsal sepals free, spreading, obtuse; lateral sepals obliquely united to the base of the column, partly spreading, sub-acute, slightly oblique, minutely apiculate, with a low dorsal keel, fleshier than the dorsal sepal. **Petals** 14 x 3.5 mm, free, spreading, oblong-elliptic, acute, 1-veined, slightly oblique, margin entire, spreading. **Lip** 10 x 12.5 mm, united to the column, fleshy, entire, deltate, with the lateral corners rounded, base truncate, apex obtuse, widely apiculate; ecallose, provided with a mid-rib which disappears before reaching the apex of the lip, base pubescent, cymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 10 mm long, straight, thin at the base, gradually widened towards the bidentate apex. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex obtuse. **Pollinia** 4, ovoid. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/2 of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: ECUADOR: Without locality data, 3000 m, *H. Medina s.n.*, digital photo, AMO!

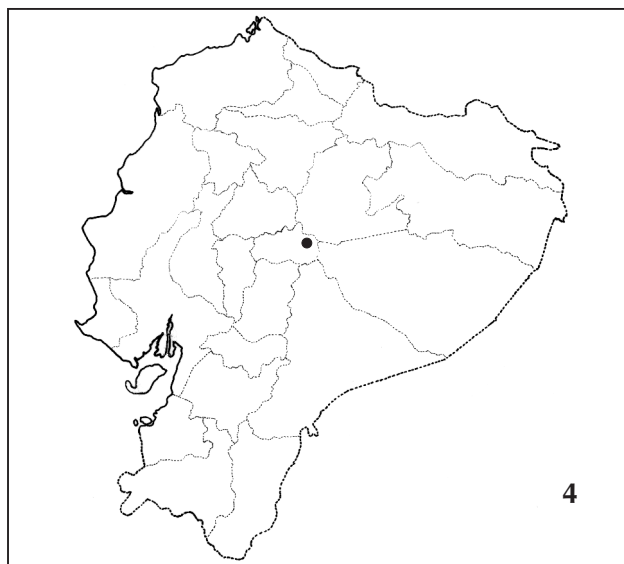
DISTRIBUTION AND ECOLOGY: Known only from central Ecuador, Tungurahua, Cordillera de Llanganates; epiphytic at 3000-3200 m. Flowering in October.

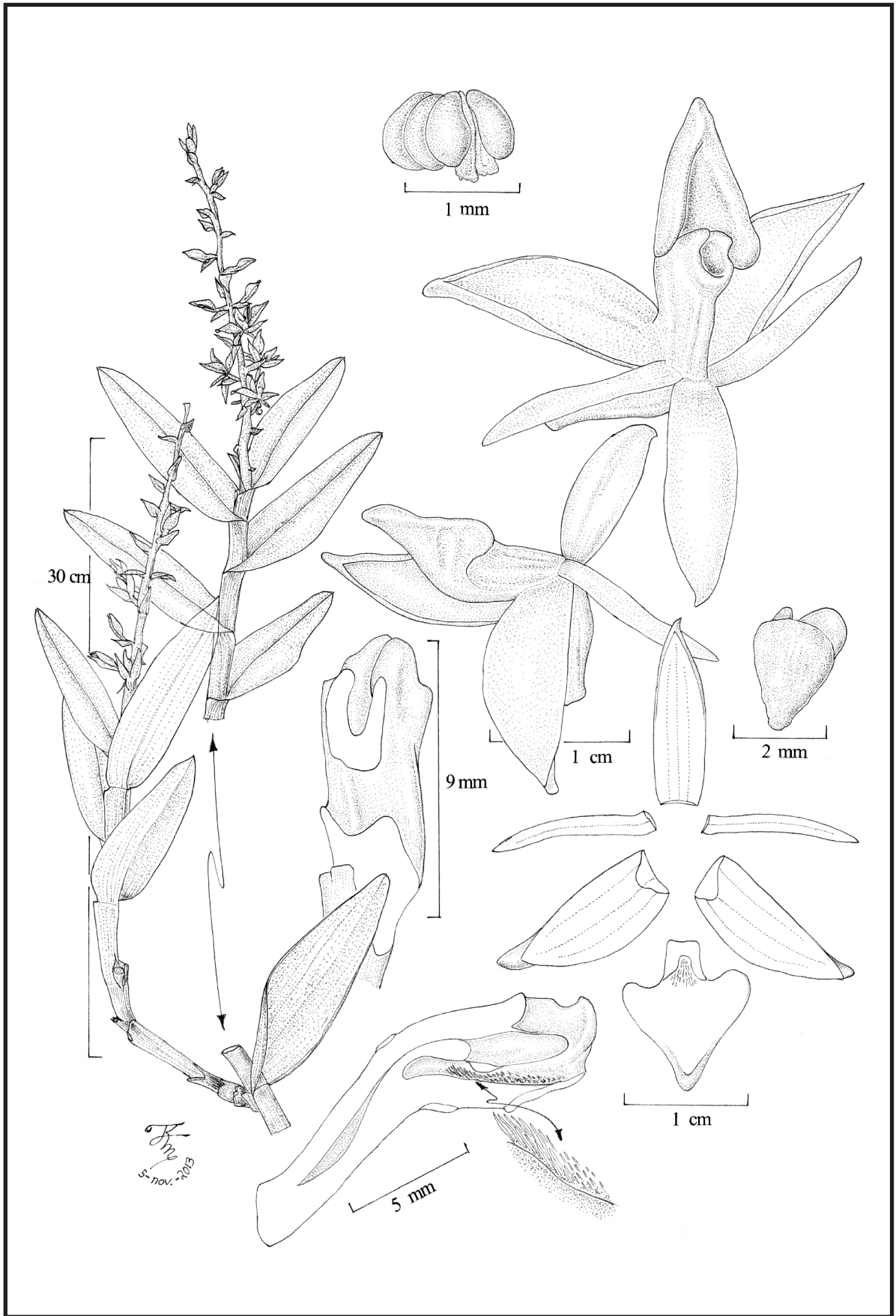
RECOGNITION: *Epidendrum deltastachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the narrowly elliptic, obtuse leaves, sepals dorsally echinate, 15-17 mm long, petals oblong-elliptic, lip deltate, base truncate and the corners rounded, widely apiculate at the apex. *Epidendrum dermatanthum* has linear oblong to lanceolate, acute leaves, glabrous sepals, petals linear-lanceolate, and a cordiform lip with the base clearly cordate. *Epidendrum palaciosii* Hágsater & Dodson has longer inflorescences (9-20 cm long), cylindrical, with small floral bracts, 2.5-4 mm long, sepals dorsally muricate, 7-8 mm long, petals oblanceolate, apically rounded. *Epidendrum rostrigerum* Rchb.f. is vegetatively similar, but the sepals glabrous, 9-11 mm long, petals linear-oblong, falcate, lip lunate, nearly semi-orbicular, and the anther is prominently rostrate, surpassing the apex of the column.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek $\delta\epsilon\lambda\tau\alpha$, delta, a triangle and $\sigma\tau\alpha\chi\upsilon\sigma$, ear of corn, in reference to the triangular, deltate shape of the lip with the base truncate, with inflorescences which are reminiscent of ears of corn and constitute the Macrostachyum Group.

REFERENCES: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum palaciosii* in E. Hágsater & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 171. Santiago, E., & E. Hágsater, 2015, *Epidendrum dermatanthum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1519. Santiago, E., & E. Hágsater, 2015, *Epidendrum rostrigerum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1556.





EPIDENDRUM DERMATANTHUM Kraenzl.

EPIDENDRUM DERMATANTHUM Kraenzl., *Repert. Spec. Nov. Regni Veg.* 1:184.1905.

Type: PERU: Cajamarca: Prov. Chota; Berge westlich von Huambos, 3200-3300 m, **August Weberbauer 4177**. Holotype: B (destroyed), F (photograph) neg. # 18313! Lectotypes (here designated): MOL! (altitude indicated as 3100-3200 m). Isolectotype: G!

Epiphytic or terrestrial, monopodial, branching **herb**, ca. 100 cm tall. **Roots** not seen. **Stems** branching when mature, cane-like, terete, erect, straight, the main stem to 100 x 0.5-1.2 cm; branches shorter, 12 x 0.7-1.0 cm. **Leaves** numerous on the main stem, distributed throughout, articulate, alternate, unequal in size; sheaths 17-40 x 8-13 mm, tubular, minutely striated, rugose; blade (on the main stem) 8.5-18 x 1.7-4 cm, (on the branches) 2.7-8.5 x 1.5-2 cm; oblong to lanceolate, acute, apiculate, margin entire. **Spathes** lacking. **Inflorescence** 11-14 cm long, apical, racemose, erect, flowering only once, pyramidal, laxly few-flowered; peduncle, 1.0 cm long, short, sub-terete; rachis 10-13 cm long, terete, straight. **Floral bracts** 12-16 x 6-7 mm, prominent, slightly longer than the ovary (gradually diminishing in size towards the apex of the rachis), narrowly ovate-lanceolate, acute, amplexicaul. **Flowers** 15-17, successive, non-resupinate, fleshy, distributed in a helicoid along the rachis; reddish brown; fragrance not registered. **Ovary** 9-12 mm long, terete, thin, longitudinally striated, not inflated. **Sepals** 15-18 x 4-6.5 mm, free, oblong, acute, margin entire, spreading; the dorsal sepal spreading, the lateral sepals partly spreading, oblique. **Petals** 12-14 x 2.5-3 mm, free, spreading, linear-lanceolate, acute, 1-veined, margin entire, spreading. **Lip** 9.5-10 x 8-9 mm, united to the column, fleshy, entire, cordiform, apex obtuse; ecallose, provided with a low rib, pubescent at the base of the lip, beneath the column;ymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 7.5-8 mm long; thin at the base, gradually widened towards the apex, straight. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex obtuse. **Pollinia** 4, ovoid, sub-equal. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** small, 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity. **Capsule** 5 x 2.5 cm, ellipsoid.

OTHER SPECIMENS: PERU: Amazonas: Luya, Camporredondo, Tullanga, subiendo del campamento o Paseana "La Palma" hacia el Cerro Huicsocunga o Condorpuna, 2700-3000 m, *Díaz 3829*, MO! USM x2! Luya, Parte alta de las montañas de Galeras, 2000-2500 m, 20 VI 1991, *Díaz 4426*, MO! USM! Cajamarca: San José de Lourdes, 2730 m, 16 II 2000, *Calatayud 283*, CUZ! San Ignacio, Huarango, Quebrada El Mirador, 2200 m, 13 III 2000, *Calatayud 455*, CUZ! Jaén, Nueva Jerusalén-La Virginia, 2500 m, 25 IV 2009, *Vásquez 344*, MOL! Cusco: Pillahuata, Entre Buenos Aires Yanamayo, 2000-2130 m, 9 IV 1969, *Vargas 21392*, AMES! CUZ! Pillcopata, eastern slopes of the Andes above Koshipata, 2000-2100 m, IV 1942, *Weberbauer 6967*, AMES x2! MOL x2! (date marked as 7 V 1914) US! Pasco: Sector Chacos, pajonal, 2100 m, 3 VI 2004, *Rojas 2688*, MO! Oxapampa, Trail to summit of Cordillera Yanachaga via Río San Daniel, 3150-3300 m, 12 VII 1984, *Smith 7723*, MO! Dist. Oxapampa, Parque Nacional Yanachaga-Chemillén, Sector Chacos-Antena, 2600 m, 14 I 2004, *Vásquez 28666*, MO! (Illustration voucher) Ibid. Sector Quebrada Yanachaga, 2910 m, 16 II 2004, *Vásquez 29437*, MO! Ibid. Sector San Daniel, 2000-2500 m, 13 III 2006, *Vásquez 31130*, MO! La Suiza Nueva, 2200 m, 7 V 2005, *van der Werff 19876*, AMO x2! (Illustration) ECUADOR: Cañar: At pass on road Pindilig-Rivera (La Virgen), 3200 m, 9 III 1985, *Harling 22974*, QCA! Loja: New road from Jimbura to Zumba south of pass, 3000 m, 21 II 1986, *Embree 50*, MO! Road Yangana-Valladolid (before Nudo of Sabanilla and outside P.N. Podocarpus), 2400 m, 18 IV 1989, *Madsen 85997*, LOJA! MO! QCA! QCNE! Napo: S Side of Cerro Sumaco, 2900-3050 m, 1 V 1979, *Løjtman 173041*, AAU! GB! Tungurahua: Cordillera de Llanganates, valley of Río Sangarinas (Desaguadero), Río San José, 3100-3200 m, 20 XI 1939, *Asplund 9802*, G! US! East facing slopes of volcán Tungurahua, 3200 m, 23 X 1961, *Dodson 1085*, F! QCA x2! SEL! Páramos de Pisayambo, alrededor de la laguna de Pisayambo, 3600-3900 m, 11 XI 1998, *Cueva 241*, QCNE! Zamora-Chinchi: Cruz Grande 6 km N of Valladolid, 2500 m, 19 V 1986, *D'Alessandro 664*, MO!

OTHER RECORDS: ECUADOR: *Medina s.n.*, digital image, AMO! PERU: Amazonas: Valera, *Cruz s.n.*, digital image, AMO! Cordillera Yasgolga, Leymebamba, 3120 m, *Salas s.n.*, digital photos AMO! Pasco: P.N. Yanachaga-Chemillén, *Becerra s.n. (sp. 43)*, digital photos AMO! (illustration voucher)

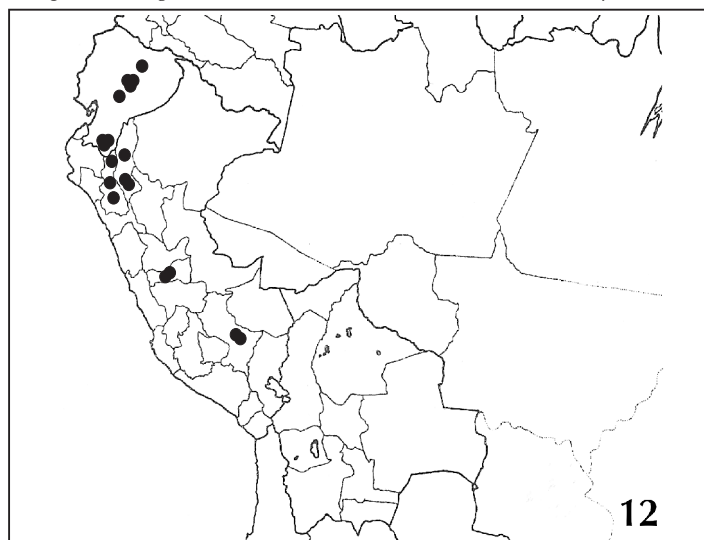
DISTRIBUTION AND ECOLOGY: Widely distributed along the Amazon slope of the Cordillera Oriental of the Andes from central Ecuador to Southern Peru, epiphytic and terrestrial at 2000-3600 m altitude. In wet cloud forest.

RECOGNITION: *Epidendrum dermatanthum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the large, linear-oblong leaves (8.5-18 x 1.7-4 cm), the inflorescence 11-14 cm long with the rachis straight, flowers successive, reddish brown, sepals 15-18 mm long, spreading, with the apex acuminate. *Epidendrum bangii* Rolfe has lanceolate leaves (5-14 x 1.5-2.4 cm), lax, few-flowered inflorescence, rachis slightly flexuous, petals linear, oblique. *Epidendrum rostrigerum* Rchb.f. has shorter, oblong-elliptic leaves (2.5-9 x 1.1-3 cm), a 9 cm long inflorescence, flowers green tinged with reddish, sepals 10 mm long, the dorsal one spreading and the lateral ones partly spreading, the anther has a rostrate apex which extends beyond the apex of the column. *Epidendrum probosanthum* Hágsater has green flowers with purple spots, sepals 10-12 mm long, the apex acute, the lip deltate and the anther also long, rostrate. *Epidendrum macrostachyum* Lindl. has lanceolate-elliptic leaves 7.5-13 cm long, a pyramidal inflorescence 16-30 cm long, with dark olive-brown flowers, sepals 11.0-11.5 mm long, and apically sub-obtuse.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek *δερματο-*, skin, and *ανθος*, flower; with skin-like flowers, in reference to the thick fleshy floral segments.

REFERENCES: Hágsater, E., 2010, *Epidendrum probosanthum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1378. Santiago, E. & E. Hágsater, 2013, *Epidendrum macrostachyum* Lindl., E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1454. Santiago, E. & E. Hágsater, 2015, *Epidendrum bangii* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1503. Santiago, E. & E. Hágsater, 2015, *Epidendrum rostrigerum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1556.



Authors: E. Santiago & E. Hágsater

Illustrator: R. Jiménez M.

Photo: M. Salas

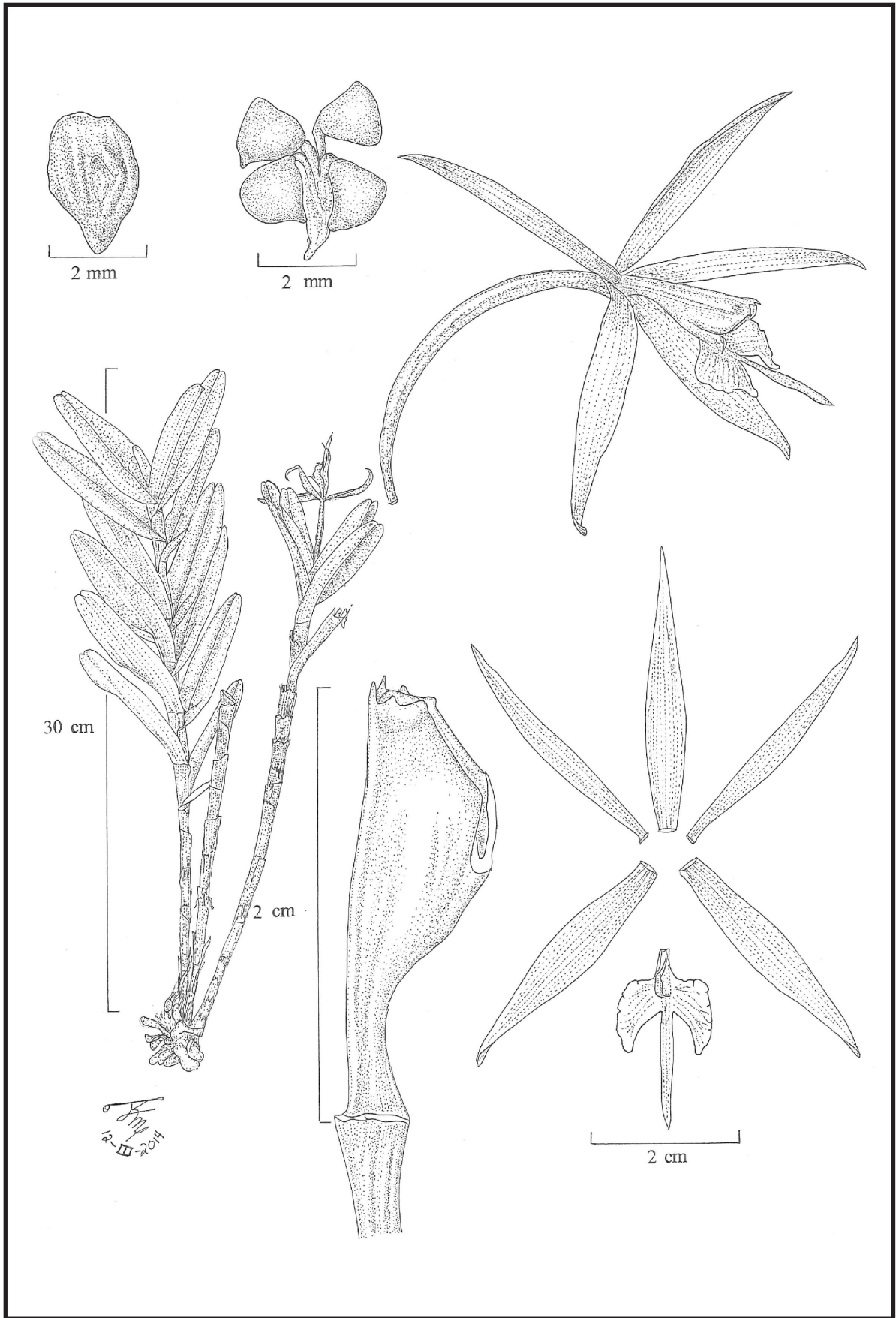
Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1519



EPIDENDRUM ERECTUM Brieger & Bicalho

EPIDENDRUM ERECTUM Brieger & Bicalho, Relat. Ci. Dept. Inst. Genet. Esc. Super. Agric. Luiz Queiroz 11: 27.1977.

Type: BRAZIL: Goiás; **Alor de Oliveira s/n.** Holotype: HB (not found in HB, *comm. pers.* Thiago Meneguzzo, 2014). Neotype here designated: BRAZIL: Goiás: Serra dos Pireneus, ca. 18 km E of Pirenópolis, 1000 m, 15 January 1972, **Howard Samuel Irwin, William Russell Anderson, M. Stieber & E. Y. T. Lee 34225**, AAU! (illustration voucher, *pro parte*, plant) Isoneotypes: MO! NY! UB! [Non *Epidendrum erectum* Rchb.f., *nomen*, The Garden 32: 371. 1887, possible orthographical error for *Epidendrum evectum* Hook.f. = *Epidendrum jameisonis* Rchb.f.]

Synonym: *Epidendrum strictum* Brieger & Bicalho, *nomen*, Orchideen (Schlechter), 3 ed. 1(9): 519. 1977, non *Epidendrum strictum* Schltr.

Epiphytic and saxicolous, caespitose, sympodial **herb**, 30-90 cm tall including the inflorescence. **Roots** 2-4 mm in diameter, basal, fleshy. **Stems** 20-74 x 0.6-1.2 cm, terete at the base, laterally compressed towards the apex, simple, straight. **Leaves** 5-15, erect, distributed along the apical 2/3 of the stems, densely aggregate, green; foliar sheath 1.3-8.0 mm long, tubular, laterally compressed; blade 4-10 x 1.2-2.5 cm, length:width 2-4:1, ovate-elliptic, retuse, aristate, coriaceous, slightly carinate. **Spathe** lacking. **Inflorescence** apical, pluri-racemose, producing new racemes from the internodes of the peduncle through time, flowering from the same stem during several years; peduncle inconspicuous, with 1-3 bracts, 4-5 x 3-4 mm, small, triangular, acute. **Floral bracts** 3-5 mm long, much shorter than the ovary, amplexicaul, triangular, acute. **Flowers** successive, 1 per raceme at a time, resupinate, yellowish green, lip and column white. **Ovary** 45-60[85] mm long, terete, unornamented. **Sepals** 30-60 x 2-3 mm, spreading, linear-lanceolate, acuminate, margin entire, revolute; lateral sepals oblique. **Petals** 35-50 x 1.5-2.5 mm, inflexed, linear-lanceolate, acuminate, margin entire, spreading. **Lip** 30-45 x 15-20 mm, united to the column, 3-lobed, base truncate; bicallose, the calli laminar, prominent; lateral lobes 10-15 x 3-7 mm, semi-ovate, rounded, margin entire to undulate; mid-lobe 15-30 x 1.5-2 mm, linear, acuminate, margin entire. **Column** 15-23 mm long, straight, thin at the base, strongly dilated towards the apex. **Clinandrium-hood** slightly surpassing the body of the column, 3-dentate. **Anther** obovoid, apex truncate, 4-celled. **Pollinia** 4, sub-triangular-quadrate, laterally compressed. **Rostrum** not seen. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: BRAZIL: Goiás: Alto Paraíso do Goiás, Chapada dos Veadeiros, Fazenda São Bento, 8 II 1998, *Cavalcanti 2387*, CEN! Serra de Pireneus, Pirenópolis, 26 XII 1968, *Giulietti 691*, BR! Serra Dourada, 19 I 1966, *Heringer 10918*, UB! São João de Aliança, Chapada dos Veadeiros, ca. 20 km W of Veadeiros, 1000 m, 10 II 1966, *Irwin 12469*, AMES! COL! FI! K! MO! S! SP! UC! Pico dos Pirineus, ca. 20 km NW of Corumbá de Goiás, near road to Niquelândia, ca. 1400 m, 27 I 1968, *Irwin 19299*, BR! Chapada dos Veadeiros, Alto Paraíso de Goiás, ca. 20 km N of Alto do Paraíso, ca. 1250 m, 20 III 1971, *Irwin 32759*, AAU! (illustration voucher, *pro parte*, flower) MEXU! MO! UB! Serra Dourada, 1000 m, campo cerrado, 6 III 1978, *Magnago 102*, RB! Parque Estadual da Serra dos Pireneus, 16 III 2002, *Pellizzaro 10*, CEN! Minas Gerais: Delfinópolis, Trilha "Escada de Pedra" Faz. Jose Antunes, 841 m, 10 III 2003, *Volpi 533*, UB!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Species endemic to the Planalto Central of Brazil known only from the states of Minas Gerais and Goiás, at 841-1400 m altitude. Flowering from January to March

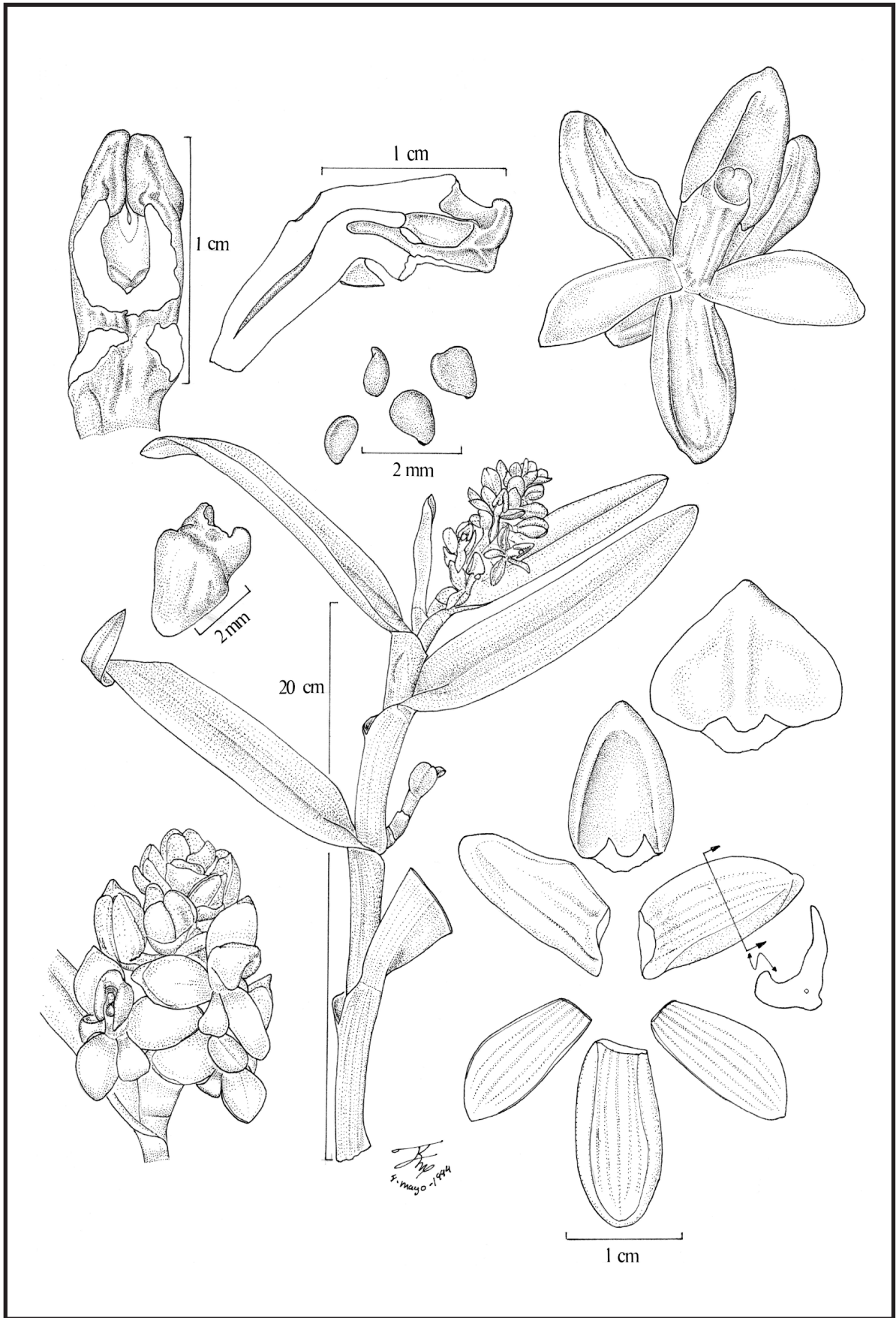
RECOGNITION: *Epidendrum erectum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spathaceous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The species is recognized by the laterally compressed stems, leaves erect, densely aggregate along the upper 2/3 of the stems, length:width = 2-4:1 (4-10 x 1.2-2.5 cm), the ovary generally 45-60 mm long. *Epidendrum taguatingense* (Brieger & Bicalho) Hágsater, Meneguzzo & L. Sánchez also endemic to the Planalto Central in the Distrito Federal and Goiás, has 8-11 erect leaves, spaced on the stem, longer and narrower, length:width = 4-6:1 or more (8-15 x 1.2-2.3 cm), narrowly elliptic-lanceolate, acuminate, ovary shorter than the leaves, 60-70 mm long. *Epidendrum tumuc-humaciense* (Veyret) Carnevali & G. Romero growing along the southern front of the Guyana Shield in Colombia, Venezuela, Guyana, Surinam and the French Guyana, bordering on Brazil has numerous leaves along the entire stem, erect, occasionally wine-red as well as the stems, ovary 80-100 mm long. *Epidendrum nocturnum* Jacq. is widely distributed from Florida to Brazil, has terete stems, few leaves distributed along the apical 2/3 of the stems, the ovary 50-70 mm long. *Epidendrum tridens* Poepp. & Endl. is distributed along the base of the Andes in Ecuador, Peru and Bolivia as well as south of the Guyana Shield in Venezuela, and has 3-5 progressively longer leaves, 3-5:1, (8.5-15 x 2-5 cm), sometimes wine-red in color, and has a longer ovary (60-100 mm), longer than the sepals (40-63 mm), peduncle and rachis very short; column straight, 21-23 mm long; the body of the fruit in at the center of the ovary. *Epidendrum carpophorum* Barb. Rodr. is similar to *E. tridens*, and is found along the Caribbean coast of Venezuela, Guyana and SE Brazil, has green leaves, a slightly arching column and the body of the fruit is located slightly displaced towards the apex upper half of the ovary.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *erectum*, upright, probably in reference to the leaves which are erect in relation to the stem, and not spreading and perpendicular to it.

REFERENCES: Sánchez, S. L. & E. Hágsater, 2010. *Epidendrum carpophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1313. Hágsater, E., Meneguzzo, T. E. C. & L. Sánchez S., 2015, *Epidendrum taguatingense* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1564. Sánchez, S. L., & E. Hágsater, 2015, *Epidendrum tridens* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1565. 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): t. 1566.



EPIDENDRUM ERIKAE Hågsater & E.Santiago

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

Type: COLOMBIA: Antioquia: Mpio. Jardín, Alto de Ventanas, 15 km SO de Jardín, en la vía a Riosucio, 2400-2800 m, 9 VI 1987, **Ricardo Callejas F., Orlando Marulanda, Francisco Javier Roldán y H. Correa 3886**. Holotype: COL! Isotype: NY! (illustration voucher, pro parte, habit & flower).

Similar to *Epidendrum ariasii* Hágsater & Dodson but the inflorescence with fewer, lilac flowers, sepals very fleshy, petals obovate-elliptic, sub-obtuse, nearly as wide as the sepals, the lip deltate, ecallose, column with a pair of rounded wings, apex somewhat recurved.

Epiphytic or terrestrial, monopodial, branching **herb**, ca. 130-200 cm tall. **Roots** 3 mm in diameter, basal, fleshy, white. **Stems** 100-187 x 0.9-1.7 cm, branching when mature, cane-like, terete, erect. **Leaves** numerous, distributed throughout the stems, alternate, articulate, sub-erect; sheath 2-4 x 1.1-1.6 cm, tubular, striated, rugose; blade 9-17 x 2-5 cm on the main stem, on the branches 5.5-8 x 1.8-2.5 cm, oblong to oblong-lanceolate, apex obtuse, apical margin slightly crenulate. **Spathes** lacking. **Inflorescence** ca 7-13 cm long, apical, flowering only once, racemose, erect, densely few-flowered, generally shorter than the apical leaf. **Floral bracts** 8-14 x 10-14 mm, prominent, longer than the ovary, cymbiform, widely ovate when spread, apex rounded, green with the edges dark brown, margin entire. **Ovary** 9-13 mm long, thick, not inflated, striated. **Flowers** 15-20, successive, 2-3 open at one time, non-resupinate, very fleshy, ventrally yellow to lilac on the dorsal surface or totally lilac; fragrance not registered. **Sepals** 14-16 x 7-8 mm, free, elliptic, apex rounded, very fleshy, 5-veined, concave, margin entire, somewhat involute; the dorsal sepal partly spreading, the lateral sepals partly spreading, slightly oblique, with a high, prominent dorsal keel that does not surpass the apex. **Petals** 14 x 6 mm, free, recurved, obovate-elliptic, oblique, apex sub-obtuse, 5 veined, margin entire. **Lip** 13 x 16.5 mm, entire, cymbiform in natural position, embracing the column, deltate when spread, the base truncate, apex obtuse, fleshy; ecallose, provided with an inconspicuous central rib that dissipates before reaching the apex of the lip. **Column** 10 mm long, straight, thick, apex somewhat recurved, with a pair of rounded wings. **Clinandrium-hood** reduced, margin entire. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/3 of the stigmatic cavity length. **Nectary** shallow, without penetrating the ovary, unornamented. **Anther** obovoid, with the apex rounded, 4-celled. **Pollinia** 4, obovoid, laterally compressed, unequal in size; caudicles soft and granulose; viscidium semi-liquid. **Capsule** ellipsoid, 5-8 x 2.8-3 cm; body 5.5-6 x 2.8-3 cm; apical neck 2 cm long.

OTHER SPECIMENS: COLOMBIA: Antioquia: Parque Nac. "Las Orquídeas", Morro Pelao, 2870-3020 m, 29 IV 1990, *Ramírez 3846*, JAUM! **Risaralda:** Mpio. Santa Rosa de Cabal; Camino real entre Termales de Sta. Rosa y Hda. La Sierra, finca Berlín; 3190 m, 7 V 1986, *Wolf 974*, COL! U! **Cauca:** Mpio. El Tambo, Parque Nacional Natural Munchique, vía La Romelia a La Gallera, 2440 m, 11 IV 1994, *Álvarez 23*, COL! Parque Nacional de Puracé, zona centro, camino a la laguna del Buey, sector Paletara, 3100 m, 16 X 1987, *Duque 633*, COL! Páramo de Las Papas, Filo de las colinas entre el Boquerón y el Cerro de Los Remedios, 3330-3460 m, 13 IX 1958, *Idrobo 3294*, COL! Páramo de las Papas, entre Letreros y Santo Domingo, 3350 m, 16 IX 1958, *Idrobo 3366*, COL! P.N. del Puracé, 3100 m, 23 VII 1976, *Jaramillo 5308*, COL! Parque Nacional del Puracé, camino a la laguna del Buey, 3050-3200 m, 1 VIII 1980, *Lozano 3581*, COL! Puracé: (Coconuco), corregimiento de Paletará, 2900-3020 m, 16 X 1992, *Orozco 2686*, COL! **Nariño:** Páramo de Bordoncillo, 3250 m, 5 III 1963, *Espinal 997*, COL! US! Páramo del Bordoncillo, vereda de San Antonio de Bellavista, 3200-3400 m, 30 I 1993, *Muñoz 100*, COL! **Putumayo:** filo de la Cordillera entre El Encano y Sibundoy, Páramo de San Antonio del Bordoncillo, 3250 m, 4 I 1941, *Cuatrecasas 11701*, COL! US!

OTHER RECORDS: COLOMBIA: Without data, *Epidendrum sp 071* (POV), (Ortiz & Uribe, 2007). **Cauca:** Popayán, Volcán Puracé, antes del Páramo, entre Huila y Cauca, *Hinestroza s.n.*, photo series, AMO! Paletará, 3200 m, *G. Escobar 1274*, photo AMO! (illustration voucher, pro parte, inflorescence; photo voucher), published as *Epidendrum sp.* (R. Escobar, 1994). **Huila:** Páramo de las papas, subiendo entre la laguna Magdalena y la laguna Santiago, 3500-3600 m, *Haelterman s.n.*, digital image, AMO!

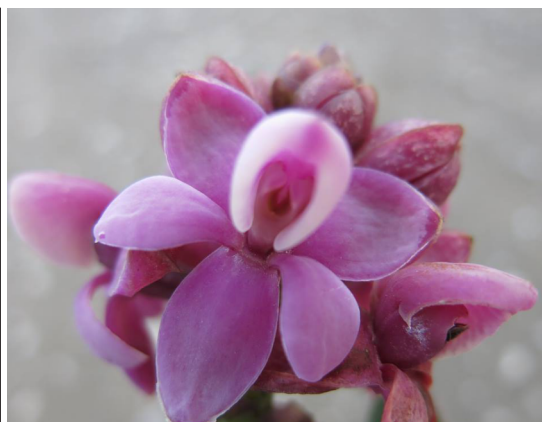
DISTRIBUTION AND ECOLOGY: Found mainly on the Cordillera Central of southern Colombia, epiphytic (on *Weinmannia tolimensis* Cuatr.), or terrestrial, at 2400-3600 m altitude. Flowering throughout the year.

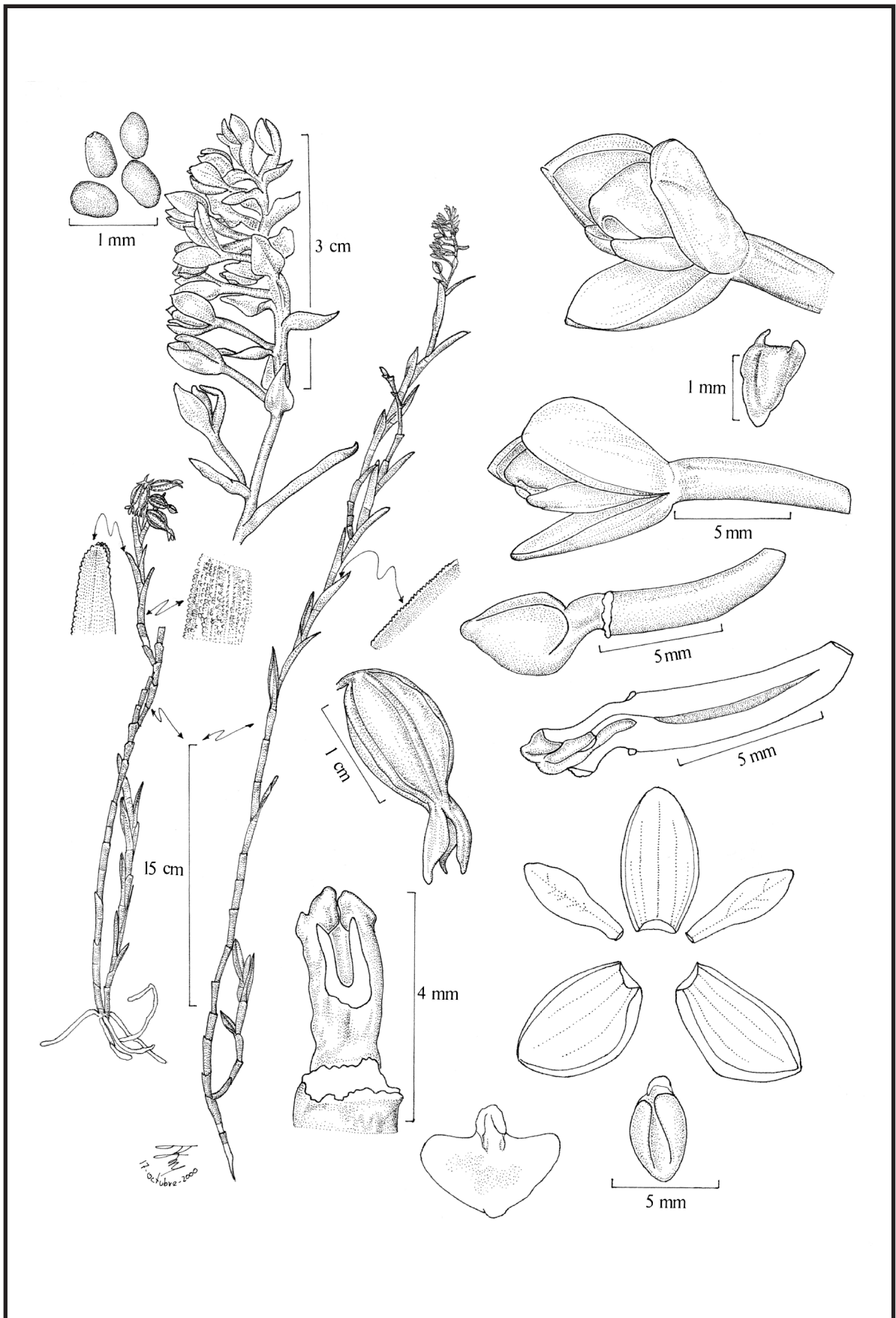
RECOGNITION: *Epidendrum erikae* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the large, robust plants, the cymbiform floral bracts apically rounded, inflorescence compact, dense, 7-13 cm long, and bears up to 20 successive lilac flowers, sepals very fleshy, 14-16 mm long, petals obovate-elliptic, nearly as wide as the sepals. *Epidendrum ariasii* Hágsater & Dodson, (endemic to Ecuador) has reddish-orange flowers, petals widely spatulate, a narrower, triangular lip, and the column ends in a pair of rounded wings. *Epidendrum xylostachyum* Lindl. has shorter inflorescences, ca. 6.5 cm long, with 7-8, pale green flowers, 2-3 open at one time, sepals are 13.5-15 mm long, petals oblong, oblique, somewhat narrower than the sepals. *Epidendrum macrostachyum* Lindl. has ovate-triangular, acute floral bracts, somewhat spaced along the rachis, the inflorescence is pyramidal, elongate, ca. 16-30 cm long, flowers are brown-black, resembling the color of ripe olives, sepals 11-11.5 mm long, petals linear-oblong, much narrower than the sepals, and the shorter column, 7 mm long.

CONSERVATION STATUS: DD. Data deficient. Apparently widespread along roadsides and in Natural National Parks.

ETYMOLOGY: In honor of Erika Westphal de Hágsater, wife of the first author, in appreciation of her support and tolerance of many years of field and laboratory work, as well as for her shared interest in the diversity, complexity and beauty of the orchids.

REFERENCES: Escobar, R. (ed.), 1994, *Epidendrum* in **Orquídeas Nativas de Colombia** 5: 752-773. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum ariasii*, E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 707. Santiago, E. & E. Hágsater, 2013, *Epidendrum macrostachyum* Lindl., E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1454. Ortiz V, P. & C. Uribe V. (eds.), 2007, **Gallery of Colombian Orchids**, CD, Bogotá.





EPIDENDRUM ERYTROPACHYCHILUM Hágater & E.Santiago

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

Type: ECUADOR: Azuay: Oriente Border: Eastern Cordillera, between Oña and the río Yacuambí, 10 September 1945, **Francisco Prieto P-308**. Holotype: NY! (Illustration voucher) Isotypes: AMES! 5!

Similar to *Epidendrum pachyichilum* Kraenzl. but the flowers smaller, reddish pink, sepals ventrally tinged with reddish orange, the inflorescence densely many-flowered with up to 15 flowers.

Terrestrial, monopodial, **herb** 14-120 cm tall, branching above. **Roots** 0.7-2.0 mm in diameter, basal, thin, fleshy. **Stems** branching towards the apex, erect ascending, cane-like, terete; primary stem 12-60 x 0.3-0.6 cm; branches 7-10 x 0.2-0.4 cm, produced from the sub-apical internodes of the previous stems; the base covered by sheaths 0.5-3.3 cm long, tubular, non-foliar, scarious. **Leaves** 11-17 or more on the primary stem, 6-9 on the branches, distributed throughout the stems, sub-parallel to the stem, slightly conduplicate at the base, partly imbricated, coriaceous, similar amongst themselves in size and shape; sheaths 1-2.4 cm long, tubular striated, verrucose, tinged reddish purple; blade 1.5-6 x 0.5-0.9 cm, lanceolate, acute, minutely apiculate with a low dorsal keel, margin crenate. **Spathe** lacking. **Inflorescence** 3.5-7 cm long, apical, racemose, erect, many-flowered, dense, a helicoid; peduncle 13-15 mm long, terete, thin, without bracts. **Floral bracts** 4.2-8.5 x 4-7 mm, prominent, as long as the ovary, widely triangular when spread, acute, cymbiform in natural position, green, the margins denticulate, tinged reddish. **Ovary** 7.5-8 mm long, short, sub-triquetrous, thick, not inflated, clearly striated, reddish. **Flowers** 10-15, non-resupinate, most open simultaneously, reddish pink, sepals internally reddish orange, ovary reddish pink; fragrance not registered. **Sepals** 6.2-6.6 x 3.5-4.5 mm, spreading, free, fleshy, elliptic, apex rounded, minutely apiculate, 3-veined, the lateral veins bifid near the base and thus appearing 5-veined, margin entire, spreading; lateral sepals slightly oblique. **Petals** 5.5-6.5 x 1.8-2.5 mm; spreading, free, oblanceolate, apex obtuse, 1-veined, the veins short branched, especially near the apex, margin entire. **Lip** 4 x 6.5-7 mm, entire, widely sub-triangular when spread, in natural position embracing the apex of the column, base subcordate, very fleshy (especially towards the apex), margin entire; bicallose, the calli small, thin, elongate, parallel. **Column** 3.5-4 mm long, short, slightly arched at the base, and the arched upwards towards the apex which is blunt, without teeth. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, unequal. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3 de length of the stigmatic cavity. **Nectary** short, without penetrating the ovary, not inflated, unornamented. **Capsule** 18-20 x 8-9 mm, ellipsoid, perianth persistent; body 11-13 x 8-9 mm; pedicel 2-3 mm long, thin, short; apical neck 4-6 mm long.

OTHER SPECIMENS: ECUADOR: Loja: Páramo of Loja, 12000 ft, without collector, W-R 10877! Parque Nacional Podocarpus, Cajanuma, 3000 m, 14 XI 2011, *Werner 2718*, AMO! (specimen and spirit) **Morona-Santiago:** Área de Bosque Vegetación Protectora Tambillo, 3050 m, 12 III 2001, *Linder Suin 848*, AMO! **BOLIVIA: La Paz:** Nor-Yungas, PNAMI, Cotapanta, sendero Chojllapata, 3420 m, *I. Jiménez 5497*, LPB! *Ibid. Miranda 1003*, LPB! **PERU: Amazonas:** Bagua; Cordillera Colán NE of La Peca, ca. 10400 ft, 9 IX 1978, *Barbour 3437*, MO! **SEL! Pasco:** Oxapampa: Dist. Huancabamba. Parque Nacional Yanachaga-Chemillén, cercanías al macizo de la Cordillera Yanachaga, 3330 m, 24 IV 2007, *Monteagudo 13809*, AMO! HOXA, HUT, MO, USM. *Ibid.* La Colmena-trocha Erica, 3320 m, 19 VIII 2008, *Valenzuela 11560*, AMO! HOXA, HUT, MO, USM.

OTHER RECORDS: ECUADOR: Loja: Parque Nacional Podocarpus, Cajanuma, 3000 m, 14 XI 2011, *Werner 2718*, digital image, AMO! (photo voucher) **BOLIVIA: La Paz:** Parque Nacional Cotapata y alrededores, http://fm2.fieldmuseum.org/plantguides/guide_pdfs/361-03.pdf photo 55 as *E. pachyichilum* (seen 22 X 2014). **PERU: Pasco:** Parque Nacional Yanachaga Chemillén, *Becerra s.n.*, digital images, AMO!

DISTRIBUTION AND ECOLOGY: Widespread along the upper slopes of the Cordillera Oriental of the Andes, from southern Ecuador through Peru to western Bolivia, terrestrial at 3000-3600 m altitude. Flowering from September to March.

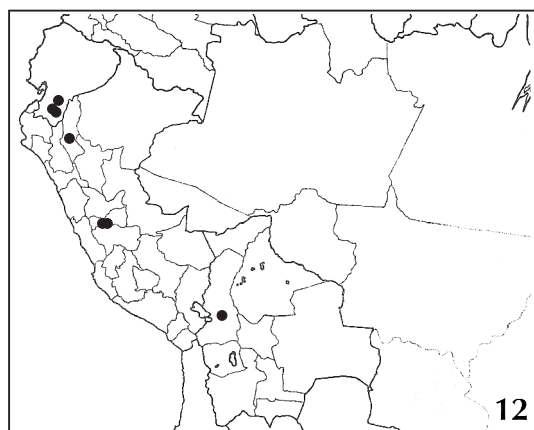
RECOGNITION: *Epidendrum erytropachyichilum* belongs to the Pachyichilum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, by the relatively small leaves, parallel to the stem, the short, racemose, erect inflorescence, brightly colored flowers, yellow to orange to reddish pink, with an entire, conduplicate, lip embracing the column, without any pubescence in front of the stigmatic cavity nor on the lip, but generally with two small calli. The species is recognized by the small plants, up to 120 cm tall, leaves lanceolate, 1.5-6 x 0.5-0.9 cm, parallel to the stem and partly imbricating; inflorescence dense, with 10-15, reddish-pink flowers, including the ovary, sepals 6.2-6.6 x 3.5-4.3 mm; apex of column blunt, without teeth, anther ovoid. *Epidendrum pachyichilum* is vegetatively very similar, but the inflorescence few-flowered, with up to 8, sulfur-yellow to green flowers, sepals ca. 11 mm long, and the lip widely triangular when spread, column with an uncinat tooth each side at the apex, anther rostrate. *Epidendrum incapachyichilum* Hágsater & E.Santiago has taller plants, to 1.5 m tall, leaves 2.4-5.5 cm long, inflorescence generally lax, with 7-9 [12] flowers colored reddish orange to yellowish orange with the ovary green, sepals 8-9.4 x 4.2-5.1 mm, and the lip widely hemi-orbicular to widely triangular when spread, with a wide apicule, apex of the column with a pair of long straight teeth, anther conical.

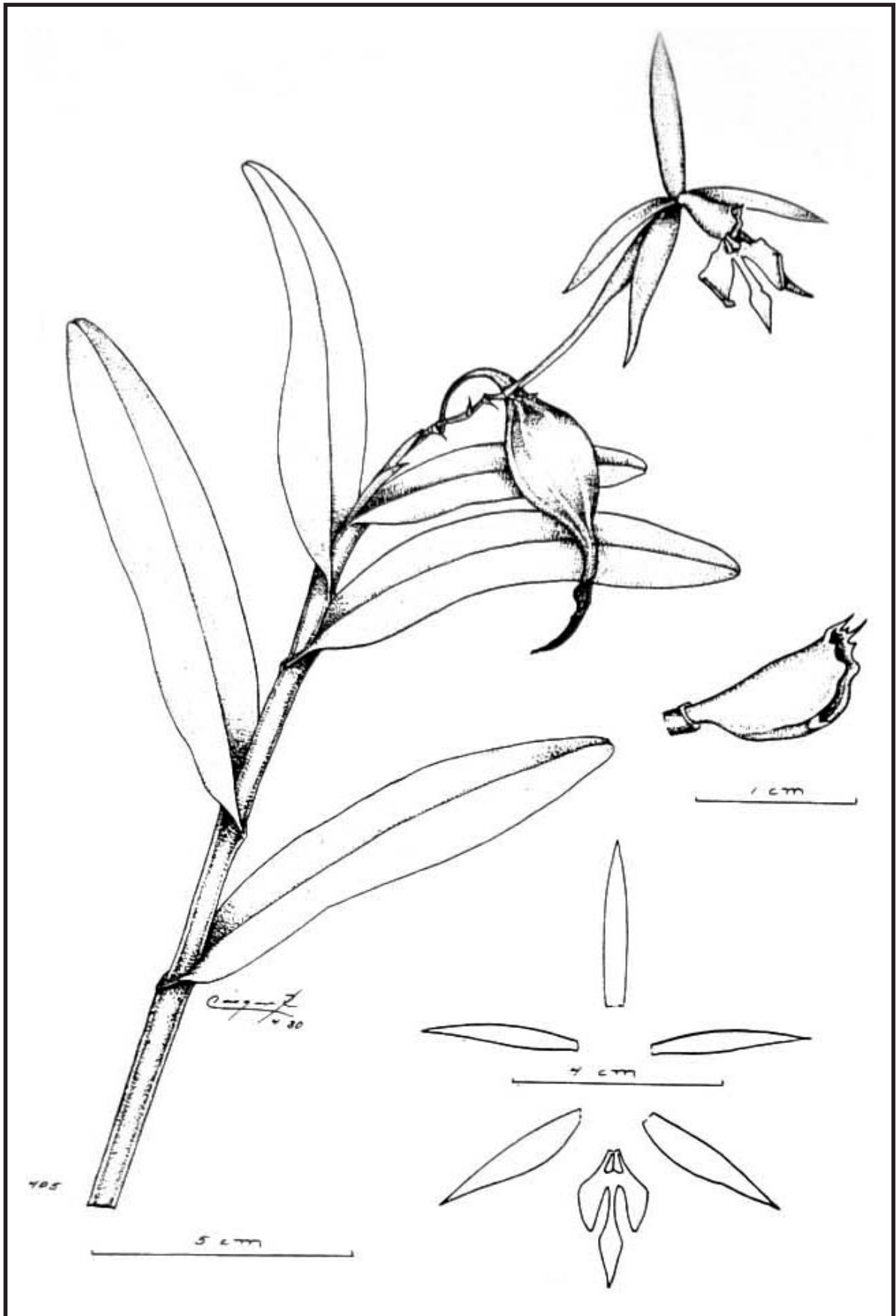
NOTE: This small group of species with relatively small flowers colored from yellow to orange to red has been consistently confused, but most recently identified collectively as *Epidendrum pachyichilum*, we consider them, however, to be several distinct species, distinguished by the leaves, floral bracts and flowers.

CONSERVATION STATUS: DD. Data deficient. Widespread and apparently frequent in various protected areas.

ETYMOLOGY: From the Greek ερυθρος, red, and *pachyichilum*, from παχυς, thick, and χεῖλος, lip, in reference to the similarity of this species to *E. pachyichilum* but with reddish-pink flowers.

REFERENCES: Hágsater, E. & E. Santiago, 2015, *Epidendrum incapachyichilum* in Hágsater, E., & L.Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1528. Jiménez Pérez, I., 2011, Registros nuevos de orquídeas de los bosques montanos de Bolivia, parte 2, *Ecología en Bolivia* 46(2): 62-66. Santiago, E., & E. Hágsater, 2015, *Epidendrum pachyichilum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1549. Schweinf., C., 1943, *Epidendrum pachyichilum* var. *Pusillum*, *Bot. Mus. Leaftl.* 11: 82. 1943. Schweinfurth, C., 1959, *Epidendrum pachyichilum* Orchids of Peru, *Fieldiana, Bot.* 30(2): 486-487.





EPIDENDRUM ESPIRITU-SANTENSE Dodson & R.Vásquez

Plate 1523

EPIDENDRUM ESPIRITU-SANTENSE Dodson & R.Vásquez, *Icon. Pl. Trop.* II: pl. 220.1989.

Type: BOLIVIA: Cochabamba: Chaparé: Junction of the Río Juntas de Corani and the Río Espiritu Santo, 560 m, 26 April 1980, **Roberto Vásquez 405**. Holotype SEL 35963! (Illustration voucher). Isotype: Herb. Vásq.

Epiphytic, caespitose, sympodial **herb**, to 50 cm tall including the inflorescence. **Roots** 2-4 cm in diameter, basal, fleshy. **Stems** 20 x 0.4 cm, terete at base, laterally compressed towards the apex, ancipitose, simple, straight, green sometimes wine-red. **Leaves** 5-10, erect, distributed throughout the stem, green to lemon green; sheath 5-15 cm long, tubular, laterally compressed, ancipitose; blade 4.8-7.5 x 1.2-1.4 cm, ratio length/width: 4-5:1, lanceolate-oblong, apex bilobed, coriaceous, slightly dorsally carinate the keel extended into a short point, with evident venation. **Spathes** lacking. **Inflorescence** apical, pluri-racemose, (racemose, producing new racemes from the basal internodes of the primary raceme with age), flowering from each raceme over several years, the racemes evident at the base of the apical leaf; peduncle 0.5-1.0 cm long, covered by 2-3 bracts 2-3 mm long, triangular, acute; rachis 1.0-1.5 cm long, zigzag. **Floral bracts** 4-5 mm long, much shorter than the ovary, embracing, triangular, acute. **Ovary** 30-40 mm long, terete, unornamented. **Flowers** 1 per raceme, successive, resupinate, sepals brown to greenish, petals, lip and column white, calli yellow; fragrance not registered. **Sepals** [16-17]25-33 x 3-5 mm, spreading, linear-lanceolate, acuminate, margin entire, revolute; lateral sepals 7 mm wide, oblique. **Petals** [14]23-30 x 2.0-4.0 mm, spreading, linear-lanceolate, acuminate, margin entire, spreading. **Lip** 18 x 10 mm, united to the column, deeply 3-lobed, base truncate; bicallose, the calli laminar, prominent; lateral lobes 10-11 x 3-6 mm, hemi-ovate, rounded, sub-parallel to the mid-lobe, margin entire, the distal margin somewhat involute; mid-lobe [8]14-20 x 2-5 mm, trulliform, narrowly unguiculate, acute, margin entire, spreading. **Column** 8-10 mm long, straight, thin at the base, strongly dilated towards the apex. **Clinandrium-hood** slightly surpassing the body of the column, with a pair of prominent teeth, and a shorter pair on the side. **Anther** not seen. **Pollinia** not seen. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** body 25 x 12.5 mm, displaced towards the apex of the capsule, with a long pedicel.

OTHER SPECIMENS: BOLIVIA: Santa Cruz: Velasco; Parque Nacional Noel Kempff, mercado Lago Caimán, 219 m, 14 I 1997, *Garviza 304*, LPB! MO! USZ. Los Fierros, 500 m, 10 XI 1993, *Jardim 78*, MO! USZ.

OTHER RECORDS: BOLIVIA: photo by Vásquez, VASQ! (Vásquez & Ibsch, 2004).

DISTRIBUTION AND ECOLOGY: Known presently only from Bolivia, at the base of the Andes and lowland forest in the Amazon basin; epiphytic at 200-560 m altitude. Flowering from January to April, possibly throughout the year.

RECOGNITION: *Epidendrum espritu-santense* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spatheous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The Bolivian species is recognized by the ancipitose, green sometimes wine-red in color stems with 5-10 green to lemon green distributed throughout, leaves lanceolate-oblong, ratio length/width 4-5:1, 4.8-7.5 x 1.2-1.4 cm, peduncle and rachis evident, flowers small, ovary 30-40 mm long, sepals 23-25 mm long, mid-lobe of lip trulliform, narrowly unguiculate, column 8-10 mm long, clinandrium-hood with a pair of prominent teeth; body of capsule displaced to the apical half. *Epidendrum nocturnum* Jacq. is widely distributed from Florida to Bolivia, has terete stems, shorter leaves, 3.7-14 cm long, longer ovary, 50-70 mm long, about as long as the sepals which are 35-75 mm long, peduncle and rachis shorter, column 15-20 mm long, body of capsule occupying nearly the full length, centered. *Epidendrum tridens* Poepp. & Endl. is distributed along the base of the Andes in Ecuador, Peru and Bolivia as well as south of the Guyana Shield in Venezuela, and has 3-5 progressive longer leaves, 3-5:1, (8.5-15 x 2-5 cm), green, sometimes wine-red in color, and has a longer ovary (60-100 mm), longer than the sepals (40-63 mm), peduncle and rachis very short; column 21-23 mm long; capsule centered. *Epidendrum taguatingense* (Brieger & Bicalho) Hágsater, Meneguzzo & L. Sánchez is endemic to Brazil, in the states of Goiás, Minas Gerais and the Federal District, and has larger plants, 40-107 cm tall, stems with 8-18 green leaves, distributed along the apical 2/3, length/width ratio 4-6:1, 8-16 x 1.2-3.0 cm, ovary 60-70 mm long, sepals 45-70 mm long, mid lobe linear, column 20-23 mm long. *Epidendrum tumuc-humaciense* (Veyret) Carnevali & G. Romero along the Amazon slope of the Guyana Shield, from Colombia to the French Guyana, has numerous leaves (6-27), shorter, narrower, ratio 2-3:1, 3-9.2 x 1.2-2.8 cm, distributed throughout the stems, erect, green to reddish, occasionally deep wine-red, ovary generally 80-100 mm long, longer than the sepals (48-81 mm), peduncle and rachis to 2 cm long; body of the capsule occupying the apical half of the capsule. Florally the Bolivian species is reminiscent of *Epidendrum oerstedii* Rchb.f., of the Coilostylis Group in Central America, but that species has fusiform pseudobulbs, the inflorescence produced from an immature growth.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Espiritu Santo River, in the department of Cochabamba, where the type was collected.

REFERENCES: Vásquez Ch. R. & P. L. Ibsch (eds.), 2004, **Orquídeas de Bolivia** 2: 149, photo 39. Sánchez S., L., & E. Hágsater, 2008, *Epidendrum oerstedii* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1151. Hágsater, E., Meneguzzo, T. E. C. & L. Sánchez, 2015, *Epidendrum taguatingense* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1564. Sánchez S., L., & E. Hágsater, 2015, *Epidendrum tridens* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1565. 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): t. 1566.



Authors: L. Sánchez S. & E. Hágsater

Illustrator: R. Vásquez

Photo: R. Vásquez

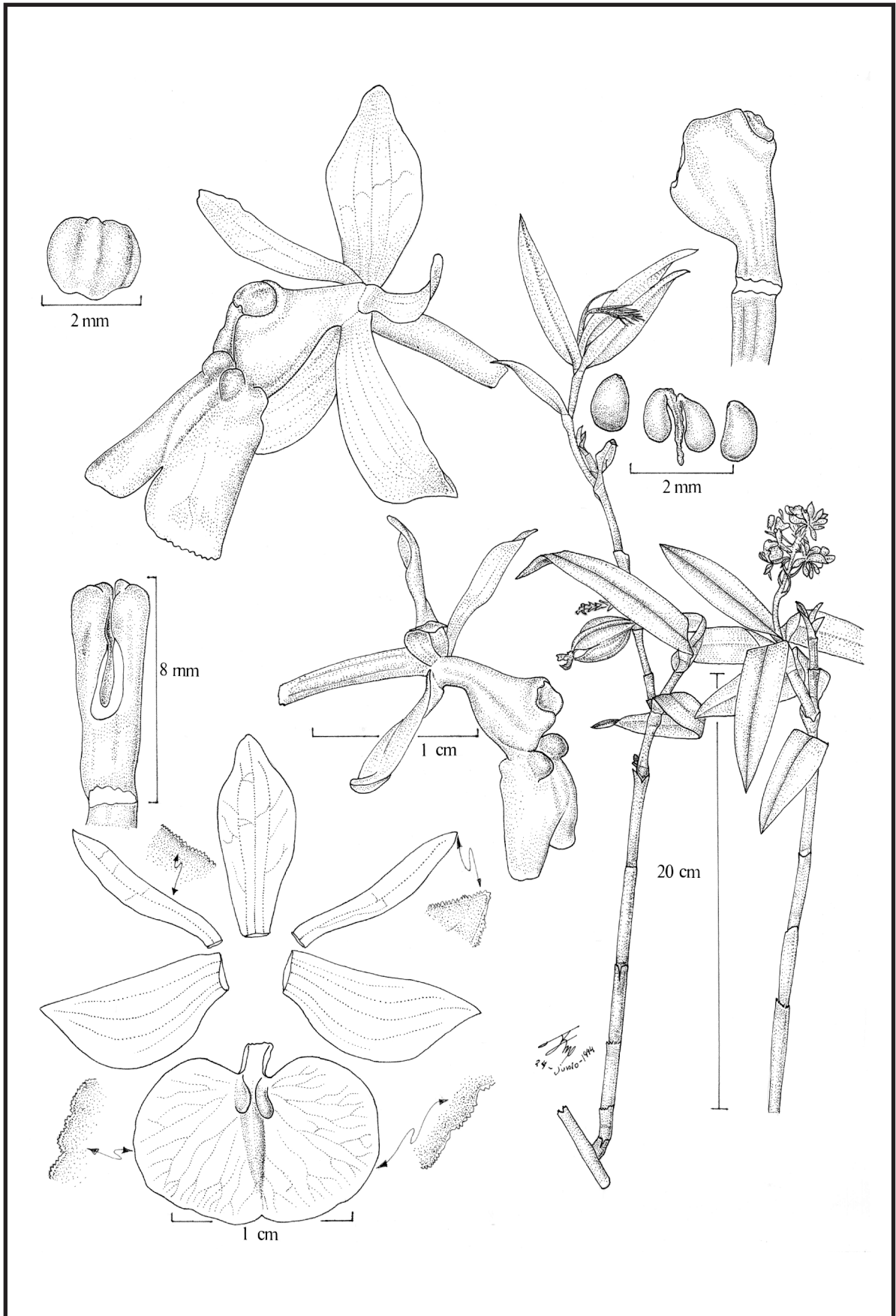
Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1523



EPIDENDRUM EVELYNAE Rchb.f.

Plate 1524

EPIDENDRUM EVELYNAE Rchb.f., *Xenia Orch.* 3: 23. 1878.

Type: BOLIVIA: La Paz: Viciniis Sorata, ad ripas rive Challasuyo, in scopulosis, montis Chiliecae. Regio Temperata, 2700-2900 m, Augusto-Octobri 1858. **Gilbert Mandon 1139**. Holotype: not designated. Lectotype (here designated): W-R 52195! including W-R 33754! Isotypes: AMES! BM! BR! G x3! GOET! LE! K! MPU! NY! P! (Illustration voucher) P x2! S x2! SEL! W-R 52194! W-R 52196! W-R 52197! W-R s.n.! (Herb. Musei Caesarei, pro parte, mounted together with *Epidendrum scopulorum* Rchb.f., probably *Mandon 1137*, and then an isotype of that species). [None of the specimens are annotated by Reichenbach himself, except for sheet W-R 33754 which only has his original description and sketch of a flower and lip in his hand-writing. The other Vienna specimens were labeled after his death, when all the material was mounted. One specimen (Herb. Musei Caesarei) was annotated by A. Cogniaux].

Epiphytic **herb**, 40 cm tall or more, where the new stem is produced from a sub-apical internode of the previous stem. **Roots** ca 1.5-2 mm in diameter, fleshy, from the base of each stem. **Stems** 12-23 x 0.3-0.6 cm, simple, cane-like, terete, straight, the new produced from the middle of a sub-apical internode of the previous stem. **Leaves** 3-7, narrowly oblong, acute, sub-coriaceous; leaf-sheaths 1-4 cm long, striate; blade 4-11 x 1.0-2.3 cm, articulate, narrowly oblong, acute, sub-coriaceous, smooth, margin entire. **Spathe** lacking, **Inflorescence** 3-7 cm long, apical, from the mature stem, flowering only once, nodding, racemose; peduncle 20 mm long, laterally compressed, ancipitose; rachis unornamented, laterally compressed. **Floral bracts** up to 30 mm long; triangular, acuminate, from much longer to shorter than the ovary. **Flowers** 12-20, successive, ca. 4-7 open at one time, resupinate, green with the lip and apex of the column tinged purple-brown; fragrance not registered. **Ovary** 8-10 mm long, not inflated, terete, unornamented. **Sepals** free, spreading, narrowly elliptic, acute, fleshy, glabrous, without any dorsal keel, margin entire, spreading; dorsal sepals 3-veined, 9-11 x 4 mm; lateral sepals, elliptic, somewhat oblique and thus upper side straight, 5-veined, 9-11 x 4.5 mm. **Petals** 9-11 x 1.5 mm, spreading, linear, acute, 1 or 3-veined, margins minutely denticulate-erose, spreading. **Lip** 6-8 x 10-14 mm, united to the column, bilobed, reniform, the sides strongly revolute in natural position, so as to appear apron-like, apex emarginate; the lateral lobes 5-7 x 6-8 mm, semi-orbicular, sometimes notched so that a very shallow mid-lobe is apparent, formed by to rounded, shallow lobes; bicallose, the calli thick, divergent, with a prominent, fleshy, thickened mid-rib that runs the length of the lip; apical margin minutely denticulate-erose, spreading. **Column** 7 mm long, thin at the base, and almost immediately strongly dilated vertically, slightly arched near the base, with a pair of rounded teeth at the apex. **Clinandrium** short, fleshy, without covering the anther, margin entire. **Nectarium** not seen. **Anther** sub-globose, 4-celled. **Pollinia** 4, obovate, laterally compressed, caudicles soft and granulose, longer than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Capsule** ellipsoid, with a thin basal pedicel 8 mm long, body 35 x 20 mm.

OTHER SPECIMENS: PERU: Cusco: Bosque montano de Alfamayo, ca. 1800 m, *Calatayud s.n.* digital fotos, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: Known from western Bolivia and southern Peru, on the Amazon slope of the Cordillera Oriental of the Andes, at 1800-2650 m altitude, in montane forest. Flowering August-October.

RECOGNITION: *Epidendrum evelynae* belongs to the Arbuscula Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, roots generally only from the base of the primordial stem, and the Incomptum Subgroup which has a short apical inflorescence with fleshy yellowish to green to violet-green to black flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by the sub-coriaceous leaves, the successive flowers without any prominent ventral nectary which inflates the ovary, the reniform, bicallose lip, sepals 9-11 mm long, and the linear, 1-veined petals. *Epidendrum chimantense* Hágsater & Carnevali has the purple-tinged leaf-sheaths, narrow, elliptic-lanceolate leaves, the column arching only at the base and a slender, non-inflated ovary. *Epidendrum lechleri* Rchb. f., a species native to Peru, has 13 mm long sepals and a 3-lobed lip. *Epidendrum nephroglossum* Schltr. has very prominent floral bracts equal or longer than the ovary which is not swollen, acute petals and an obsolete clinandrium. *Epidendrum bakrense* has wider petals and shorter segments, with a much inflated ovary, and the column apex with a rounded lobe above the calli, not a tooth. *Epidendrum rousseffianae* Collantes & Hágsater has somewhat similar reniform lip, but the plant is quite different, with monopodial, branching stems.

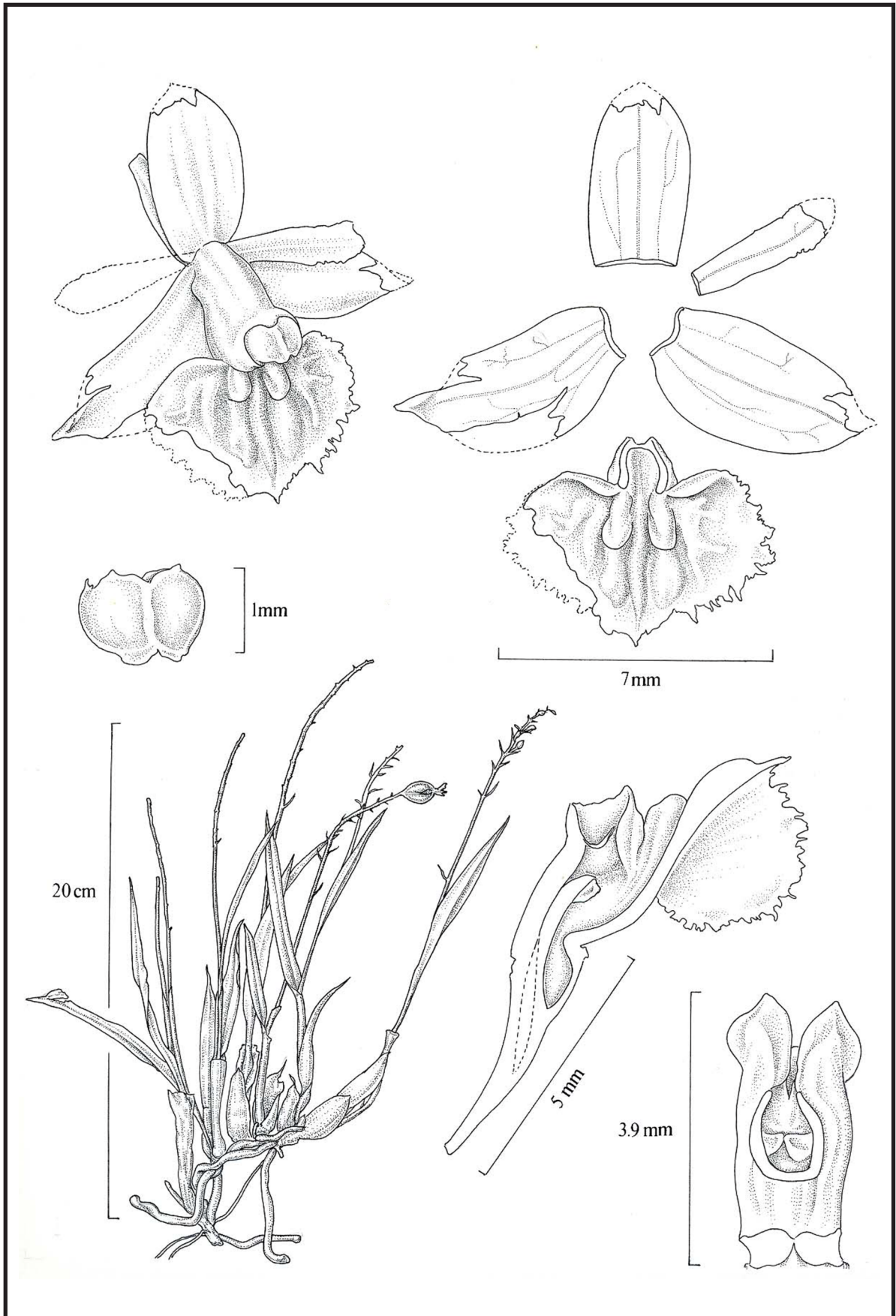
NOTES: Reichenbach described and in his sketch indicated the two calli followed by 3 short, parallel, narrow ribs. Our study of the P isotype, and the photographs by Calatayud (from Cuzco), clearly indicate two wide, divergent calli with a wide, thick mid-rib that runs the length of the lip, and thus is in contradiction with the protologue. We presume the sketch by Reichenbach, and therefore his description are taken from a dried flower, where the fleshy, central mid-rib collapses, and in the process can be misinterpreted as three short ribs, which when rehydrated, recover the original form of one wide, thickened mid-rib. In addition the margin of the petals was not noted as minutely denticulate-erose. The photograph by Calatayud clearly shows 3-veined petals. Vásquez and Ibsch (2004) treated this species as a synonym of *E. lechleri* Rchb.f. together with *E. nephroglossum* Schltr. Dodson (1999) based his citation for Ecuador on a misidentified specimen, *Dodson & Thien 2344* (MO!), which corresponds to *Epidendrum homoion* Hágsater & Dodson.

CONSERVATION STATUS: DD. Data deficient. Only two collections have been identified.

ETYMOLOGY: Not stated.

REFERENCES: Dodson, C.H., 1999, *Orchidaceae* in Jørgensen, P.M. & S. León Yáñez (eds.), *Cat. Vasc. Pl. Ecuador*, **Monogr. Syst. Bot. Miss. Bot. Gard.** 75: 630-775. Vásquez Ch., Roberto, & Pierre L. Ibsch (eds.), 2004, **Orquídeas de Bolivia** 2: 124.





EPIDENDRUM EXCELSUM C.Schweinf.

EPIDENDRUM EXCELSUM C.Schweinf., Fieldiana Bot. 33 (suppl.): 35. 1970.

Type: PERU: Departamento La Libertad; Prov. Huamachuco, entre Yanazara y Huaguil (carretera al Marañón), at 3750 m, epífita sobre "Quishuar" (*Budellia* sp.), flores amarillentas, 24 Junio 1958, A. López & Abundio Sagástegui Alva 2757. Holotype: AMES 69112! (illustration voucher, plant). Isotypes: AMO! (illustration voucher, flowers). HUT!

Epiphytic, sympodial, caespitose, erect herb, 8-24 cm long including the inflorescence. **Roots** 4 mm in diameter. **Rhizome** 1 cm long, short, covered by sheaths, scariosus and evanescent. **Stems** 3-6 x 0.6-1 cm, thickened, forming a thick, homoblastic pseudobulb, terete, fusiform, green, minutely rugose, and brilliant. **Leaves** 1-2; produced from the apex of the pseudobulb; blade 4-10 x 0.5-1.1 cm, narrowly oblong to linear-lanceolate, acute to acuminate, grass-like, green, margin entire. **Spathe** lacking. **Inflorescence** 10-22 cm long, apical, racemose, flowering only once, erect, loosely many flowered; peduncle 5-10 cm long, terete, with a single bract below the rachis, ca. 8 mm long; rachis up to 17 cm long, terete. **Floral bracts** 4-9 mm long, about as long as the ovary, triangular-lanceolate, acuminate, embracing. **Ovary** ca. 4 mm long, thin, unornamented, inflated behind the perianth into a short vesicle. **Flowers** ca. 10-16, simultaneous, resupinate, yellow or grayish yellow; fragrance not registered. **Sepals** spreading, free, margin entire; dorsal sepal 5.1-6.7 x 3-4 mm, oblong-ovate, obtuse, 3-veined, the lateral veins branched; lateral sepals 6.9-7.8 x 3.5-3.7 mm, obliquely adnate to the base of the column, elliptic-ovate, acute, dorsally carinate, 3-veined with irregular anastomosis. **Petals** 4.9-6.1 x 1.5-1.8 mm, spreading, oblong-oblancoate, obtuse, 1-veined, margin erose towards the apex, spreading. **Lip** 5.3-5.5 x 8 mm, adnate to the column, entire, transversely cordate-ovate, base slightly cordate, margin erose-denticulate, except for the entire posterior margin; bicallose, the calli prominent, ellipsoid, laterally somewhat compressed, disc 5-7-ribbed, the ribs low. **Column** 3.4-4.5 mm, slightly clavate and arched, thick. **Clinandrium-hood** prominent, wide, somewhat up-turned, margin sinuous. **Rostellum** apical, foramen slit. **Lateral lobes of the stigma** prominent, ca. ½ the length of the stigmatic cavity. **Nectary** penetrating about ¼ of the ovary, constricted near the perianth, smooth. **Anther** widely globose, 4-celled. **Pollinia** not seen. **Capsule** not seen.

OTHER SPECIMENS: PERU: La Libertad: Huamachuco, Yanoasar-Huaguil, 3750 m, 20 VI 1958, López 1393, USM! (This collection was made simultaneously with the type, but only indicates the first collector A. López, with a different collection number). The following material comes from across the Río Marañón on the Cordillera Oriental and looks similar but the flowers have not been studied in detail: Pataz; Tingo, La Sabana-Huayllillas), 3100 m, 23 V 1961, López & Sagástegui 3542, AMES! HUT! (The specimen at AMES only has immature floral buds.)

OTHER RECORDS: none seen.

DISTRIBUTION AND ECOLOGY: Presently known only from northern Peru, in the Department of La Libertad, on the Cordillera Occidental and Oriental of the Andes, thus on both sides of the Río Marañón; epiphytic at 3100-3750 m altitude, on *Budellia* sp. "Quishuar". Flowering in May and June.

RECOGNITION: *Epidendrum excelsum* belongs to the Rupestre Group, which is characterized by caespitose, sympodial plants, pseudobulbous stems with 1-4 fully developed leaves toward the apex, and lack of spathes at the base of an erect, racemose or paniculate inflorescence, the lip ecallose or bicallose and with several fleshy thickened keels on the disc. The species is characterized by the small, erect plants, narrow, grass-like leaves, an entire lip, with the margin deeply erose-dentate, two calli at the base which are large but not upright, and the disc somewhat thickened into 5-7 very low ribs. *Epidendrum ochoae* Collantes & Hágsater has a pendulous, sympodial habit, the stem with a homoblastic pseudobulb, terete, constituted by 3 internodes, green, smooth, brilliant, the leaves lanceolate to long-lanceolate, mucronate, leathery, sepals oblique, united to the column, the lip deeply 3-lobed, with 2 prominent, upright calli, and with 3 prominent thickened ribs, the lateral ones in front of the calli, smaller than the mid-rib. *Epidendrum pachydiscum* Hágsater, described from Cusco Province, is overall very similar, though it has erect stems, the lip is ecallose, and the lateral lobes of the lip are much wider. *Epidendrum megalocoleum* Hágsater the entire lip, deeply emarginate and mucronate, ecallose, the disc with 3 well-defined, central keels, the lateral pair ending at about ¾ the length of the lip, the central keel starting at the middle of the lip and ending in the fleshy mucro.

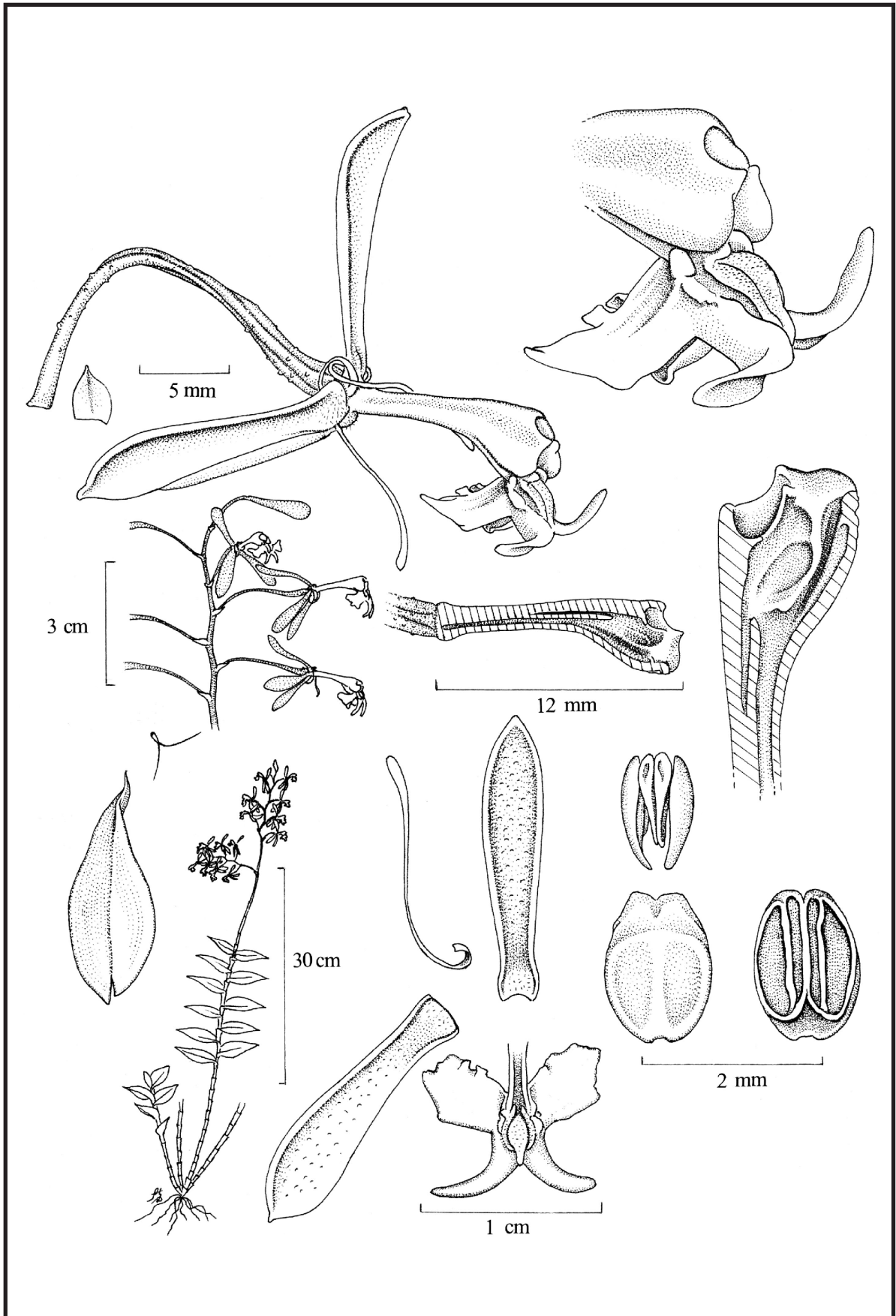
NOTES: There are other specimens from the Huascarán National Park which have been compared to this species, but the material has not been available for detailed study. An additional specimen from Cajamarca appears to belong to a different, as of yet undescribed, though similar species.



CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *excelsus*, lofty, high; probably in reference to the high altitude where this species grows.

REFERENCES: Hágsater, E., 2004, *Epidendrum pachydiscum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 773. Hágsater, E., 2007, *Epidendrum megalocoleum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: t. 956. Collantes, B., & E. Hágsater, 2015, *Epidendrum ochoae* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15: t. 1546.



EPIDENDRUM FINDLINGIAE Hágsater, Dalström & Ruíz-Pérez

Plate 1526

EPIDENDRUM FINDLINGIAE Hágsater, Dalström et Ruíz-Pérez, *sp. nov.*

Type: PERU: Amazonas: Chachapoyas; Molinopampa, epiphytic or more commonly lithophytic on crystalline limestone in patches of remnant, scrubby cloud forest at 2490 m, 23 March 2011, *Stig Dalström 3468*. Holotype: USM! (Illustration voucher). Digital photos of pretype: AMO! (Photo voucher).

Somewhat similar to *Epidendrum lopezii* Hágsater but the plants and flowers somewhat smaller, disc of the lip with 5 unequal ribs, and lateral lobes of the lip narrowly sub-pentagonal and reflexed, longer than broad.

Epiphytic or lithophytic, sympodial, caespitose **herb**, 55-60 cm tall including the inflorescence. **Roots** ca. 1.5 mm in diameter, basal, thin. **Stems** 35 x 0.7-1 cm, simple, cane-like, terete, thin, erect, straight, the basal half covered by non-foliar sheaths 2.5 x 0.5-0.7 cm, tubular, scarious, becoming fibrous with time. **Leaves** 7-11, distributed along the apical half of the stems, articulate, spreading, light green to purplish green; sheaths 14-23 x 6-7 mm, tubular, green to purplish green; blade 3.5-6 x 2.0-2.5 cm, elliptic, short acuminate, margin entire, spreading. **Spathe** lacking. **Inflorescence** 25 cm long, apical, paniculate, erect, lax-flowered; peduncle 10 cm long, terete thin, straight, provided with ca. 3 bracts 20-25 mm long, distributed throughout the peduncle, tubular at the base, acute and conduplicate above; rachis 15 cm long, terete, thin, generally 2-3 branched, laxly few-flowered; each raceme about 5 cm long, subtended by bract ca. 1 cm long, narrowly triangular, long-acuminate, amplexicaul. **Floral bracts** 3-4 mm long on the branches, 3-12 mm long on the primary rachis, gradually diminishing in size, shorter than the ovary, triangular, acuminate, embracing. **Ovary** 20-27 mm long, terete, very thin, slightly dilated behind the perianth, arched, striated, scarcely and minutely papillose. **Flowers** ca. 60, simultaneous, resupinate, the sepals dorsally magenta, ventrally greenish brown, the petals and the column pink, the column apically scarcely and minutely adorned with few irregular magenta dots, lip pale pink with the base of the mid-lobe yellowish green, the ribs of the disc heavily marked with dark magenta; fragrance not registered. **Sepals** 14-15.7 x 3.0-3.7 mm, free, reflexed, somewhat fleshy, narrowly spatulate-oblancoolate, the apical half concave, obtuse, minutely apiculate, 3-veined, margin entire, somewhat involute. **Petals** 14 x 0.5 mm, free, reflexed, usually overlapping each other behind the sepals, decurrent, though sometimes nearly parallel to the column, sigmoid, filiform, apex rounded, 1-veined, margin entire, spreading. **Lip** 8.2 x 10 mm, united to the column, 3-lobed, convex in natural position; bicallose, the calli deltoid, somewhat laterally compressed, short; disc formed by 5 unequal, fleshy, parallel ribs, the mid-rib prominent, wide, reaching the apical sinus, the lateral pairs progressively shorter, the outer pair about 1/3 the length; lateral lobes 5 x 3.5 mm, reflexed, nearly parallel to each other in natural position, somewhat retrorse when spread, narrowly sub-pentagonal, oblique, posterior margin erose, anterior margin entire; mid-lobe 3.5 x 9 mm, deeply bifurcate, forming a pair of falcate, divaricate, linear lobes the apices rounded, margin entire, spreading, each lobe 3.5 x 1.2 mm. **Column** 11-12 mm long, straight, the basal 2/3 thin, then vertically widened, apex rounded ventrally, with a short triangular tooth on each side. **Clinandrium-hood** reduced, margin entire. **Anther** ellipsoid, apically notched, 4-celled. **Pollinia** 4, bird-wing type, the inner pair somewhat smaller. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** penetrating the ovary, thin, unornamented. **Capsule** not seen.

OTHER SPECIMENS: PERU: Amazonas: Luya, Cerros Calla Calla 5 km, above Leimebamba on the road to Balsas, area known as San Miguel, 2400 m, 1 IV 1964, *Hutchison 4841*, UC! Cerca de Leymebamba, 2200-2800 m, *Erica Morón s.n.*, USM!

OTHER RECORDS: PERU: Amazonas: Cerca de Leymebamba, 2200-2800 m, *Erica Morón s.n.*, digital images of live flowers, AMO! Cerca de Leymebamba, 2845 m, *Salas s.n.*, digital image, AMO!

DISTRIBUTION AND ECOLOGY: Known only from the eastern slope the Cordillera Oriental of the Andes in northern Peru, in the Cerros de Calla Calla, at 2200-2845 m altitude; epiphytic and terrestrial. Flowering in March.

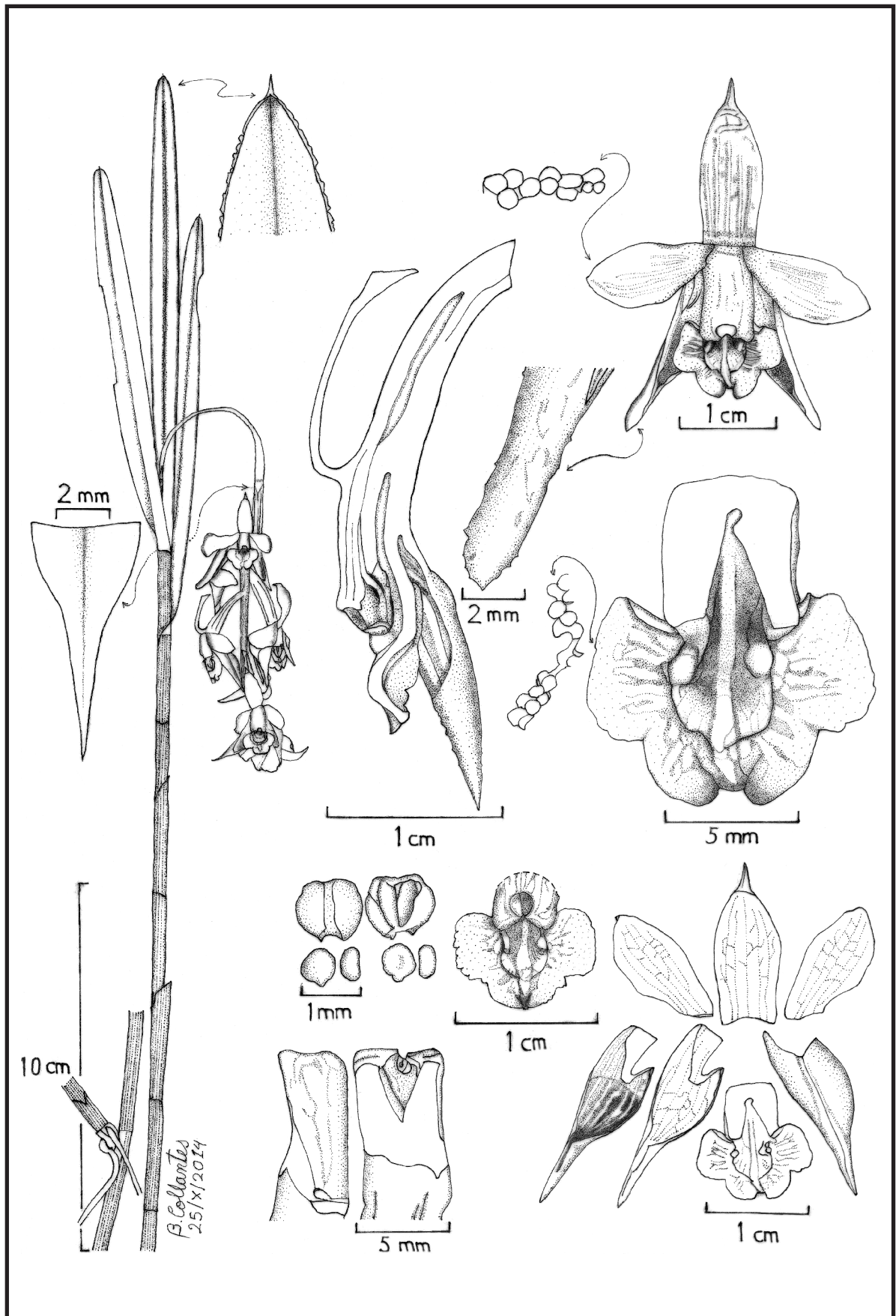
RECOGNITION: *Epidendrum findlingiae* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the mostly filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, at least the inner pair, and the Paniculatum Subgroup which has filiform petals, all pollinia "bird-wing" type, green and white flowers, often marked with purple on the disc of the lip and apex of the column. The species is recognized by the relatively short plants, 55-60 cm tall including the inflorescence, leaves 3.5-6 x 2.0-2.5 cm, laxly paniculate inflorescence the sepals dorsally magenta, ventrally greenish brown, column and lip pink, the disc and calli of the lip dark magenta, the apical lobes pale green, sepals 14-15.7 mm long, the lip adorned with 5 unequal ribs, and the lateral lobes narrowly sub-pentagonal. It closely resembles *Epidendrum lopezii* which much taller plants, 100-250 cm high, larger leaves 12.5-17 x 2.6-5.5 cm, flowers of similar color, but the lip has only 3 ribs, and the lateral lobes of the lip are transversely oblong rectangular, with the corners all rounded. *Epidendrum paniculatum* Ruiz & Pavón has green with the apical half of the column and the lip white, the disc of the lip marked reddish, sepals 10-12 mm long, lateral lobes of the lip sub-orbicular, spreading, the disc of the lip with 3 ribs. *Epidendrum capricornu* Kraenzl. has oblong-elliptic leaves 3-11 x 1.5-3.3 cm, the sepals are purple-brown with the ventral surface pale yellow, 14-15 mm long, and the lip is pink with the lateral lobes oblong, falcate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: Mary Findling is a patron of environmental causes. She has followed the career of film-maker Darryl Saffer as he documented conservation issues. After he partnered with orchid taxonomist Stig Dalström to do the film *Wild Orchid Man In The Ghost Orchid Swamp*, Mary expressed an interest in helping support the series. Since Mary has a personal interest in orchids, it was a natural fit. With her help, the Wild Orchid Man series will continue for at least three more films, including the recently released, *Wild Orchid Man In The Mountains Of Amazonas* where the discovery of *Epidendrum findlingiae* is featured.

REFERENCES: Hágsater, E., *Epidendrum lopezii* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 2, *Icon. Orchid.* 3: t. 348. Santiago, E., & E. Hágsater, *Epidendrum capricornu* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1309. Santiago, E., & E. Hágsater, *Epidendrum paniculatum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1468.





EPIDENDRUM INCAHUAMANII Collantes & Hągsater

EPIDENDRUM INCAHUAMANII Collantes et Hągsater, *sp. nov.*

Type: PERU: Prov. Urubamba: Dist. Machu Picchu: Santuario Hist3rico de Machu Picchu, Torrepata, 3200 m, 11 agosto 2014, **Feliciano Incahuaman & Carmen Soto 147**. Holotype: USM! (illustration voucher; plate Collantes N^o 36; photo by F. Incahuaman, taken 4 September 2013, photo voucher).

Similar to *Epidendrum birostratum* C.Schweinf. but the leaves linear-lanceolate, apical flowers opening first, petals obovate-oblong to obovate-elliptic; disc in front of the calli with a prominent hemi-circular protuberance, traversed through the middle by a prominent mid-rib extending to the apex of the mid-lobe, lateral lobes dolabriform-sub-elliptic, mid-lobe semi-circular with the apex retuse and mucronate.

Terrestrial and epiphytic, sympodial, caespitose **herb**, 18-50 cm tall. **Roots** basal, thick. **Stems** 30 x 0.5 cm, the new stem produced from a sub-basal node of the previous stem, cane-like, terete, thin, erect, straight. **Leaves** 5-10, distributed along the apical 2/3 of the stem, distichous, articulate, sub-coriaceous; sheaths 1-4.5 x 0.5 cm, tubular, conspicuously many-veined, striated; blade 2.5-15 x 0.3-0.9 cm, linear-lanceolate, apex sub-acute, mucronate; margin translucent, appearing vitrified, irregularly crenate towards the apex; upper face green suffused with purple to reddish. **Spathe** lacking. **Inflorescence** apical, racemose, arcuate-nutant, short, densely flowered, flowers opening in succession from the apex of the inflorescence towards the base; peduncle 2-3 x 0.4 cm, complanate; rachis sub-triangular. **Floral bract** 9 x 4 mm, long-acuminate-setaceous; the lower ones more than half as long as the ovary, progressively shorter, the apical ones half as long as the ovary, ovate-triangular to ovate acuminate, embracing. **Flowers** 4-10, natural spread 3 cm in diameter, resupinate, sepals pink, dorsally dark pink (as is the ovary), the aristate apex pale green to garnet; petals entirely pink to cream colored with the margins pale pink, apex greenish yellow; lip creamy-pink, creamy-yellow or pale pink, calli whitish; disc creamy white to creamy-pink, the mid-rib creamy-white, column basally pale green, creamy-yellow towards the apex; fragrance not registered. **Ovary** 18 x 4 mm, short, terete, thin at the base and progressively thicker, not inflated, striated. **Sepals** 5-veined with anastomosis, margin entire, spreading; dorsal sepal 13-17 x 5.5-6 mm, reflexed, oblong, conspicuously mucronate; lateral sepals 15-20 x 6 mm, partly spreading, obliquely united to the column, sub-elliptic, deeply concave in the middle, apex prominently aristate-complanate, the awn 5 x 1.8 mm. **Petals** 12-14 x 5.5-6.0 mm, free, revolute, obovate-oblong to obovate-elliptic, cuneate, sub-acute to obtuse, 5-veined, anastomose, the lateral veins bifurcate at the base; margin spreading, minutely papillose near the apex. **Lip** 6-8 x 10-11 mm, adnate to the column, deeply 3-lobed, base cordate; bicallose, the calli sub-conical, slightly complanate, disc thickened into a semi-circular plate, traversed by a prominent mid-rib extending to the apex of the mid-lobe; lateral lobes 2.5 x 6 mm, dolabriform-sub-elliptic, oblique, margin entire to slightly crenate, posterior border involute; mid-lobe 2.5 x 6 mm, semi-circular, apex usually retuse, with a wide mucro in the sinus, margin entire. **Column** 9 x 5 mm, rectangular sub-clavate, thick, short, lateral sepals inserted obliquely. **Clinandrium-hood** reduced, margin entire. **Anther** sub-spherical, 4-celled. **Petals** 4, sub-equal, sub-orbicular, complanate, dorsally convex. **Rostellum** apical, oval foramen. **Nectary** reaching the base of the perianth. **Capsule** ellipsoid; pedicel 2 mm long, body 2.5 x 1.5 cm; apical neck reduced, floral segments persistent.

OTHER SPECIMENS: PERU: Cusco: Acjanaco, Parque Nacional del Manú, 3250-3350 m, 1 IX 1990, *Cano 4075*, MO! USM! Prov. Urubamba: Dist. Machu Picchu: 700 m del Centro Arqueol3gico de Qantupata, 3200 m, 11 VIII 2014, *Incahuaman & Soto 147-b*, CUZ! (digital images AMO!). Pillahuata (laderas), 2980 m, 9 VII 1915, *Vargas 6108*, AMES!

OTHER RECORDS: PERU: Cusco: Prov. Urubamba: Dist. Machu Picchu: Santuario Hist3rico de Machu Picchu; Camino Inca, sector Ch'akicocha, ca. 3580 m, IX 2000, (observed by B. Collantes). De Phuyupatamarca a Ch'akicocha, (observed by F. Incahuaman, 4 IX 2013, pers. comm.) Machu Picchu, *Gonza s.n.*, photo, AMO!

DISTRIBUTION AND ECOLOGY: Only known from Peru, from the department of Cusco; Machu Picchu district, Santuario Hist3rico de Machu Picchu, Camino Inca Qantupata-Torrepata, ca. 2980-3350 m altitude, Phuyupatamarca and Ch'akicocha, terrestrial in sphagnum moss in cloud forest, epiphytic on "huichullo" (*Weinmannia* sp.). The whole flower, when chewed is sweet, and therefore is called "misky" in Quechua, which means sweet. Flowering from July to September.

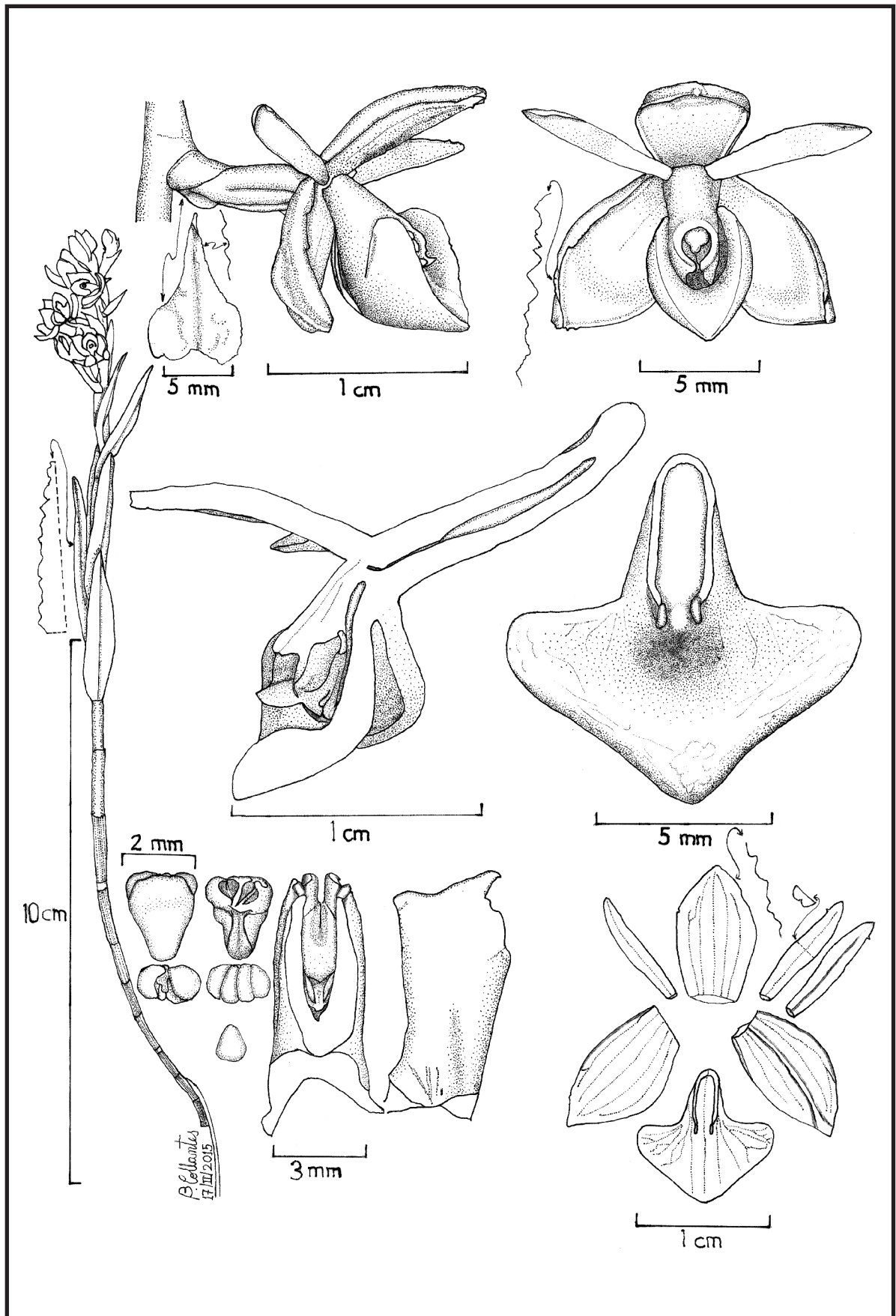
RECOGNITION: *Epidendrum incahuamanii* belongs to the Aristisepalum Group, which has a caespitose habit, simple stems, sub-coriaceous leaves, an arching-nutant, racemose inflorescence without spathaceous bracts, a thickened disc on the 3-lobed lip, and especially the lateral sepals which are apically prominently aristate-complanate, 15-20 mm long. The species is recognized by the linear-lanceolate leaves 2.5-15 x 0.3-0.9 cm, the lip deeply 3-lobed, lateral lobes dolabriform-sub-elliptic, oblique, the disc thickened into a semi-circular plate, traversed by a prominent mid-rib extending to the apex of the mid-lobe which is 2.5 x 6 mm, semi-circular, apex usually retuse. *Epidendrum birostratum* has wider leaves, 6.5-13 x 1.3-1.5 cm, the lip with dolabriform-rounded lateral lobes, mid-lobe as long as the lateral lobes, cuneate, sub-quadrate, the apex sinuous-truncate, 3-dentate; disc with the thickened plate sub-quadrate-ovate. *Epidendrum aristisepalum* Hągsater & Dodson from southern Ecuador has similar leaves 6-14.5 x 0.7-1.1 cm, but the callosity lip has a sub-orbicular mid-lobe with the disc thickened into 3 prominent longitudinal ribs. *Epidendrum jalcaense* Chocce-Peña, Dalstr3m, Hągsater & J.Arnaiz has wider, shorter leaves, 4.7-6.6 x 1.0-1.5 cm, bright orange flowers with a wide, 4-lobed, callosity lip, with 5 thickened ribs on the disc.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Feliciano Incahuaman, (*huaman*-falcon, an Inca surname, thus Inca falcon), an extraordinary worker of the Ministry of Culture at the Camino Inca of the Santuario Hist3rico de Machu Picchu; a great friend and enthusiastic conservationist, and who brought this species to our attention.

REFERENCES: Chocce-Peña, M., S. Dalstr3m, E. Hągsater & J. Arnaiz, 2013, *Epidendrum jalcaense*, in E. Hągsater & L. Sanchez S., (eds.), The Genus *Epidendrum*, **Icon. Orchid.** 14: t. 1446. Hągsater, E., & C.H. Dodson, 2001, *Epidendrum aristisepalum*, in E. Hągsater & L. Sanchez S., (eds.), The Genus *Epidendrum*, **Icon. Orchid.** 4: t. 412. Schweinfurth, C., 1943, *Epidendrum birostratum*, **Bot. Mus. Leaf.** 11: 83, t. 13. 1943.





EPIDENDRUM INCAPACHYCHILUM Hágsater & E.Santiago

EPIDENDRUM INCAPACHYCHILUM Hágsater et E.Santiago, *stat. et nom. nov.*

Basionym: *Epidendrum aquaticoides* C.Schweinf. var. *pusillum* C.Schweinf., Bot. Mus. Leaf. 11: 82. 1943. Type: PERU: Cuzco: Prov. Urubamba, on trail from Phuyupata to Sayacmarca, at 3600 m, 5 August 1942, [Julio] César Vargas Calderón 2894. Holotype: AMES! Isotype: CUZ!

Terrestrial, branching **herb** to 150 cm tall. **Roots** ca. 2 mm in diameter, basal, thin, fleshy, scarce. **Stems** branching mainly towards the apex, the primary stem 40-50 x 0.3-0.5 cm; branches 13-19 x 0.2-0.4 cm, ascending, cane-like, terete, thin, the base covered by sheaths 0.5-2 cm long, tubular, non-foliar, scarioso. **Leaves** 13-17 or more on the main stem, 6-8 on the branches, distributed along the stems, parallel to the stems, base slightly conduplicate, partly imbricating, similar in size and shape; sheaths 1-2.1 cm long, tubular, striated, verrucose, tinged reddish purple; blade 2.4-5.5 x 0.4-0.7 cm, lanceolate, acute, minutely apiculate, with a low dorsal keel, margin minutely and irregularly papillose-crenate. **Spathes** lacking. **Inflorescence** 2.5-6 [6.6] cm long, apical, racemose (though sometimes producing a 2-flowered branch near the base of the peduncle), erect, laxly few-flowered, helicoid: peduncle 6-10 mm long, terete, thin, without bracts. **Floral bracts** 6-11 x 4-7 mm, shorter than the ovary, proportionately nearly as wide as they are long, deltate to wide-ovate when spread, acute-acuminate to obtuse, cymbiform in natural position, margins denticulate, crenulate-papillose, green tinged with red. **Ovary** 9-13 x 3 mm, terete, thick, not inflated, clearly striated, green, slightly tinged with red. **Flowers** 7-9[12], non-resupinate, the majority open simultaneously (only the apical flowers in bud), reddish orange to yellowish-orange; fragrance not registered. **Sepals** 8-11 x 4.2-6 mm, free, fleshy, elliptic, minutely apiculate, 5-7-veined; dorsal sepal spreading, obtuse, margin entire, spreading; lateral sepals partly spreading, slightly oblique, acute, margin entire, erose-crenulate at the apex, spreading, with obvious dorsal keel, attenuate towards the base. **Petals** 7.5-9 x 1.5-2 mm, partly spreading, free, fleshy, semi-terete, linear-oblancoolate, apex acute, 1-veined, dorsally canaliculated, margin entire, spreading. **Lip** 5-6 x 8.8-11 mm, widely hemi-orbicular to widely triangular when spread, appearing transversely sub-cordiform in natural position, embracing the apex of the column in natural position, base truncate, corners rounded, apex with a widely triangular, fleshy, margin entire; the calli two, small, ellipsoid, parallel, in front of the column. **Column** 7-8 x 3 mm, short, straight, thick, with a long, straight tooth on each side of the apex, somewhat retrorse. **Clinandrium-hood** reduced, margin entire. **Anther** 2 x 1.5 mm, ovoid-conical, with the apex without surpassing the column, 4-celled. **Pollinia** 4, lentil-shaped to obovoid, similar in size; caudicles very short. **Rostellum** apical, slit. **Lateral lobes of the stigma** small, 1/3rd the length of the stigmatic cavity. **Nectary** short, to the insertion of the sepals, without penetrating the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: PERU: Cuzco: Santuario Histórico de Machu Picchu, Camino Inca, sector Ch'akicocha-Phuyupatamarca, 3580 m, 12 IX 2000, M.León & B.Collantes 4026, CUZ! MO! (illustration voucher; other illustration prepared by Pastorelli, published by Bennett & Christenson, 2001), Aguas Calientes, near Wenner-Gren ruins [Machu Picchu], 3400-3600 m, 5 VIII 1942, Metcalf 30757, AMES! MO! (illustration AMO!) UC! Aguas Calientes, Machu Picchu, a 88 km y 112 km de Cuzco; Santuario Histórico de Machu Picchu y en Camino Inca, en Qorihuayrachina Llulluchayoc, Runkurakay, Phuyupatamarca, Wiñayhuayna e Intipuncu, 4150 m, 14-22 X 1987, Núñez 8292, CUZ! MO! NY! SEL! Phuyupata to Sayacmarca, 3650 m, 23 VI 1948, Vargas 7257, AMES! CUZ!

OTHER RECORDS: PERU: Cuzco: Santuario Histórico de Machu Picchu, Camino Inca, sector Ch'akicocha-Phuyupatamarca, 3850 m, 12 IX 2000, M.León & B.Collantes 4026, photo series (Collantes FE 830), AMO! Urubamba, Machu Picchu, near to Phuyupatamarca, 3650 m, October 2005, W. Nauray s.n., digital image, AMO! Without locality, W. Galiano s.n., digital image, AMO! Machu Picchu, Oscar Quispe s.n., digital image, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: Known only from the general area of Machu Picchu, along the Inca trail, Urubamba Province in Cuzco Department, southern Peru, on the eastern upper slopes of the Cordillera Oriental of the Andes, terrestrial in *Sphagnum* sp., at 3400-4150 m altitude. Flowering from June to October.

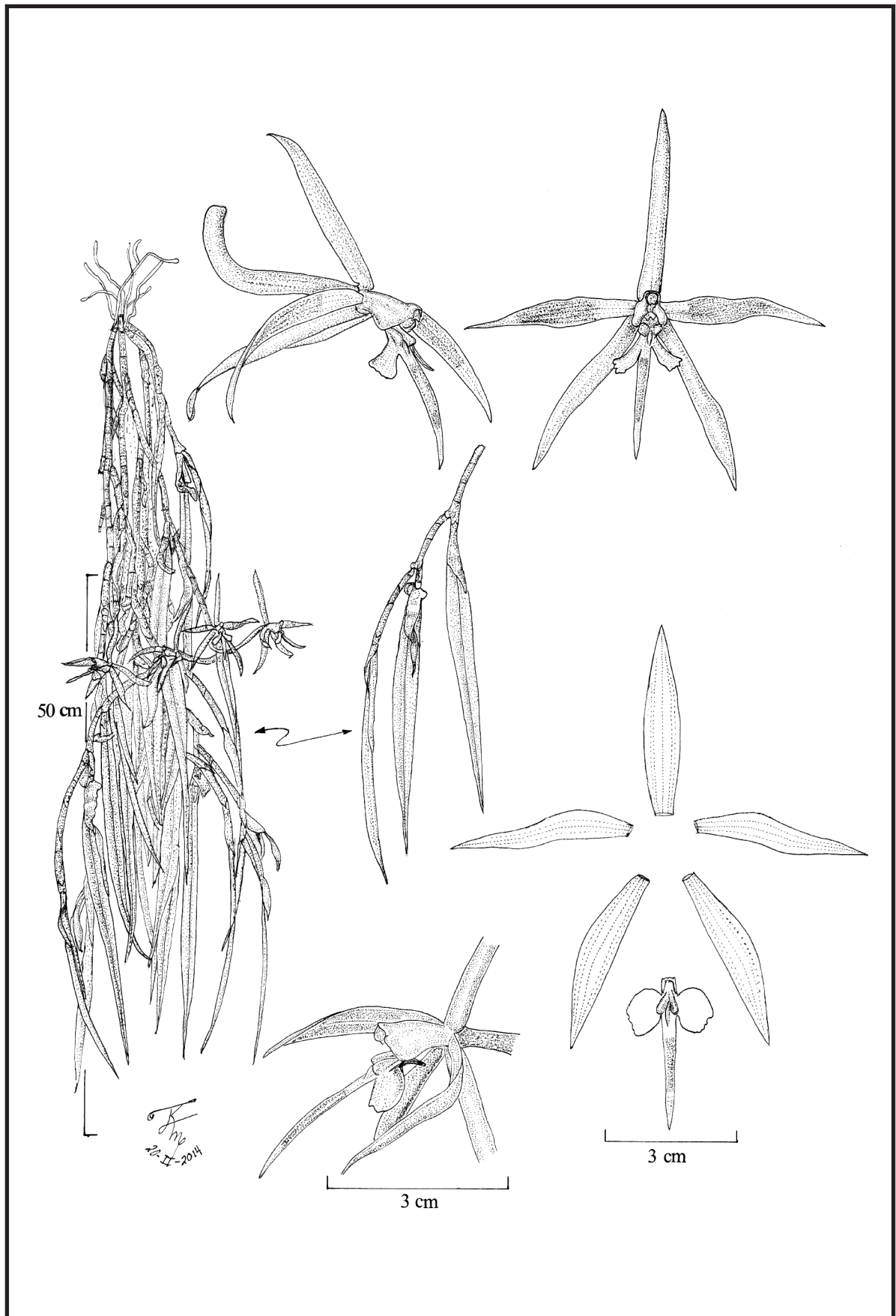
RECOGNITION: *Epidendrum incapachytilum* belongs to the Pachytilum Group which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, by the relatively small leaves, parallel to the stem, the short, racemose, erect inflorescence, brightly colored flowers, yellow to orange to reddish pink, with an entire, conduplicate, lip embracing the column, without any pubescence in front of the stigmatic cavity nor on the lip, but generally with two small calli. The species is recognized by the thin, branched stems covered by tubular, reddish purple sheaths, the lanceolate leaves, 2.4-5.5 cm long, parallel to the stem, erect inflorescence, generally laxly few-flowered, the flowers reddish orange to yellowish orange, sepals 8-9.5 mm long, the lip widely hemi-orbicular to widely triangular when spread, transversely sub-cordiform in natural position, with two small ellipsoid calli at the base of lip in front of the column, and the column straight with a pair of prominent somewhat retrorse teeth at the apex. *Epidendrum erytropachytilum* Hágsater & E.Santiago has reddish pink flowers, and is vegetatively similar, with a densely many-flowered inflorescence, sepals 6.2-6.6 mm long, the lip entire, disc bicallose and the column arched, apex blunt, without teeth. *Epidendrum pachytilum* Kraenzl. has narrowly lanceolate leaves, sulfur-yellow flowers, sepals 11 mm long, lip entire, widely triangular, base truncate, disc apparently ecallose, column with an uncinat tooth at each side of the apex, anther rostrate.

NOTE: This small group of species with relatively small flowers colored from yellow to orange to red has been consistently confused, and most recently identified collectively as *Epidendrum pachytilum*, we consider them, however, to be several distinct species, distinguished by the leaves, floral bracts and flowers.

ETYMOLOGY: In reference to the Camino del Inca, the Inca foot-path that reaches Machu Picchu, and along which the species has been collected, and *pachytilum*, from , thick, and , lip, in reference to the similarity of this species to *E. pachytilum*.

REFERENCES: Bennett, Jr., D. E. & E. A. Christenson, 2001, *Epidendrum pachytilum*, **Icon. Orchid. Peruv.** t. 645. Christenson, E. A., 2003, *Epidendrum pachytilum*, **Manual de las Orquídeas del Santuario Histórico de Machu Picchu**, PROFONANPE 2003. Hágsater, E. & E. Santiago, 2015, *Epidendrum erytropachytilum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1522. Santiago, E., & E. Hágsater, 2015, *Epidendrum pachytilum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1549. Schweinfurth, C., 1959, *Epidendrum pachytilum*, in *Orchids of Peru*, **Fieldiana, Bot.** 30(2):486-487.





EPIDENDRUM IXILUM Hágsater, Archila & Chiron

EPIDENDRUM IXILUM Hágsater, Archila et Chiron, *sp. nov.*

Type: GUATEMALA: El Quiché; Mpio. San Juan Cotzal, 1350 m, Junio 2013, cultivated by Julio Fonseca sub **Fredy Archila s.n.**, Holotype: BIGU! (Flowers and leaf in spirit; digital images of holotype, AMO!) Isotype: BIGU!

Similar to *Epidendrum parkinsonianum* Hook. but the lateral lobes of the lip retrorse, obliquely orbicular-sub-quadrate, and color different, sepals and petals olive-green, the apex of the dorsal sepal tinged copper; lip white at base, calli intense yellow, mid lobe multi-color, base pink and white, middle section copper colored, apex green.

Epiphytic, sympodial, pendent **herb**, up to 73 cm long. **Roots** from the base of the primary stem, fleshy, thin, ca. 2 mm in diameter. **Stems** 2.3-13.0 x 0.35-0.40 cm, cane-like, where the new stem is produced horizontally from the sub-apical internode of the previous stem, arching-pendent, covered by several scarios, papiraceous, imbricating, whitish sheaths, turning brown, lanceolate, acute, provided with irregular verrucose papillae; basal sheaths tubular, amplexicaul, the apical sheath 9.70 x 0.85 cm, prominent, covering the base of the inflorescence, and thus appearing to be a spathe. **Leaves** to 19-25 x 1.7-3.0 cm, apical, single per stem, pendent, fleshy, succulent, linear-elliptic, acuminate, dark green. **Spathe** absent. **Inflorescence** apical, sessile, racemose, short. **Flowers** 1-3, sepals and petals olive-green, the apex of the dorsal sepal tinged copper; lip white at base, calli intense yellow, mid lobe multi-color, base pink and white, middle section copper colored, apex green; fragrance not registered. **Floral bracts** small, triangular, much shorter than the ovary. **Ovary** ca. 4.6 x 0.4 cm long, long, dotted with scales. **Sepals** 42-43 x 8.4-9.0 mm, spreading, linear-elliptic, acuminate, the lateral sepals somewhat oblique, margins entire, somewhat revolute. **Petals** 37-41 x 5-8 mm, slightly arching forward, obliquely linear-elliptic, acuminate, margins entire, spreading. **Lip** 28-31 x 18-20 mm, united to the column, straight in natural position, extending from the apex of the column, 3-lobed, bicallose, the calli basal, prominent; lateral lobes 7.5-10.0 x 8.5-14.0 mm, retrorse, obliquely orbicular-sub-quadrate, margins spreading, irregularly crenate; mid-lobe 23-25 x 2.0-3.5 mm, linear, acuminate, margins entire, spreading. **Column** 14-16 x 5.3 mm, long, claviform. **Clinandrium-hood** laminar, slightly surpassing the body of the column, margin dentate. **Rostellum** apical, laminar, slit. **Lateral lobes of the stigma** not seen. **Anther** sub-spherical, 4-celled, the interior scale-like. **Pollinia** 4, semi-ovoid, laterally strongly compressed, so both sides flat, borders rounded; caudicles in two pairs, granulose, slightly longer than the pollinia; viscidium semi-liquid. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: GUATEMALA: Mpio. San Juan Cotzal; Planta cultivada en Guatemala por Julio Fonseca, procedente de la región Ixil, El Quiché, **Fredy Archila s.n.**, muestreada mayo 2013, BIGU! (flower and leaf in spirit). Digital images of pretype by Julio Fonseca, AMO!

OTHER RECORDS: GUATEMALA: Digital images of pretype in flower, plant cultivated by Julio Fonseca, photographed by Sergio Romero, AMO! (illustration and photo voucher.)

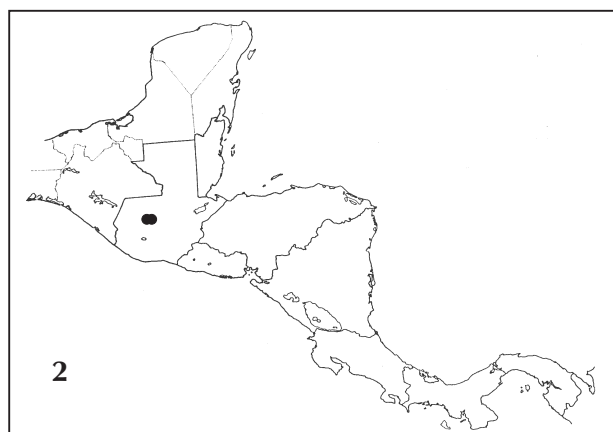
DISTRIBUTION AND ECOLOGY: Known only from a single collection in western Guatemala, from the Sierra de los Chuchumatanes at 1350 m altitude. Flowering in May.

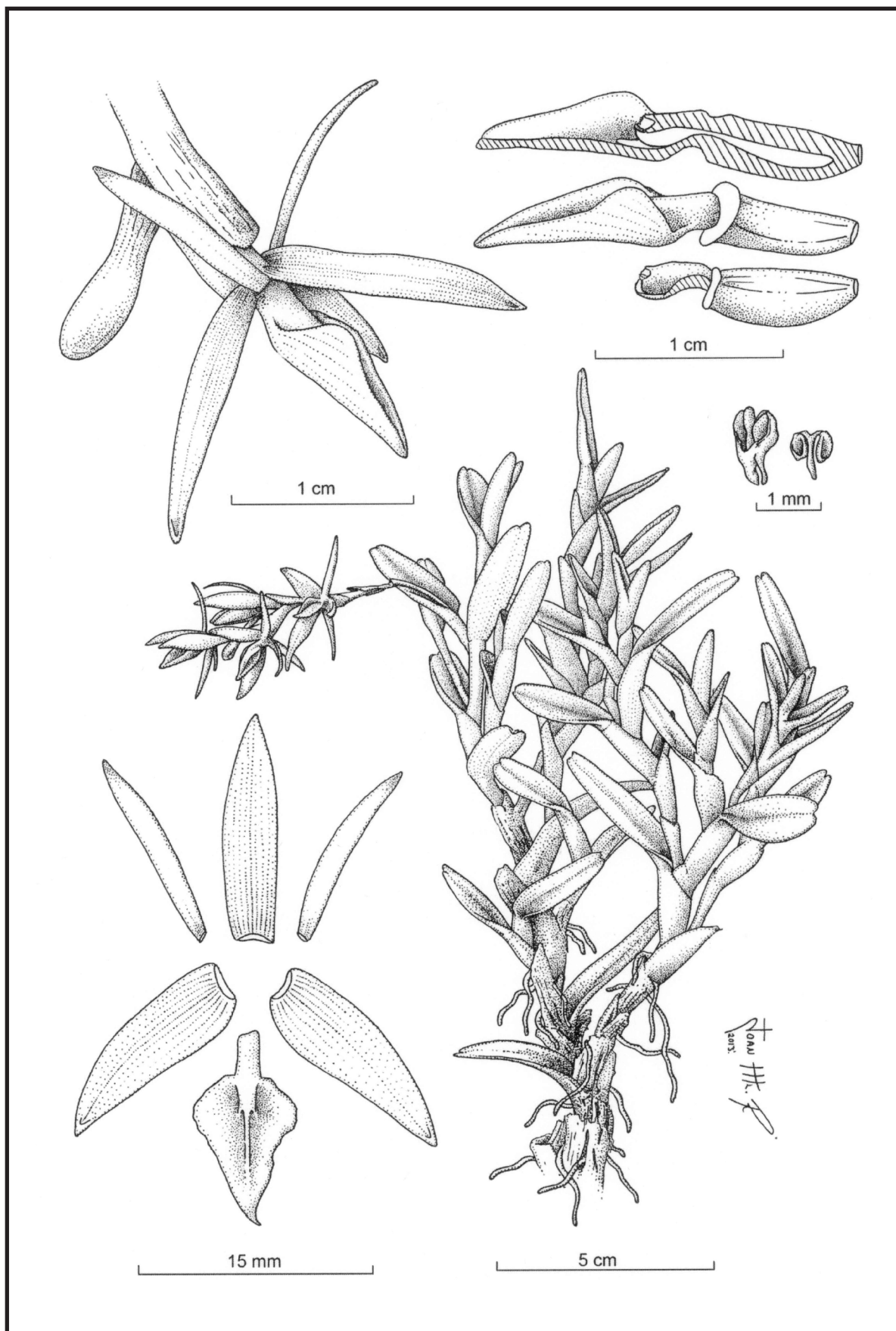
RECOGNITION: *Epidendrum ixilum* belongs to the Falcatum Group, recognized by the pendent, sympodial, caespitose habit, roots only at the base of the first stems, a single, fleshy, succulent, lanceolate leaf, the large, star-shaped flowers, and the deeply 3-lobed lip. The species is epiphytic, recognized by the thin stems, 1-3 flowers, olive-green sepals (42-43 mm long) and petals, somewhat tinged copper, the lip white at the base, with the mid-lobe pink, copper colored and green apically. It is similar to *Epidendrum parkinsonianum* Hook. which is also epiphytic, also has 1-3 flowers and thin stems, but larger flowers (sepals 45-95 mm long), sepals and petals green, the lip white, except for the yellow calli. *Epidendrum falcatum* Lindl. is lithophytic, has 4-8 flowers, thickened, brittle stems, and the flowers are similar in size (sepals 30-52 mm long) with sepals and petals pink, lip white, except for the yellow calli. The color is reminiscent of *Epidendrum lacertinum* Lindl., but that species has thickened, pseudobulbous stems, and the inflorescence many-flowered.

CONSERVATION STATUS: DD. Data deficient. Known presently only from the type.

ETYMOLOGY: Dedicated to the Ixil Triangle, an area of contrasts, in homage to its natural diversity, and where this species was collected. The Ixil Triangle is constituted by three municipalities in the Department of El Quiché: Nebaj, San Juan Cotzal and Chajul, in the Sierra de los Chuchumatanes.

REFERENCES: Hágsater, E., 1990, *Epidendrum falcatum* in E. Hágsater & G.A. Salazar (eds.), Orchids of Mexico, part 1, **Icon. Orchid.** 1: t. 31. Hágsater, E., 1990, *Epidendrum parkinsonianum* in E. Hágsater & G.A. Salazar (eds.), Orchids of Mexico, part 1, **Icon. Orchid.** 1: t. 37.





EPIDENDRUM JORGE-WARNERII Karremans & Hågsater

Plate 1530

EPIDENDRUM JORGE-WARNERII Karremans & Hágsater. *Lankesteriana* 13(3): 260. 2014.

Type: COSTA RICA: Puntarenas: Buenos Aires, Buenos Aires, Olán, cumbre del Cerro Tinuk, 9°17'29.1" N 83°10'11.2" W, 2417 m, bosque pluvial premontano, epífitas en bosque de páramo, 25 Julio 2012, **Adam P. Karremans, Diego Bogarín, Daniel Jiménez & Víctor H. Zúñiga 5545**. Holotype: CR! Isotype: JBL-Spirit! (Illustration voucher).

Epiphytic, sympodial, caespitose, erect **herb**, up to 20 cm tall. **Roots** from the base up to above half the length of the stems, fleshy, filiform. **Stem** 15-20 cm tall, branching, cane-like, flattened, erect. **Leaves** up to 5, distributed along the stem, mostly close to the apex as the basal ones fall off with time; leaf sheath 1.5 cm long, tubular, rugose; blades 2.8-3.6 x 0.8-1.3 cm, elliptic to narrowly-ovate, obtuse bilobed, articulate. **Spathaceous bracts** lacking. **Inflorescence** apical, mostly from lateral branches, distichous, flowering only once; peduncle up to 2 cm long; rachis curved, laterally flattened. **Floral bracts** equal to longer than the ovary, acute, flattened, 1 cm long. **Flowers** 2-4, simultaneous, resupinate, brownish-yellow; fragrance sweet during the day. **Ovary** 8.0-8.5 mm, laterally compressed, prominently inflated throughout. **Sepals** free, spreading, the dorsal prominently bent inwards, narrowly-ovate to elliptic, acute, 9-veined, margin entire; the **dorsal sepal** 15 x 3.5 mm; the **lateral sepals** 15 x 4.0-4.5 mm, oblique. **Petals** 13.0-13.5 x 1.5-2.0 mm, spreading, strongly bent backwards, ligulate to narrowly-elliptic, obtuse, 3-veined, margin entire. **Lip** 12.5 x 5.5-6.0 mm, united to the column, ovate-lanceolate, slightly 3-lobed, margin wavy, embracing the column, completely covering it; callus Y-shaped, prolonged into a central rib extending to the apex of the lip; lateral lobes hemi-rhomboid; mid-lobe triangular, acute, apiculate. **Column** 3.5 mm long, straight, with two apical truncate wings. **Clinandrium-hood** short, margin irregular. **Anther** narrowly ovate with a prominent central rib, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles granulose. **Rostrum** apical, slit. **Nectary** penetrating 2/3 the ovary. **Capsule** not seen.

OTHER SPECIMENS: None seen.

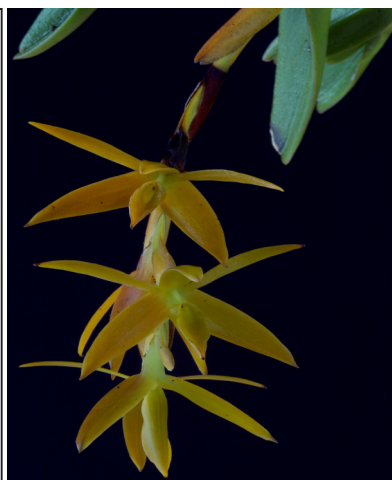
DISTRIBUTION AND ECOLOGY: Endemic to Costa Rica. Known only from the plants found on the summit of Cerro Tinuk, Costa Rica. It grows epiphytic and lithophytic in a small area of isolated "paramo", at around 2400 m elevation. It was found flowering in July.

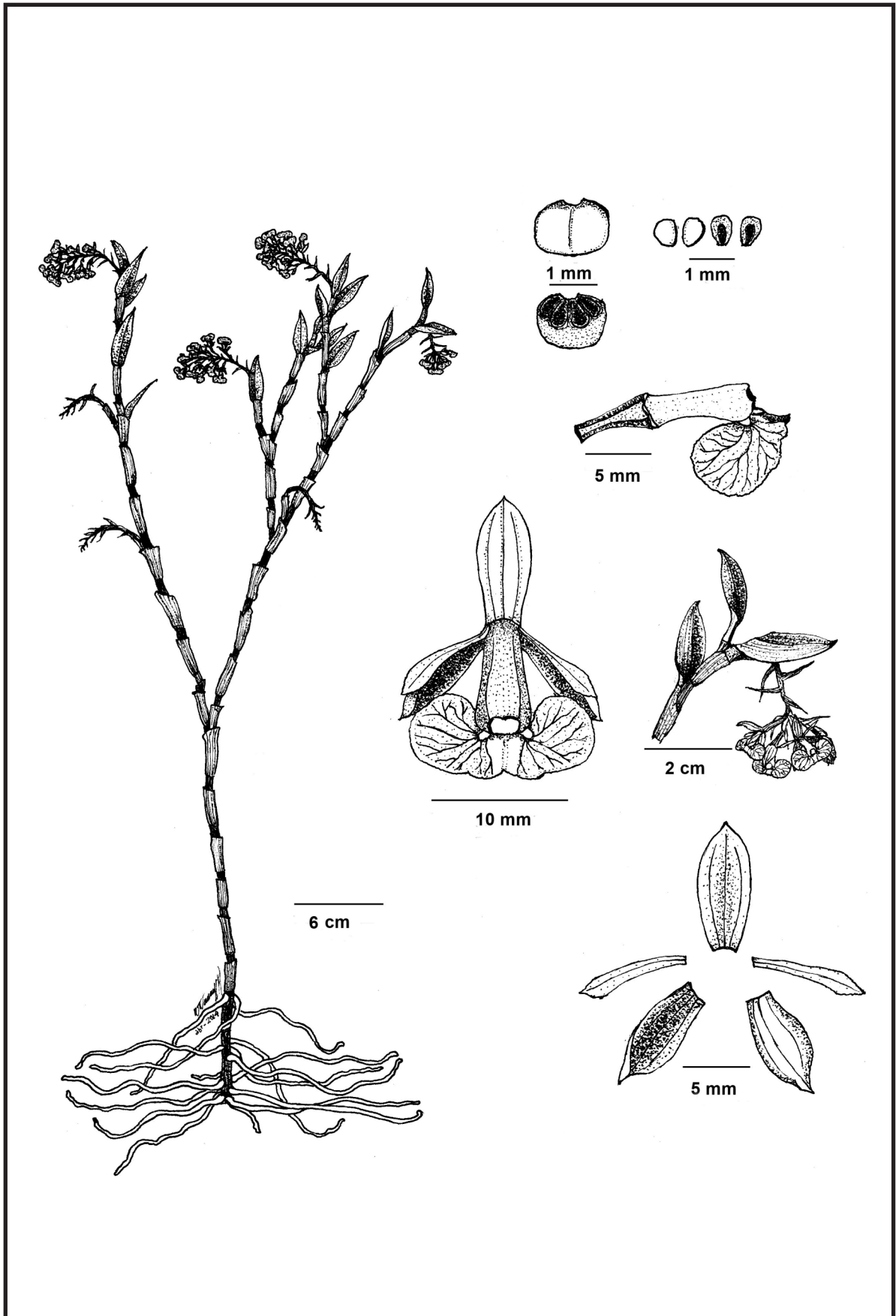
RECOGNITION: *Epidendrum Jorge-warnerii* belongs to the Ramosum Group which is characterized by the monopodial, branching stems, the spike-like, distichous inflorescence, and the single callus, and the Rugosum Subgroup which has a branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species can be recognized by the laterally compressed stems, the laterally compressed rachis and ovary, the 2-4, large, brownish-yellow flowers, sepals 15 mm long, lip 12.5 mm long, the lip which embraces the column completely and callus of the lip Y-shaped. *Epidendrum anoglossoides* Ames & C. Schweinf. has smaller, up to 9, greenish-yellow flowers, sepals and petals 7.5-9.5 mm long, lip 6 mm long, and callus of the lip tri-dentate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: The name honors Jorge Warner, current Director of the Lankester Botanical Garden of the University of Costa Rica. With more than a decade in his position he has been paramount in the development of the research center at the garden, and in the creation and execution of the research projects, which allows for this and most other findings.

REFERENCES: Sánchez, L. & E. Hágsater. 2007. *Epidendrum anoglossoides* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 6, **Icon Orchid.** 9: t. 907. Karremans, A. P. & E. Hágsater. 2014. *Epidendrum jorge-warnerii* in Fernández, M., Bogarín, D. & A. P. Karremans. New Species and Records of Orchidaceae from Costa Rica III. *Lankesteriana* 13(3): 260.





EPIDENDRUM JOSE-ALVAREZII Hágsater, Gut.-Peralta & Nauray

Plate 1531

EPIDENDRUM JOSE-ALVAREZII Hágsater, Gut.-Peralta et Nauray, *sp. nov.*

Type: PERU: Junin: Prov. Satipo, Distr. Pampa Hermosa; Anexo Calabaza, Tramo Calabaza-Toldopampa, 3231 m, UTM 18L, 513676-8730089, 23 Noviembre 2013. **Yorka Gutiérrez Usca & René Farfán Zegarra OJSYGU190.**

Holotype: USM! (Illustration and photo voucher.) Isotype: MOL!

Similar to *Epidendrum ardens* Kraenzl., but the flowers bright carmine-red, the disc of the lip fleshy and turning orange with age, sepals spreading, petals descendent, linear-oblongate, hidden behind the lip, lip twice as side as it is long, reniform, apically shallowly 3-lobed, the apical lobe formed by a pair of wide and short, rounded lobes.

Epiphytic, monopodial, branching, erect **herb**, to ca. 60 cm tall. **Roots** ca. 1.5 mm in diameter, thin, basal, fleshy. **Stems** superimposed, occasionally branching, cane-like, terete, thin, erect; the basal stem 39 x 0.6 cm, the upper stems and branches 7.5-10.5 x 0.3-0.4 cm; the upper stems produced from a sub-apical internode of the previous stem. **Leaves** distributed throughout the stems, ca. 10 on the basal main stem, sheaths 20-28 x 6 mm, tubular to slightly infundibuliform, scarious, striated and rugose, blades not seen; upper stems and branches with 3-5 leaves, sheaths 1-2.6 x 0.4-0.6 cm, tubular, somewhat infundibuliform, blades 2.5-3.5 x 0.8-1.2 cm, ascending, similar in size and shape, distichous, articulate, sub-coriaceous, green, lanceolate to ovate-lanceolate, slightly oblique, acute, margin entire. **Spathes** lacking. **Inflorescence** ca. 30-45 mm long, apical, racemose, arching-nutant, densely few-flowered; peduncle ca. 6-10 mm long, laterally compressed. **Floral bracts** 8-10 x 3 mm, narrowly triangular-lanceolate, acuminate, amplexicaul. **Ovary** 6 mm long, terete, thin at the base, slightly thickened towards the apical half; forming a vesicle at the perianth (not shown on illustration). **Flowers** 5-10, simultaneous, resupinate, carmine-red, the disc turning orange with age; fragrance not registered. **Sepals** 9 x 4 mm, free, spreading, obtuse, apiculate, 3-veined, margin entire, spreading; dorsal sepals obovate-elliptic, with a low dorsal keel, aristate; lateral sepals obovate, oblique, with a prominent dorsal keel and thus notoriously aristate. **Petals** 8 x 1.5 mm, descendent, the apex hidden behind the lip, free, linear-oblongate, acute, 1-veined, margin erose towards the apex, slightly revolute. **Lip** 6 x 13 mm, ventrally adnate to the column, convex in natural position, transversely reniform, sub-3-lobed, base strongly cordate, margin erose; bicallose, the calli small, globose; disc very fleshy, with an evident central rib, thin, reaching the apex of the lip; lateral lobes 5.3 x 5.6 mm, dolabriform-orbicular; mid-lobe, incipient, 3.0 x 5.3 mm, emarginate, formed by a pair of semi-orbicular lobes, each lobe 3 x 2.6 mm. **Column** 8 x 3 mm, straight, sub-claviform, thin. **Clinandrium-hood** short, margin entire. **Anther** reniform, with a dorsal rib, 4-celled. **Pollinia** 4, ovoid, lateral and obliquely compressed; caudicles granulose, filiform. **Rostellum** apical, slit. **Lateral lobes of the stigma, nectary and capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known only from the type locality in Peru, in the region of Junín, in eastern high montane forests, of which only relicts are now seen, epiphytic at an altitude of 3200 m. Flowering in November.

RECOGNITION: *Epidendrum jose-alvarezii* belongs to the Soratae Subgroup of the Scabrum Group which is characterized by the branching habit starting on a monopodial, primary stem, infundibuliform, rugose leaf-sheaths, lanceolate, aristate, acute leaves, racemose subcapitate inflorescence on a short, thin peduncle, and the bicallose lip. The species can be recognized by the bright carmine-red flowers, sepals 9 mm long, reniform lip, 6 x 13 mm, apically shallowly 3-lobed, the apical lobe formed by a pair of wide and short, rounded lobes, the disc of the lip fleshy and turning orange with age. It is somewhat similar to *Epidendrum ardens* which has bright orange to scarlet to brown flowers, is known only from Cusco, in southern Peru, and has 10-11 mm long sepals, the lip is reniform cordate, 6.5-7 x 9.5-10.2 mm, the petals linear. *Epidendrum soratae* Rchb.f. has smaller flowers, sepals 6-7 mm long, and the lip is 6.5 x 8.2 mm long, with the mid-lobe small, comparatively narrower, the flowers greenish-yellow.

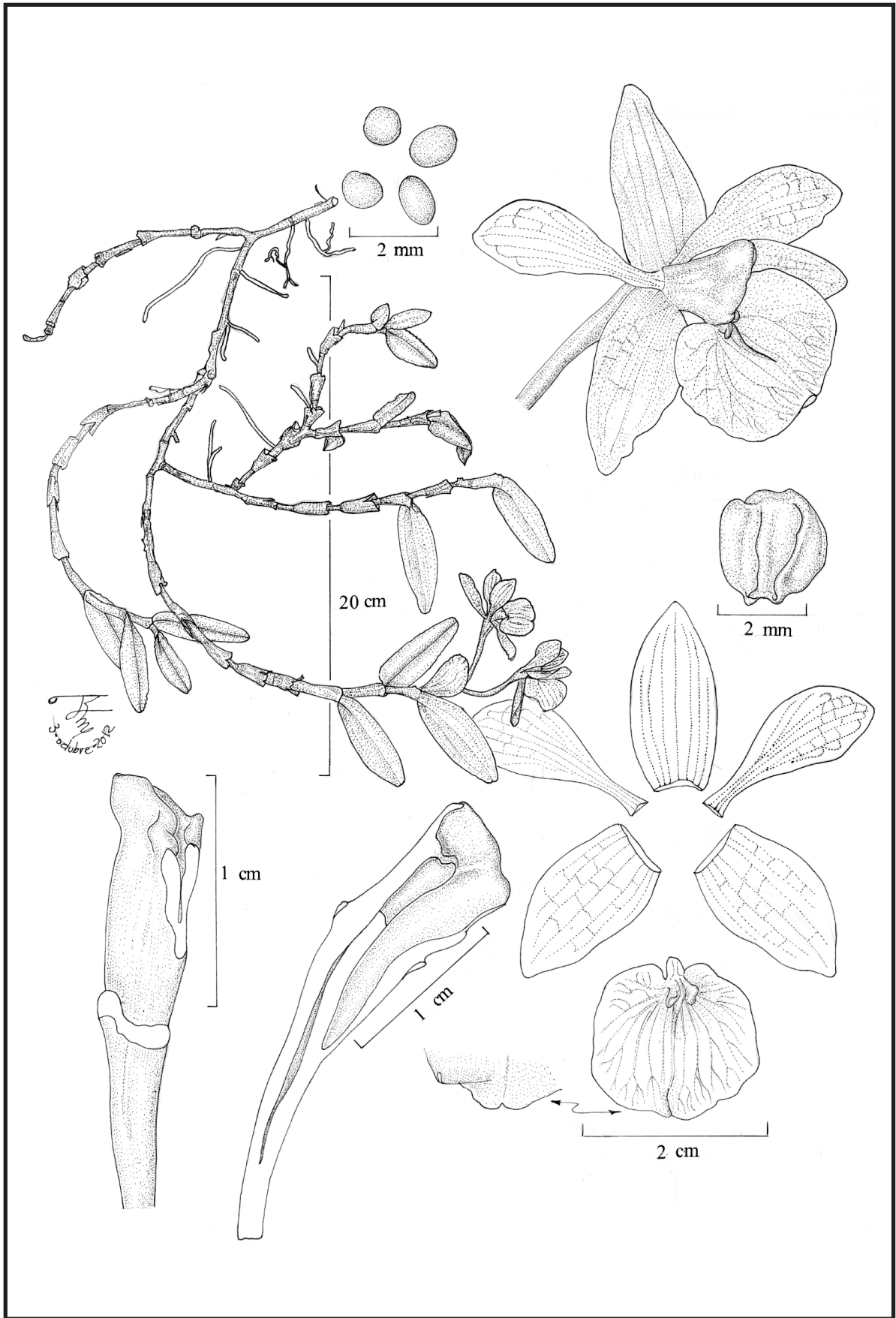
CONSERVATION STATUS: DD. Data Deficient.

ETYMOLOGY: The new species is dedicated to José Álvarez Alonso, biologist, in recognition to his contributions to the knowledge of biodiversity and the conservation and sustainable management of Amazonian ecosystems in Peru.

ACKNOWLEDGMENT: We wish to thank the Ministerio del Ambiente del Perú, and the Dirección General de Diversidad Biológica, made possible the activities leading to the discovery of this species within the scope of the project "Estudio Poblacional de la Orquideas en las regiones de Junín y San Martín", in a joint collaboration with the Technical Assistance Program PAT-MINAM/USAID. The Ministerio of Agricultura y Riego del Perú for the necessary authorizations. Guillermo Álvarez (BioAqual) for his logistical support.

REFERENCES: Santiago, E., & E. Hágsater, 2007, *Epidendrum soratae* in The Genus *Epidendrum*, part 6, **Icon. Orchid.** 9: t. 988. Santiago, E. & E. Hágsater, 2009, *Epidendrum ardens* in The Genus *Epidendrum*, part 8, **Icon. Orchid.** 12: t. 1206.





EPIDENDRUM LAGOTIS Rchb.f.

EPIDENDRUM LAGOTIS Rchb.f., Bonplandia 3(5): 68. 1855.

Type: COLOMBIA: [Norte de Santander:] San Pedro, **Wagener s.n.** Holotype: W-R 4790!

Epiphytic, sympodial, caespitose, straggling **herb**, up to 30 cm tall. **Roots** basal, fleshy. **Stems** 15-30 x 0.2-0.7 cm, simple, cane-like, terete, thin, arching upwards and covered towards the base by 1 or 2 sheaths 17-20 mm long, infundibuliform, non-foliar, scariose. **Leaves** 6-10, distributed throughout the stem, alternate, articulate, unequal in size (the basal leaf smaller); foliar sheaths 10-22 x 4-7 mm, infundibuliform, minutely striated (especially when dry); blade 2-6 x 1.0-2.3 cm, ovate-elliptic, apex sub-obtuse, margin entire, spreading. **Spathe** single, 2.0-2.8 x 1.4-1.5 cm (not spread), obliquely semi-obovate, apex rounded, conduplicate, the margin entire. **Inflorescence** 6 cm long (including the flowers), apical, two-flowered; peduncle 1.5-2 mm long, thin, laterally compressed, erect, straight, totally hidden within the spathe; rachis very short, 4-6 mm long, laterally compressed, also hidden within the spathe. **Floral bracts** 1-3 mm long, much shorter than the ovary, widely triangular, acuminate, amplexicaul, hidden within the spathe. **Flowers** 2, simultaneous, resupinate, green; fragrance not recorded. **Ovary** 28-30 mm long, terete, thin, slightly inflated behind the perianth, forming a very small, ventral vesicle. **Sepals** partly spreading, free, elliptic, obtuse, 7-veined, margin entire, spreading, membranaceous; dorsal sepal 22-25 x 10 mm; lateral sepals 17-19 x 10 mm, slightly oblique. **Petals** 21 x 8 mm, partly spreading, free, spatulate, with the apex somewhat rounded, 3-veined, the lateral veins much branched and appearing 8 veined; margin entire, spreading. **Lip** 16 x 16 mm, united to the column, entire, orbicular, base cordate, apex rounded, margin entire, spreading; bicallose, the calli small, sub-spherical, somewhat laterally compressed; disc provided with a single, short, narrow mid-rib, reaching the middle of the lip. **Column** 11 mm long, wide. **Clinandrium-hood** prominent, inflated and thickened, without surpassing the body of the column, margin entire. **Anther** ovoid, 4-celled. **Pollinia** 4, ovoid, similar in size; caudicles not seen. **Rostrum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** penetrating 1/3 of the ovary, wide, unornamented. **Capsule** 4.5-5 x 1.5-2 cm, ellipsoid; pedicel 1 cm long; body 2.5-3 x 1.5-2 cm; apical neck 1 cm long.

OTHER SPECIMENS: COLOMBIA: Norte de Santander: [Mpio. Toledo:] Culagá Valle, near [vereda] Tapatá (north of Toledo), 1500-2100 m, 3-8 III 1927, *Killip 20166*, HB! NY x2! US! (Illustration voucher). Ibid. *Killip 20482*, AMES! NY! US!

DISTRIBUTION AND ECOLOGY: Known only from the Cordillera Oriental of the Andes in northern Colombia, Department of Norte de Santander, at 1500-2100 m altitude. Flowering in March. http://apps.kew.org/wcsp/acceptedRef.do?name_id=68731 (June 2014) indicates the origin as Venezuela, which we cannot corroborate, though it is expected.

RECOGNITION: *Epidendrum lagotis* belongs to Megalospatham Group characterized by the caespitose but branching habit, many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathe, resupinate flowers, the column more or less united to the lip. The species is recognized by the straggling stems with infundibuliform leaf-sheaths, short leaves (2-6 cm long), blade ovate-elliptic the apex sub-obtuse, spatulate petals, and disc of the lip with a pair of small, sub-spherical, somewhat complanate calli. *Epidendrum scutella* Lindl. has tubular leaf-sheaths, ovate-lanceolate, acute leaves (4.7-12 cm long), flowers fleshy, generally 5 per inflorescence, the lip apically sub-obtuse, disc with a pair of low calli with the apex bi- or tri-dentate, and petals ovate-lanceolate. *Epidendrum rhomboscutellum* Hágsater & E. Santiago has thin stems, narrowly lanceolate, acuminate leaves (2-6 cm long), a 2-flowered inflorescence, the flowers greenish yellow with the apex of the petals reddish brown, the lip is obovate-rhombic with the base cuneate, and the apex acute; disc with a pair of globose calli. *Epidendrum rhodochilum* (Schltr.) Hágsater & Dodson has pendent plants, green flowers with a red lip, smaller flowers (sepals 17 mm long), lip is obovate, obtuse, with the margin denticulate and the lip is free from the column. *Epidendrum megalospatham* Rchb.f. has an oblong-ovate lip with the apical margin denticulate, the elongate rachis has 6, laxly distributed flowers, and the lip is partly free from the column.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Greek λαγώς, a hare. Reason not expressed by the author and unclear.

REFERENCES: Hágsater, E., & E. Santiago, 2013, *Epidendrum rhomboscutellum* in E. Hágsater & L. Sánchez S., (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1481. Santiago, E. & E. Hágsater, 2015. *Epidendrum megalospatham* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1539. Santiago, E. & E. Hágsater, 2015. *Epidendrum rhodochilum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1555. Santiago, E. & E. Hágsater, 2015. *Epidendrum scutella* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1559.



Authors: E. Santiago & E. Hágsater

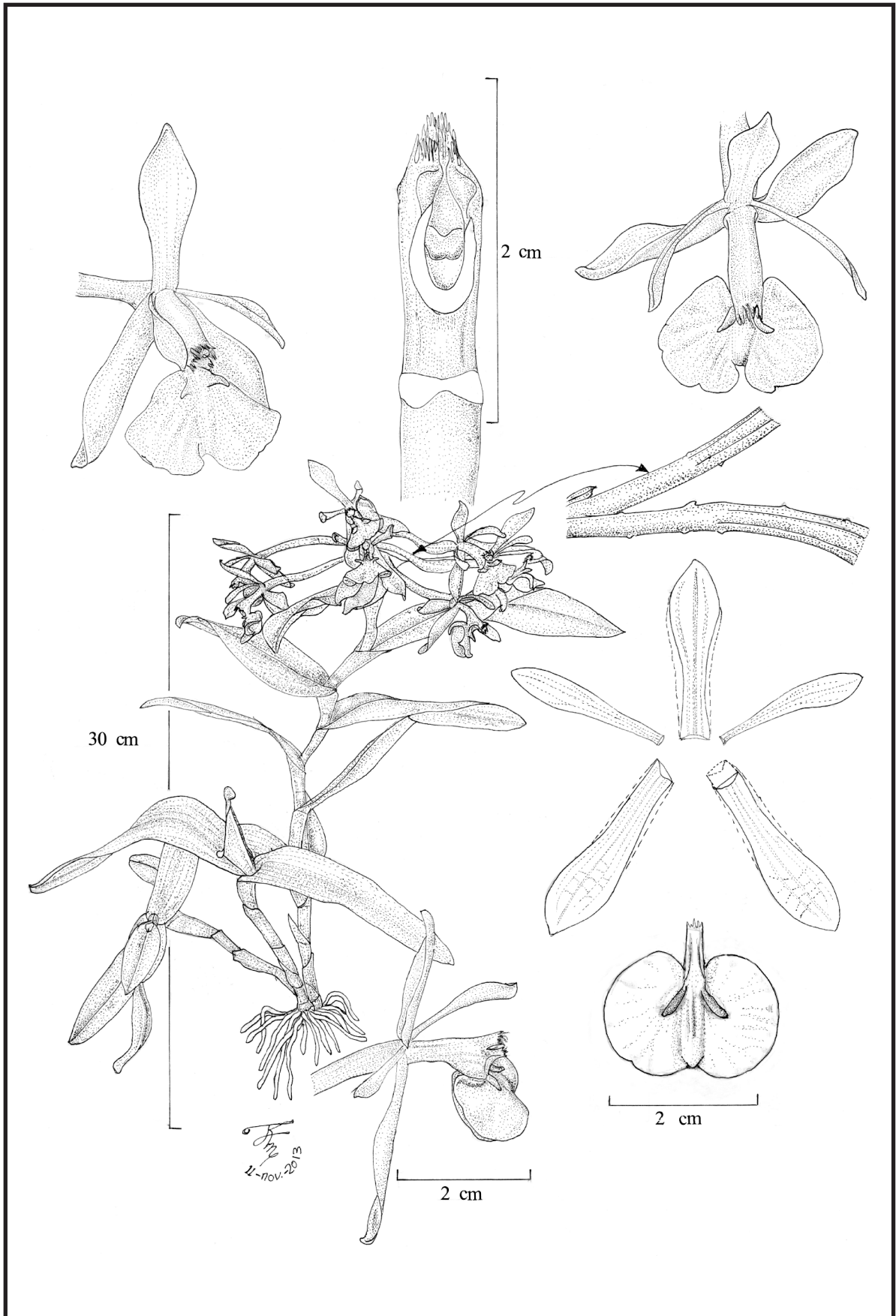
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1532



EPIDENDRUM LIBIAE Hagsater, Garcia Lopera & Est. Dominguez

Plate 1533

EPIDENDRUM LIBIAE Hágsater, García Lopera et Est. Domínguez, *sp. nov.*

Type: COLOMBIA: Risaralda: cerca de Pueblo Rico, Cordillera Occidental, zona selvática entre Risaralda y Chocó, 1000-1500 m, col. mayo 2012, cult. 14 junio 2013, **Jairo Serna sub Esteban Domínguez V. & Diana García Lopera 78**. Holotype: JAUM 062642! (illustration voucher and digital images AMO!)

Similar to *Epidendrum pachyceras* Hágsater & L. Sánchez but more numerous flowers, sepals and petals spatulate, clinandrium and lateral wings of the column prominent and deeply fimbriate, lip with 3 low ribs and several thickened veins.

Epiphytic, sympodial, caespitose, erect **herb**, 36.5-50 cm tall including the inflorescence. **Roots** 0.5-1.0 mm in diameter, basal, fleshy, filiform. **Stems** 30-40.7 x 0.8-2.1 cm, simple, cane-like, terete at the base, laterally compressed above, flexuous. **Leaves** 9-10, distributed throughout the stems; foliar sheath 3.7-5 cm long, tubular, laterally compressed, smooth; blade 10-13.6 x 3.3-3.6 cm, narrowly elliptic-lanceolate, apex retuse, coriaceous, green. **Spathe** lacking. **Inflorescence** apical from the mature stem, sub-corymbose, flowering only once, sessile. **Floral bracts** 15 mm long, much shorter than the ovary, triangular, acute, amplexicaul. **Flowers** 10, resupinate, simultaneous, greenish, fragrance citrus like, (of "limoncillo", *Cymbopogon citratus* (DC.) Stapf.). **Ovary** 61-65 x 4-5 mm, terete, not inflated, scarcely ornamented with small irregular trichomes. **Sepals** 25-26 x 8-9 mm, membranaceous, spreading, free, spatulate, acute, 5-veined, margin entire, revolute. **Petals** 22 x 4 mm, diffuse, spatulate, acute, membranaceous, 3-veined, margin entire, spreading. **Lip** 16 x 23 mm, united to the column, obscurely 3-lobed, sub-orbicular-reniform, base deeply cordate, margin entire, the lateral margins obliquely revolute, so that the lip appears triangular in natural position; lateral lobes 6 x 15 mm, hemi-ovate, mid-lobe 1.6 x 13 mm, very short, transverse, bilobed, emarginate; bicallose, the calli prominent, long, conical, divergent; disc with 3 central, low ribs, the lateral ones prolonged to the apex, the central one only reaching the middle of the lip, several additional low thickened veins covering the rest of the lip, non-radiant. **Column** 18 x 8 mm, straight, apically truncate. **Clinandrium-hood** very prominent, divided into 3 segments, the lateral ones longer and narrower than the middle, all deeply fimbriate, especially the lateral segments. **Anther** 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** deep, penetrating 3/4 of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from the Department of Risaralda in central Colombia, western slope of the Cordillera Occidental, epiphytic at 1000-1500 m altitude. In wet rainforest between Risaralda and the Chocó, in climate typical of the mid-section of the Cordillera Occidental in the coffee growing region of Risaralda. Flowering in June and July.

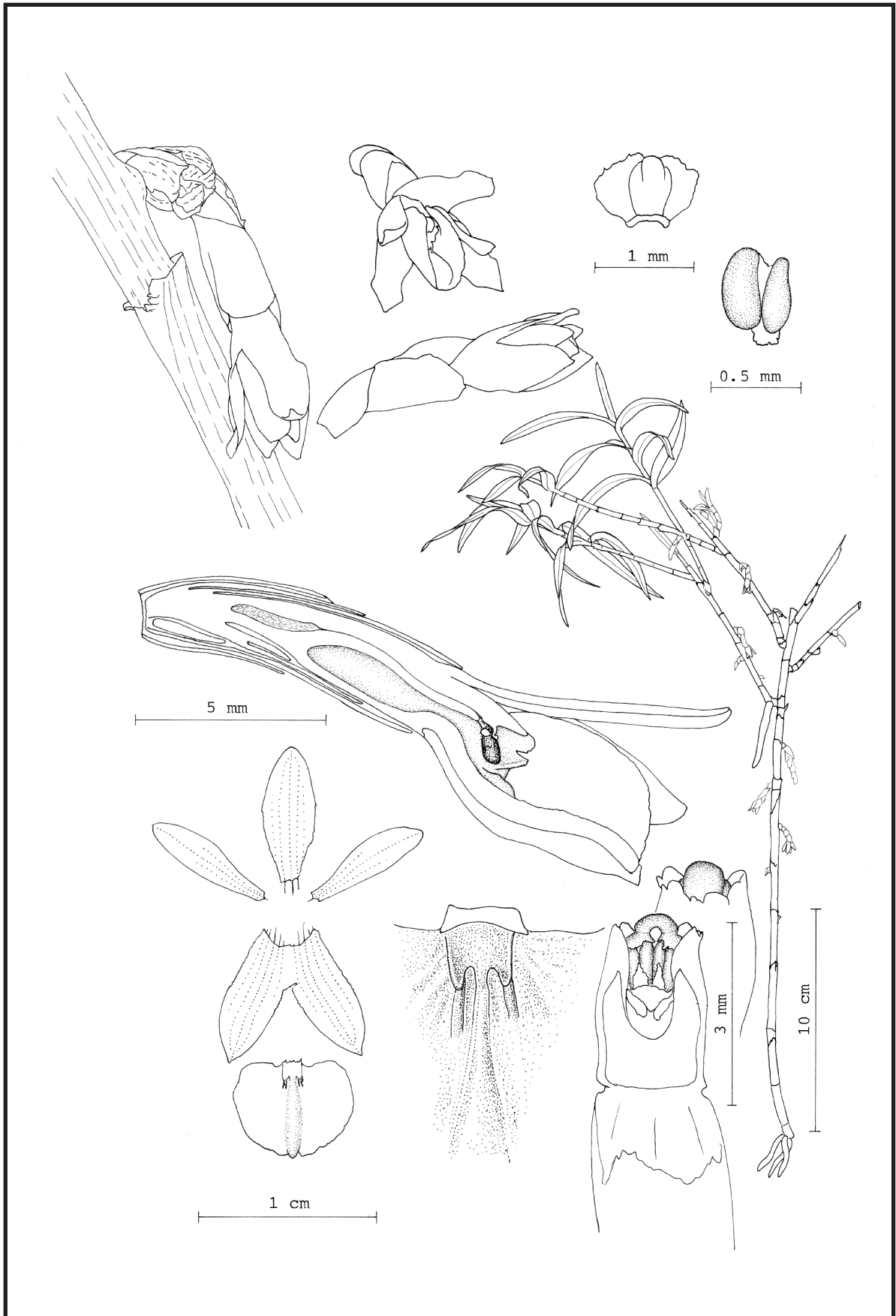
RECOGNITION: *Epidendrum libiae* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy light green to glaucous leaves, apical inflorescence without any spathe, sessile, rarely with a short peduncle, one-flowered to corymbose, fleshy, and flowers green to yellowish-green, rarely white. The species is recognized by the laterally compressed stems, 9-10 simultaneous flowers, long ovary (61-65 mm long), scarcely ornamented with small irregular trichomes, sub-orbicular-reniform lip, with the sides obliquely revolute in natural position, with 3 thickened ribs in the middle, and additional somewhat thickened, low, radiating veins, clinandrium-hood 3-lobed, deeply fimbriate, the lateral lobes longer and narrower than the mid-lobe. It is reminiscent of *Epidendrum pachyceras* from Costa Rica and Panama, but that species has 1-3 flowers, elliptic sepals, linear-elliptic, 1-veined petals, a shorter ovary (28-50 mm long), and the lip does not show any evidently thickened veins, column 12-14 mm long, with obtuse petaloid wings, and the clinandrium dentate-fimbriate. *Epidendrum pseudokillipii* Hágsater & L. Sánchez, sympatric with this species has plants up to 38 cm tall, 2-3 flowers, sepals 17-18 mm long, a shorter ovary, 25-40 mm long, 6.5 mm wide petals with a somewhat irregular margin, the lip widely cordiform-reniform, the disc without ribs nor thickened veins, and a shorter, fimbriate clinandrium-hood. *Epidendrum romero-castannedae* Hágsater & L. Sánchez, found in the hills around the Gulf of Darién in eastern Panama and northern Colombia, including the Chocó, has shorter plants, 1-5 flowers, narrowly elliptic sepals and petals, a shorter ovary (35-55 mm long), and an obscurely 3-lobed, reniform lip with small calli, and radiating thickened veins, the margin somewhat undulate and a prominent, narrow, clinandrium-hood. *Epidendrum vulgoamparoanum* Hágsater & L. Sánchez found along the Pacific lowlands of Costa Rica and Panama in dry spiny forest generally has 3-5, rarely 10 flowers, elliptic sepals and petals, a shorter ovary (30-60 mm long), widely obovate, obscurely 3-lobed lip with the margin slightly undulate, small, sub-globose calli, and numerous thickened veins at the base, a prominent, entire clinandrium-hood, with the margin erose-fimbriate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Libia Lopera (1924-2000), admirer of flowers, mother of the second author, Diana García-Lopera, owner of Libia Orquídeas nursery in San Antonio de Prado, Antioquia, Colombia.

REFERENCES: Hágsater, E., & L. Sánchez Saldaña, 1993, *Epidendrum pachyceras*, in Hágsater, E. & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 170. Hágsater, E., & L. Sánchez Saldaña, 1999, *Epidendrum killipii*, in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 342. Sánchez S., L., 2004, *Epidendrum pseudokillipii*, in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 781. Hágsater, E., & L. Sánchez Saldaña, 2006, *Epidendrum romero-castannedae*, in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 882. Hágsater, E., & L. Sánchez Saldaña, 2006, *Epidendrum vulgoamparoanum*, in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 898.





EPIDENDRUM LILIJAE Foldats

Plate 1534

EPIDENDRUM LILIJAE Foldats, Acta Bot. Venez. 3: 321, 1968.

Type: VENEZUELA: Mérida: Unos 20 km de Mérida hacia La Carbonera, Quebrada Los González, 1800 m, **Ernesto Foldats 7005**.

Holotype: VEN! Isotypes: AMES! K! NY! US!

Epiphytic or humicolous, caespitose, sympodial, branching **herb**, ca. 100-230 cm tall. **Roots** 3-4 mm in diameter, basal from the main stem, and rarely from the base of some plantlets, terete, nearly as thick as the stems. **Stems:** main stem 64-230 x 0.4-0.6 cm; the branches 20-60 x 0.25-0.3 cm; cane-like, terete, thin, straight, branching, base covered with sheaths 3-6 x 0.4-0.6 cm, tubular, non-foliar, minutely striated, scarious. **Leaves** numerous, up to 27 or more, distributed throughout the stems and branches (in mature stems only 11-14 persistent towards apical half; articulate, alternate, spreading, slightly arching; sheaths 1.5-3 x 0.25-0.6 cm, tubular, minutely striated; blade 10-12 x 1.2-1.7 cm (on the main stem), 5-9 x 0.5-1.2 cm (on the branches), linear-lanceolate, long acuminate, margin entire, spreading. **Spathes** lacking. **Inflorescence** ca. 2 cm long, (including the flower), lateral, numerous, originating from the base or the middle of the internodes, through the foliar sheaths, 1-flowered, producing new flowers in successive year; peduncle sub-sessile, totally hidden by 4-6 bracts 2-10 mm long, tubular, imbricated, minutely striated, the basal 2 or 3 scarious, the apical ones greenish. **Floral bracts** 10 mm long, tubular, similar to the bracts similar to the bracts of the peduncle, totally covering the ovary. **Flowers** 1 at a time, tubular when young, sepals spreading with age, green to greenish white, without fragrance. **Ovary** 5 mm long, terete, forming a ventral vesicle along the apical 2/3, minutely striated. **Sepals** 8-10 x 2-2.5 mm, connate at the base of the juvenile flower, barely opening and parallel to the column; spreading and free when the flower matures, elliptic-lanceolate, obtuse, 5-veined, margin entire, slightly revolute; lateral sepals slightly oblique. **Petals** 8.0-8.5 x 1.5 mm, free, barely opening, parallel to the column, oblanceolate, obtuse, 3-veined, oblique, margin entire, spreading. **Lip** 8.0-8.5 x 1.5 mm, united to the column in natural position, conduplicate, the base embracing the apex of the column, entire, ovate, base truncate, apex rounded, slightly constricted in the middle; margin sub-entire; callus a single low platform, apically tridentate, each tooth prolonged by a thin rib, the lateral ribs short, the mid-rib long, thick, reaching the apex of the lip. **Column** 2.5-3 mm long, short, thick, the apex with a pair of truncate, dentate wings. **Clinandrium-hood** short, slightly surpassing the body of the column, margin erose. **Anther** reniform, dorsally thickened with a fleshy central rib. **Pollinia** 2, sub-obovoid, caudicles nearly as long as the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** very small. **Nectary** penetrating over half of the ovary, inflated, unornamented. **Capsule** 15-18 x 5-6 mm, ellipsoid; body 12-14 x 5-6 mm; peduncle sub-sessile, ca. 1 mm long; apical neck 3-4 mm, perianth persistent.

OTHER SPECIMENS: COLOMBIA: Plantae Expeditionis Botanicae Mutisii Vice-Regni Novae-Granatae (1783-1808), without locality, *Mutis 6469*, MA x2! **Antioquia:** Medellín-Boquerón-San Jerónimo, Cerro del Padre Amaya, 29 IX 1983, *Hágsater 7265*, AMO! (spirit, illustration and photo voucher). **Valle del Cauca:** El Cairo, Zona alta de la Vereda Alto Cielo, camino que atraviesa el filo hasta el Alto Valencia, 1798 m, 23 VII 2011, *García-Revelo 57*, CUVC! (digital image of live flower, AMO!) **VENEZUELA: Barinas:** Quebrada El Molino, zwischen Altamira und Calderas, 1000 m, 20 IX 1951, *O.Renz 7397*, RENZ! **Mérida:** Mérida-La Azulita, 15 X 1967, *Bunting 2596*, VEN! **Trujillo:** Gebiet Escuque-Monte Carmelo, Cieneguita, 1500 m, IX 1947, *O.Renz 4387*, RENZ!

OTHER RECORDS: COLOMBIA: Cundinamarca: Guayabetal, "Fundiciones", 1500 m, 20 X 1984, *Ortiz Valdivieso s.n.*, slide and illustration, HPUJ!, copies AMO! **VENEZUELA*: Táchira:** Road to Quenequea, 2500 m, IV 1974, *Dunsterville 1312*, illustration, published in *Dunsterville & Garay (1976)*.

DISTRIBUTION AND ECOLOGY: Epiphytic or humicolous plant presently known from the Andes in western Venezuela and neighboring Colombia, as well as the Colombian Cordillera Occidental, at an altitude of 1000-1800 [2500] m. Flowering July, September and October.

RECOGNITION: *Epidendrum lilijae* belongs to the Pleuranthium Group, characterized by the caespitose habit, cane-like and elongate stems, several short, lateral inflorescences, and the Phragmites Subgroup which has generally non-branching stems, sub-sessile, 1 or 2 flowered inflorescences, the flowers green or yellowish green, the ovary somewhat inflated and nearly hidden by 2-4 tubular, imbricating bracts. The species is recognized by the tall (100-150 cm) branching stems with linear-lanceolate, long acuminate leaves, single-flowered inflorescences (though flowers are successive), flowers tubular at anthesis, sepals partly connate, eventually spreading and free. Sepals lanceolate-elliptic, 8-10 mm long, lip ovate with the base truncate, column with a pair of dentate wings and clinandrium-hood short. *Epidendrum phragmitoides* Hágsater has short plants (ca 20 cm tall), ovate-elliptic leaves with the apex obtuse and bilobed, sepals partly spreading, oblong-lanceolate, 10 mm long, lip sub-entire with a pair of small, triangular lateral lobes, prominent clinandrium surpassing the body of the column. *Epidendrum phragmites* Heller & L.O. Williams has stems about 80 cm tall with ovate-elliptic to ovate-lanceolate leaves, the apex bilobed, inflorescence 1-2-flowered, sepals partly spreading, 12-13.7 mm long, the lip bicallose with a wide mid-rib and the clinandrium very prominent, surpassing the apex of the column. *Epidendrum brachybotrys* Ackerman & Montalvo has stems up to 50 cm tall, the leaves narrowly elliptic with the apex acuminate, flowers 1-2, greenish white, sepals spreading, totally free, 9.5-10 mm long, the lip sub-reniform, base cordate, with a pair of sub-globose calli.

*NOTE: We have not included the following illustration: Venezuela: Trujillo: Rain Forrest above Jajó, 7500 ft, II 1967, *Dunsterville 38*, AMES!, because as drawn, the lip is transversely elliptic and lacks any callus.

CONSERVATION STATUS: DD. Deficient.

ETYMOLOGY: In honor the wife of the author, Lilija Kupfers de Foldats, born in Latvia, who not only appreciated Foldats' work, Orchidaceae (1969-1970) in Flora de Venezuela, but also actively participated in it. Ernesto Foldats (1925-2003) was born in Liepāja, Latvia, and emigrated to Venezuela where he became a prominent biologist.

REFERENCES: *Dunsterville, G.C.K. & L.A. Garay, Epidendrum lilijae*, in *Venez. Orch. Ill.* 6: 134. Foldats, E., 1970, *Epidendrum lilijae*, in *Orchidaceae in Tobias Lasser (ed.), Flora de Venezuela* 15(3): 304-306.



Authors: E. Hágsater & E. Santiago

Illustrator: E. Hágsater

Photo: E. Hágsater

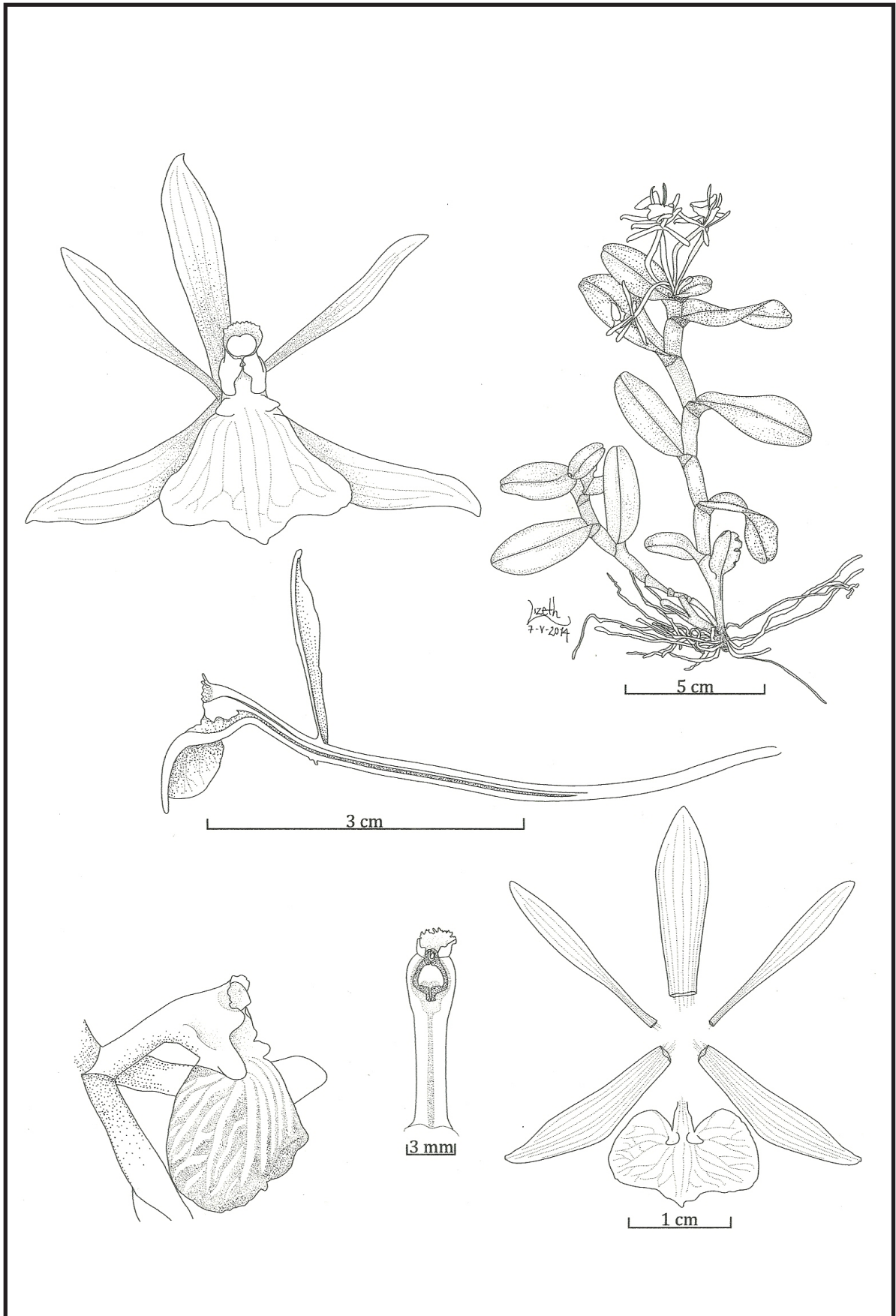
Editors: E. Hágsater & L. Sánchez S.

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ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1534



EPIDENDRUM LIZETHAE Hágsater, Rincón-Useche & L.Sánchez

Plate 1535

EPIDENDRUM LIZETHAE Hágsater, Rincón-Useche et L.Sánchez, *sp. nov.*

Type: COLOMBIA: Boyacá: Municipio San Luis de Gaceno, 400-700 m, 30 diciembre 2012, **Lizeth Rodríguez & Jonathan Rodríguez 65**. Holotype: COL! (Illustration voucher). Isotype: VALLE! Digital images of pretype: AMO! (photo voucher).

Similar to *Epidendrum platytilum* Schltr., but the flowers smaller, petals spatulate, lip transversely elliptic, obscurely trilobed, mid-lobe apiculate, ovary not inflated, calli conical, divergent.

Epiphytic, sympodial, caespitose, erect **herb**, 17-26 cm tall including the inflorescence. **Roots** 0.5-1.0 mm in diameter, basal, fleshy, filiform. **Stems** 11-15 x 0.62-0.65 cm, simple, cane-like, terete at the base, laterally compressed above, ancipitose, flexuous. **Leaves** 5-9, distributed throughout the stem; foliar sheath 1.6-2.5 cm long, tubular, laterally compressed, ancipitose, smooth; blade 3.5-8.3 x 1.9-1.6 cm, elliptic, apex retuse, coriaceous, green. **Spathes** lacking. **Inflorescence** apical, from mature stem, sub-corymbose, flowering only once, sessile. **Floral bracts** 4-5 mm long, much shorter than the ovary, triangular, acute, amplexicaul. **Flowers** 5, resupinate, simultaneous, green, apparently without fragrance. **Ovary** 60-65 x 2-3 mm, terete, not inflated, unornamented. **Sepals** 17.9-18.6 x 5-6 mm, membranaceous, spreading, free, narrowly obovate, acute, 7-veined, margin entire, revolute; lateral sepals oblique, 7-veined. **Petals** 20-21 x 2.0-2.5 mm, free, spreading, spatulate, acute, membranaceous, 3-veined, margin entire, spreading. **Lip** 11.0-11.6 x 15.0-15.4 mm, united to the column, transversely elliptic, obscurely 3-lobed, base cordate; bicallose, calli prominent, conical, divergent, disc of the lip with many evident thickened veins, the 3 central veins prolonged to the apex of the lip, other shorter ones originating from the middle of these; lateral lobes 7.0-7.4 x 8.0-8.1 mm, ovate, margin irregularly undulate; mid-lobe 0.8-0.9 x 3-4 mm, transversely rectangular, retrorse, apiculate. **Column** 11.0-12.7 mm, slightly arched, vertically widened towards the apex. **Clinandrium** prominent, conical, margin dentate. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles granulose, short, viscidium semi-liquid. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** 1/3 the length of the stigmatic cavity. **Nectary** deep, penetrating 2/3 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Boyacá: Municipio San Luis de Gaceno, 400-700 m, 27 III 2013, **Rodríguez 72**, VALLE!

OTHER RECORDS: COLOMBIA: Meta: Villavicencio, 500 m, *Nielsen s.n.* (Digital photo AMO!)

DISTRIBUTION AND ECOLOGY: Known only from Colombia, Department of Boyacá, on the eastern slope of the Cordillera Oriental, epiphytic at 400-700 m altitude. Phorophyte: several tree species, including one species of *Arecaceae*. Found in large populations. Flowering in December.

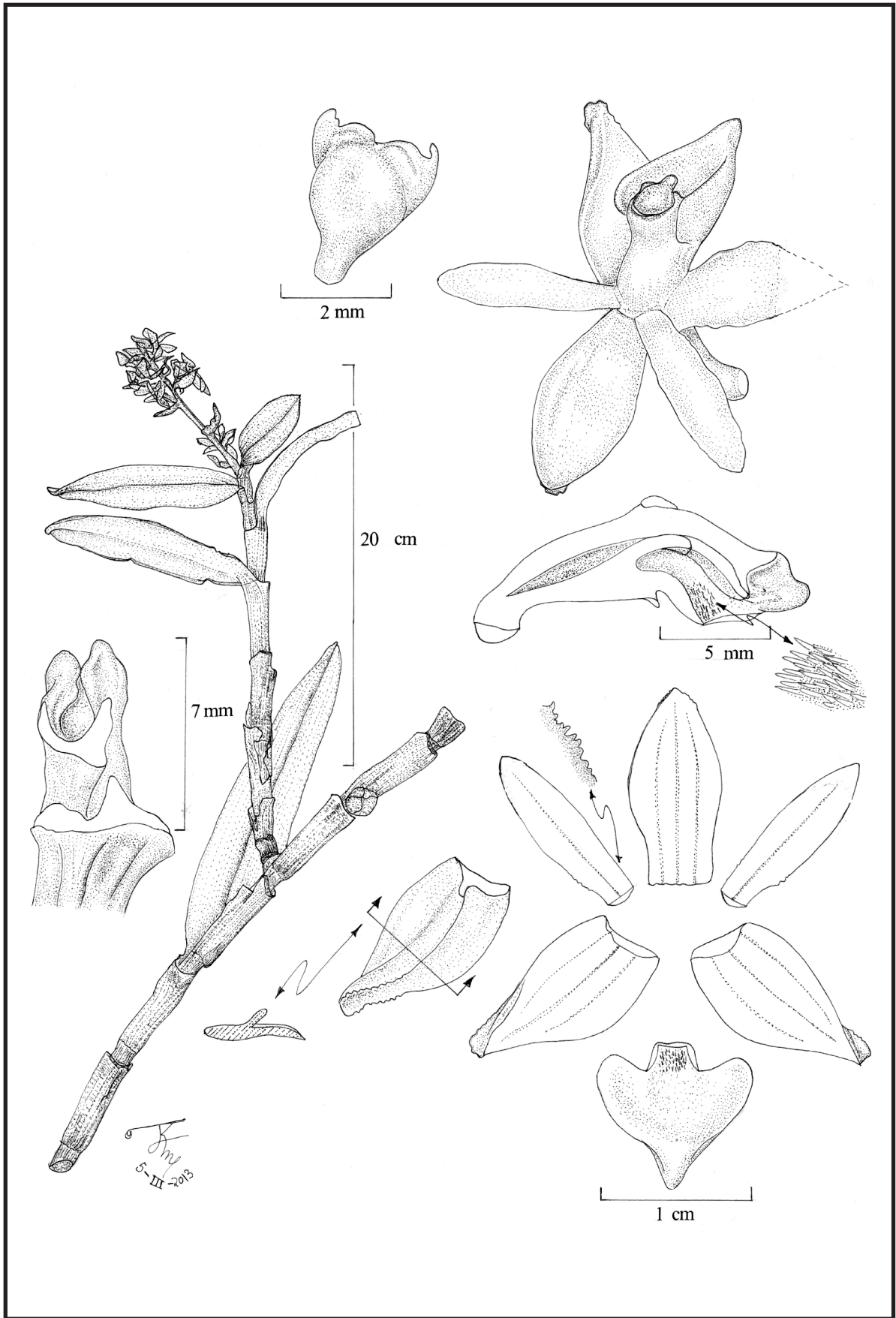
RECOGNITION: *Epidendrum lizethae* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy light green to glaucous leaves, apical inflorescence without the spathaceous bract, sessile, rarely with a short peduncle, one-flowered to corymbose, fleshy, and flowers green to yellowish-green, rarely white. The species is recognized by the cane-like, laterally compressed, ancipitose, flexuous stems, 5 simultaneous, large flowers, sepals 20-22 mm long, lip transversely elliptic, obscurely 3-lobed, prominent, conical, divergent calli; disc of the lip with evident thickened veins, the 3 central ones prolonged to the apex, other smaller ones produced from the middle of these, mid-lobe rectangular, apiculate, small, clinandrium prominent, conical, margin dentate. It is similar to *Epidendrum platytilum* Schltr. which is endemic to the Pacific slope of the Andes in central Ecuador and has laterally compressed stems though not ancipitose, 3-5 leaves which are wider (2.3-3.4 cm wide), 1-2 simultaneous flowers, a short 20-45 mm long, inflated ovary, larger flowers (sepals 36-40 mm long), obovate petals with the margin undulate, a reniform, sub-orbicular lip with small, sub-globose calli, and the disc of the lip with numerous thickened veins. *Epidendrum kerryae* Hágsater & L.Sánchez a lowland species along the Pacific slope of northern Ecuador and Colombia has 1-2, large, flowers (sepals 26-28 mm long), a trigonous ovary with a vesicle on the underside, entire, sub-orbicular lip and small sub-globose calli. *Epidendrum killipii* Hágsater & L.Sánchez also from the western slope of the Cordillera Occidental in Colombia, has 1-3 flowers, sepals 20-33 mm long, a non-inflated ovary, sub-orbicular, entire lip, and lacks the thickened veins on the lip, calli small, sub-globose. *Epidendrum dentiferum* Ames & C.Schweinf. growing from Costa Rica to Colombia along the Pacific slope has smaller plants (7-17 cm tall), stems somewhat laterally compressed, 1-3, small, flowers (sepals 10-16 mm long), sepals and petals acuminate, lip entire, sub-orbicular, abruptly mucronate at the apex; calli small, sub-globose, disc with three prominently thickened, central ribs, and the column has a pair of laminar, lateral, lacerate apical wings.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Lizeth Katherine Rodríguez, student of Agronomic Engineering at the National University of Colombia-Palmira Campus; photographer and enthusiast of the orchids of Colombia, born in Bogotá, and who has collaborated closely with the AMO Herbarium, in the knowledge of the genus *Epidendrum*.

REFERENCES: Hágsater, E. & L. Sánchez, 1994. *Epidendrum kerryae*, una especie nueva de Colombia. *Orquideología* 19 (2): 37-42. Hágsater, E. & L. Sánchez Saldaña, 1999. *Epidendrum killipii*, in Hágsater, E., Sánchez Saldaña, L. & J. García-Cruz (eds.), *The Genus Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 342. Sánchez, S. L. & E. Hágsater, 2007. *Epidendrum dentiferum*, in Hágsater, E. & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 6, **Icon. Orchid.** 9: t. 928. Sánchez, S. L. & E. Hágsater, 2009. *Epidendrum platytilum*, in Hágsater, E. & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1276.





EPIDENDRUM MACPHERSONII Hágsater & E.Santiago

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

Type: COLOMBIA: Antioquia: Mun. Frontino, region of Murrí, ca. 12 km on road from Nutibara; 2150 m, 11 December 1988, **Gordon McPherson, Francisco Javier Roldán and I. Castaño 13448**. Holotype: MO!

Similar to *Epidendrum probosanthorum* Hágsater but the flowers dull red, lateral sepals with a high laminar keel, its margin erose, petals oblong with the apex rounded, column thick with a wide nectary, and the anther with a short rostrum.

Epiphytic, monopodial, branching **herb**. **Roots** not seen. **Stems** branching when mature, only a fragment of the primary stem seen, 16 x 1.3 cm; branches 20 x 0.6-1.1 cm; cane-like, terete, straight, base covered by sheaths 1-2 cm long, tubular, striated, rugose. **Leaves** 4, persistent, aggregate at the apex of the stem, articulate, alternate, spreading, sub-coriaceous; sheath 1-3.5 cm long, tubular, minutely striated, rugose; blade of the primary stem 15 x 3.5 cm; of branches 6-10 x 1.8-2.2 cm; narrowly elliptic, apex sub-obtuse, margin slightly revolute in herbarium specimens. **Spathes** lacking. **Inflorescence** 9 cm long, apical, racemose, erect, flowering only once, few-flowered, sub-dense; peduncle 8 mm long, terete, erect, straight; rachis straight. **Floral bracts** 11-17 x 7-10 mm, prominent, longer than the ovary, triangular, acute, amplexicaul. **Flowers** 7-8, simultaneous, non-resupinate, fleshy, dull red; fragrance not registered. **Ovary** 8-9 mm long, terete, thick, not inflated, minutely striated. **Sepals** free, 3-veined, margin entire, spreading, dorsal sepals 13 x 6 mm, spreading, narrowly obovate, apex rounded, with a low dorsal, erose keel; lateral sepals 14 x 7 mm, partly spreading, ovate, acute, slightly oblique, with a high laminar keel, its apical margin erose. **Petals** 11 x 3.5 mm, free, spreading, oblong, apex rounded, 1-veined, margin spreading, minutely erose. **Lip** 8.7 x 10.3 mm, united to the column, entire, deltate, base cordate, much fleshier towards the apex, cymbiform in natural position, embracing the apex of the column without covering it, margin entire, spreading; ecallose, without ribs, pubescent at the base in front of the column. **Column** 7 mm long, thick, arched, apex with a pair of rounded teeth, pubescent in front of the stigmatic cavity. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, with an apical rostrum, the apex truncate. **Pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** shallow, without penetrating the ovary, wide and pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently only from the upper western slope of the Cordillera Occidental, in the department of Antioquia, corresponding to the Chocó biogeographic region, epiphytic at 2150 m altitude, presumably in cloud forest. Flowering in December.

RECOGNITION: *Epidendrum macphersonii* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the elliptic leaves, triangular floral bracts, longer than the ovary, flowers simultaneous, dull red, lateral sepals 14 mm long, with a high laminar dorsal keel, the apical margin erose, petals oblong, the apex rounded, anther with an apical, truncate rostrum. *Epidendrum rostrigerum* Rchb.f. has narrower floral bracts, the apices acuminate, sepals 9-11 mm long, without any dorsal keel, anther with a long rostrum. *Epidendrum probosanthorum* Hágsater has green flowers, somewhat tinged purple, sepals with a minute dorsal apicule, petals linear with the apex obtuse, anther with a long rostrum, the rostrum reminiscent of an elephant's trunk. *Epidendrum coordinatum* Rchb.f. has greenish or pale yellow flowers, lanceolate leaves, the sepals very fleshy, apically uncinuate, the petals oblong, acute, falcate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Gordon McPherson, (1947-), Curator at the Missouri Botanical Garden, and who has collected extensively in tropical America, and is a specialist of Euphorbiaceae of Madagascar. He collected the type specimen.

REFERENCES: Hágsater, E., 2010, *Epidendrum probosanthorum* in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1378. Santiago, E., & E. Hágsater, 2015, *Epidendrum rostrigerum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1556.



Authors: E. Hágsater & E. Santiago

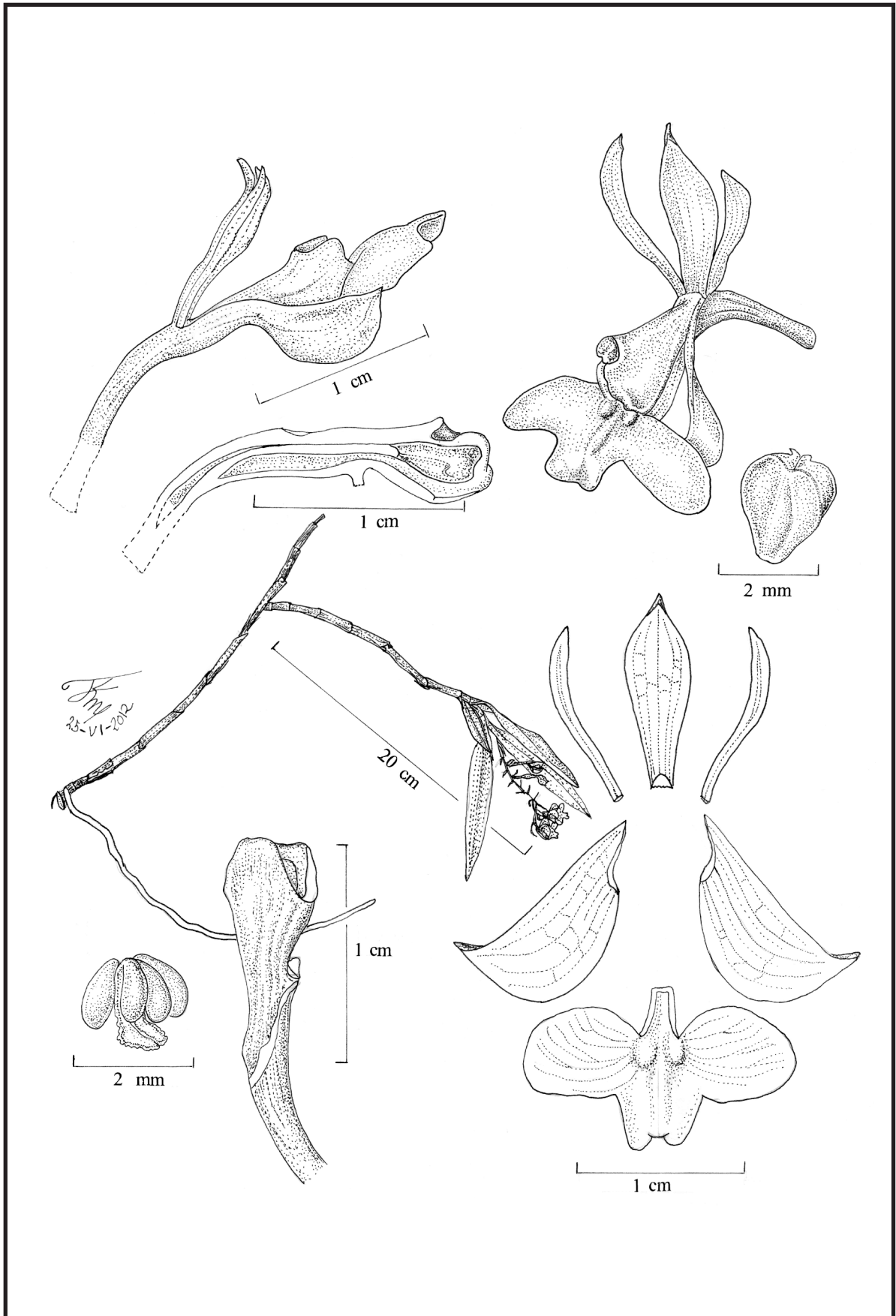
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1536



EPIDENDRUM MACUCHIENSE Hágsater & E.Santiago

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

Type: ECUADOR: Cotopaxi: 2 km E of Macuchi, on road from Quevedo-Latacunga, 1500 m, 10 October 1979, Calaway H. Dodson 9238. Holotype: SEL! (illustration voucher.)

Similar to *Epidendrum homoion* Hágsater & Dodson, with a similar shaped lip, but the flowers green, smaller, and the petals much narrower, linear-oblancoolate.

Epiphytic, sympodial, erect **herb**, the new stems arising from a sub-apical internode of the previous stem. **Roots** 1.0-1.5 mm in diameter, basal from the basal stem, thick. **Stems** 16.5-23 x 0.2-0.3 cm; simple, cane-like, terete, straight, the new stem originating from a middle internode of the previous stem, gradually becoming thinner and shorter. **Leaves** 4, aggregate towards apex of the stem, alternate, articulate, erect-spreading, equal in size, sub-coriaceous; sheaths 10-23 x 2-3 mm; tubular, minutely striated, becoming fibrous with time; blade 3.5-10 x 0.8-1.5 cm; lanceolate, acute, margin entire, spreading. **Inflorescence** 6 cm long, apical, flowering only once, racemose, arching; peduncle thin, somewhat laterally compressed, ancipitose, straight, rachis laterally compressed, thin, straight. **Floral bracts** 4-6 mm long, about half as long as the ovary, triangular, acuminate. **Flowers** ca. 12, simultaneous, resupinate, green; fragrance not registered. **Ovary** 13-14 mm long, terete, thin, not inflated, smooth. **Sepals** acute, slightly concave, glabrous, 5-veined, margin entire, spreading; dorsal sepal 11.4 x 4 mm; spreading, free, oblanceolate, apex mucronate, lateral sepals partly spreading, nearly parallel to the column and obliquely united to it, broadly hemi-obovate, oblique, strongly curved, so that the outer margin is straight nearly to the curved apex. **Petals** 10.8 x 1.0 mm, partly spreading, free, linear-oblancoolate, acute, arcuate towards the apex, 1-veined, bifurcate near the middle, margin entire, spreading. **Lip** 8.6 x 16.1 mm; united to the column, deeply 3-lobed, slightly convex; bicallose, the calli relatively large, mounds; disc with a low, wide keel that reaches the apical sinus, margin entire, spreading; lateral lobes 6.6 x 5.2 mm, broadly transverse-elliptic to sub-orbicular, the distal margin nearly straight; mid-lobe 3.3 x 5 mm; emarginate, sub-quadrate-cuneate. **Column** 10 mm long, thin at the base, gradually widened towards the apex, straight. **Clinandrium-hood** reduced, the margin erect, entire. **Anther** sub-ovoid, apex truncate, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose, longer than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** penetrating half the ovary, wide, unornamented. **Capsule** not seen.

OTHER SPECIMENS: Non seen.

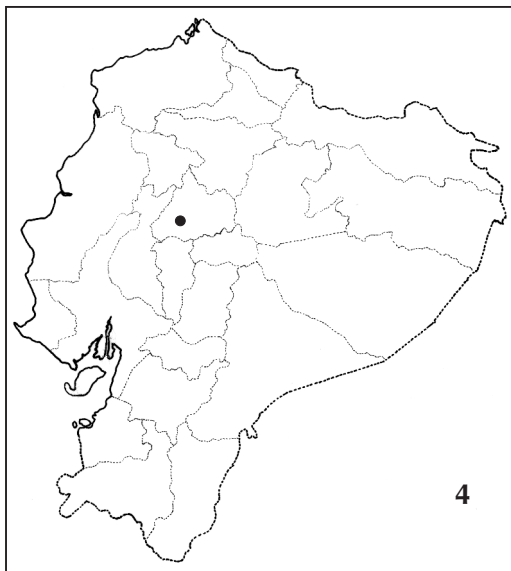
OTHER RECORDS: Non seen.

DISTRIBUTION: Known presently only from the type, in central Ecuador, on the western slope of the Cordillera Occidental de los Andes at 1500 m altitude, epiphytic. Flowering in October.

RECOGNITION: *Epidendrum macuchiense* belongs to the Arbuscula Group, Incomptum Subgroup which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy greenish to violet-green flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by the green flowers, the deeply 3-lobed lip, twice as wide as it is long, (8.6 x 16.1 mm), the lateral lobes semi-orbicular, and the quadrate-cuneate, emarginate mid-lobe, and the thin, linear-oblancoolate petals (10.8 x 1 mm). It resembles *Epidendrum homoion* Hágsater & Dodson, has a very similar shaped lip (14-16 x 26-28 mm), but has obtusulate petals which are much wider (8.5 x 6.0-6.5 mm); the sepals and petals are green and the lip olive-green to purplish green. *Epidendrum boekei* Hágsater also has a 3-lobed lip, but it is nearly as long as it is wide, 11-14 x 14-18 mm, the lateral lobes are slightly retrorse, petals narrowly oblanceolate, apex rounded (11.5 x 3-6 mm), and the calli are narrower and divergent. *Epidendrum oenochromum* Hágsater & Dodson has burgundy-red colored flowers, the lip is proportionately wider than long, 10 x 16 mm, but the lateral lobes are orbicular, and petals oblong, 11.7 x 2.2 mm.

ETYMOLOGY: In reference to the town of Macuchi, in the province of Cotopaxi, Ecuador, near where the type was collected.

REFERENCES: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum homoion*, in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 145. Hágsater, E., & C. H. Dodson, 2004, *Epidendrum oenochromum*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 768. Hágsater, E., 2009, *Epidendrum boekei*, in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 8, **Icon. Orchid.** 12: t. 1210.



Authors: E. Hágsater & E. Santiago

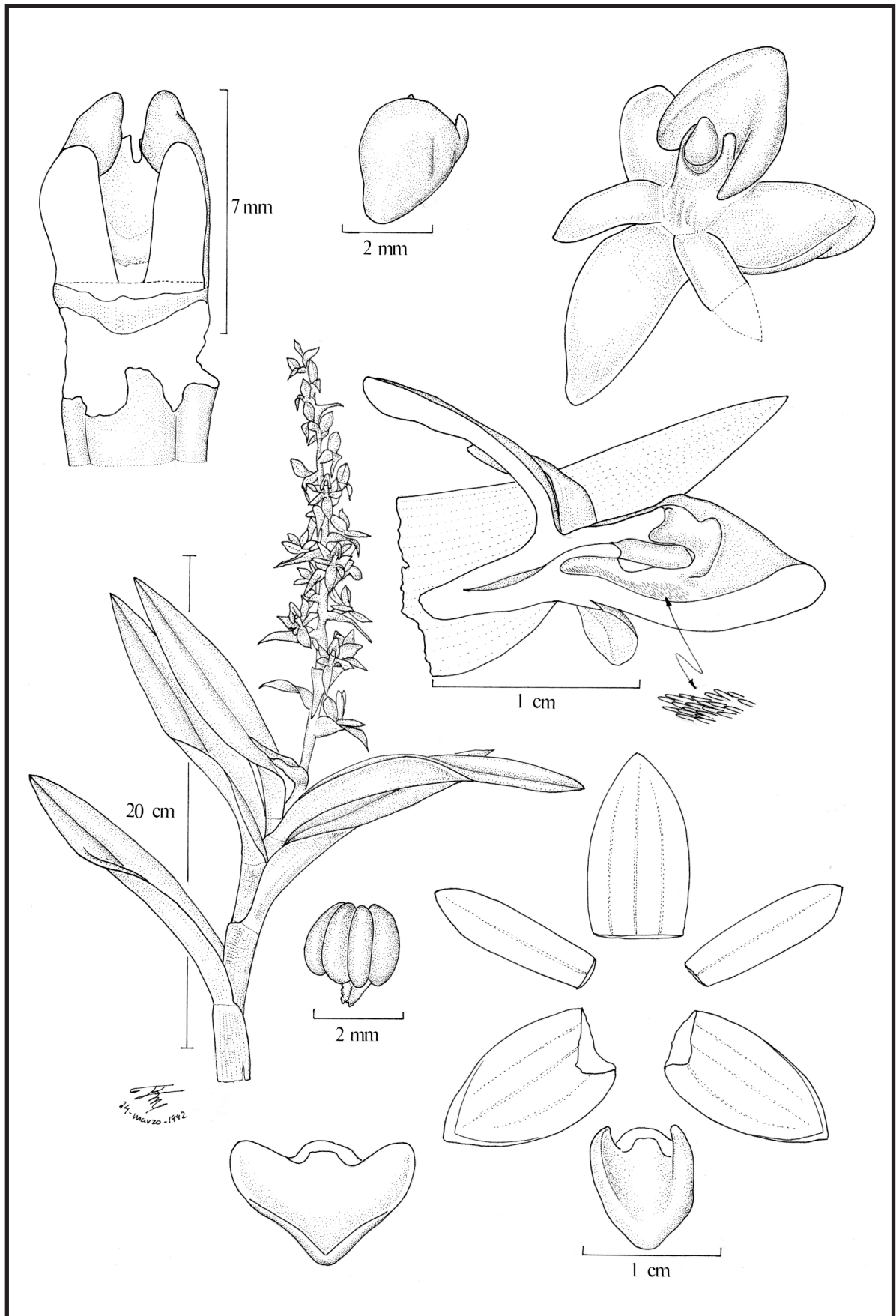
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

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ICONES ORCHIDACEARUM 15(1). 2015. Plate 1537



EPIDENDRUM MAGNIBRACTEUM Kraenzl.

EPIDENDRUM MAGNIBRACTEUM Kraenzl., Notizbl. Bot. Gart. Berlin-Dahlem 7(61-70): 440-441, 1920.

Type: COLOMBIA: Santander: "Genauerer Standort unleserlich", 3000 m, **Kalbreyer 1172**. Holotype: B, destroyed. Lectotype: here designated: COLOMBIA: [Cundinamarca: Bogotá], **Schultze 151**. US! (Illustration voucher).

Terrestrial, monopodial, branching **herb**, 60-200 cm tall. **Roots** basal, fleshy, thin. **Stems** branching when mature, cane-like, terete, erect, straight, the main stem 1.0-1.8 cm thick. **Leaves** numerous on the main stem, distributed throughout, articulate, alternate, partly spreading, unequal in size (those on the main stem larger than those of the branches); sheath 10-33 x 10-14.5 mm, tubular, minutely striated, rugose; blade (of the main stem) 18-20 x 2-5 cm, the apical one shorter, ca. 5 cm long; those on the branches 3-15 x 2-3 cm, elliptic-lanceolate, acute, apical margin minutely serrulate, slightly revolute. **Spathes** lacking. **Inflorescence** 15-30 cm long, apical, racemose, erect, flowering only once, pyramidal, densely many-flowered; peduncle 1.5 cm long, short, terete, erect, straight, gradually wider towards the apex; rachis 17-28.5 cm long, terete, green. **Floral bracts** 10-40 x 8-14 mm, prominent, much longer than the flowers, (diminishing gradually in size towards the apex of the rachis), ovate-triangular, acuminate, amplexicaul, cymbiform, green, the apical margin minutely denticulate. **Flowers** 21-30, successive, non-resupinate, very fleshy, color of ripe olives, lip light green, forming a helicoid around the rachis; fragrance not registered. **Ovary** 6-7 mm long, terete, thick, longitudinally striated, not inflated, unornamented. **Sepals** 10-13.7 x 5.0-8 mm, free, margin entire, spreading; dorsal sepal reflexed, elliptic, apex obtuse; lateral sepals partly spreading, ovate-elliptic, obtuse, with a low dorsal, smooth, keel. **Petals** 12-13 x 2.5-3.5 mm, free, spreading, linear-oblong, sub-obtuse, margin entire, spreading. **Lip** 9-11 x 12-13 mm, united to the column, very fleshy, entire, widely cordiform, somewhat cordate at the base, apex obtuse, ecallose, without ribs, glabrous, cymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 7 mm long, straight, thick. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid. **Pollinia** 4, obovoid; caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, half as long as the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, not inflated, strongly pubescent in front of the stigmatic cavity. **Capsule** 5 x 1.8 cm, ellipsoid, pedicel 0.5 cm long; body 3.5 x 1.8 cm; apical neck 10 mm long, perianth persistent.

OTHER SPECIMENS: COLOMBIA: Cundinamarca: Zipaquirá, 2900 m, 25 XI 1941, *Huertas 1*, AMES! Zipaquirá, "El Gaque", 2850 m, *Huertas 1126*, COL! San Bernardo, entre Paquilo y Santa Marta, Quebrada de Aguas Claras, 2730 m, 24 VII 1981, *Jaramillo 7040*, COL! Bogotá, *Karsten s.n.*, W-R 40009! (only the plant, the flowers in the envelope seem larger and dry in a different color). Páramo-Boquerón de Chipaque, 3300 m, 17 XI 1956, *Ospina 34*, AMESx2! COL! Páramo-Boquerón de Chipaque, 3300 m, 17 XI 1956, *Ospina 34a*, COL! Berge nordlich der Montserrate, nordlich von Bogotá, 2800-3000 m, V 1937, *Renz 3084*, RENZ! Ibid. 2800 m, 24 VI 1939, *Renz 3123*, RENZ! Mpio. Sibaté, San Miguel, 2800-2900 m, 6 VIII 1943, *Schneider 17*, AMES! COL! **Distrito Capital:** Cerros de Usme, 2800 m, received XII 2014, *Castro s.n.*, digital image series, AMO! (photo voucher). Usme, Páramo de Chisacá, received XII 2014, *Castro s.n.*, digital image series, AMO!

OTHER RECORDS: COLOMBIA: Water color by Vicente Sánchez, published as *Epidendrum rigidiflorum* Schltr. in José Celestino Mútis, *Flora de La Real Expedición Botánica del Nuevo Reyno de Granada (1783-1816)*, 9: pl. 39. Madrid, 1985.

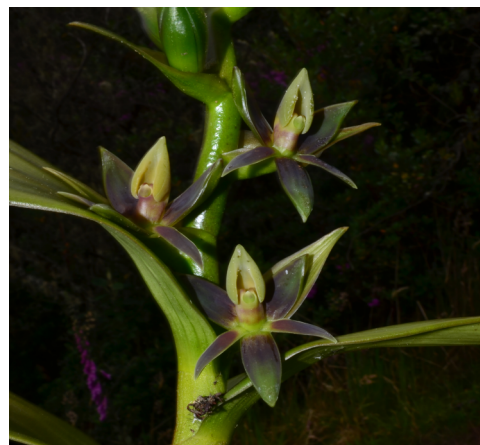
DISTRIBUTION AND ECOLOGY: Known only from the border region of northern Colombia, on the Cordillera Oriental of the Andes, in Cundinamarca and Boyacá, terrestrial at 2700-3300 m altitude. Flowering from May through November.

RECOGNITION: *Epidendrum magnibracteum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the large leaves to 18-20 cm long, many-flowered, pyramidal inflorescence with successive flowers the color of ripe olives with the lip light green, the floral bracts very prominent, longer than the flowers, the short ovary 6-7 mm long, the lip widely cordiform and glabrous. *Epidendrum macrostachyum* Lindl. has shorter leaves, to 13 cm long, similar inflorescences and flowers in size and color, but the floral bracts, though prominent, never surpass the length of the flower, the lip has a low rib and a pair of thickened lamina in front of the column. *Epidendrum dermatanthum* Kraenzl. has short, narrow leaves 8-10 cm long, short inflorescences with few flowers, the flowers greenish brown, and short floral bracts ca. 12-13 mm long. *Epidendrum bractiacuminatum* Hágsater & Dodson also has few-flowered inflorescences, with ca. 11-12 burgundy-red to purple flowers with the base of the column green, ovary 9-12 mm long, and the lip cordiform, proportionately as wide as it is long, sepals triangular-ovate with the apex acuminate, 13-17 mm long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *magni*-large, and *bractea*, the leaf-like blade found at the base of the flower, in reference to the very large floral bracts that distinguishes this species.

REFERENCES: Hágsater, E., & C. H. Dodson, 1999, *Epidendrum bractiacuminatum* in E. Hágsater, L. Sánchez S. & J. García-Cruz, (eds.), *The Genus Epidendrum*, Part 3, **Icon. Orchid.** 3: t. 317. José Celestino Mútis, 1985, *Flora de La Real Expedición Botánica del Nuevo Reyno de Granada (1783-1816)*, tomo 9, Microspermae: Orchidaceae III. Madrid. Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 14: t. 1454. Santiago, E., & E. Hágsater, 2015, *Epidendrum dermatanthum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1519.



Authors: E. Santiago & E. Hágsater

Illustrator: R. Jiménez M.

Photo: C. Castro

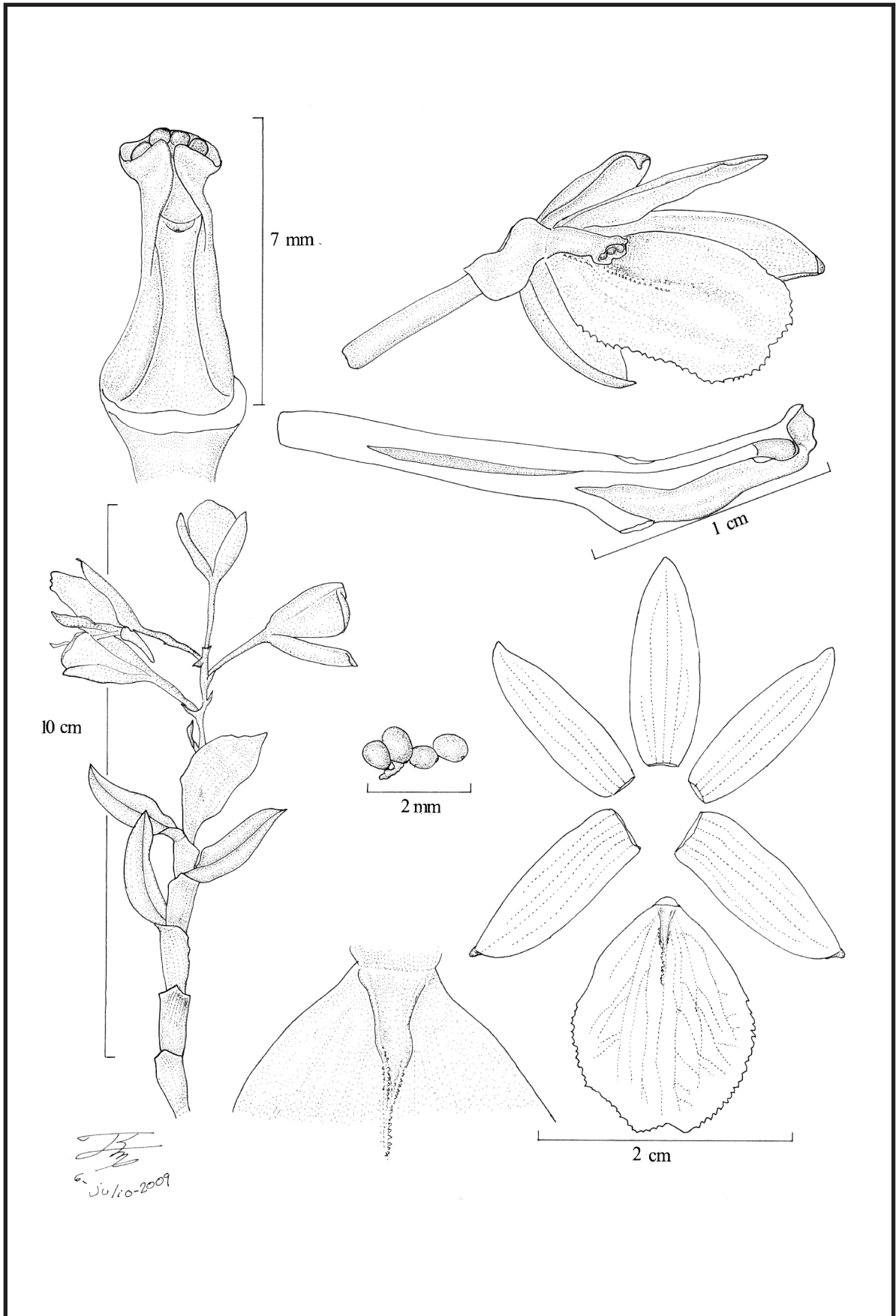
Editors: E. Hágsater & L. Sánchez S.

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ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1538



EPIDENDRUM MEGALOSPATHUM Rchb.f.

EPIDENDRUM MEGALOSPATHUM Rchb.f., *Linnaea* 41(7): 114. 1877.

Type: [Colombia:] Nova Granada: "Quindiu?", *Linden s.n.*, "non edit. in coll.". Medellín, *Wallis s.n.*! Lectotype (here designated): [COLOMBIA: Antioquia:] N. Granada, Medellín, **Gustav Wallis s.n.**, W-R 4360! Paralectotype: *Linden s.n.*, W-R 4723!

Synonyms: *Diothonea megalospatha* (Rchb.f.) Garay & Dunsterv., *Venez. Orch. Ill.* 3: 74. 1965. *Epidendrum falsum* Rchb.f., *Flora* 69: 553, 1886 Type: Ex. Nov. Gran[ada], Lectotype (here designated): W-R 13864! (specimen) W-R 4780! (sketch of floral details and inflorescence). Fragment, flower, microscope slide, HUH 82068. *Epidendrum puberulosum* Hágsater *Orquídea* (Mexico City) n.s. 12(2): 296. 1992. Basionym: *Diothonea sodiroi* Schltr., *Repert. Spec. Nov. Regni. Veg.* 14: 389, 1916. Type: ECUADOR: Chimborazo "In silvis tropicis et subtropicis vulcani Pallatanga", A. Sodiro 47. Holotype: B (destroyed). Lectotype (designated by Dodson & Hágsater, 1999): QPLS!

Epiphytic, pendent, sympodial, caespitose **herb**, to 22 cm long. **Roots** 0.5 mm in diameter, basal, terete, thin. **Stems** 8-17.5 x 0.2-0.5 cm, simple, cane-like, laterally compressed. **Leaves** 5-8, distributed throughout the stems, alternate, articulate, pendent-spreading, succulent-coriaceous, ventrally glaucous; sheath 8-14 x 3-6 mm, tubular, slightly inflated at the apex (somewhat infundibuliform), minutely striated, ancipitose; blade 1.5-5 x 0.7-1.8 cm, oblong to ovate-oblong, oblique, apex acute, tridentate, margin purple, crenulate-minutely dentate towards the apex. **Spathes** 1-2, 2.5-2.8 x 0.8-1.3 cm, obliquely elliptic and conduplicate, light green marked with reddish purple, the apex of the peduncle and rachis exposed. **Inflorescence** 4.0-4.3 cm long, apical, racemose, few-flowered, flowering only once; peduncle 2.2-3 cm long, thin, laterally compressed. **Flowers** 5-6, simultaneous, resupinate, sepals and petals ochre-green, the lip burgundy-red; without fragrance. **Floral bracts** 2-5 mm long, much shorter than the ovary, triangular-lanceolate, obtuse, embracing. **Ovary** 15-19 mm long, terete, thin, slightly dilated behind the perianth, minutely striated, green marked with reddish-purple. **Sepals** 15-18 x 4.0-5.5 mm, partly spreading, free, membranaceous, oblong to oblong-elliptic, obtuse, margin entire, spreading; dorsal sepals 3-veined, the lateral veins short-branched; lateral sepals slightly oblique, minutely apiculate, 5-veined. **Petals** 14-16 x 4.0-4.5 mm partly spreading, free, ovate-elliptic, acute, 3-veined, margin entire, spreading. **Lip** 16-19 x 10-15 mm, free from the column, entire, ovate-elliptic, minutely papillose, base cuneate, the apex slightly emarginate, margin denticulate, spreading; the calli substituted by two low, narrow, parallel ribs, with two lower ribs in the middle forming a "V" shaped structure, and then ending in a minutely papillose, short extension reaching about 1/3 of the lip. **Column** 6-7 mm long, very slightly arched at the apical 2/3, wedge-shaped, narrower at the apex than at the base, thin. **Clinandrium-hood** prominent, without surpassing the body of the column, margin entire. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** very short, wide, barely penetrating the ovary, unornamented. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles soft and granulose, as long as the pollinia. **Capsule** ellipsoid, 50 x 9 mm; pedicel, very short, terete, 3 mm long; body 25 x 9 mm long; apical neck 22 mm long.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Ranging along the Cordillera Oriental of the Andes from Táchira and Trujillo states on Venezuela through Colombia to northern Ecuador, and the Cordillera Central in Colombia. Epiphytic, growing at 2120-3100 m altitude in sub-alpine sub-páramo, and very wet montane forest. Flowering from March to August, October, in fruit in January, corresponding to the maximum rainy season.

RECOGNITION: *Epidendrum megalospathum* belongs to the Megalospathum Group characterized by the sympodial, sub-caespitose but branching habit, many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathes, resupinate flowers, the column more or less united to the lip; and the Megalospathum Subgroup which has the calli substituted by elongate, low ribs, flowers green or greenish brown, lip burgundy red, lustrous, margin denticulate. The species is recognized by the long stems, to 17.5 cm long, inflorescence about 5-6 cm long, the end of the peduncle and rachis exposed beyond the spathes, sepals oblong to oblong-elliptic, 15-18 x 4.0-5.5 mm, petals lanceolate, acute, 14-16 x 4.0-4.5 mm, the lip ovate, base cuneate; the calli substituted by two low, narrow, parallel ribs, with two lower ribs in the middle forming a "V" shaped structure, and then ending in a minutely papillose, short extension reaching about 1/3 of the lip. It is similar to *Epidendrum rhodochilum* (Schltr.) Hágsater & Dodson, which has similarly long stems, the peduncle of the inflorescence nearly totally hidden within the spathes (only a part of the rachis is visible), sepals ovate-oblong, 15-17 x 6.5-7.0 mm, petals elliptic-ovate, 15-16 x 5.3-5.5 mm, lip sub-orbicular-obovate, disc with three low, narrow, parallel ribs in place of the calli. *Epidendrum brachyrhodochilum* Hágsater & E.Santiago has shorter stems, 3.5-7 cm long, the peduncle and rachis nearly totally hidden within the spathes, sepals elliptic, 11-12 mm long, petals elliptic-sub-ovate, 11-12 x 5 mm, lip sub-orbicular-obovate, 12-16 x 12-14 mm, disc with 3 parallel ribs all the same size and length, the lateral pair bifurcate at the base and thus appearing as 5 ribs, the lateral ribs very short.

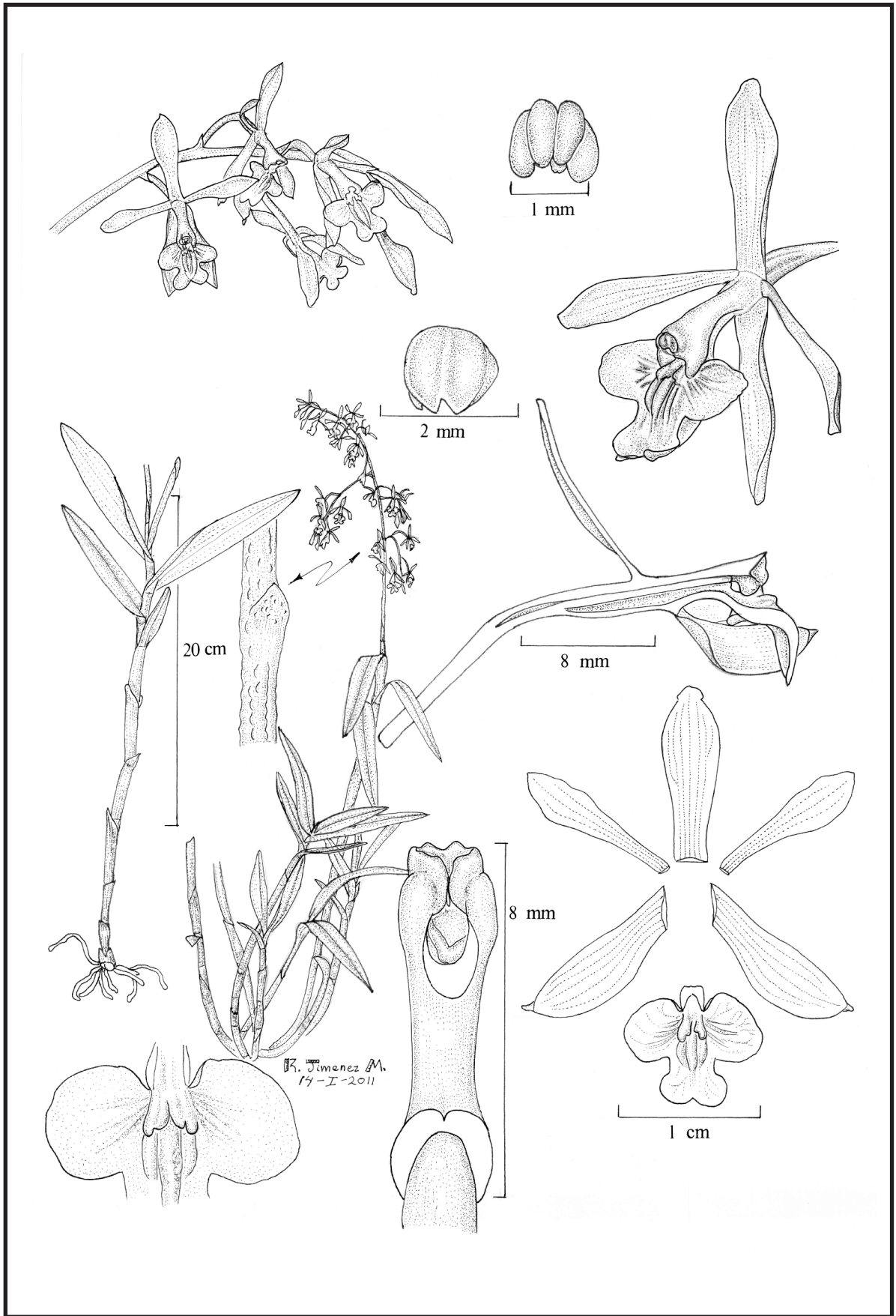
NOTE: *Epidendrum megalospathum* and *E. brachyrhodochilum* ranges overlap, but the species are easily recognizable by the length of the stems, the size of the flowers and the way in which the spathe covers or not the rachis of the inflorescence, and the number of ribs on the lip.

CONSERVATION STATUS: NT. Not threatened; the species is widespread and found in protected areas.

ETYMOLOGY: From the Greek *μεγαλο-* big, and *σπαθη*, a broad flat blade, a spathe, in reference to the prominent spathes that subtend the inflorescence.

REFERENCES: Dodson, C. H., & P. M. Dodson, 1989, *Epidendrum megalospathum* in *Orchids of Ecuador*, **Icones Pl. Trop.**, ser. II, 5: t. 473. Dodson, C. H. & E. Hágsater, 1999, *Epidendrum* (Orchidaceae) in P. M. Jørgensen & S. León-Yáñez (eds.), *Cat. Vasc. Pl. Ecuador Monogr. Syst. Bot. Missouri Bot Gard.* 75: 655-669. Dunsterville, G. C. K. & L. A. Garay, 1965, *Diothonea megalospatha* (Rchb.f.) Garay & Dunsterv., *Venez. Orch. Ill.* 3: 74-75. Escobar, R., *Epidendrum megalospathum* in *Orquídeas Nativas de Colombia* 5: 761. Foldats, E., 1970, *Epidendrum megalospathum*, *Flora de Venezuela* 15(3): 314-316. Hágsater, E., & E. Santiago, 2015, *Epidendrum brachyrhodochilum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1508. Santiago, E., & E. Hágsater 2015, *Epidendrum rhodochilum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1555.





EPIDENDRUM MONTSERRATENSE Nir

EPIDENDRUM MONTSERRATENSE Nir, Orchidaceae Antill.: 132. 2000.

Type: MONTSERRAT: Cudjon [Cudjoe] Head. On rocks overhanging the road, 8 February 1907, [in fruit], **John Adolph Shafer 402**.

Holotype: NY! (1 stem in fruit, 1 stem in flower). Isotypes: CM 1164407! (sterile). US 695358! (in fruit). Clonotype: flowered in cultivation, 5 December 1908, AMES!

Epiphytic and lithophytic, sympodial, caespitose **herb**, 44.5-59 cm tall. **Roots** 0.7-1.2 mm in diameter, produced from the base of the stems, thin, white. **Stems** 24-30 x 0.3-0.7 cm, cane-like, thickened without forming an obvious pseudobulb, covered by 3-5 tubular, non foliar, scarious sheaths 0.8-4.8 cm long. **Leaves** 2-5, distributed along the apical ¼ of the stem, articulate, coriaceous; sheaths 10-32 mm long, tubular, minutely striated; blade 4-14.5 x 0.7-3.8 cm, narrowly elliptic, apex sub-obtuse, minutely apiculate, margin entire. **Spathaceous bracts** 2, strongly imbricated in young stems, dry when in flower, sometimes lacking. **Inflorescence** ca. 19-29 cm long, apical, paniculate, sub-erect, lax-flowered, about as long as the stem; peduncle 11.5 cm long, elongate, thin, sub-terete, scarcely papillose, provided with 2 small, triangular, acuminate, amplexicaul bracts 6-14 mm long; rachis straight papillose, with 2-3 few-flowered racemes; each raceme ca. 7 cm long, with a basal bract 9 mm long, similar to those of the peduncle. **Floral bracts** 1-4 mm long, small, much shorter than the ovary, triangular lanceolate, acuminate, amplexicaul, abaxially papillose. **Ovary** 17-45 mm long, terete, thin, slightly dilated behind the perianth, unornamented. **Flowers** 20-27, simultaneous, resupinate, greenish yellow; fragrance not recorded. **Sepals** 10-12 x 3-4 mm, slightly concave, oblanceolate, sub-obtuse, minutely apiculate, 5-veined, margin entire, spreading; **dorsal** sepal free, spreading; **lateral** sepals obliquely united to the base of the column, partly spreading, slightly oblique. **Petals** 10.4-11 x 2.1-3 mm, free, spreading, linear-oblanceolate, obtuse, 3-veined, margin spreading, entire. **Lip** 3-lobed, 8 x 9 mm, united to the column, base cordate, margin entire; bicallose, the calli laminar, disc provided with 3 narrow keels, which disappear before reaching the apex of the lip, and 3 pairs of thickened veins on the sides of the calli; lateral lobes 3 x 4 mm, orbicular; mid-lobe 3 x 4 mm, sub-quadrate, short-emarginate, forming a pair of orbicular lobes at the apex. **Column** 7-8 mm long, straight, thin. **Clinandrium-hood** prominent, margin slightly erose. **Rostellum** sub-apical, slit. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, as long as the pollinia. **Lateral lobes of the stigma** short. **Nectary** penetrating ¼ of the ovary, not inflated, unornamented. **Capsule** 34 x 7 mm; pedicel 10 mm long, thin; body 17 x 7 mm, ellipsoid; apical neck 7 mm long.

OTHER SPECIMENS: MONTSERRAT: cult. Plant Biology greenhouse at Southern Illinois University Carbondale, apparently collected by David Brussell, pressed 2010, *Nickrent 5598*, AMO 25734! (Illustration voucher) SIU. Digital images of flowering specimen provided by Forrest Michael Brem, AMO! (Photo voucher). Baker Hill, 13 II 2000, *Nir & Axelrod 83*, NY (in fruit). Baker Hill, 12 II 2000, *Axelrod & Nir 11055*, NY (in fruit).

OTHER RECORDS: MONTSERRAT: sketch of plant and flower, XII 1881, *Vale s.n.*, W-R 50183! (the stems look much thicker than in live and pressed specimens). <http://www.orchidspecies.com/epimontserratense.htm> photo by Charles Wilson.

www.kew.org/science-conservation/plants-fungi/Epidendrum-montserratense-montserrat-orchid photo by Martin Hamilton. http://Phytolimages.siu.edu/imgs/paraman/1/na/Orchidaceae_Epidendrum_montserratense_17659.html photo by Daniel L. Nickrent (photo voucher).

DISTRIBUTION AND ECOLOGY: Endemic to the island of Montserrat, growing on rocks and old Mango trees (Hamilton, 2006). Flowering from October to November.

RECOGNITION: *Epidendrum montserratense* belongs to the Amblostomoides Subgroup of the Amblostoma Group which is characterized by the caespitose habit, the thinly fusiform stems with narrow, apically bilobed, sub-coriaceous leaves distributed along the apical half of the stems, an often large, apical, erect, paniculate inflorescence, the flowers greenish-yellow to white, the ovary and the sepals usually dorsally pubescent, and the lip 3-lobed. The species has greenish yellow flowers, with scarcely visible papillae on the peduncle, rachis and floral bracts, the lateral lobes of the lip are sub-orbicular, with 3 thickened veins at the base, the mid-lobe is sub-quadrate, emarginate, ending in a pair of small circular lobes. *Epidendrum pubiflorum* C.Schweinf. has the rachis finely pubescent, slightly larger flowers, but the petals are 2 mm wide and the lip is bicallose and 3-keeled, the lateral lobes dolabriform and the mid-lobe cuneate, truncate. *Epidendrum lanipes* Lindl. has larger plants and flowers strongly fragrant of citrus, the rachis as well as the ovaries are pubescent, lateral lobes of the lip semi-ovate, mid-lobe cuneate, retuse, bicallose with three short keels in front. *Epidendrum ancirotulosum* Hágsater & E.Santiago has short, thickened stems, an erect, relatively large, paniculate inflorescence, the rachis glabrous, fleshy flowers, the ovaries pubescent, the sepals dorsally sparsely short-pubescent, petals linear, falcate, and the lip deeply 3-lobed, the lateral lobes obliquely oblong-reniform, the mid-lobe narrowly sub-rhombic, obtuse, bicallose, the calli with a cuniculus beneath them, and a semi-circular, anchor-shaped structure in front. *Epidendrum gabanense* Hágsater & E.Santiago also has a pubescent ovary, and the lateral lobes of the lip are very small and rounded.

CONSERVATION STATUS: CT. Critically Endangered, (Jones, 2008). Endemic to Montserrat and rare. The southern half of the Island was covered by ash and lava in July 1995 from the Soufrière volcano, making it inhabitable. After the volcanic eruption, plants were rescued and have been established in cultivation in the Montserrat National Trust Botanic Garden as well as the Royal Botanic Gardens, Kew (Hamilton, 2006). Seeds are stored in Kew's Millennium Seed Bank.

ETYMOLOGY: In reference to the island of Montserrat in the Antilles, only place where the species has been collected.

ACKNOWLEDGMENT: The author thank Randall J. Bayer; Scott Stewart and Forrest Michael Brem, from the Southern Illinois University Carbondale, for supplying the digital images and herbarium material for identification.

REFERENCES: Hágsater, E., & E.Santiago, 2004, *Epidendrum ancirotulosum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 4, *Icon. Orchid.* 7: t. 704. Hágsater & E.Santiago, 2010, *Epidendrum gabanense* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1333. Hamilton, M., 2006. *Epidendrum montserratense* (Montserrat Orchid). In: Hamilton, M. et al. **Strengthening capacity for Species Action Planning in Montserrat**. Royal Botanic Gardens, Kew. Available on: http://www.kew.org/science-research-data/directory/projects/UKOT_MONSaps.htm; accessed on: 21/11/2012. Jones, M. (2008). **Distribution and Conservation of Montserrat's Endemic Flora** (MSc thesis, Imperial College, London). Young, R. P. (ed.), (2008). **A biodiversity assessment of the Centre Hills, Montserrat** (Durrell Conservation Monograph No 1, Durrell Wildlife Conservation Trust, Jersey, Channel Islands).

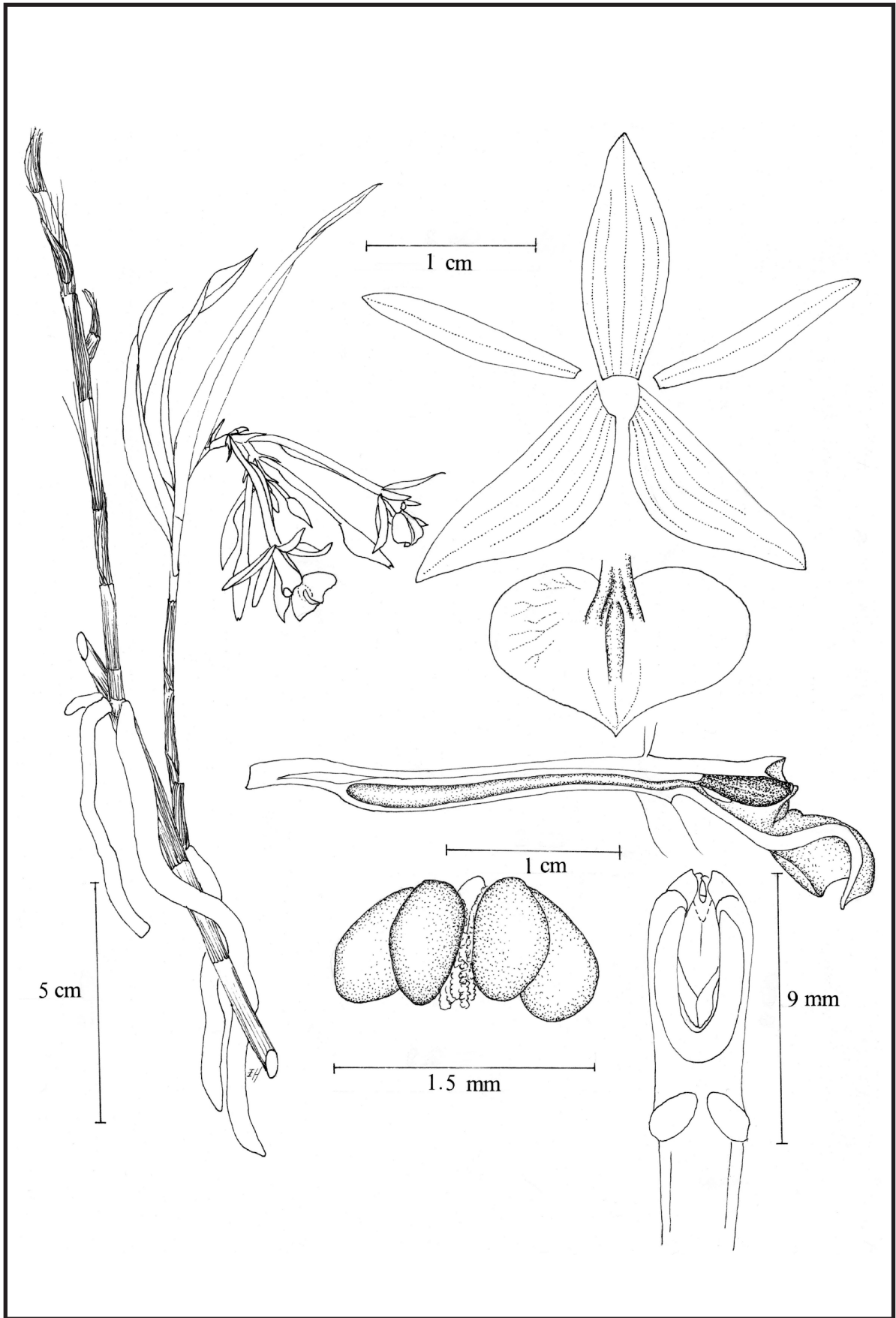


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ICONES ORCHIDACEARUM 15(1). 2015. Plate 1540



EPIDENDRUM MORGANII Dodson & Garay

EPIDENDRUM MORGANII Dodson & Garay, in C. H. Dodson & P.M. Dodson (eds.), *Icon. Pl. Trop.* 4: pl. 381. 1980.

Type: ECUADOR: El Oro: above Viscaya gold mine, 2 km above Zaruma, alt. 1250-1500 m, flower cult. 10 July-18 August 1980, **Calaway H. Dodson, A. Perry and Pete Morgan 9333**. Holotype: SEL! Clonotypes: El Oro: Piñas, received from SEL, 15 IV 1981, prepared 16 IV 1981 [Calaway H. Dodson, A. Perry and Pete Morgan 9333] "*Morgan*"* sub **Hágsater 6586**, spirit, AMO! (Illustration and photo voucher). Ibid. pressed cult. 20 XI 1982, "*Morgan*" sub **Hágsater 6586**, AMO! Ibid. pressed cult. 10 V 1986, "*Morgan*" sub **Hágsater 6586**, QCNE! Ibid. pressed cult. 30 IV 1989, "*Morgan*" sub **Hágsater 6586**, AMO! Ibid. pressed cult. 21 V 1990, "*Morgan*" sub **Hágsater 6586**, MO! QCA!

Epiphytic, sympodial, climbing, erect **herb**, to 45 cm tall, each new stem originating from a sub-apical internode of the previous stem. **Roots** 2-3 mm in diameter, produced from the base of the initial stem, and the base of some of the successive stems, fleshy, thick, white. **Stems** 8-22 x 0.3-0.6 cm, cane-like, simple, terete, thin, erect, straight, the basal 2/3 covered by non-foliar sheaths 6-20 mm long, tubular, minutely striated. **Leaves** 3-6, aggregate towards the apex of the stem, similar in size and shape, membranaceous, alternate, articulate; sheath 0.6-1.8 x 0.4-0.6 cm, tubular, minutely striated; blade 10.5-15 x 1-1.5 [3] cm, narrowly elliptic, short-acuminate, margin entire. **Spathaceous bract** lacking. **Inflorescence** 5-11 cm long, apical, flowering only once, racemose, arching, laxly flowered; peduncle, thin, laterally compressed, ancipitose, straight, occasionally provided in the middle with a bract, 20 mm long, linear-lanceolate, long-acuminate. **Floral bracts** 4-11 mm long, much shorter than the ovary, narrowly triangular, long-acuminate, amplexicaul. **Flowers** 5-24, produced successively, 1-3 open at any time, resupinate, green, the lip tinged with purple-brown; fragrance sweet, during morning hours. **Ovary** 22-33 mm long, terete, thin, slightly inflated along the apical 2/3, unornamented. **Sepals** 13-18 x 5-6.5 mm, spreading, free, glabrous, narrowly-ovate, acute, 5-veined, margin entire, spreading; lateral sepals oblique. **Petals** 12-16 x 1.7-2.3 mm, spreading, free, linear-lanceolate, acute, 1-veined, margin entire, spreading. **Lip** 10-13 x 10-16 mm, united to the column, entire, convex, widely cordiform, apiculate, margin entire, spreading; bicallose, the calli laminar, low, divaricate; the disc with a inter calli rib which disappears before reaching the apex of the lip. **Column** 9-10 mm long, straight, thin at the base, gradually widening along the apical half. **Clinandrium-hood** short, margin entire. **Anther** not seen. **Pollinia** 4, sub-obovoid, somewhat laterally flattened. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, half as long as the stigmatic cavity. **Nectary** penetrating 2/3 of the ovary, slightly dilated at the base, unornamented. **Capsule** pedicel and apical neck slender, floral parts persistent.

OTHER SPECIMENS: ECUADOR: El Oro: Zaruma; Parroquia Malvas, 1200 m, 28 XI 1988, pressed cult. 31 VIII 1989, *Roman sub Hágsater 9588*, AMO x2! Ibid. pressed cult. 26 I 1992, *Roman sub Hágsater 9588*, AMO! Viscaya, above gold mine near Zaruma, 1250-1500 m, 24 IX 1980, *Dodson 10540*, SEL! 3 km NW of Zaruma, 1250-1500 m, 21 IV 1989, *Dodson 17976*, MO! 3.7 km NW of junction of old and new roads Piñas to Sta. Rosa, 1100 m, 20 IV 1989, *Dodson 18006*, MO! Road from Paccha del Inca to Pasaje, 1800 m, 23 V 1988, *Hirtz 3867*, AMO! MO!

OTHER RECORDS: ECUADOR: Imbabura: Lita-San Lorenzo, 8 IX 1999, *Portilla sub Hágsater 12266*, spirit, [probably El Oro, fide Hágsater & Dodson, 1999].

DISTRIBUTION AND ECOLOGY: Known only from the Pacific slope of the Andes in southern Ecuador, in the province of El Oro. Epiphytic at 1100-1800 m altitude. Flowering from April to November.

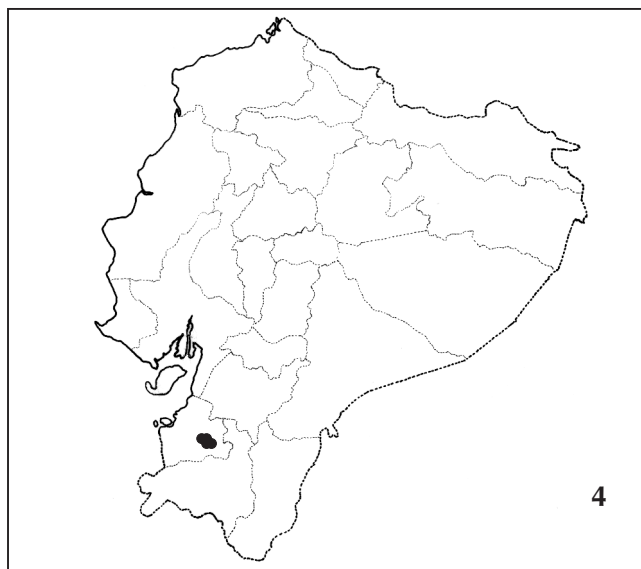
RECOGNITION: *Epidendrum morganii* belongs to the Arbuscula Group which is characterized by the erect habit with successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, roots produced generally only from the base of the primordial stem, and the Incomptum Subgroup which has a short apical inflorescence with fleshy yellowish to green to violet-green to black flowers with short ovaries, the lip entire to 3-lobed. This species is recognized by the short, few-flowered inflorescences, successive, green flowers tinged with purple-brown, sepals 13-18 mm long, the lip widely cordiform, apiculate, with two low, laminar, divergent calli. *Epidendrum ecostatum* Pabst, described from Brazil, has similar but smaller flowers, and the lip lacks any calli. *Epidendrum jamaicense* Lindl. also has an inflated nectary, but the lip is reniform, with the apex rounded and somewhat emarginate, revolute in natural position, and the lateral sepals are aristate. *Epidendrum prietoi* Hágsater has been described from the same general area of Ecuador, but that species as a clearly 3-lobed lip.

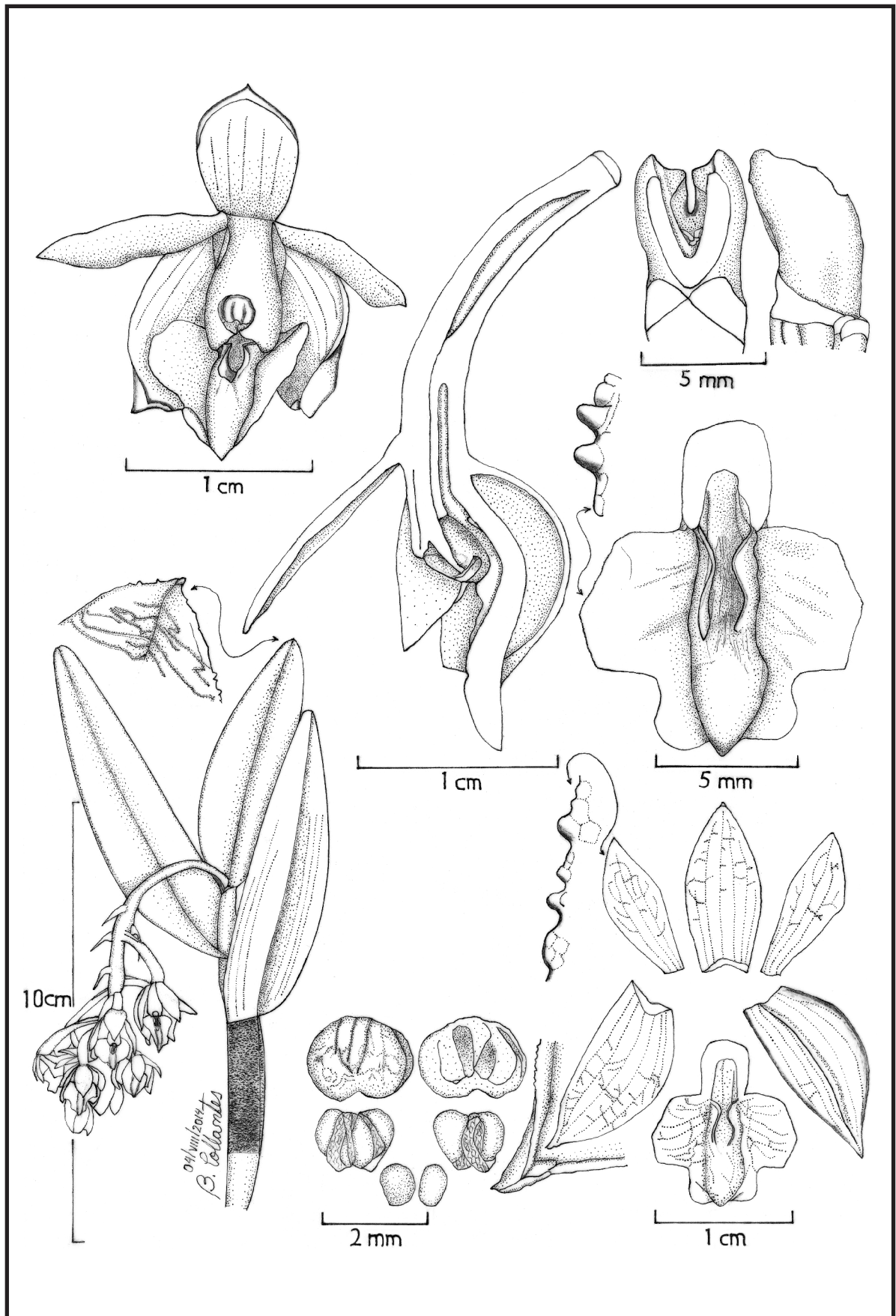
***NOTE:** The original collection was a plant collected by *Calaway H. Dodson, A. Perry and Pete Morgan 9333*, and cultivated at the Selby Botanical Gardens. The holotype was prepared from that cultivated plant in August 1980. On April 15, 1981, Hágsater received a division of the plant from the Selby Botanical Gardens, which was then labeled as *P. Morgan sub Hágsater 6586*, and further cultivated in Mexico City, with several specimens prepared over the years; these specimens are here considered as clonotypes.

CONSERVATION STATUS: DD. Data deficient. Apparently locally common.

ETYMOLOGY: In honor of Pete Morgan, who participated in the collection of the type.

REFERENCE: Dodson, 1999, *Orchidaceae*, in Joergensen, P.M. & S. León Yáñez (eds.), *Catalogue of the Vascular Plants of Ecuador*, *Monogr. Syst. Bot. Missouri Bot. Gard.* 75: 630-775. Hágsater, E., 2004, *Epidendrum prietoi* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, *Icon. Orchid.* 7: t. 779.





EPIDENDRUM MORMONTOYI Collantes & Hagsater

EPIDENDRUM MORMONTOYI Collantes et Hągsater, *sp. nov.*

Type: PERU: Cusco: Prov. Machu Picchu: Santuario Hist3rico de Machu Picchu, Huiñay Huayna, ca. 2700 m, 10 noviembre 2008, **Carmen Soto & Rolando Mormontoy 146**. Holotype: USM! (illustration voucher; digital image of pretype, plant and flowers, AMO! photo voucher). Isotype: CUZ! (digital image AMO!).

Similar to *Epidendrum inamoenum* Kraenzl. but the plants sympodial, stems non-branching, the flowers larger, floral segments acute, and the lip proportionately slightly longer than wide, lateral lobes of the lip transversely and asymmetrically pentagonal. Epiphytic and terrestrial, caespitose, sympodial **herb**, 50-80 cm tall. **Roots** basal, thick. **Stems** 40-80 x 1 cm, simple, cane-like, sub-terete, slightly laterally compressed, erect. **Leaves** numerous, coriaceous, distichous, articulate; sheaths 3.2 cm long, tubular, minutely rugose; blade 6.5-7.5 x 1.9-2.1 cm, ovate-oblong, obtuse, minutely sub-mucronate, margin entire, though minuscule and irregular dentate at the apex. **Spathe** lacking. **Inflorescence** 4.5 cm long, apical, racemose, arcuate-nutant, densely many-flowered, flowering only once, peduncle 2.2 x 0.4 cm, complanate, slightly ancipitose. **Floral bracts** 5-10 mm long, the lower ones 1/3 de length of the ovary, progressively shorter, ovate-triangular, aristate, embracing. **Flowers** 13, nearly all open at one time, except for the apical bud, flowers naturally spreading, 2 cm in floral diameter, resupinate; sepals, petals and lip light green, calli creamy green, surrounded by a light brown suffusion; fragrance not registered. **Ovary** 18 x 3 mm, terete, base somewhat thin, slightly thickened towards the apex, not inflated, smooth, unornamented. **Sepals** free, spreading, concave, glabrous, margin entire; dorsal sepal 14 x 6.5 mm, ovate-elliptic, acute, 5-veined; lateral sepals 15 x 7 mm, oblique, hemi-ovate, acute, conspicuously mucronate due to the end of the dorsal keel produced along the apical half of the sepals, 6 veined, branching near the apical half. **Petals** 11 x 4 mm, spreading, free, obliquely obtrullate, acute, 3-veined, the veins branching above, margin entire, spreading, minutely papillose towards the apex. **Lip** 10.5 x 8 mm, united to the column, deeply 3-lobed, many-veined with anastomosis; bicallose, the calli somewhat sigmoid, conspicuously laminar, with a channel at the base with fine irregular longitudinal striations of the disc between the calli, turning into a wide, low, fleshy rib, conspicuously liguliform, that runs the length of the lip and ends in a wide mucro in the apical sinus; lateral lobes 5 x 4 mm, transversely and asymmetrically pentagonal, external margin minutely papillose; mid-lobe 3 x 5 mm, transversely quadrate, apex somewhat bilobed, the lobes rounded, with a prominent triangular mucro in the sinus. **Column** 7 x 4 mm, short, robust, barrel-shaped, sub-arcuate, with a pair of apical tooth-like wings. **Clinandrium-hood** short, margin entire. **Anther** transversely reniform, 4-celled. **Pollinia** 4, sub-equal, widely obovoid to ellipsoid, flat on one side, convex on the other. **Rostellum** apical, slit (long-oblong). **Lateral lobes of the stigma** 1/5 the length of the stigmatic cavity. **Nectary** penetrating 1/5 of the ovary, smooth, tubular towards the base, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Cusco: Santuario Hist3rico de Machu Picchu, Phuyupata, *Epidendrum sp.*, photo J. Sparshatt, (Christenson, 2003). *Epidendrum sp.*, photo, pg. 137, fig. 45 (Collantes et al., 2007).

DISTRIBUTION AND ECOLOGY: Known only from southern Peru, Cordillera Oriental of the Andes, Province of Urubamba, in the Santuario Hist3rico de Machu Picchu, epiphytic and terrestrial at ca. 2700 m altitude. Flowering in November.

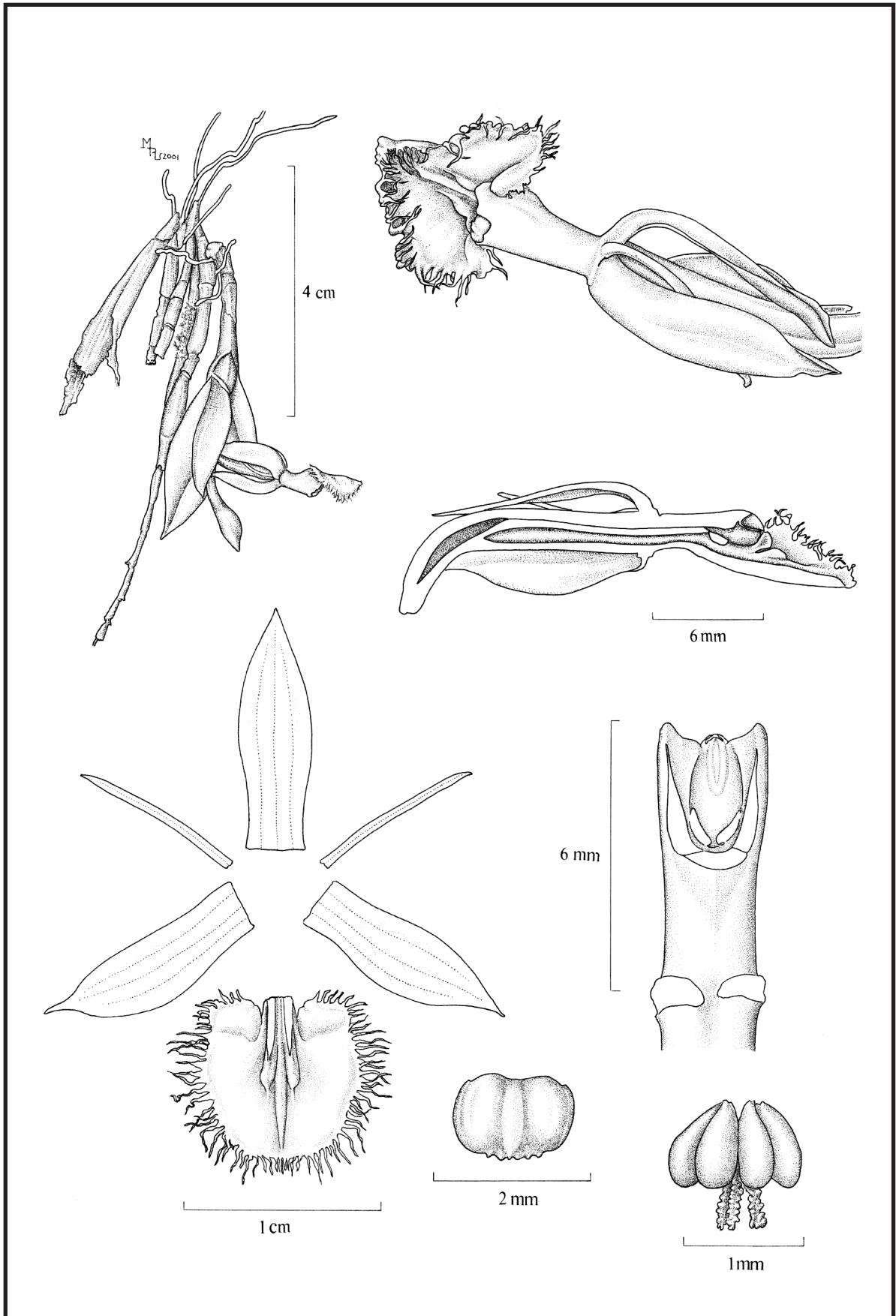
RECOGNITION: *Epidendrum mormontoyi* belongs to the Andean Group, Renilabium Subgroup which is characterized by the tall plants, monopodial habit, generally large, bilobed leaves, racemose inflorescence, entire or 3-lobed lip with a channel at the base of the disc between the calli; but differs in having non-branching stems with a sympodial habit, and acute leaves. The species is recognized by the simple, cane-like stems, arching nutant racemose inflorescence, deeply 3-lobed lip, pale green flowers, suffused with brown around the laminar calli; bicallose, the calli somewhat sigmoid, conspicuously laminar, with a channel at the base of the disc between the calli, turning into a wide, low, fleshy rib, conspicuously liguliform, that runs the length of the lip and ends in a wide mucro in the apical sinus; lateral lobes transversely and asymmetrically pentagonal, external margin minutely papillose; mid-lobe transversely quadrate, apex somewhat bilobed, the lobes rounded. *Epidendrum inamoenum* Kraenzl. is very similar, though the plants are monopodial and branching, flowers are similarly colored and shaped, but smaller, the sepals are 9-10 mm long, petals 7-8 x 3-4 mm, and column 6 mm long, the lip is proportionately broader than long, and the floral segments apically obtuse. *Epidendrum x renipichincae* Hągsater & E. Santiago also has a 3-lobed lip, somewhat larger flowers, sepals 16-18 mm long, and creamy-yellow, the lateral lobes of the lip are dolabriform, margin minutely erose.

CONSERVATION STATUS: DD. Data deficient,

ETYMOLOGY: In honor of Rolando Mormontoy L3pez (1980-), an efficient and conservation-minded keeper of the Ministry of Culture, Santuario Hist3rico de Machu Picchu, for providing the material for the description of this species and other records from the Santuario Hist3rico de Machu Picchu.

REFERENCES: Christenson, E., 2003, Galería de Orquídeas, *Epidendrum sp.*, **Manual de Orquídeas del Santuario Hist3rico de Machu Picchu**, Profonampe, Lima, Perú. Collantes, Benjamín, Carmen Soto & José Koechlin, 2007, **Orquídeas en Inkaterra Machu Picchu Pueblo Hotel**, pg. 137, fig. 45. Inkaterra Asociación, Lima, Perú. Hągsater, E., & E. Santiago, 2009, *Epidendrum inamoenum*, in E. Hągsater & L. Sánchez S., (eds.), **The Genus Epidendrum**, Part 8, **Icon. Orchid.** 12: t. 1255. Hągsater, E., & E. Santiago, 2009, *Epidendrum x renipichincae*, in E. Hągsater & L. Sánchez S., (eds.), **The Genus Epidendrum**, Part 8, **Icon. Orchid.** 12: t. 1284.





EPIDENDRUM MORONENSE Dodson & Hágsater

EPIDENDRUM MORONENSE Dodson & Hágsater, *Icon. Pl. Trop.* ser 2, 5: pl. 476. 1989.

Type: ECUADOR: Zamora-Chinchipec, region of Zamora, [hort, Mario Jiménez, Zamora], 700-1200 m, 5 February 1987, *Calaway H. Dodson, Piedad Marmol de Dodson & Dennis D'Alessandro 16938*. Holotype: QCNE! Isotype: MO!

Epiphytic, sympodial, pendent **herb**, 5-8 cm tall. **Roots** scarce, from the base of the stems, thin, fleshy, white, ca. 1 mm in diameter. **Stems** 2-4 x 0.3-0.4 cm, cane-like, laterally compressed, produced from the basal internodes of the previous stem, straight, thickened, green tinged with purple; partly covered when young by a pinkish, thin non-foliar, striated sheath. **Leaves** 1-4, apical, aggregate towards the apex of the stem; sheath tubular, striated, short; blade 4-10 x 1-3 cm, lanceolate-elliptic, somewhat falcate, acute, articulate, dorsal surface green, the margin purple, ventrally purple-red, margin entire, spreading. **Spathaceous bract** 0.8-2 cm long, single, conduplicate, narrowly elliptic, acute. **Inflorescence** up to 3 cm long without the flowers, apical, distichous, short, lax, few-flowered; peduncle sub-terete, very short, rachis sinuous, the flowers always turning away from the substrate (trunk of tree), to the same side, and thus secund, the ovary turned over 90° so that the flower produce from the left side of the rachis is oriented slightly towards the right and vice-versa. **Flowers** 3-7, successive, 1-2 open at a time, non-resupinate, fleshy, lustrous, greenish, to pinkish or buff, the lip white, sometimes tinged with pale pink, column green, anther white; fragrance not registered. **Floral bracts** much shorter than the ovary, triangular, acute, amplexicaul. **Ovary** 12 x 2.5 mm, terete, thick, not inflated, smooth. **Sepals** 12.5-15 x 3.6-4.0 mm, strongly reflexed, lanceolate-elliptic, somewhat constricted near the base, acute, with a low dorsal keel, 3-veined, margin entire, spreading, the **lateral** 11.2-11.7 mm long, sepals slightly shorter, apiculate. **Petals** 8-10 x 0.7-1 mm, strongly reflexed, free, filiform, acute 1-veined, margin entire, spreading. **Lip** 8.2-12 x 10-12 mm, united to the column, un-lobed, sub-orbicular to reniform, base cordate, margin deeply laciniate; bicallose, the calli laminar, long, reaching the middle of the lip, disc with a narrow, fleshy rib, running nearly to the apex of the lip. **Column** 6 mm long, straight, apex rounded. **Clinandrium-hood** reduced, margin entire. **Anther** wide, reniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granulose, longer than the pollinia; viscidium semi-liquid. **Rostrum** apical, slit. **Nectary** deep, penetrating over half of the ovary, not inflated, smooth. **Lateral lobes of the stigma** prominent, about half the length of the cavity. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR*: **Loja:** Santiago, hort. Ecuagenera, 8 III 2003, *Medina sub Hágsater 13882*, (spirit), AMO! **Morona-Santiago:** km 59, Méndez to Morona, 20 XI 1989, *Dodson 17771*, MO! Aguacate, 1400 m, hort. Ecuagenera, 13 XI 2001, *Portilla 3002 sub Hágsater 12375*, AMO! (Illustration and photo voucher). **Zamora-Chinchipec:** Zamora, 1000 m, IX 1983, *D'Alessandro 324*, MO! Cordillera del Condor, [Yantzaza] between Zamora and Gualaquiza, 800-1300 m, 6 VI 1987, hort Río Palenque Science Center 5 VI 1988, *Hirtz sub Dodson 17438*, MO! Cordillera del Condor, Zumbi-Paquiza, 1400 m, 18 VII 1986, *Embree 95*, MO!

OTHER RECORDS: ECUADOR: Hort. Canada, 27 X 2005, *Light s.n.* digital image, AMO! Hort. California, *Dan Newman s.n.*, digital image, AMO! **Morona-Santiago:** Chigüinda, *Hirtz 7480*, digital image, AMO!

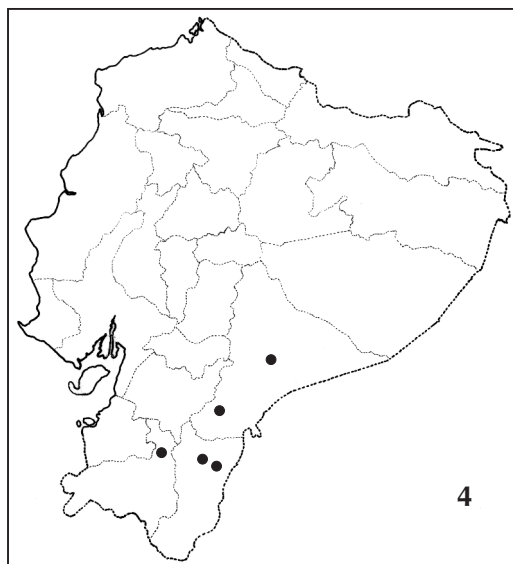
DISTRIBUTION AND ECOLOGY: Known only from southeastern Ecuador, in the basin of the Río Zamora, on the slopes of the Cordillera Oriental of the Andes and the Cordillera del Condor, at 800-1400. Epiphytic in wet forests, Flowering from June to November, February.

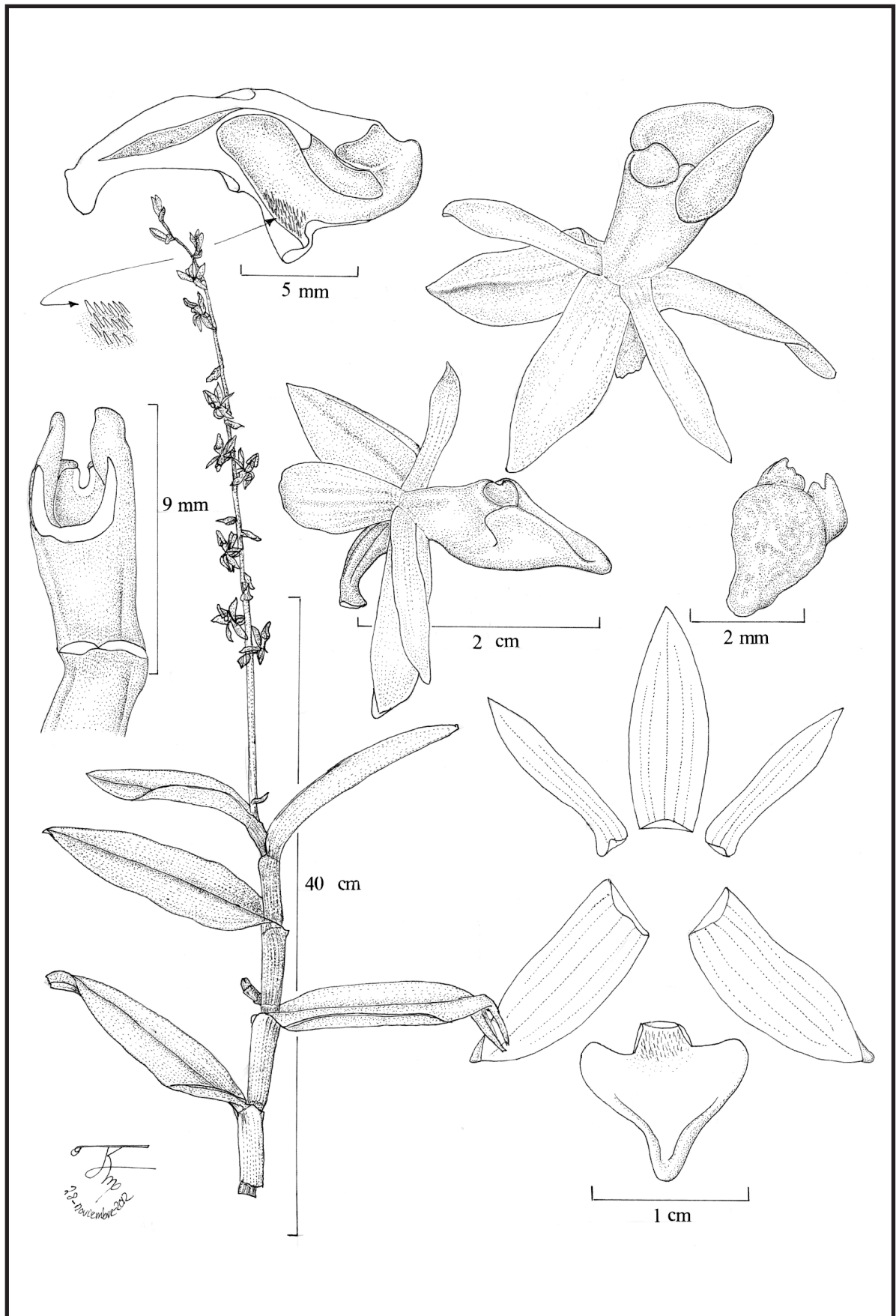
RECOGNITION: *Epidendrum moronense* belongs to the Moronense Group which is characterized by the caespitose habit with thickened stems, with 1-4 fleshy, coriaceous leaves, the inflorescence apical, distichous, with successive, non-resupinate flowers, the lip un-lobed, margin fimbriate, bicallose. The species is recognized by the thickened stems 4 cm long, 1-4, lanceolate elliptic leaves, non-resupinate flowers, greenish, to pinkish or buff, the lip white, sometimes tinged with pale pink, column green, anther white, strongly reflexed sepals and petals nearly as long as the ovary, and the lip is reniform to sub-orbicular, with the margin deeply laciniate. *Epidendrum ruizlarreanum* D.E.Benn. & Christenson a single, linear leaf, has white, concolor flowers, spreading sepals, petals parallel to the column, the oblong-ovate, un-lobed lip with the margin fimbriate, high, laminar calli, and 3 narrow ribs, the reniform anther is truncate.

***NOTE:** Collection *Hirtz 2036* cited by Dodson (1999) as a voucher for this species, is the type collection of *Epidendrum brachyanthum* Hágsater & Dodson (Hágsater & Dodson 2004).

ETYMOLOGY: In reference to the province of Morona-Santiago, where the species has been collected.

REFERENCES: Dodson, C. H., 1999. Orchidaceae in Jørgensen, P. M., & S. León-Yañez (eds.), Catalogue of the Vascular Plants of Ecuador, *Monogr. Syst. Bot. Missouri Bot. Gard.* 75: 663. Dodson, C. H., 2001. Photograph 579, *Epidendrum moronense*, *Native Ecuadorian Orchids* 2: 289. Hágsater, E., & C. H. Dodson, 2004. *Epidendrum brachyanthum* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 4, *Icon. Orchid.* 7: t. 712.





EPIDENDRUM MUNCHIQUENSE Hågsater, E.Santiago & García-Revelo

Plate 1544

EPIDENDRUM MUNCHIQUENSE Hágsater, E. Santiago et García-Revelo, *sp. nov.*

Type: COLOMBIA: Cauca: Mun. El Tambo, Parque Nacional Munchique (por Las Juntas), 1730-1850 m, 5 Mayo 1984, **Linda Albert de Escobar, José I. Santa & Francisco Roldán 4373**. Holotype: MO! (illustration voucher).

Similar to *Epidendrum oxycalyx* Hágsater & Dodson, but the flowers somewhat smaller, laxly distributed along the elongate rachis, sepals and petals with acute apex, column thick, with a wide nectary and the lip deltate, the base sub-truncate.

Terrestrial or lithophytic, monopodial, branching **herb** ca. 93-100 cm tall. **Roots** from the base of the main stem, 2.7 mm in diameter. **Stems** branching when mature, cane-like, terete, erect, straight, the primary stem 55-75 x 0.7-1.5 cm, branches 3.25-22 x 0.5-1.4 cm. **Leaves** numerous on the primary stem, apparently distributed throughout, articulate, alternate, partly spreading; sheath 18-48 mm long, tubular, minutely striated, rugose; blade of the primary stem 8.5-18 x 2.2-4 cm; of the branches 7-13 x 2-4 cm, narrowly elliptic, acute or sub-acute, margin entire, slightly revolute. **Spathe** lacking. **Inflorescence** 25-40 cm long, apical, racemose, erect, flowering only once, laxly few-flowered; peduncle 4.0-4.3 cm long, terete, erect, straight, provided in the middle with a bract 7-10 mm long, widely triangular, acute; rachis 33-34 cm long, terete, gradually thinner towards the apex. **Floral bracts** 6-13 x 4-8 mm, prominent, slightly longer than the ovary, gradually diminishing in size towards the apex of the rachis, triangular, acute, amplexicaul. **Flowers** 19-21, simultaneous, non-resupinate, fleshy, scarlet, turning grayish brown after extracting the pollinia; without fragrance. **Ovary** 5-7 mm long, terete, striated longitudinally, not inflated. **Sepals** 14-18 x 5-8 mm, free, spreading, acute, 5-veined, margin entire, spreading; dorsal sepals elliptic, lateral sepals oblong-elliptic, slightly oblique, minutely apiculate, with a low dorsal keel. **Petals** 14-18 x 2.5-2.8 mm, free, spreading, oblong, acute, 3-veined, margin entire, spreading. **Lip** 9.3-14 x 6.3-10.6 mm, united to the column, very fleshy, entire, deltate, the base sub-truncate, apex sub-obtuse; ecallose, without ribs, base pubescent, embracing the apex of the column without covering it, margin entire, spreading. **Column** 8-9 mm long, straight, base thin, much thickened at the apex, with a pair of apical, lateral, rounded wings. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex obtuse, short. **Pollinia** 4, obovoid, somewhat laterally compressed; caudicles shorter than the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** shallow, without penetrating the ovary, wide throughout, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Cauca: PN Munchique, El Tambo, vereda La Romelia, 2600 m, 22 VIII 1993, *Barbosa 8545*, COL! MA! El Tambo: vereda 20 de Julio camino a la Cabaña de la UAS PNN al 20 de Julio, 2000-2200 m, 13 X 1995, *Lozano 7121*, COL! El Tambo: PN Munchique, 2600 m, 24 IV 1979, *Morales 131*, COL! PN Munchique, El Tambo, vereda La Romelia, Quebrada charco azul, 2570 m, 20 VII 1993, *Velayos 6957*, COL! MA! **Valle del Cauca:** Mun. El Cairo, Corregimiento El Boquerón, Cerro El Inglés, 2150 m, 28 XII 2007, *Arévalo 795*, COL! Mun. San José del Palmar, Alto de las Tangaras, Reserva Natural Cerro El Inglés, 2175 m, 13 VII 2011, *García-Revelo 30*, CUCV! (photo voucher).

OTHER RECORDS: None seen.

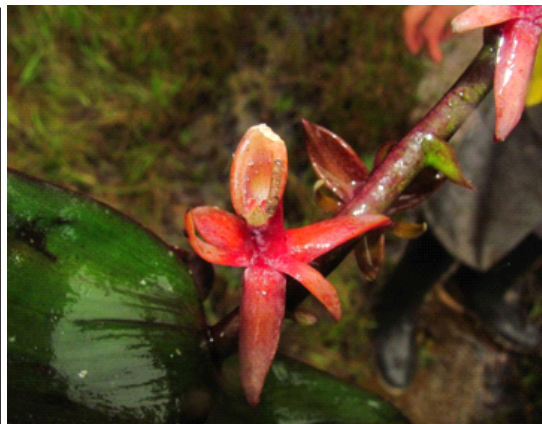
DISTRIBUTION AND ECOLOGY: Presently known only from the Cordillera Occidental in southern Colombia in the Departments of Cauca and Valle del Cauca, terrestrial at 1730-2600 m altitude. Flowering from May to December.

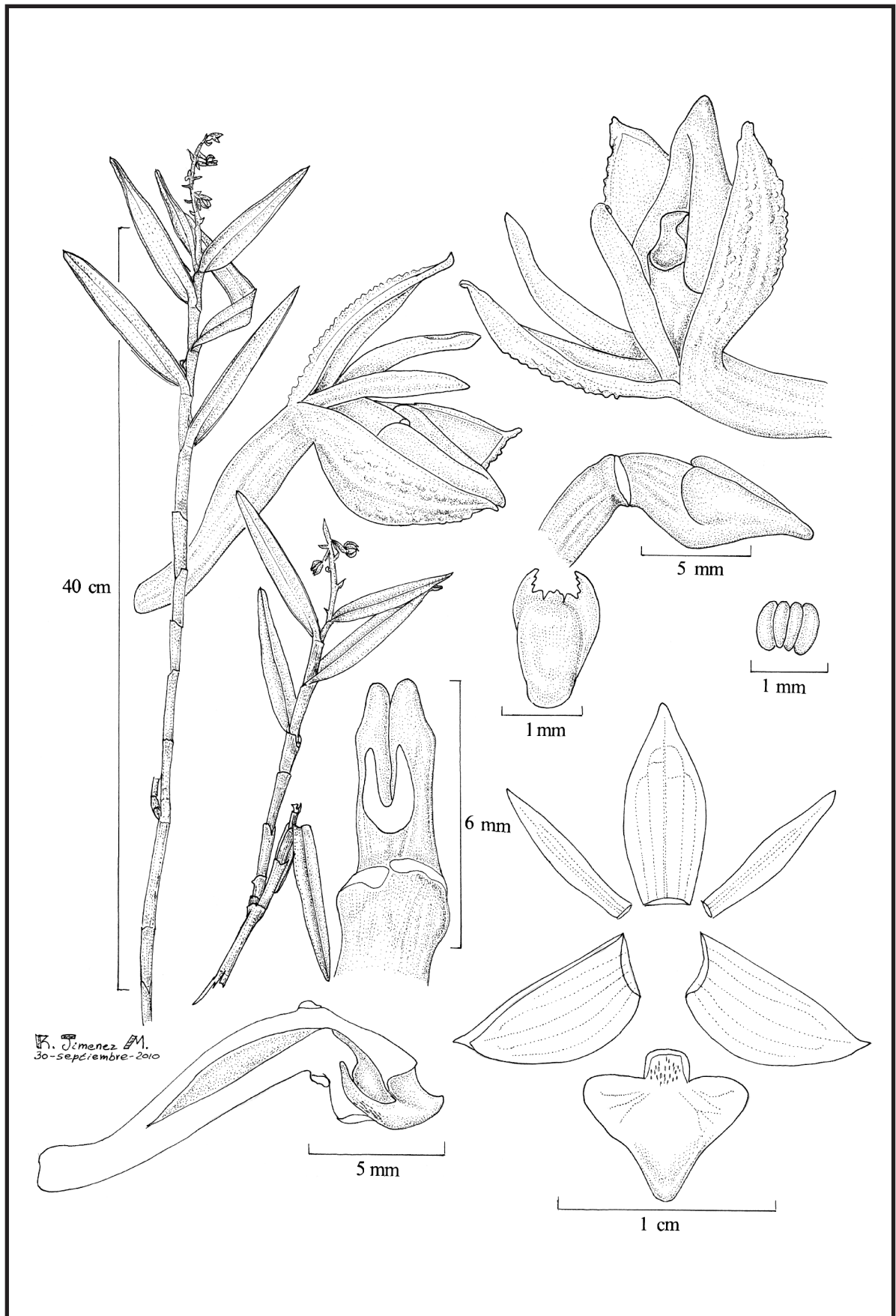
RECOGNITION: *Epidendrum munchiquense* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the elongate inflorescence (to 40 cm long), erect and few-flowered, the flowers simultaneous, laxly distributed throughout the rachis, sepals and petals 14-18 mm long, apex acute, nectary wide throughout. *Epidendrum macrostachyum* Lindl. has a pyramidal, many-flowered inflorescence, densely distributed, successive flowers, sepals 11.0-11.5 mm long, the apices obtuse, and the nectary narrow throughout. *Epidendrum oxycalyx* Hágsater & Dodson has densely aggregate flowers throughout the rachis, sepals 15-23 mm long, apex acuminate, nectary narrow and the lip triangular with the base deeply cordate.

CONSERVATION STATUS: DD. Data deficient. Found in the Parque Nacional Natural Munchique.

ETYMOLOGY: In reference to the Parque Nacional Natural Munchique, west of Popayán, Cauca, Colombia, on the Cordillera Occidental of the Andes, where the species has been collected several times. The park was created in 1977 and covers 440 km² ranging from 600 to 3100 m altitude.

REFERENCES: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum oxycalyx* in Hágsater, E., & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 169. Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in Hágsater, E., & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1454.





EPIDENDRUM NOTOSTACHYUM Hágsater & E.Santiago

Plate 1545

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

Type: PERU: Pasco: Distrito Oxapampa, Parque Nacional Yanachaga-Chemillén, Sector Chacos, 2471 m, 14 Enero 2004, **Rodolfo Vásquez, Abel Monteagudo, Antonio Peña & Rolando Francis 28928**. Holotype: AMO! (illustration voucher). Isotype: HOXA!

Similar to *Epidendrum macrostachyum* Lindl., but the flowers green or greenish white, floral bracts shorter, the sepals densely dorsally papillose, and the nectary very short, without penetrating the ovary.

Terrestrial, monopodial, branching herb ca. 45-100 cm tall. **Roots** 2-3 mm in diameter, basal, fleshy, thick. **Stems** the primary stem 33-85 x 0.4-0.7 cm; branches 12-20 x 0.4-0.55 cm; branching when mature, cane-like, base terete, slightly laterally compressed towards the apex, erect, straight. **Leaves** numerous on the primary stem (ca. 21 or more), distributed throughout the stems; 5-8 on the branches, distributed along the apical half of the stem, articulate, distichous, somewhat spreading in relation to the stem, green, lustrous; sheaths 10-50 x 4-8 mm, tubular, minutely striated, rugose; blade (of the primary stem) 7.5-15 x 1.6-2.2 cm; blades of the branches 4.5-10 x 0.8-1.5 cm; lanceolate, obtuse, margin denticulate towards the apex. **Spathes** lacking. **Inflorescence** 6.5-15 cm long, apical, racemose, flowering only once, flowers laxly distributed in a helicoid; peduncle 5-10 mm long, laterally compressed, straight; rachis 6-11 cm long, terete, thin, straight. **Floral bracts** 6-9 x 1.5-3 mm, small, shorter than the ovary (gradually diminishing in size towards the apex of the rachis), narrowly triangular, acute, amplexicaul. **Flowers** 11-30, simultaneous, non-resupinate, fleshy, green to greenish white; fragrance not registered. **Ovary** 5-7 mm long, terete, thin, slightly longitudinally striated, not inflated. **Sepals** 9.0-9.5 x 3-4 mm, green, partly spreading, dorsally papillose, acute, 5-veined, converging towards the apex, minutely apiculate, margin entire, spreading; dorsal sepal elliptic, lateral sepals hemi-ovate, oblique. **Petals** 8 x 1.5 mm, free, partly spreading, linear-oblancoleate, acute, 3-veined, margin entire, spreading. **Lip** 5.0-5.7 x 6.5-7.5 mm, united to the column, very fleshy (mainly towards the apex), entire, deltate, base truncate, apex rounded, ecallose, without ribs, cymbiform in natural position, embracing the apex of the column, without covering it, margin entire, spreading. **Column** 5 mm long, straight, thick, the apex directed slightly upwards, with a pair of prominent teeth that surpass the body of the column. **Clinandrium** reduced, margin entire. **Anther** 4-celled, ovoid, apex truncate. **Pollinia** 4, ovoid, similar in size and form. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** shallow, penetrating about 2/3 of the column, without penetrating the ovary, narrow. **Capsule** ellipsoid, 30-35 x 10-13 mm; pedicel 6-8 mm long; body 16-20 x 10-13 mm; apical neck 5-6 mm long.

OTHER SPECIMENS: BOLIVIA: Cochabamba: Chapare; along the road to Villa Tunari, 1500 m, 24 I 1980, *Luer 4938*, SEL! **La Paz:** Nor Yungas; 24 km NE of Unduavi on road to Yolosa Junction (Coroico), 3100 m, 29 II 1980, *Solomon 5151*, MO! 13.2 km NE (below) Chuspipata (16.5 km S of Yolosa), 2150 m, 19 VII 1982, *Solomon 8077*, NY! MO! SEL! U! **COLOMBIA: Norte de Santander:** Toledo, Puente Nuevo, vía Saravana, 26 II 1979, *Morales 84*, COL! **ECUADOR: Azuay:** Gualaceo, ca. 15 km E of Gualaceo on road to Limon, 3300 m, 2 VI 1981, *Madison 7521*, QCA! SEL! **Napo:** Guagra Urcu, near summit, 3150 m, 29 IX 1980, *Holm-Nielsen 27609*, AAU! **PERU: Cusco:** La Convención, Distr. Echarate, Llactahuacán, N. del Río Apurímac, NE de Pueblo Libre, S de la Cordillera de Vilcabamba, 1650 m, 14 VII 1998, *Baldeón 3011*, CUZ! USM! La Convención, Quellomayo-Lucumayo, 2650 m, 26 VII 1944, *Vargas 4517*, CUZ! Paucartambo, S. Pedro; Tambomayo, 1200 m, V 1970, *Vargas 21870*, CUZ! **Huánuco:** Carpish Pass, 84 km from Tingo María on highway to Lima, ca. 2750 m, 19 XI 1949, *Allard 21104*, US! Carpish, 2850 m, 15 VIII 1940, *Asplund 13134*, S! between Huánuco and Pampayacu, 13 I 1927, *Kanehira 334*, AMES! Road from Huánuco to Tingo María, north of Carpish Pass, 46.8 km NE of Huánuco, 2490 m, 6 XII 1981, *Plowman 11111*, USM! Dist. Chinchao, San Pedro Carpish, 2850 m, 29 VII 2003, *Trujillo 157*, HURP, SEL, MOL (spirit), AMO! (digital image and illustration). km 451 on Lima-Tingo María road, Carpish, ca. 2450 m, 2 VI 1981, *Young 522*, MO! NY! **Pasco:** Dist. Villa Rica; Comunidad Centro Bocaz (Abra Bocaz-San Lazaro), 1850 m, 31 V 2005, *Arias 423*, MO! Dist. Huancabamba; P.N. Yanachaga Chemillén, 2400 m, 19 I 2007, *Monteagudo 13638*, AMO! Ibid. quebrada diablo fuerte, trocha hacia la parcela Oso-Playa, 2398-2500 m, 23 VI 2008, *Monteagudo 16483*, USM! Dist. Oxapampa; camino hacia la antena de Chacos-Zona de Amortiguamiento, P.N. Yanachaga-Chemillén, 2360-2800 m, 27 IX 2005, *Ortiz 980*, MO! Dist. Chontabamba. Alto Gramazu al borde del río Machis, 2087 m, 20 XII 2007, *Rojas 4986*, AMO! Oxapampa; P.N. Yanachaga-Chemillén, Sector Chacos, 2219 m, 21 I 2004, *Vásquez 28827*, HOXA! MO! Ibid. 24 I 2004, *Vásquez 28921*, MO! Palmazu, Cooperativo Navarra, 2000 m, 5 VIII 1986, *Henk van der Werff 836*, SEL! Oxapampa; Chacos, 2700 m, 6 XI 2009, *van der Werff 23215*, AMO!

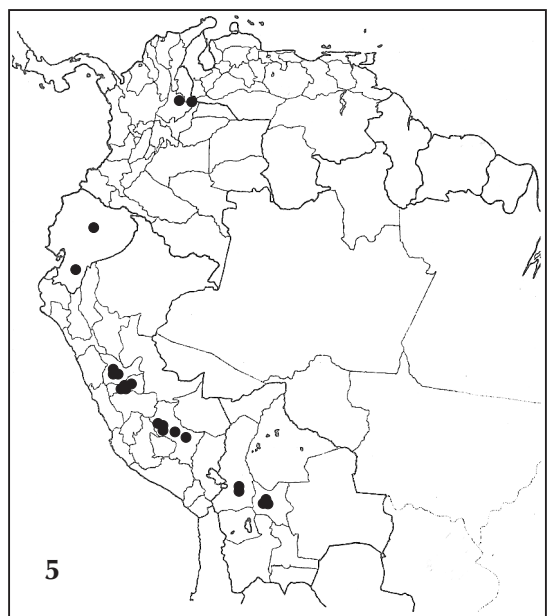
OTHER RECORDS: BOLIVIA: Cochabamba: Prov. Chapare, Cuesta del Sillar, km 105 Cochabamba-Villa Tunari, 1840 m, *Vásquez 142*, (Herb. Vasquezianum), illustration published as *Epidendrum macrostachyum*, (Vásquez & Dodson 1982). **COLOMBIA: Santander:** Surutá, Cachirí, *Ortiz-Valdivieso s.n.*, slide, AMO! **ECUADOR:** Without locality, *Medina s.n.*, digital image, AMO! (photo voucher).

DISTRIBUTION AND ECOLOGY: Along the upper slopes of the Cordillera Oriental, from Northern Colombia to western Bolivia; at 1500-3100 m altitude, terrestrial. Flowering from June to January.

RECOGNITION: *Epidendrum notostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the narrow, lanceolate leaves, 4.5-15 x 0.8-2.2 cm, floral bracts small; flowers green or greenish white, sepals dorsally papillose, anther ovoid with the apex truncate; nectary shallow, penetrating about 2/3 of the column, not the ovary. *Epidendrum borealistachyum* Hágsater & E.Santiago is vegetatively very similar, but the flowers lilac-white, apex of the column deep purple, nectary deep, penetrating 1/3 of the ovary. *Epidendrum palaciosii* Hágsater & Dodson has elliptic-lanceolate leaves, 5-12 x 2.3 cm; flowers are grayish lilac, sepals dorsally muricate, petals oblancoleate with the apex rounded, 3.5 mm wide. *Epidendrum macrostachyum* Lindl. has wider leaves, 1.4-3.5 cm wide; floral bracts are prominent, triangular-ovate, 8-18 mm long, flowers are black-brown, the color of ripe olives, sepals are dorsally glabrous. *Epidendrum microrigidiflorum* Hágsater has ovate-lanceolate leaves, apex acuminate, flowers are greenish yellow to cream-colored, sepals dorsally glabrous, and the lip is widely rhombic, with the base cuneate.

ETYMOLOGY: From the Greek νότος, southern, and στήθος, ear of corn, in reference to the southern distribution of this species within the range of the group, with inflorescences which are reminiscent of ears of corn and constitute the Macrostachyum Group. Most of the specimens first seen are from Bolivia and Peru, but later some specimens have been identified from northern Colombia and Ecuador.

REFERENCES: Hágsater, E., 2006, *Epidendrum microrigidiflorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 853. Hágsater, E., & C. H. Dodson, 1993, *Epidendrum palaciosii* in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 171. Hágsater, E., & E. Santiago, 2015, *Epidendrum borealistachyum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1505. Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part, 10, **Icon. Orchid.** 14: t. 1454. Vásquez C., R., & C. H. Dodson, 1982, as *Epidendrum macrostachyum* Lindl., **Icon. Pl. Trop.** 6: t. 532.



Authors: E. Hágsater & E. Santiago

Illustrator: R. Jiménez M.

Photo: H. Medina

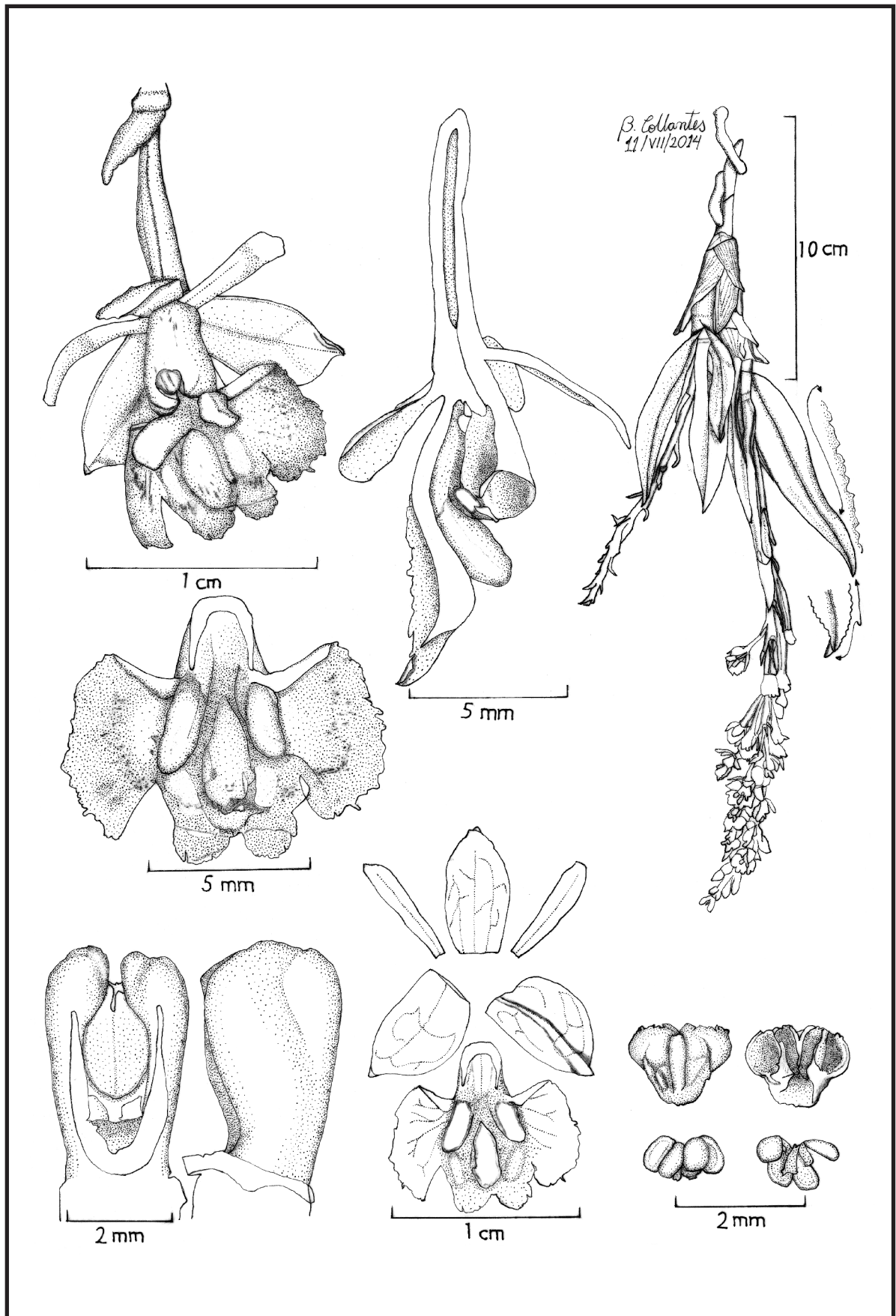
Editors: E. Hágsater & L. Sánchez S.

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ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1545



EPIDENDRUM OCHOAE Collantes & Hagsater

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

Type: PERU: Cusco: Prov. Urubamba: Dist. Machu Picchu: Santuario Histórico de Machu Picchu, "Bosque de Uncas"- sector del Camino Inca, ca. 3400 m, 21 julio 2013, **Daniel Aucayllo & Carmen Soto, Inkaterra Machu Picchu Pueblo Hotel 145**, Centro de Conservación *in situ*. Holotype: USM (illustration voucher, digital image of plant and flowers, AMO!), Isotype: CUZ! (Digital image AMO!).

Similar to *Epidendrum pachydiscum* Hágsater, but the plant pendent, lateral lobes of the lip widely dolabriform, and lip bicallose, the calli prominent, ellipsoid, laterally somewhat compressed, disc 3-carinate, the lateral ribs low, the mid-rib prominent.

Epiphytic, sympodial, caespitose, pendent **herb**, 11.5-26 cm long including the inflorescence. **Roots** 4 mm in diameter. **Rhizome** 1 cm long, short and pendent, covered by 5 sheaths 1-3.5 cm long, conduplicate, widely ovate, acute, scarious and evanescent. **Stems** 3.5 x 1 cm, thickened, forming a thick, homoblastic pseudobulb, terete, fusiform, of 3 internodes, green, minutely rugose, and brilliant. **Leaves** 3, articulate; 2, produced from the basal and middle internodes, and one from the apex of the pseudobulb; blade 4.5-8.8 x 1.5-1.9 cm, lanceolate, mucronate, coriaceous, green, underside minutely rugose, margin entire, crenate towards the apex. **Spathes** lacking. **Inflorescence** 11-20.5 x 0.3-0.35 cm, apical, racemose, flowering only once, pendent, densely many-flowered; peduncle 4.5 cm long, laterally compressed, ancipitose, straight, with nodes at the base and 2 bracts 1 cm long; rachis terete, straight and sulcate. **Floral bracts** 4-11 mm long, about 1/3 the length of the ovary, triangular, long-acuminate, dorsally granulose, yellow with irregular reddish dots. **Ovary** 8-15 mm long, thin, longitudinally striated, not inflated, green, sparsely dotted purple. **Flowers** 12-35, successive, opening from the base towards the apex of the inflorescence, resupinate, yellowish green; sepals dorsally with irregular pale purple dots; lip with irregular purple dots and blotches; calli with diffuse purple dots; mid-rib with irregular purple blotches; column dorsally with small and irregular purple blotches; fragrance not registered. **Sepals** partly spreading, free, margin entire; dorsal sepal 6.5 x 3.5 mm, oblong-elliptic, sub-obtuse, minutely mucronate, incurved, 3-veined with secondary veins; lateral sepals 6.5 x 4 mm, slightly incurved, widely hemi-ovate, sub-obtuse, mucronate, oblique, dorsally with a low keel towards the base, apically conspicuous, 1-veined with irregular anastomosis. **Petals** 6 x 1.5 mm, spreading, incurved, linear-oblancoleate, sub-obtuse, 1-veined, margin entire, spreading. **Lip** 7 x 10 mm, adnate to the column, deeply 3-lobed, base slightly cordate convex in natural position; bicallose, the calli prominent, ellipsoid, laterally somewhat compressed, disc 3-carinate, the lateral rib low, the mid-rib prominent, inter-callose, forming a fleshy, irregular, obovoid protuberance which nearly reaches the apical sinus; lateral lobes 3 x 6 mm, widely dolabriform, margin crenate-dentate, the posterior margin involute, otherwise spreading; mid-lobe 3 x 5 mm, transversely sub-trapezoid, deeply emarginate and thus bilobed, the lobes rounded. **Column** 4.3 x 2.7 mm, straight, slightly clavate, thick. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, foramen slit. **Lateral lobes of the stigma** ¼ the length of the stigmatic cavity. **Nectary** shallow, without penetrating behind the perianth, smooth. **Anther** widely pyriform, 4-celled. **Pollinia** 4, sub-equal, obovoid, laterally compressed, convex; caudicles short. **Capsule** 23 x 12 mm; pedicel 5 x 1.5 mm, body globose, 13 x 12 mm, apical neck 4 x 2 mm.

OTHER SPECIMENS: None seen.

OTHER RECORDS: PERU: Cusco; Santuario Histórico de Machu Picchu, Camino Inca, bosque, *Polylepis sp.*, ca. 3200 m, César Uchima *s.n.*, (pers. comm. 14 IX 2001), (digital image series, AMO!).

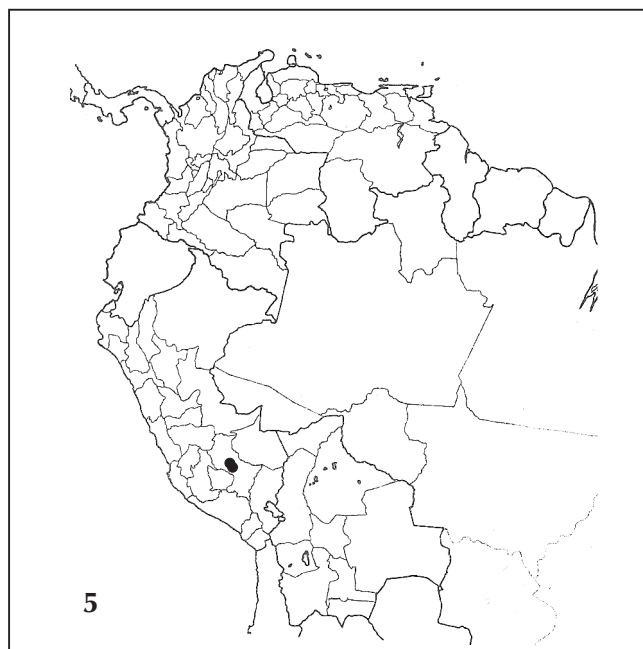
DISTRIBUTION AND ECOLOGY: Presently known only from the "Bosque de Uncas", and *Polylepis*, Camino Inca, Machu Picchu, Cusco, Peru, epiphytic on *Escallonia myrtilloides* L. f. (Tasta), and *Polylepis racemosa* Ruiz & Pav. (Queñua), at 3200-3650 m altitude. Flowering in July.

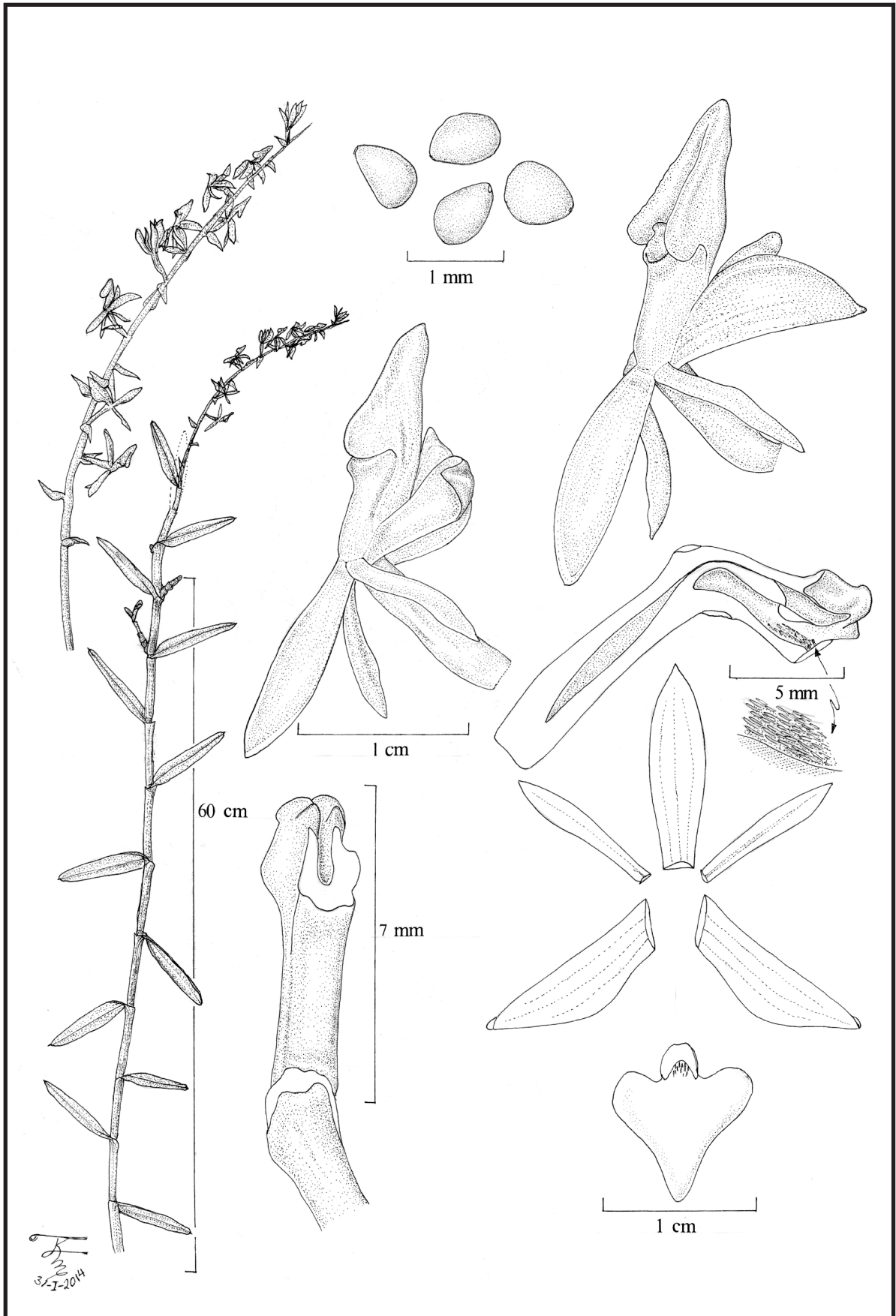
RECOGNITION: *Epidendrum ochoae* belongs to the Rupestre Group, which is characterized by the caespitose, sympodial plant, the pseudobulbous stems with 1-4 fully developed leaves toward the apex, and lack of spathes at the base of an erect, racemose or paniculate inflorescence, the lip ecallose or bicallose and with several fleshy thickened keels on the disc. The species is characterized by the epiphytic, pendulous, sympodial habit, the stem with a homoblastic pseudobulb, terete, constituted by 3 internodes, green, smooth, brilliant, the leaves lanceolate, mucronate, the lip deeply 3-lobed, with 2 prominent calli, upright, and with 3 prominent thickened ribs, the lateral ones in front of the calli, smaller than the mid-rib. *Epidendrum pachydiscum* Hágsater, described from Cusco Province, is overall very similar, though it has erect stems, the lip is ecallose, and the lateral lobes of the lip are much wider. *Epidendrum megalocoleum* Hágsater the entire lip, deeply emarginate and mucronate, ecallose, the disc with 3 well-defined, central keels, the lateral pair ending at about ¾ the length of the lip, the central keel starting at the middle of the lip and ending in the fleshy mucro. *Epidendrum excelsum* C. Schweinf. has smaller plants, narrower leaves, fewer flowers, an entire lip, with the margin deeply dentate, two calli at the base which are large but not upright, and the disc somewhat thickened into 3 very low ribs, but otherwise the habit is similar as well as the flowers.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Julio Gustavo Ochoa, a Biologist of the Ministry of Culture in Machu Picchu, a conservationist and for his contribution to the knowledge of the Flora of Machu Picchu. He brought this species to our attention, and photographed the live plant.

REFERENCES: Hágsater, E., 2004, *Epidendrum pachydiscum*, in E. Hágsater & L. Sánchez S. (eds.), The genus *Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 773. Hágsater, E., 2007, *Epidendrum megalocoleum*, in E. Hágsater & L. Sánchez S. (eds.), The genus *Epidendrum*, Part 6, **Icon. Orchid.** 9: t. 956. Santiago, E., & E. Hágsater, 2015, *Epidendrum excelsum* in E. Hágsater & L. Sánchez S. (eds.), The genus *Epidendrum*, Part 11, **Icon. Orchid.** 15: t. 1525.





EPIDENDRUM ODONTOSTACHYUM Hågsater & E.Santiago

Plate 1547

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

Type: PERU: Pasco: Dist. Oxapampa: Sector Abra-Villa Rica, 2365 m, 24 April 2004, **Rocio Rojas, J. Mateo & C. Rojas 2275**.

Holotype: MO! (Illustration voucher). Isotype: USM.

Similar to *Epidendrum oxycalyx* Hágsater & Dodson, but with linear-lanceolate leaves sparsely distributed throughout the stems, lax-flowered inflorescence, and the sepals short-acuminate, 12-13 mm long, and a tooth on each side of the apex of the column, in addition to the rounded wings.

Terrestrial or epiphytic monopodial, branching **herb**, about 100 cm tall. **Roots** not seen. **Stems** branching sub-apically when mature, cane-like, terete, erect, straight; the primary stem 70 x 0.5-0.8 cm, branches shorter, (only young branches seen). **Leaves** 13 on the main stem, 5-6 on the branches, laxly distributed, spaced along the stems, articulate, alternate, spreading; sheath of the primary stem 17-58 mm long, tubular minutely striated and rugose; blade 6-8 x 0.6-1.6 cm, linear-lanceolate, the apex obtuse, minutely apiculate, margin entire, slightly revolute. **Spathes** lacking. **Inflorescence** 20 cm long, apical, racemose, sub-erect, flowering only once, laxly few-flowered; peduncle 1.5 cm long, terete, erect, straight, rachis 18.5 cm long, terete gradually thinner towards the apex. **Floral bracts** 5-9 x 3-4 mm, slightly shorter than the ovary (gradually diminishing in size towards the apex of the rachis), triangular, acuminate, amplexicaul. **Flowers** 17, opening in successive, eventually all open at once, non-resupinate, fleshy, dark green with the lip purple-green, turning orange once pollinia are removed; fragrance not registered. **Ovary** 8-13 mm long, terete, longitudinally striated, not inflated. **Sepals** 12-13 x 3.5-4.5 mm, free, 3-veined, margin entire, spreading; dorsal sepal slightly reflexed, oblong-narrowly elliptic, apex obtuse, minutely apiculate, lateral sepals spreading, obliquely elliptic, the upper side straight, short acuminate, with a low dorsal keel. **Petals** 12 x 1.5 mm, free, slightly reflexed, linear, narrow, 1-veined, margin entire, spreading. **Lip** 9 x 9 mm, united to the column, very fleshy, especially towards the apex, entire, sub-deltate-cordiform, base cordate, apex obtuse; ecallose, without ribs, pubescent at the base, embracing the apex of the column without covering it completely, margin entire, spreading. **Column** 7-8 mm long, straight, the apex abruptly arching upwards, the apex with a tooth on each side in addition to the rounded wings. **Clinandrium-hood** reduced, upturned, margin entire. **Anther** not seen. **Pollinia** 4, ovoid, similar in size; caudicles not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, half as long as the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHERS PECIMENS: ECUADOR: Zamora-Chinchi: Cantón Zamora, 2120 m, 15 IV 2000, *Suin 597*, QCNE! **PERU: Cusco:** La Convención, Hda. Potrero, Sapan-Sachayoc, 2200 m, 5 III 1942, *Vargas 2532*, AMES! **CUZ!** **MO!** **Pasco:** Oxapampa, Dist. Huancabamba. Zona de amortiguamiento del P.N. Yanachaga-Chemillén, 2565 m, 25 VI 2006, *Monteagudo 12290*, MO!

OTHER RECORDS: PERU: Pasco: Parque Nacional Yanachaga-Chemillén, 25 IV 2004, *E. Becerra s.n.*, digital photo, AMO! (photo voucher).

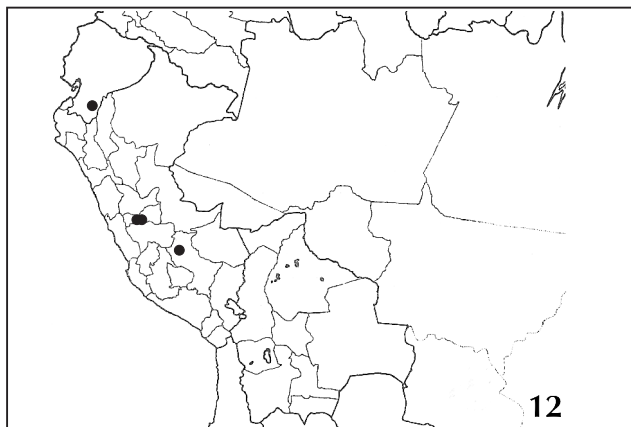
DISTRIBUTION AND ECOLOGY: Known from southern Ecuador to central Peru, along the Cordillera Oriental of the Andes, at 2120-2565 m altitude. Epiphytic or terrestrial in primary montane forest or on sand with abundant moss. Flowering from March to June.

RECOGNITION: *Epidendrum odontostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the sparsely spaced, linear-lanceolate (6-8 x 0.6-1.6 cm) leaves distributed throughout the stems, elongate, lax-flowered inflorescence, the flowers dark green with the lip tinged purple, sepals 12-13 mm long, and the apex of the column with a tooth and a rounded wing on each side of the apex of the column. *Epidendrum oxycalyx* has elliptic-lanceolate (5-17 x 1.2-4.5 cm) leaves closely spaced on the stem, a densely flowered inflorescence, flowers reddish brown to greenish brown, sepals 15-23 mm long, and the apex of the column with a pair of rounded wings. *Epidendrum munchiquense* Hágsater, E. Santiago & García-Revelo has narrowly elliptic leaves (7-18 x 2-4 cm), a similarly lax-flowered inflorescence, but the flowers are orange to wine-red with the ventral surface of the tepals grayish, sepals 14-18 mm long, and the column with a pair of rounded wings. *Epidendrum bangii* Rolfe has lanceolate leaves (5-14 x 1.5-2.4 cm), a much shorter (10-14 cm long), few-flowered inflorescence, flowers purple-green to greenish brown, sepals 14-18 mm long, and the apex of the column with a pair of rounded wings.

CONSERVATION STATUS: DD. Data deficient. Found in protected National Parks.

ETYMOLOGY: From the Greek *οδοντο* tooth, and *σταχυ*, ear of corn, in reference to the pair of teeth at the apex of the column of this species, which distinguishes it from other species of the Macrostachyum Group, which has inflorescences reminiscent of ears of corn.

REFERENCES: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum oxycalyx* in E. Hágsater & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, *Icon. Orchid.* 2: t. 169. Hágsater, E., E. Santiago & S. García Revelo, 2015, *Epidendrum munchiquense* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1544. Santiago, E., & E. Hágsater, 2015, *Epidendrum bangii* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1503.



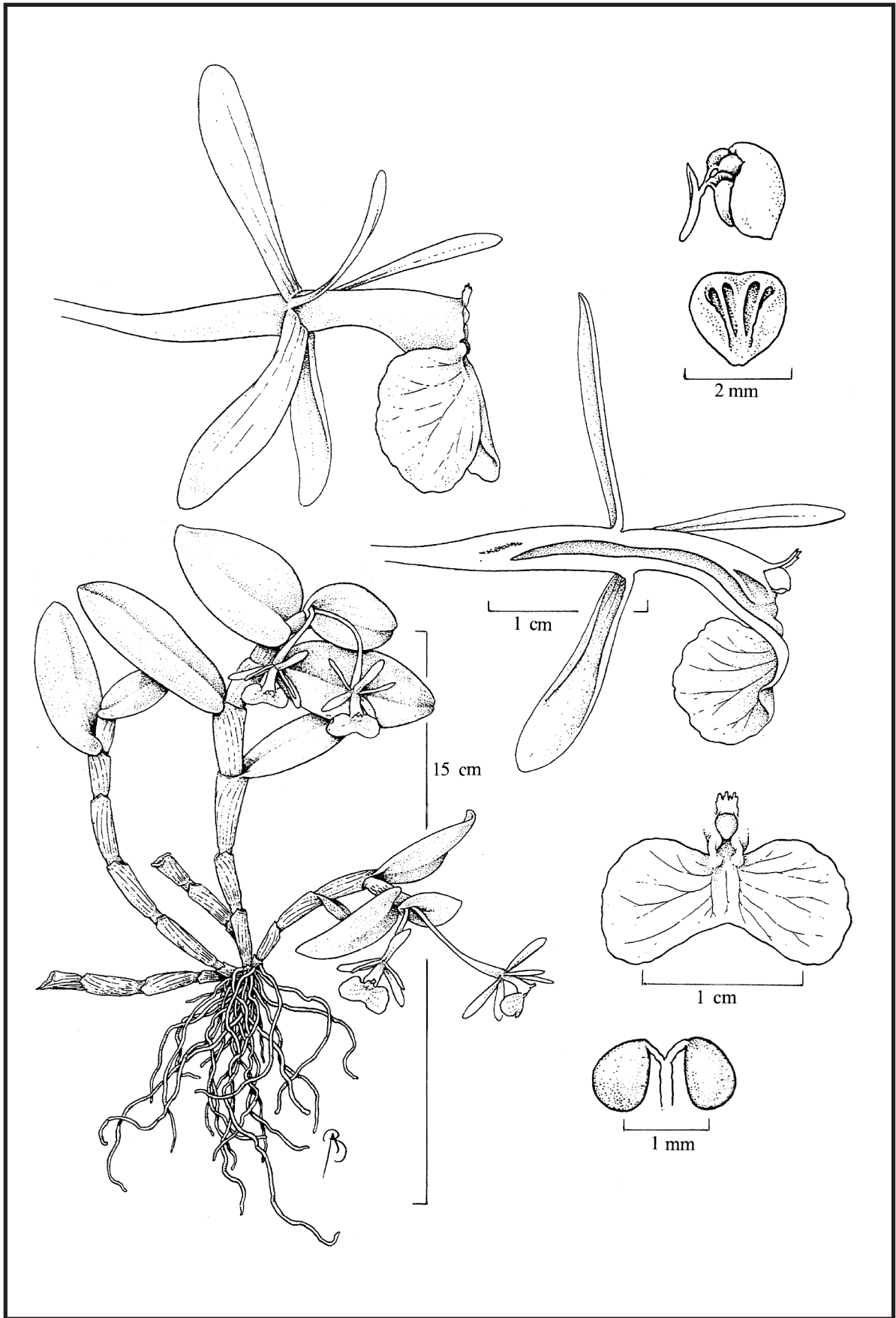
Authors: E. Hágsater & E. Santiago
Herbario AMO

Illustrator: R. Jiménez M.
México, D.F. MÉXICO

Photo: E. Becerra

Editors: E. Hágsater & L. Sánchez S.

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1547



EPIDENDRUM OLDEMANII Christenson

EPIDENDRUM OLDEMANII Christenson, Brittonia 46 (1): 54. 1994.

Type: FRENCH GUIANA: [Saint-Laurent-du-Maroni:] Saül, 3°37'N, 53°12'W, vic. Eaux Claires, Sentier Botanique, ca. 250-350 m, 27 May 1992, **Scott Mori, C. Gracie, Thomas B. Croat, H. Maas, Paul Maas, T. Pennington & D. Reed.**

22915. Holotype: NY! (illustration voucher, *pro parte* plant in flower).

Epiphytic, sympodial, caespitose, short **herb**, 10-12 cm tall including the inflorescence. **Roots** basal, fleshy, thin, 1 mm in diameter. **Stems** 8-10 x 0.5-0.7 cm, simple, cane-like, strongly laterally compressed, flexuous. **Leaves** 3-5, distributed along the apical 2/3 of the stem; foliar sheath 1.2-1.5 cm long, tubular, laterally compressed, smooth; blade, 6.5 x 1.6 cm, narrowly elliptic to ovate-elliptic, apex bilobed, margin entire, spreading, coriaceous, dorsally slightly carinate, light green. **Spathaceous bract** lacking. **Inflorescence** apical, from the mature stem, sub-umbellate, sub-sessile, peduncle inconspicuous. **Floral bracts** much shorter than the ovary, hidden by the apical leaf. **Flowers** 2, simultaneous, resupinate, yellow-green; fragrant. **Ovary** 28 mm long, terete, thickened along the apical half, unornamented. **Sepals** spreading, free, fleshy, elliptic, obtuse, margin entire, revolute; dorsal sepal 16.5 x 4 mm, lateral sepals 14 x 3.7 mm, oblique. **Petals** 13 x 1.8 mm, spreading, linear-oblongate, obtuse, membranaceous, 1-veined, margin entire, spreading. **Lip** 8 x 16 mm, united to the column, transversely reniform, bilobed, the lobes obovate, margin sinuous; bicallose, the calli small, sub-globose. **Column** 11 mm long, slightly arching. **Clinandrium-hood** prominent, narrow, erect, apical margin dentate. **Anther** obovate, 4-celled. **Pollinia** 4, sub-globose. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** penetrating 1/3 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: FRENCH GUYANA: Saül, vic. Eaux Claires, ca. 200 m, 27 V 1992, *Mori 22345*, NY (paratype, not seen, illustration voucher, *pro parte* flower in lateral view, lip, flower in longitudinal section, anther and pollinia).

OTHER RECORDS: FRENCH GUYANA: Hort. Cayenne, photographed by *Chiron 6038*, digital images of live plant, AMO!

DISTRIBUTION AND ECOLOGY: Endemic from the French Guyana, from the Atlantic lowlands of the region of Saül; epiphytic in forest canopy at 200-350 m altitude. Flowering in May.

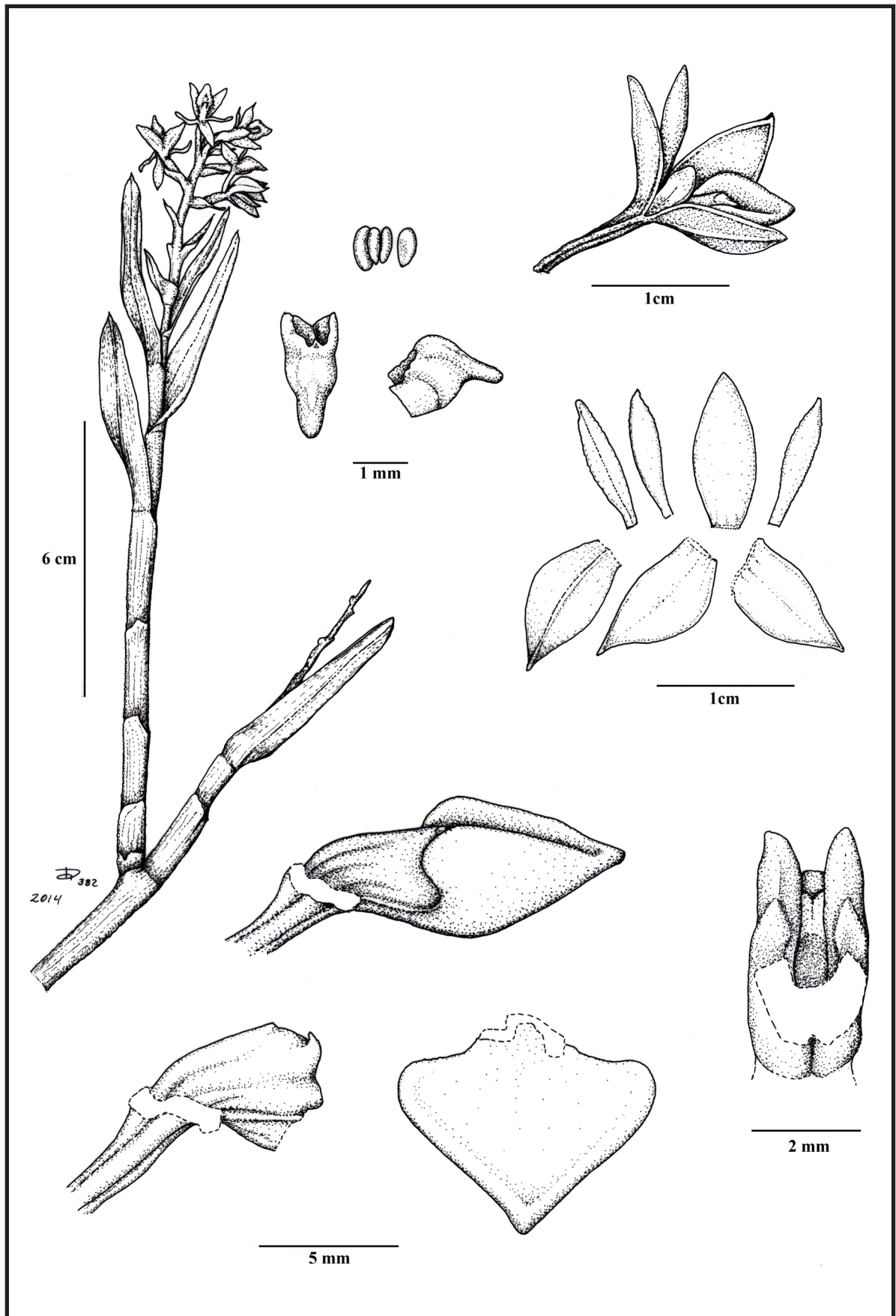
RECONOCIMIENTO: *Epidendrum oldemanii* belongs to the Difforme Group which is characterized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spathaceous bracts, fleshy, green to yellowish-green rarely white flowers. The species can be recognized by the small plants, stems strongly laterally compressed, leaves elliptic to ovate-elliptic, with 2 simultaneous, yellow-green flowers, the lip bilobed, lobes obovate, margin sinuous, calli small, sub-globose. It is similar to *Epidendrum sertorum* Garay & Dunsterv., a species ranking in Colombia and Venezuela, the inflorescence with 7 flowers, a cordiforme lip, acute apex and the disc with numerous thickened veins. *Epidendrum amapense* Hágsater & L. Sánchez which grows in the French Guyana and northeastern Brazil, but that species has narrow leaves, and a 3-lobed lip.

CONSERVATION STATUS: DD: Data deficient.

ETYMOLOGY: In honor of Professor Roelof A.A. Oldeman, Netherlands researcher and founder of the Herbarium of Cayenne (CAY) at the Institut de Recherche in 1965, better known as ORSTROM. He has greatly contributed to the study of the Flora of the French Guyana.

REFERENCES: Hágsater, E. & L. Sánchez. 1993. *Epidendrum amapense* in Hágsater, E. & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid. 2:** t. 105.





EPIDENDRUM PACHYCHILUM Kraenzl.

Plate 1549

EPIDENDRUM PACHYCHILUM Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 184. 1905.

Type: PERU: Junín: Tarma; Cerros al oeste de Huacapistana, monte bajo siempre verde, 3000-3100 m, **August Weberbauer 2054**. Holotype: B (destroyed), phototypes: AMES! F! NY! Lectotype (designated by Bennett & Christenson, 2001): MOL 605! (illustration voucher). Isotype: PR!

Terrestrial, sympodial and branching, sub-caespitose **herb**, ca. 50 cm tall. **Roots** not seen. **Stems** cane-like, branching, ascending, terete, thin, the primary stem seen in part, 7 mm thick; branches (secondary and tertiary) 10-20 x 0.4-0.5 cm; base covered by tubular sheaths 7-22 mm long, minutely striated, rugose, becoming scarious with age. **Leaves** 4-8, distributed along the apical half of the stems, sub-parallel to the stem, similar; sheaths 1.1-3.4 cm long, tubular, minutely striated, rugose; blade 2.5-5 x 0.6-0.8 cm, narrowly lanceolate, obtuse, with a dorsal keel, minutely apiculate, somewhat fleshy, apical margin finely serrate. **Spathe** lacking. **Inflorescence** 5 cm long, apical, racemose, few-flowered, erect, longer than the apical leaf, peduncle 1.5 cm long, erect, provided in the middle with a bract 13 x 8 mm, ovate, acuminate, amplexicaul, longer than the floral bracts; rachis somewhat laterally compressed. **Floral bracts** 7-8 mm long, prominent, nearly as long as the ovary, narrowly triangular-ovate, acuminate. **Ovary** 9 mm long, short, triquetrous, not inflated, striated. **Flowers** 7-8, non-resupinate, simultaneous, sulfur-yellow; fragrance not registered. **Sepals** 11 x 4.5-5 mm, spreading, free, elliptic, margins entire, fleshy; dorsal sepal elliptic, sub-acute; lateral sepals sub-hemi-ovate, slightly oblique, with a low dorsal keel. **Petals** 10 x 2 mm, spreading, free, linear-elliptic, acute, margin crenulate. **Lip** 7 x 9.5 mm, entire, widely triangular when spread, embracing the column in natural position, concave, fleshy, base truncate, apex sub-acute, margin entire, spreading; ecallose. **Column** 6.5 mm long, short, thick, slightly arching at the base, the apex with an uncinete tooth on each side of the anther. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, apex rostrate, 4-celled. **Pollinia** 4, obovoid, unequal in size, the inner pair slightly smaller, somewhat laterally compressed, caudicles and viscidium not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma, nectary** and **capsule** not seen.

OTHER SPECIMENS: None seen. See notes.

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Known presently from central Peru, the Cordillera Oriental of the Andes, at 3000 o 3100 m altitude.

NOTES: The illustration, prepared from the lectotype, does not show all the flowers, only the most visible of the pressed inflorescence. The base of the lip and the nectary are not shown either, so we are not sure about the presence of calli, nor of any papillose ornamentation which may occur in front of the stigmatic cavity, as is usual in this group of species. The other specimens cited by Bennett & Christenson (2001), correspond to other species, cited under their respective descriptions, and here compared under recognition. Schweinfurth (1959) cited *Epidendrum aquaticoides* var *pusillum* as a synonym of this species, but we consider it as the basionym of a new species, *Epidendrum incapachytilum* Hágsater & E.Santiago, described elsewhere in this same volume.

RECOGNITION: *Epidendrum pachytilum* belongs to the Pachytilum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, by the relatively small leaves, parallel to the stem, the short, racemose, erect inflorescence, brightly colored flowers, yellow to orange to reddish pink, with an entire, conduplicate, lip embracing the column, without any pubescence in front of the stigmatic cavity nor on the lip, but generally with two small calli. The species is recognized by the narrowly lanceolate leaves, erect, sub-parallel to the stem, inflorescences erect about 5 cm long, flowers sulfur-yellow, sepals 11 mm long, petals oblanceolate, the margin crenulate, lip widely triangular, with the apex obtuse, the column with an uncinete tooth on each side of the anther; anther rostrate. *Epidendrum incapachytilum* Hágsater & E.Santiago is vegetatively very similar, but the flowers are reddish orange, sepals 8-9.4 mm long, petals linear-oblanceolate, the margin entire, lip widely hemi-orbicular to widely triangular when spread, anther conical, not apically rostrate. *Epidendrum erythropachytilum* Hágsater & E.Santiago has inflorescences with up to 15, reddish pink flowers, sepals 6.2-6.6 mm long, the lip widely triangular, apex rounded, the column arching upwards, the apex blunt, without teeth, anther ovoid, apex rounded.

CONSERVATION STATUS: DD. Data deficient. Known presently only from the type.

ETYMOLOGY: From the Greek *παχυσ*, thick, and *χειλος*, lip, in reference to the fleshy, thickened lip, typical of this and all other species of the Macrostachyum Group.

REFERENCES: Bennett; D. E. & E. A. Christenson, *Epidendrum pachytilum* **Icon. Orchid. Perv.** t. 645, 2001. Hágsater, E., & E. Santiago, 2015, *Epidendrum erythropachytilum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1522. Hágsater, E., & E. Santiago, 2015, *Epidendrum incapachytilum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1528. Schweinfurth, C., 1959, *Epidendrum pachytilum* in *Orchids of Peru*, **Fieldiana, Bot.** 30(2): 486-487. Velarde, O., 1968, *Catalogo de isótipos de la colección de plantas peruanas de A. Weberbauer que se conservan en el herbario de la Universidad Agraria del Perú*; **Raymondiana** 1: 89-104.



Authors: E. Santiago & E. Hágsater

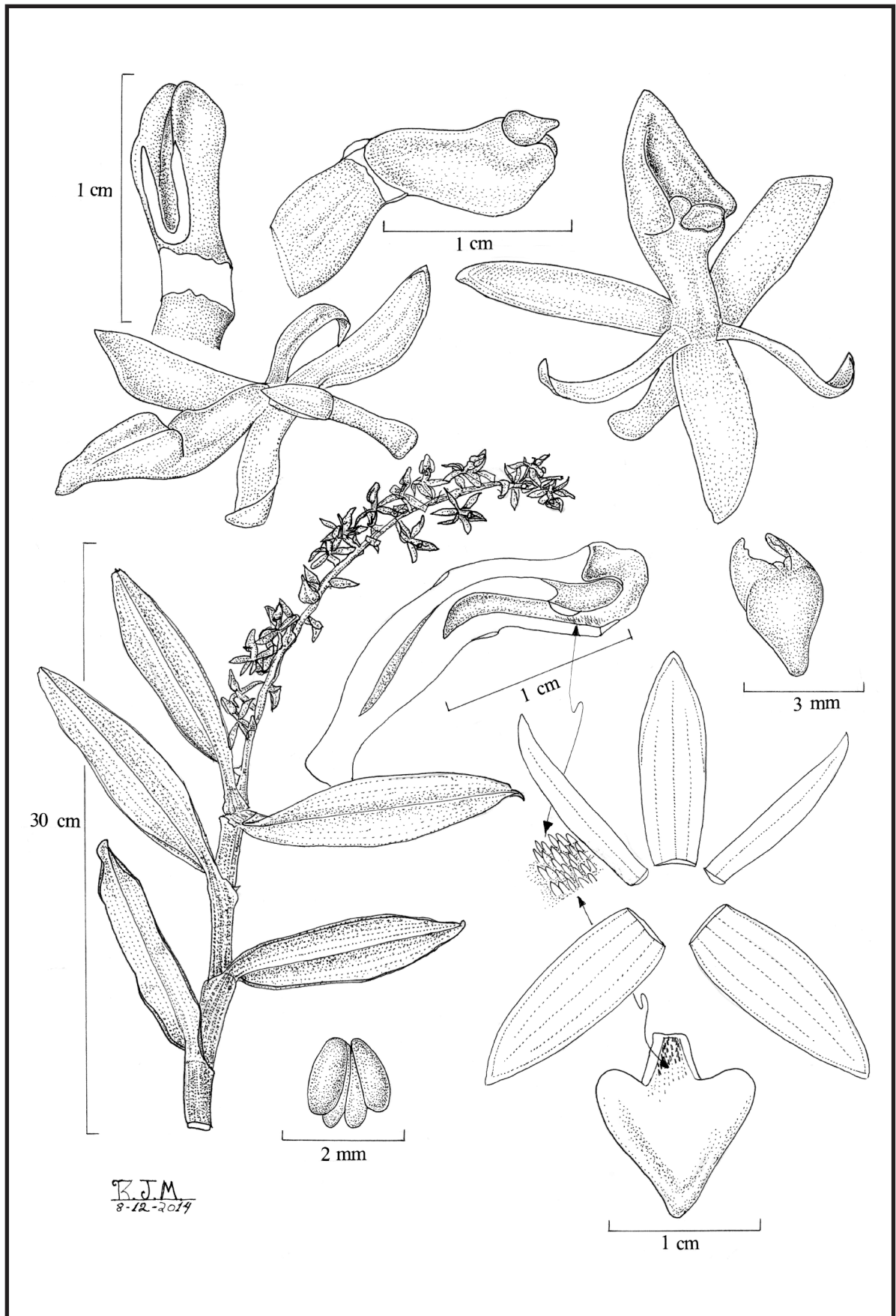
Illustrator: D. Trujillo

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1549



EPIDENDRUM PORPHYROSTACHYUM Hágsater & E.Santiago

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

Type: COLOMBIA: Antioquia: Mun. de Frontino; km 15.5 of road Nutibara-Murrí, 1830 m, 22 September 1987, James L. Zarucchi, Alan E. Brant & Carlos Julio Castaño 5627. Holotype: MO! (illustration voucher) Isotype: COL!

Similar to *Epidendrum bangii* Rolfe but the leaves elliptic, proportionately wider, the inflorescence much longer, with twice as many flowers, sepals acute, and the lip very fleshy towards the apex, flowers, leaves and stem purple.

Terrestrial, monopodial, branching herb. **Roots** not seen. **Stems** >15-27 x 0.9-1.3 cm (only a fragment seen) branching above when mature, cane-like, erect, straight. **Leaves** numerous on the main stem, distributed throughout, articulate, alternate, coriaceous, purple colored; sheath 15-50 x 9-13 mm, tubular, minutely striated, rugose; blade 13-14.5 x 2.3-3.1 cm, narrowly elliptic, acute, margin entire, slightly revolute (in dried specimens). **Spathe** lacking. **Inflorescence** 24 cm long, apical, racemose, erect, flowering only once, many-flowered; peduncle 15-20 mm long, short, sub-terete; rachis ca 22.5 cm long, terete, slightly sinuous. **Floral bracts** 10-20 x 6-8 mm, prominent, slightly longer than the ovary (gradually diminishing in size towards the apex of the rachis), narrowly triangular, acute, embracing. **Flowers** 25-27 on the main stem, 6 on the branches, opening in succession, but all eventually open simultaneously, non-resupinate, fleshy, distributed in a helicoid, though somewhat secund; wine-red, concolor; fragrance not registered. **Ovary** 6-10 mm long, terete, longitudinally striated, not inflated. **Sepals** free, fleshy, slightly convex, acute, margin entire, spreading; dorsal sepals 15 x 5.2 mm, slightly reflexed, lanceolate, 3-veined; lateral sepals 15 x 7 mm, partly spreading, narrowly ovate, 5-veined, oblique. **Petals** 14 x 2 mm, free, fleshy, slightly reflexed, linear, short-acuminate, 1-veined, margin entire, spreading. **Lip** 11 x 11 mm, united to the column, fleshy, much more so towards the apex, entire, deltate-cordiform, apex sub-acute, ecallose and without ribs; cymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 9 mm long, thick, very slightly arched, with a pair of rounded wings at the apex. **Clinandrium**-hood reduced, margin entire. **Anther** 4-celled, ovoid, apex acute. **Pollinia** not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** 1/3 the length of the stigmatic cavity. **Nectary** shallow, barely penetrating the ovary, not inflated, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Antioquia: km 1-2 from highway on road to Briceño, 1900 m, 25 XI 1988, McPherson 13275, COL! MO! Valdivia; Vereda San Fermín, Alto de Ventanas 145 km NE de Medellín, Finca la Soledad, 2000 m, 7 I 1994, Callejas 11071, MO!

OTHER RECORDS: COLOMBIA: Antioquia: Cordillera Central, Mun. Valdivia, 2080 m, Monsalve 87, digital photo series, AMO! **Risaralda:** Cordillera Occidental, Parque Nacional Natural Tatamá, Calderón-Franco s.n., digital photo, AMO! (photo voucher).

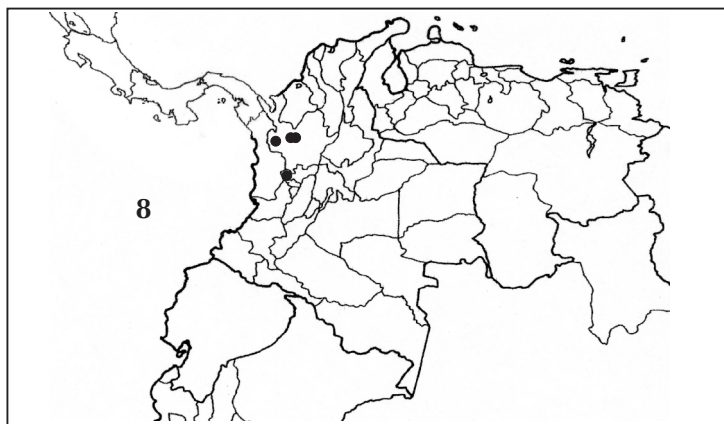
DISTRIBUTION AND ECOLOGY: Presently known from the Cordillera Occidental and the northern tip of the Cordillera Central in central Colombia, at 1830-2000 m altitude, terrestrial. Flowering in September-January. Rainfall is >2000 mm, in cloud forest.

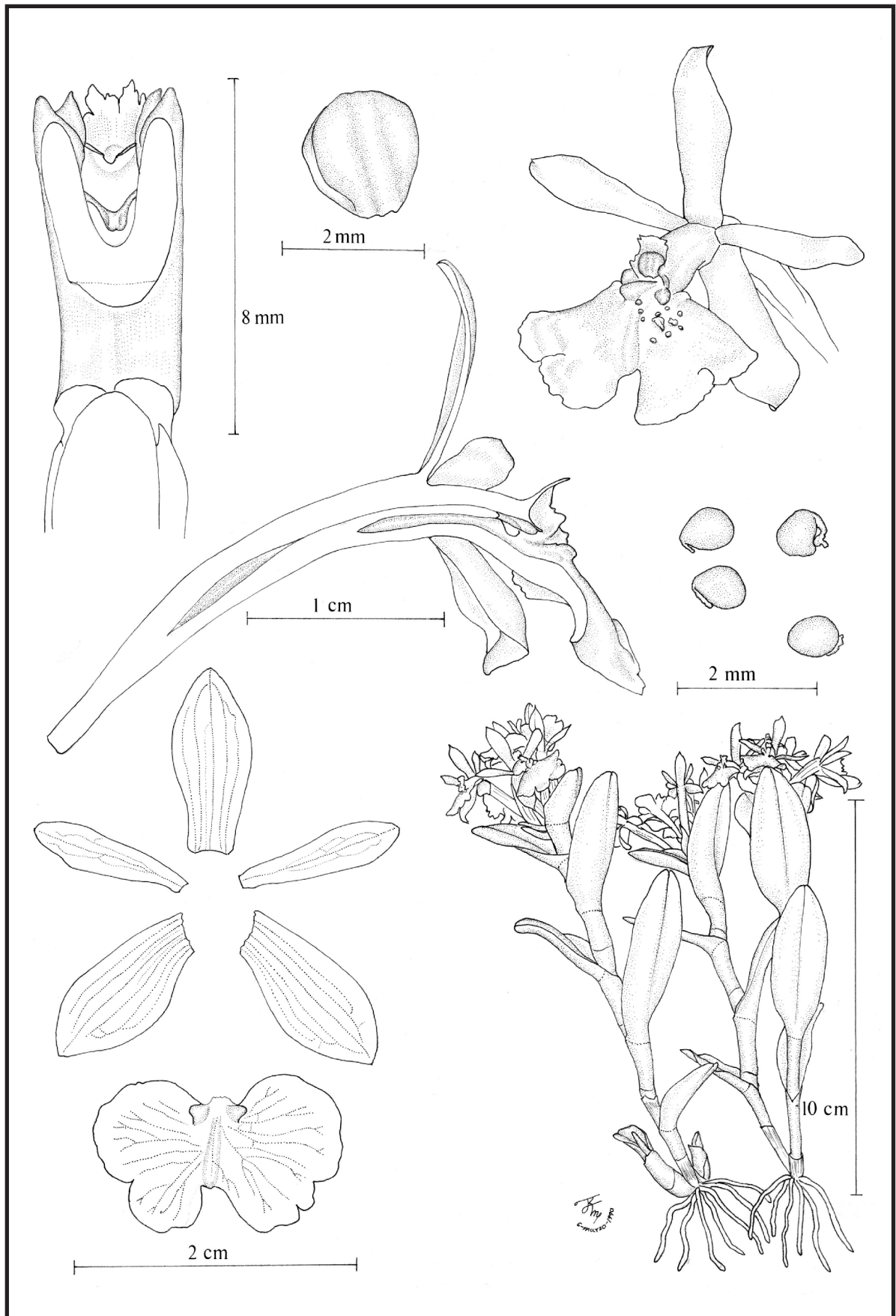
RECOGNITION: *Epidendrum porphyrostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the concolor, purple leaves and plants, elongate, many-flowered inflorescence to 24 cm long, narrowly elliptic leaves (13-14.5 x 2.3-3.1 cm), dorsal sepal and petals slightly reflexed, sepals acute, and the triangular-cordiform lip with the apex much fleshy-thickened. *Epidendrum bangii* has shorter inflorescences, 5-14 cm long, with about half as many flowers, narrowly lanceolate leaves (5-14 x 1.3-2.4 cm), green in color, sepals acuminate, and the flowers purple-green to greenish brown to greenish yellow, lip and column basally reddish. *Epidendrum oxycalyx* Hágsater & Dodson has lanceolate, green leaves (9-17 x 2.8-4.5 cm), apically acuminate, inflorescence 8-23 cm long, sepals and petals long-acuminate, and flowers reddish brown, somewhat tinged yellow. *Epidendrum munchiquense* Hágsater, E.Santiago & García-Revelo has a much longer (25-40 cm), lax-flowered inflorescence, the leaves green, sepals and petals spreading, the lip deltate with the base sub-truncate, flowers scarlet, turning grayish brown after extracting the pollinia.

CONSERVATION STATUS: DD. Data deficient. Found recently in the Parque Nacional Natural Tatamá. The species however does not appear to be widespread.

ETYMOLOGY: From the Greek πορφύρεος purple, and σταχυς ear of corn, in reference to the purple or wine-red flowers, leaves and stems of this species of the Macrostachyum Group.

REFERENCES: Hágsater, E., & C. H. Dodson, 1993, *Epidendrum oxycalyx* in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 169. Hágsater, E. & E. Santiago, 2015, *Epidendrum munchiquense* in E. Hágsater & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1544. Santiago, E. & E. Hágsater, 2015, *Epidendrum bangii* in E. Hágsater & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1503.





EPIDENDRUM PSEUDODIFFORME Hoehne & Schltr.

Plate 1551

EPIDENDRUM PSEUDODIFFORME Hoehne & Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 35: 71. 1925*. Type: BRAZIL: Rio Grande do Sul: Torres, col. **Aquino XVIII sub L. Burger**. Holotype: B, destroyed.

Isonym: Arch. Bot. São Paulo 1 (3): 242. 1926. Type: BRAZIL: São Paulo: Butantan, Feb. 1921, **Augusto Gehrt s.n.**, Holotype: SP 5347 (not found). Lectotype (designated by Barros, 2004): Plate 7, fig. 4 of Arch. Bot. São Paulo 1(3): 1926. (illustration [miss-labelled 5387] based on the holotype, "**A. Gehrt** leg., Butantan n° 5347", fide Schelchler, 1926)

Epiphytic, simpodial, caespitose **herb** 10-15 cm tall. **Stems** 8-13 x 0.2-0.3 cm, terete, flexuous. **Leaves** 3-7, sheath tubular; blade 1.5-4.5 x 1.5-1.7 cm, narrowly ovate-elliptic, retuse to bilobed, coriaceous, green, margin entire. **Spathe** lacking. **Inflorescence** apical, from the mature stems, sub-umbellate, flowering only once, sub-sessile; peduncle ca. 5 mm long, reduced. **Floral bracts** 6-7 x 1.5-2.0 mm, shorter than the ovary, ovate, acute. **Flowers** 4-8, simultaneous, resupinate, green; fragrance sweet. **Ovary** 24-38 x 1.3-1.5 mm, somewhat inflated, terete, unornamented. **Sepals** 12-13 x 4.5-5.0 mm, free, glabrous, spreading, coriaceous, obovate-elliptic, obtuse, 5-6-veined, margin entire, revolute; the lateral sepals somewhat oblique. **Petals** 11-12 x 2.0-2.5 mm, spreading, membranaceous, narrowly oblanceolate, obtuse to rounded, 3-veined, margin entire. **Lip** 8.0-9.5 x 16-17 mm, united to the column, 3-lobed-reniform, cordate base; bicallose, the calli small, divaricate; disc with several drops of a sweet exudate, central rib reduced; lateral lobes semi-orbicular, crenulate; mid-lobe with a deep sinus to emarginate, forming two semi-orbicular, crenulate lobes. **Column** 8-9 x 2.0-2.5 mm, somewhat arcuate, with apical rounded wings. **Clinandrium-hood** conical, entire, margin lacerate-dentate. **Anther** 4-celled, ovoid, unornamented. **Pollinia** 4, sub-ovoid, laterally compressed, sub-equal; caudicles soft and granulose; viscidium viscous, translucent. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** 2/3 the length of the stigmatic cavity. **Nectary** penetrating 1/4 of the ovary, unornamented. **Capsule** not seen.

OTHER SPECIMENS: BRAZIL: Without locality, *Vall s.n.*, SP! *Ibid.* *Widgren 1064*, S! **Minas Gerais:** Perichagaraopeba, Fazenda da São Vicente, *Herringer s.n.*, HB! Caldas, Poços, 15 VI 1874, *Mosén 1947*, S! **Paraná:** *Dusén s.n.* S! Jacarehy, 12 II 1912, *Dusén 14037*, S! Paranaguá, Pico Torto, 300 m, 15 I 1970, *Hatschbach 23336*, UC! **Rio de Janeiro:** *Riedel 36 W!* *Widgren s.n.*, S! Petrópolis, ex-Hort. Florália, pressed cult. 12 III 1990, *Hágsater 10225*, (illustration vouchers:) AMO! AMES! NY! RJ! RPSC! SP! *Ibid.* pressed cult. 7 VIII 1991, AMO! US! *Ibid.* pressed cult. 13 IX 1995, AMO! Petrópolis, *Spannagel 11*, SP! Guanabara, Floresta da Tijuca, Pedra do Frade, 800 m, 1 VI 1951, *Pabst 383-A*, HB! Guanabara, I 1950, *Pabst 483*, HB! Corcovado, *Wats 535*, W! Angra dos Reis: Ilha Grande, 23 VII 1915, *Rose 20376*, US! **Rio Grande do Sul:** Torres, I 1922, *Aquino 18 sub Buger s.n.* B (destroyed). **Santa Catarina:** Ibirama, 200 m, 16 I 1954, *Geveiski 103*, HB! Florianópolis; Morro Costa do Lagoa, 200 m, 17 I 1965, *Klein 7095*, HB! Lagoa auf Sta. Catharina, *Pabst s.n.*, W! Palhoça, 690 m, 13 V 1953, *Reitz 690*, HB! Corupá, Jaraguá do Sul, 14 I 1958, *Reitz 6190*, HB! **São Paulo:** São Bernardo do Campo, Reserva del Instituto Florestal, km 35.5 da via Anchieta, ca. 800 m, pressed cult. 23 VI 1993, *Hágsater 10274*, AMO! *Ibid.* pressed cult. 13 VII 1992, *Hágsater 10275*, AMO! *Ibid.* pressed cult. 31 VII 1992, AMO! Bertiooga-Boraceia, Litoral de São Paulo, 27 I 1990, pressed cult. 9 XI 1990, *Hágsater 10398*, AMO! (illustration, AMO!) *Ibid.* pressed cult. 25 VI 1991, AMO! *Ibid.* pressed cult. 3 VII 1991, AMO! *Ibid.* pressed cult. 16 VII 1991, AMO! *Ibid.* pressed cult. 7 VIII 1991, AMO! *Ibid.* pressed cult. 16 VIII 1991, AMO! *Ibid.* pressed cult. 1 X 1991, AMO! *Ibid.* pressed cult. 27 III 1992, AMO! *Ibid.* pressed cult. 14 VIII 1992, AMO! *Ibid.* pressed cult. 6 I 1994, AMO! São Paulo, *Handro s.n.*, SP! Butantan, 16 I 1922, *Hoehne s.n.*, SP! NY x2! Sorocabá, 4 XII 1825, *Mosén 2954*, P! S! W! Tremembé, *Walter s.n.*, HB! Serra da Mantiqueira, Santo Antônio do Pinhal, 25 I 1955, *Walter 124*, HB!

OTHER RECORDS: BRAZIL: Without locality, SE Brazil, 700 m, *Baptista s.n.* (digital image AMO!) **Rio Grande do Sul:** Without locality, www.orkuideasgauchas.net, (seen 28 Nov. 2014) *Varella s.n.* (digital images AMO!) **Santa Catarina:** Florianópolis; Lagoa auf Sta. Catharina, *Pabst s.n.* illustration Taf. XI (W-R slide AMO!)

DISTRIBUTION AND ECOLOGY: Endemic the Mata Atlântica of SE Brazil, from Minas Gerais to Rio Grande do Sul. Epiphyte, from 200 to 1050 m altitude. Flowering from October to March.

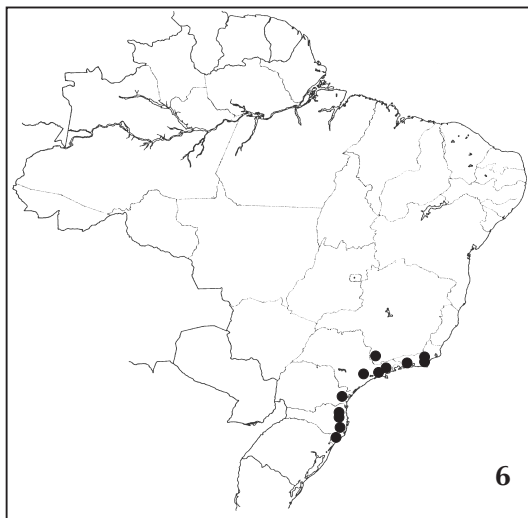
RECOGNITION: *Epidendrum pseudodiforme* belongs to the *Difforme* Group which is recognized by the caespitose, sympodial plants, fleshy, pale green to glaucous leaves, apical inflorescence, sessile, rarely with a short peduncle, one-flowered to corymbose, without spatheaceous bracts, fleshy, green to yellowish green rarely white flowers. The species can be recognized by its terete stems 8-13 cm tall, leaves 1.5-1.7 cm wide, 4-8 flowered, flowers with a sweet fragrance, sepals 12-13 mm long, lip 3-lobed-reniforme, margin crenulate, disc with several drops of sweet exudate, mid-lobe with a deep sinus to emarginate, column somewhat arcuate, 8-9 mm long, clinandrium dentate-lacerate. It is similar to *Epidendrum difforme* Jacq., which has ancipitose stems, margin of the lip entire to crenulate, mid-lobe of the lip sub-quadrate, disc without any exudate, clinandrium-hood erose. *Epidendrum thiagoi* Hágsater & L.Sánchez has taller plants, 12-25 cm tall, stems somewhat laterally compressed, narrow leaves, 0.8-1.3 cm wide, 1-3 flowers, without any drops of exudate, margin of the lip entire, and the column shorter, 6-8 mm long. *Epidendrum campaccii* Hágsater & L.Sánchez, has taller plants, 11-25 cm tall, wider leaves, 1.6-2.6 cm wide, larger flowers sepals 14.0-15.5 mm long, lip with an entire margin, and a straight, long column, 10.5-11.0 mm long.

*NOTE: Though the authors indicated that they would publish the new species elsewhere, they did comply with publication requirements then in place, a diagnosis and acceptance of the name by the authors. In addition they mentioned that the original material was from São Paulo, though they did not cite it specifically. Unfortunately, none of the specimens cited has been found, so we accept the lectotification proposed by Barros (2004), though the illustration had not been published, it was available to the authors. The number on the illustration, "5387 H.O.C." is evidently a numerical error in reference to specimen 5347 of the herbarium at Butantan, now SP.

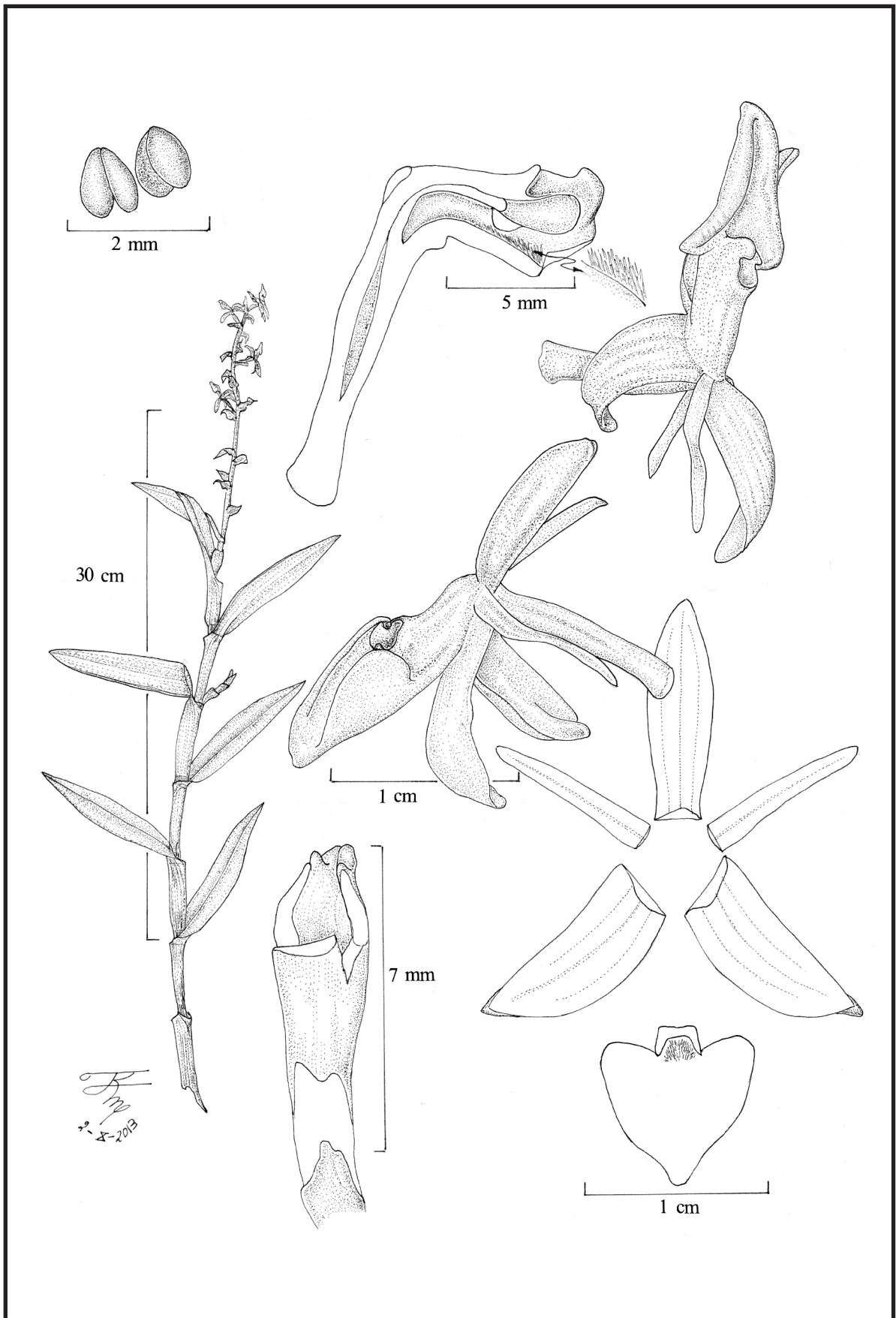
CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek *ψευδο*, false, and the Latin *difformis* differently formed, in reference to the similarity of this species to *E. difforme*.

REFERENCES: Barrios, F., 2004, Taxonomic and Nomenclatural Notes on Brazilian Orchidaceae, in K. S. Mannilal & C. Sathiish Kumar (eds.), **A Tribute to Gunnar Seidenfaden**, 7-22. Mentor Books & Indian Assoc. Angiosperm Taxonomy. Hoehne, F. C. & R. Schlechter, 1925, "*Epidendrum pseudodiforme* ined." in R. Schlechter, Die Orchideenflora von Rio Grande do Sul, **Repert. Spec. Nov. Regni Veg. Beih.** 35: 71. Hágsater, E. & L. Sánchez S., 2010, *Epidendrum thiagoi*, in Hágsater, E. & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1393. Pabst, G. F. J., 1978, Noticias Orquideológicas XVIII, **Bradea** 2 (46): 306. Sánchez, S. L. & E. Hágsater, 1993, *Epidendrum campaccii*, in Hágsater, E. & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 117. Schlechter, R., 1925, Dier Orchideenflora von Rio Grande do Sul, **Repert. Spec. Nov. Regni Veg. Beih.** 35: 71. Schlechter, R., & F. C. Hoehne, 1926, Contribuições ao Conhecimento das Orchidáceas do Brasil, **Arch. Bot. São Paulo** 1(3): 160-349.



Authors: L. Sánchez S. & E. Hágsater Illustrator: R. Jiménez M. Photo: L. F. Varella Editors: E. Hágsater & L. Sánchez S.
Herbario AMO México, D.F. MÉXICO ICONES ORCHIDACEARUM 15(1). 2015. Plate 1551



EPIDENDRUM PURACESTACHYUM Hágsater & E.Santiago

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

Type: COLOMBIA: Cauca: Mun. de Coconuco, Parque Nacional Natural Puracé, Camino a la Laguna del Buey, 3050-3200 m, 1 Agosto 1980, **Gustavo Lozano Contreras 3563**. Holotype: ! (illustration voucher) Isotype: COL! NY!

Similar to *Epidendrum oxycalyx* Hágsater & Dodson but the leaves lanceolate, shorter and narrower, inflorescence lax-flowered, sepals acute vs acuminate, lip deltate with the corners rounded and the apex obtuse, base sub-cordate.

Terrestrial, monopodial **herb** to ca. 100 cm tall, branching above. **Roots** not seen. **Stems** branching when mature, cane-like, terete, erect, straight; the main stem ca. 100 x 0.7-0.9 cm; branches 13-30 x 0.7-0.8 cm. **Leaves** numerous on the main stem, 6-10 on the branches, distributed throughout, articulate, alternate, sub-erect, unequal in size (the basal ones shorter); sheaths 21-38 mm long, tubular, minutely striated, rugose; blade 5.3-8 x 0.9-2.5 cm, lanceolate, acute, margin entire. **Spathe** lacking. **Inflorescence** 15-17 cm long, apical, racemose, erect, flowering only once, many-flowered; peduncle 1 cm long, terete, erect, straight, without bracts; rachis 14-16 cm long. **Floral bracts** 5-18 x 3-5 mm, prominent, slightly longer than the ovary (gradually diminishing in size towards the apex of the rachis), narrowly lanceolate-triangular, acuminate, embracing. **Flowers** ca. 18, successive, non-resupinate, fleshy, perianth wine-red; fragrance not registered. **Ovary** 9-13 mm long, terete, longitudinally striated, not inflated. **Sepals** 11-12 x 3.5-4.2 mm, free, slightly recurved, oblong-elliptic, acute, 3-veined, margin entire, spreading; lateral sepals slightly oblique, minutely apiculate, with a low dorsal keel. **Petals** 9.5 x 1.7 mm, free, reflexed, oblong-triangular, sub-acute, 1-veined, margin entire, spreading. **Lip** 12 x 8.2 mm, united to the column, very fleshy, entire, deltate, the corners rounded, apex obtuse, base sub-cordate; ecallose, without ribs, pubescent at base, in front of the column, embracing the apex of the column in natural position, margin entire, spreading. **Column** 7 mm long, straight, thin at the base, slightly widened towards the apex, apex with a pair of lateral, rounded wings. **Clinandrium** reduced, margin entire. **Anther** not seen. **Pollinia** 4, obovoid, somewhat laterally compressed, caudicles not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, ½ as long as the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, wide throughout, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Cauca: Mun. de Puracé, Parque Nacional Natural Puracé, 3100-3200 m, 14 XII 1996, *Parra 57*, COL! **Huila:** San José de Isnos: Vereda "El Marmol", 9 km del límite del Parque Nacional Natural Puracé, 2800 m, 22 VII 1980, *Lozano 3356*, COL! Mun. La Argentina, Arriba de la Finca Palmira, 2100 m, 26 IX 1984, *Lozano 4184*, COL! **Putumayo:** Km 33, Pasto to Sibundoy, 3180 m, 24 I 1987, *Dodson 17031*, MO!

OTHER RECORDS: COLOMBIA: Cauca: Parque Nacional Natural Puracé, Popayán, 2800 m, 22 I 1974, *Escobar 1024B*, slide, AMO!

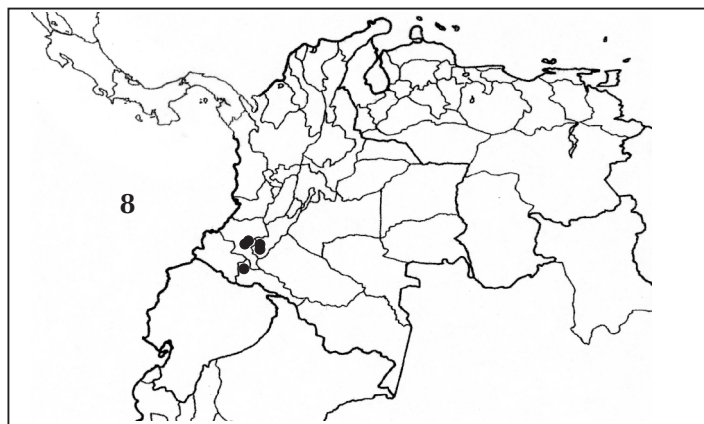
DISTRIBUTION AND ECOLOGY: Presently known only from the southern end of the Cordillera Central in southern Colombia, in the neighborhood of the Volcán Puracé, in the Parque Nacional Natural Puracé, at 2800-3200 m altitude, terrestrial in paramo, and tall Andean forest, rainfall <2000 mm. Flowering from July to January.

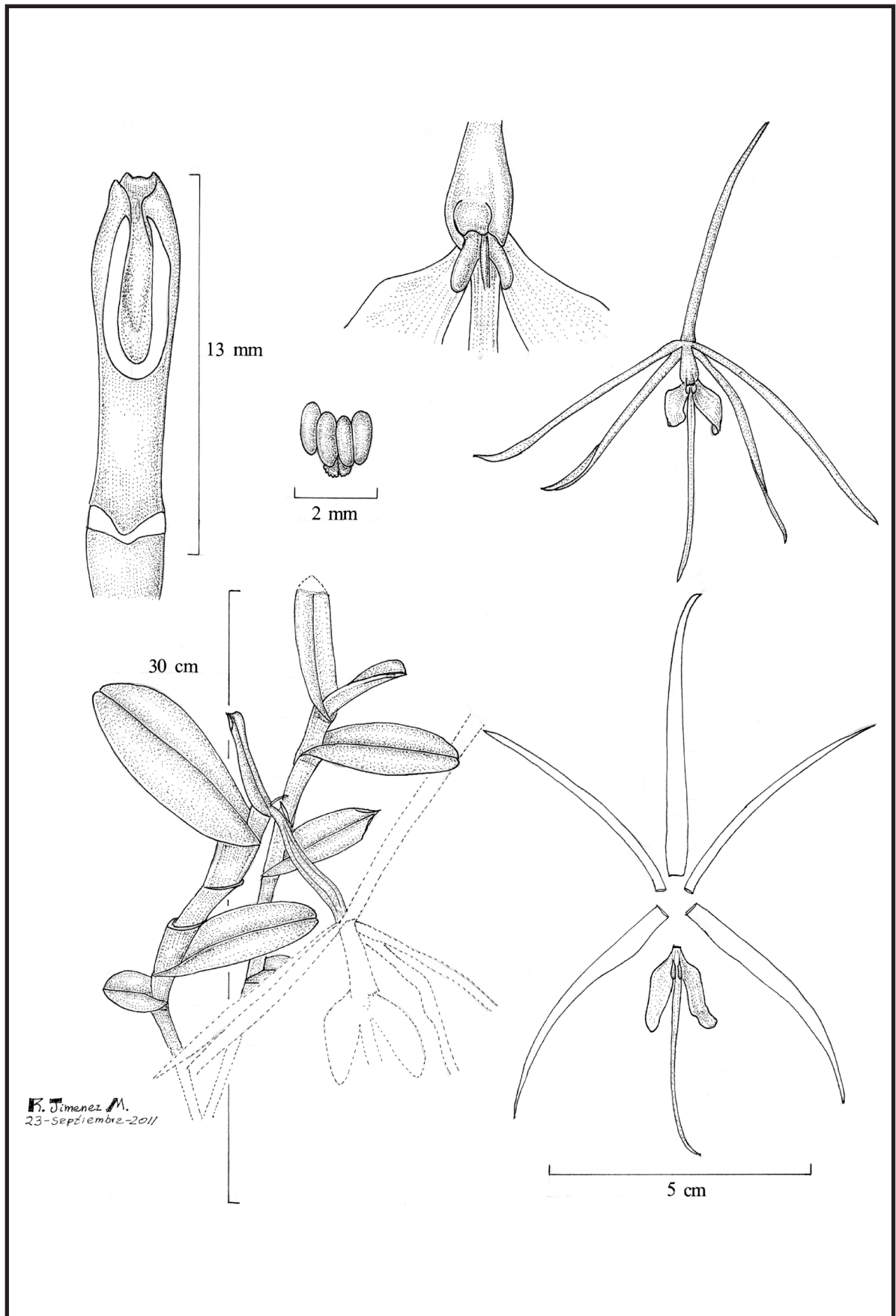
RECOGNITION: *Epidendrum puracestachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the lanceolate leaves 5.3-8 x 0.9-2.5 cm, short, inflorescence with wine-red colored flowers, oblong-elliptic, acute sepals 11-12 mm long, reflexed, oblong-triangular, sub-acute petals 9.5 x 1.7 mm, and the deltate lip with the corners rounded and the apex obtuse. *Epidendrum oxycalyx* has elliptic-lanceolate leaves 5-17 x 1.2-4.5 cm, inflorescence with reddish brown to greenish brown flowers, sepals acuminate, 15-23 mm long, petals linear-lanceolate, acuminate, 11-16 x 1.0-1.2 mm, and the lip narrowly cordiform. *Epidendrum recurvitopalostachyum* Hágsater & E.Santiago, has oblong, obtuse leaves 2-10 x 0.7-1.5 cm, a short, dense inflorescence, with a sinuous rachis, flowers yellow, slightly tinged with reddish, sepals elliptic, obtuse, 8-11.5 mm long, petals oblong-elliptic, obtuse, 10-11 x 2.5-3.5 mm. *Epidendrum stenobractistachyum* Hágsater & E.Santiago is vegetatively very similar, but the flowers are greenish yellow, sepals narrowly elliptic, 14-15 mm long, petals slightly recurved, oblong and falcate, 13 x 2.8 mm, lip deltate. *Epidendrum porphyrostachyum* Hágsater et E.Santiago has narrowly elliptic, purple colored leaves, 13-14.5 x 2.3-3.1 cm, the inflorescence is elongate and sub-lax-flowered, 24 cm long, flowers are deep purple, lateral sepals narrowly ovate, 15 mm long, petals linear, short-acuminate, 14 x 2 mm, and the lip deltate-cordiform.

CONSERVATION STATUS: DD. Data deficient. Presently known from the Parque Nacional Natural Puracé and adjacent areas.

ETYMOLOGY: In reference to the area where it has been collected, around the base of the Volcán Puracé, and $\sigma\tau\alpha\chi\upsilon\varsigma$ ear of corn, as it belongs to the Macrostachyum Group.

REFERENCES: Hágsater, E., & C.H. Dodson, 1993, *Epidendrum oxycalyx* in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2; t. 169. Hágsater, E. & E. Santiago, 2015, *Epidendrum porphyrostachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1550. Hágsater, E. & E. Santiago, 2015, *Epidendrum recurvitopalostachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1554. Hágsater, E. & E. Santiago, 2015, *Epidendrum stenobractistachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1562. Santiago, E. & E. Hágsater, 2013, *Epidendrum macrostachyum* Lindl., E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 10, **Icon. Orchid.** 14: t. 1454.





EPIDENDRUM RAMIRO-MEDINAE Hágsater & L.Sánchez

Plate 1553

EPIDENDRUM RAMIRO-MEDINAE Hágsater et L.Sánchez, *sp. nov.*

Type: COLOMBIA: Putumayo: Vereda La Esperanza, camino viejo que lleva desde Minchoy hasta Mocoa, mayo 2006, prensado de material cultivado 25 julio 2013, 1900 m, **Ramiro Medina 238**. Holotype: HPUJ (not seen), deposited 14 august 2013. Photographic series of pretype, AMO! (illustration voucher).

Simile *Epidendri cocornocturnum* Hágsater sed foliis angustis, ovario brevior, segmentis floralibus longioribus.

Lithophytic or epiphytic, sympodial, caespitose **herb**, 40 cm tall including the inflorescence. **Roots** Basal, fleshy. **Stems** 19-25 x 0.7-1.5 cm, simple, cane-like, laterally compressed, ancipitose. **Leaves** 6-7, distributed along the apical 3/4 of the stems; sheaths and underside of the leaves tinged purple, upper side of the leaves olive-green; foliar sheath 1-2 cm long, laterally compressed, ancipitose; blade ovate-elliptic, 3-9 x 1.5-2.8 cm, length/width: 2-3:1, apex bilobed, with an evident dorsal keel. **Spathaceous bract** lacking. **Inflorescence** apical, racemose, producing one flower at a time. **Floral bract** 7-10 mm long, much shorter than the ovary, hidden by the apical leaf, triangular, acute. **Ovary** 75-78 x 7 mm, terete, inflated towards the apex, unornamented. **Flower** one at a time, successive, resupinate, sepals and petals light green, the sepals slightly tinged with brown externally, lip white, apical 2/3 of the mid-lobe green, calli intense yellow, column light green towards the base, apex white; fragrance slight, nocturnal. **Sepals** spreading, free, linear-lanceolate, 90-100 x 8-9 mm, acuminate, margin entire, revolute, lateral sepals oblique. **Petals** depressed, free, ensiform, 95 x 3 mm, acuminate, margin entire, spreading. **Lip** united to the column, 3-lobed; bicallose, the calli prominent, oblong, with a prominent central keel barely entering the mid-lobe; lateral lobes narrowly semi-ovate, 25 x 7-8 mm, oblique, apex rounded, with several evident veins; mid-lobe ensiform, 68-75 x 2.5-3 mm, acuminate, with 3 evident veins, the central vein longer than the lateral veins and reaching the apex. **Column** 13 mm long, slightly arching, dilated towards the apex. **Clinandrium-hood** short, slightly erose. **Anther** ovoid, with two rounded protuberances, 4-celled. **Pollinia** 4, laterally compressed; caudicles soft and granulose, shorter than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Species presently known only from southern Colombia not far from the Ecuadorean border. Growing on the upper reaches of the Amazon basin, on the eastern slope of the Cordillera Oriental of the Andes at 1900 m altitude. Flowering in July.

RECOGNITION: *Epidendrum ramiro-medinae* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spathaceous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The species is recognized by the upper part of the stems strongly laterally compressed, ancipitose, 6-7 leaves distributed along the upper 3/4 of the stem, narrow leaves, 1.5-2.8 cm wide, ovary shorter (75-78 mm long) than the sepals (90-100 mm long), lateral lobes of the lip narrowly semi-ovoid, rounded, mid-lobe 68-75 mm long, column 13 mm long. Similar to *Epidendrum cocornocturnum* Hágsater, endemic to central Colombia, has green plants, leaves 2.8-4.6 cm wide, a longer ovary (60-90 mm), acuminate floral segments, lateral lobes of the lip triangular, acuminate, mid-lobe of the lip shorter, (50-60 mm), and column twice as long, (19-26 mm). *Epidendrum nocturnum* Jacq., widely distributed throughout the neotropics has terete stems, relatively long, narrow leaves, a shorter ovary (45-62 mm), smaller sepals and petals, (40-70 mm long), and linear petals. *Epidendrum carpophorum* Barb. Rodr. also has ancipitose stems, ranges along the Atlantic slope of Venezuela, the Guianas and southeastern Brazil, has 4-6, olive green leaves, the underside tinged purple, leaves wide (2.5-6 cm), a short ovary (75-78 mm) and smaller flowers, sepals 30-60 mm long, the lateral lobes of the lip ovate-triangular, acute and short (15-20 mm long), and the mid-lobe very short (30-35 mm). *Epidendrum angustilobum* Fawc. & Rendle (syn. *Epidendrum latifolium* (Lindl.) Garay & Sweet is abundant in the Antilles and northern coast of Colombia, Venezuela and the Guianas, has dark green colored plants, wider leaves (2-7 cm wide) and a much longer ovary (120-200 mm long), smaller flowers, sepals 42-65 mm long, the mid-lobe short, (36-45 mm). *Epidendrum macrophorum* Hágsater & Dodson, endemic to the western slope of the Andes from Panamá to northern Peru has dark green colored plants, longer, wider leaves, (9.5-20 x 2.3-7 cm), a very long ovary (220-280 mm), the mid-lobe of the lip short (35-47 mm) and a very long column (30-34 mm).

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Ramiro Medina from San Francisco, Putumayo, who has collaborated in the study of the genus *Epidendrum* through numerous photographic studies, with images showing great quality and detail. He brought this species to our attention.

REFERENCES: Hágsater, E., 1999, *Epidendrum cocornocturnum* in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 326. Hágsater, E. & C. H. Dodson, 1999, *Epidendrum macrophorum* in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 350. Sánchez S., L., & E. Hágsater, 2008, *Epidendrum angustilobum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1102. Sánchez S., L. & E. Hágsater, 2010, *Epidendrum carpophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1313.



Authors: E. Hágsater & L. Sánchez S.

Illustrator: R. Jiménez M.

Photo: R. Medina

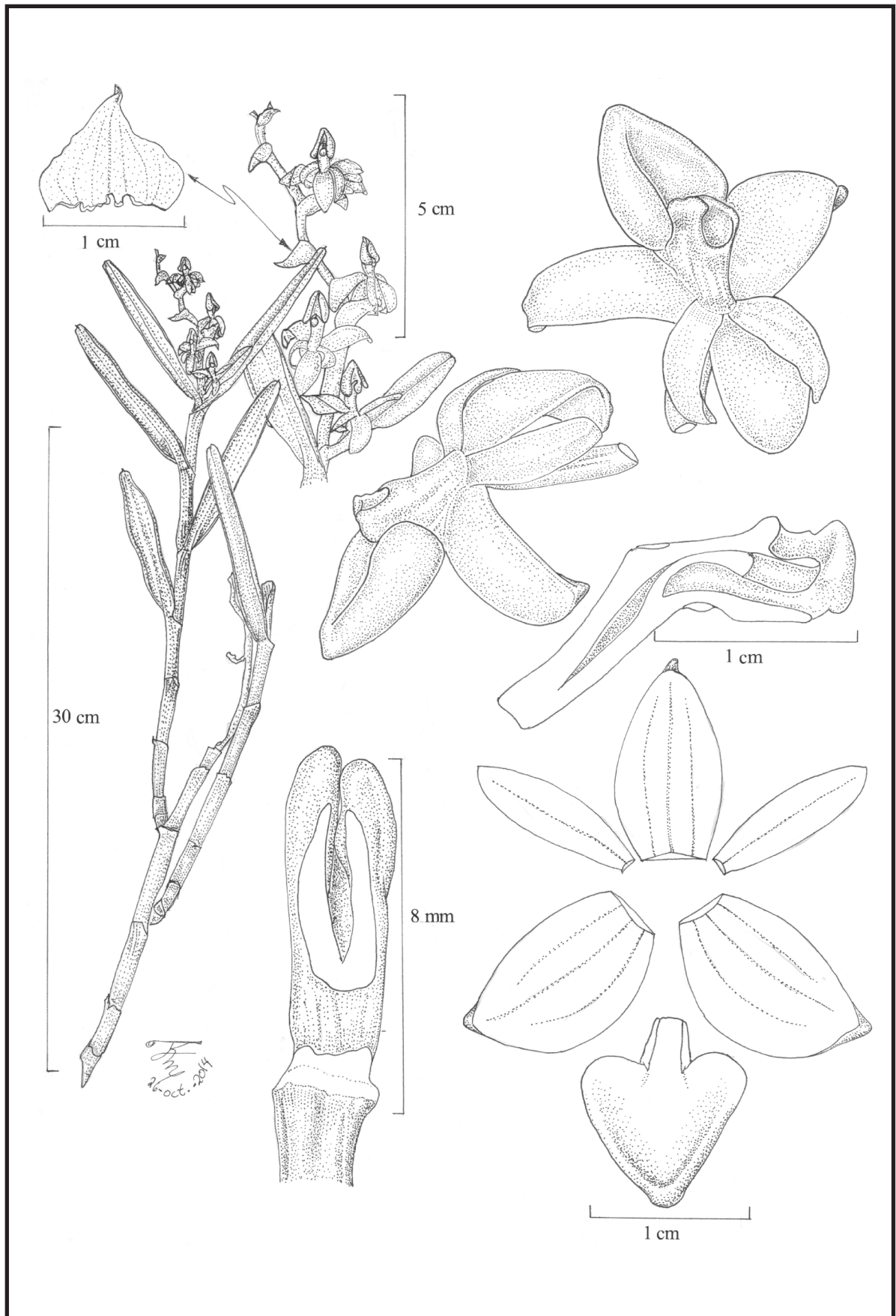
Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1553



EPIDENDRUM RECURVITEPALOSTACHYUM Hågsater & E.Santiago

Plate 1554

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

Type: ECUADOR: Napo: Cartagena, km 25 from El Carmelo on road towards La Bonita, ca. 2800 m, 8 April 1979, *Bernt Løjtnant, Ulf Molau & Michael T. Madison 12016*. Holotype: AAU! (illustration voucher). Isotype: GB!

Similar to *Epidendrum chondrochilum* F.C.Lehm. & Kraenzl. but the flowers greenish yellow, sepals and petals strongly recurved and convex; rachis terete, sinuous, column and lip totally exposed, nectary glabrous, not pilose.

Epiphytic or terrestrial, monopodial, branching **herb**, 45-52 cm tall. **Roots** 1-3 mm in diameter, basal, terete, thin, white. **Stems** branching when mature, (the branches themselves branching), cane-like, terete, erect, straight; the primary stem 41-45 x 0.6-0.85 cm, the branches 3-36 x 0.35-0.7 cm; base covered thy sheaths 1.2-4 cm long, tubular, not foliar, scarious. **Leaves** ca. 7-15, persistent towards the apex of the apical half of the primary stem, 3-6 on the branches, articulate, distichous, sub-erect, similar in size and shape, sub-coriaceous; sheaths 0.5-3.8 cm long, tubular, minutely striated, rugose, reddish brown; blade (of the primary stem) 4-10 x 1.0-1.5 cm; (of the branches) 2-9 x 0.7-1.2 cm; long, oblong, the apex rounded, minutely apiculate, with a low dorsal keel, margin slightly revolute, in pressed specimens. **Spathe** lacking. **Inflorescence** 3-8.5 cm long, apical, racemose, erect, flowering only once, sub-densely few-flowered; peduncle 6-10 mm long, terete, thin, erect, straight; rachis sinuous. **Floral bracts** 6-14 x 5-12 mm, shorter than the ovary, triangular-ovate, acuminate, embracing. **Flowers** 5, simultaneous, non-resupinate, fleshy, greenish yellow, the sepals tinged reddish; fragrance not registered. **Ovary** 6-10 mm long, terete, thin, not inflated, minutely striated. **Sepals** free, recurved, slightly convex, elliptic to broadly elliptic, apex obtuse, minutely apiculate, with a low dorsal keel, 3-veined, margin entire, spreading; dorsal sepals 8-10 x 4-6 mm, elliptic; lateral sepals 8-11.5 x 5-8 mm, broadly elliptic, oblique. **Petals** 10-11 x 2.5-3.5 mm, free, recurved, narrowly elliptic, apex obtuse, oblique, 1-veined, margin entire, spreading. **Lip** 6-10 x 8-11 mm, united to the column, entire, deltate, fleshier towards the apex, cymbiform in natural position, embracing the apex of the column, margin entire, spreading; ecallose, without ribs. **Column** 7-8 mm long, thick, arching upwards towards the apex, with a pair of rounded lateral wings. **Clinandrium-hood** reduced, margin entire. **Anther** and **Pollinia** not seen. **Rostellum** apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** shallow, without penetrating the ovary, not inflated, unornamented. **Capsule** ellipsoid, 47-50 x 20-23 mm; pedicel 6 mm long, body 32-34 x 20-23 mm; apical neck 7-12 mm long.

OTHER SPECIMENS: COLOMBIA: Putumayo: between San Francisco and Mocoa, 8500 ft, 30 X 1974, *Plowman 4318*, COL! **ECUADOR: Loja:** Yangana to Valladolid, km 13.5, 7000 ft, 10 IX 1999, *Hágsater 12301*, AMO! P.N. Podocarpus on the slope of the Cajanuma Mts. 15 km S of Loja, 2800 m, 22 III 1985, *Hirtz 2276*, MO! Parque Nacional Podocarpus, Cajanuma, 2900 m, 8 VI 2006, *Werner 2031*, AMO! (specimen and spirit) **Azuay:** NW of the Páramo del Castillo (ca. 6-8 km, N-NE of Sevilla de Oro), 10000-11200 ft, 31 VIII 1945, *Camp E-5178*, AMES! NY! S! **Morona-Santiago:** between Campanas and Arenillas, along Río Tintas, 10 leagues SE of El Pan, 2195 m, 13 VII 1943, *Steyermark 53606*, AMES! F! **Napo:** km 31 road from Baeza to Tena, 2200 m, 29 V 1986, *Dodson 16440*, MO! QCNE! **Sucumbíos:** Santa Bárbara, km 43.3 desviación de la carretera Tulcán-Ibarra hacia La Bonita, después de Santa Bárbara, 2680 m, col. 8 VII 1990, pressed cult. 18 VIII 1993, *Hágsater 10564*, AMO! MO! QCA! (ilustración, AMO) **Zamora-Chinchipec:** between Tambo Consuelo and Tambo Cerro Negro, 8500-9500 ft, 20-24 VIII 1945, *Camp E-4965*, NY! Nudo de Sabanilla, pass on road Yangana-Valladolid, 2800-2900 m, 5 IV 1985, *Harling 23701*, GB! QCA! Limón to Cuenca on east side of pass, I 1989, *Hirtz 4183*, MO! P.N. Podocarpus, road Loja-Zamora, just E of pass, 2800 m, 15 III 1989, *Madsen 85905*, LOJA! QCA! **PERU: Amazonas:** Bagua, Cordillera Colán E of La Peca, ca. 10300 ft, 25 VIII 1978, *Barbour 3202*, LE! MO! SEL! USM! **Piura:** Huancabamba; Distrito Carmen de la Frontera, Cabeceras de Quebrada Gallo, Proyecto Minero Río Blanco, 3100-3300 m, 18 VI 2005, *Cano 15666*, USM! Carmen de La Frontera; alturas de Nueva York, 3160 m, 28 VII 2006, *Cano 16810*, USM!

OTHER RECORDS: ECUADOR: Without locality, *Medina s.n.*, digital image, AMO! (photo) **Loja:** Parque Nacional Podocarpus, Cajanuma, 2900 m, 8 VI 2006, *Werner 2031*, digital image, AMO! (photo voucher) **Zamora-Chinchipec:** Parque Nacional Podocarpus, photo published as *Epidendrum macrostachyum*, <http://www.unl.edu.ec/miccambio/paramos-del-parque-nacional-podocarpus/> Eastern side of pass on road from Yangana to Valladolid, 2000-2700 m, 24 VIII 1985, *Hirtz 2327*, slide, AMO!

DISTRIBUTION AND ECOLOGY: Ranging from the Cordillera Oriental of the Andes from southern Colombia (Putumayo), Ecuador and northern Peru (Amazonas & Piura); epiphytic and terrestrial at 2100-3300 m altitude. Flowering in January to October.

RECOGNITION: *Epidendrum recurvitepalostachyum* belongs to the *Macrostachyum* Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the oblong leaves with the apex rounded (2-10 x 0.7-1.5 cm), inflorescence short (3-8.5 cm long) and few-flowered, rachis terete and sinuous, the floral bracts triangular-ovate (6-14 x 5-12 mm); the greenish yellow flowers with the sepals and petals recurved and convex (sepals 8-11.5 mm long), thus totally exposing the column and lip. *Epidendrum chondrochilum* is vegetatively very similar, but the flowers are greenish brown, sepals, though similar in size are partly spreading and concave, thus partly hiding the column and lip, the rachis is laterally compressed and straight. *Epidendrum humeadorensis* Hágsater & Dodson is florally similar, but the leaves are elliptic-lanceolate, with the apex acute (8.5-14 x 1.9-2.5 mm), flowers are yellowish green, sepals 16-20 mm long, and the petals elliptic. *Epidendrum stenobractistachyum* Hágsater & E.Santiago has lanceolate leaves with the apex acute, (14-16 x 3-4 cm, leaves on the main stem); flowers are greenish yellow, somewhat larger, with the sepals slightly reflexed (14-15 mm long); the inflorescence is longer (6.5-17 cm long) with the floral bracts narrowly triangular (8-18 x 4-6 mm).

CONSERVATION STATUS: DD. Widespread along its range.

ETYMOLOGY: From the Latin *recurvatus*, curved backwards, and the Greek *πεταλον*, petal, modified to tepal by metathesis to represent both the sepals and petals; and *σπασυ*, ear of corn, in reference to the reflexed sepals which distinguish this species from others of the *Macrostachyum* Group.

REFERENCES: Hágsater, E. & C. H. Dodson 1999, *Epidendrum humeadorensis* in E. Hágsater, L. Sánchez Saldaña & J. García-Cruz (eds.), *The Genus Epidendrum*, Part 2, *Icon. Orchid.* 3: t. 335. Hágsater, E. & E. Santiago, 2015, *Epidendrum stenobractistachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1562.



Authors: E. Hágsater & E. Santiago

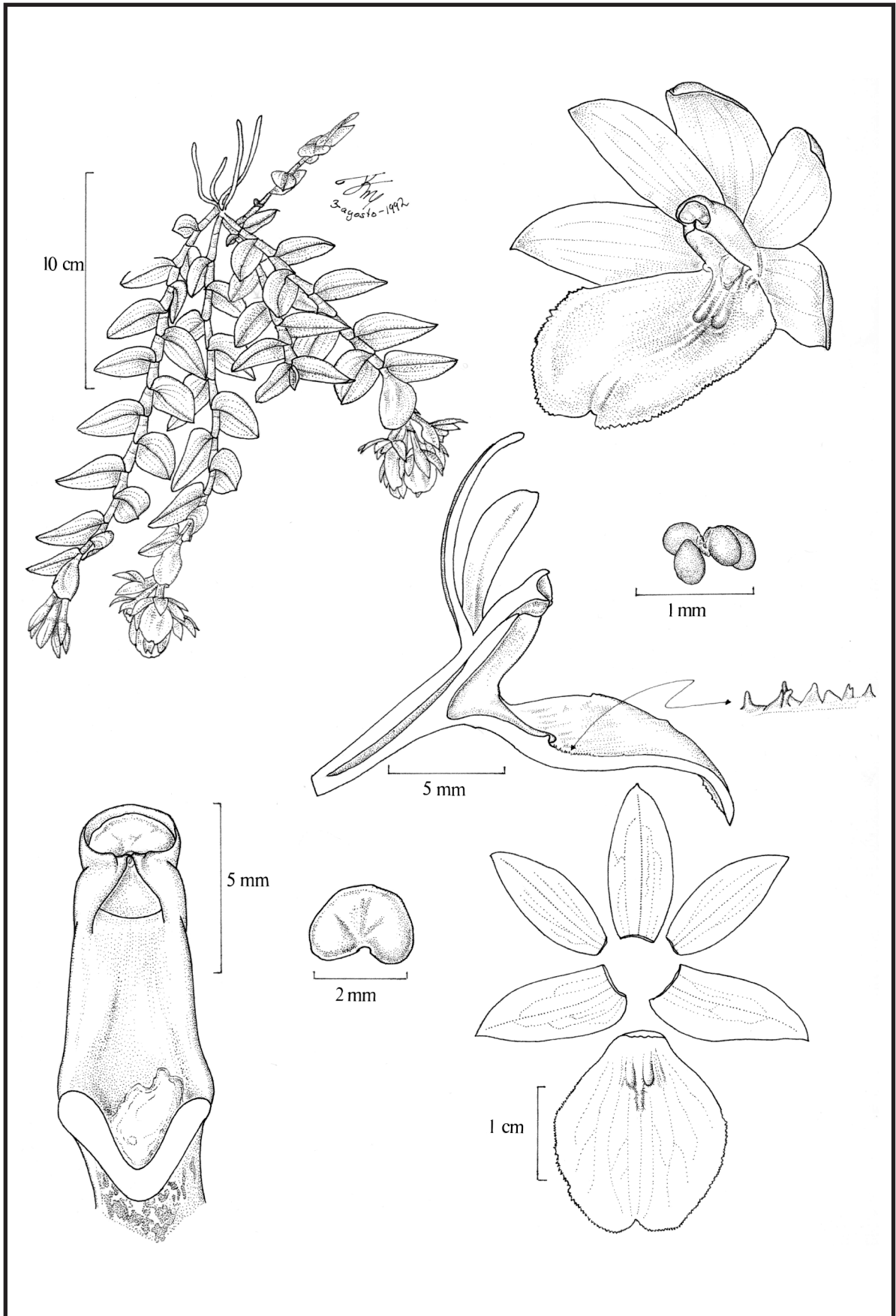
Illustrator: R. Jiménez M. Photo: F. Werner

Editors: E. Hágsater & L. Sánchez S.

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ICONES ORCHIDACEARUM 15(1). 2015. Plate 1554



EPIDENDRUM RHODOCHILUM (Schltr.) Hágsater & Dodson

Plate 1555

EPIDENDRUM RHODOCHILUM (Schltr.) Hágsater & Dodson, *Orquídea* (Mexico City) 12(2): 296. 1992.

Basionym: *Diothonea rhodochila* Schltr. Repert. Sp. Nov. Regni Veg. Beih. 27: 61. 1927. Type: COLOMBIA: Nariño: Daza, 10 km NW von Pasto, 2600 m, January 1922, **Werner Hopp 146**. Type: B, destroyed. Neotype (here designated): ECUADOR: Sucumbios: después de Santa Bárbara, 2080 m, 8 VII 1990, pressed cult. 3 VIII 1992, **Eric Hágsater, Calaway H. Dodson, Daniel Rubio & Nixon Revelo 10560**, AMO! Isoneotype: QCA! (Illustration voucher). Clononeotypes: Ibid. pressed 9 VII 1993, AMES! Ibid. pressed cult. 10 IX 1995, COL!

Epiphytic, caespitose, sympodial, pendent **herb**, 15-24 cm long. **Roots** 0.5-1.0 mm in diameter, basal, fleshy, thin. **Stems** 11-18 cm long, simple, cane-like, laterally compressed, straight. **Leaves** 8-12, distichous, distributed throughout the stem, unequal in size (the basal ones somewhat shorter); sheath 1.0-1.6 cm long, infundibuliform, minutely striated, ancipitose; blade 1.5-4.0 x 1.0-1.8 cm; articulate, ovate, oblique, apex acute, minutely apiculate, coriaceous, succulent, smooth, green, somewhat tinged de reddish, apical margin erose. **Spathe** 22-24 x 10-15 mm, single, wide, semi-orbicular, oblique, conduplicate. **Inflorescence** 4.5-6 cm long, apical, racemose, from the mature growth, flowering only once, pendent; peduncle totally covered by the spathaceous bract. **Flowers** 6, resupinate, simultaneous, greenish, the lip intense burgundy-red; no fragrance recorded. **Floral bracts** 2.5 mm long, much shorter than the ovary, triangular, acute, embracing. **Ovary** 8-12 mm long, not inflated, terete, unornamented. **Sepals** 15-17 x 6.5-7.0 mm; partly spreading, free, somewhat fleshy, ovate-oblong, 3-veined with irregular secondary veins, margins spreading; dorsal sepal obtuse, apiculate; lateral sepals acute, oblique. **Petals** 15-16 x 5.3-5.5 mm, partly spreading, elliptic-ovate, somewhat oblique, succulent, apex acute, 3-veined, the lateral veins branching, margins entire, spreading. **Lip** 20-21 x 15-19 mm, free of the column and nearly perpendicular to it, sub-orbicular-obovate, the base somewhat cuneate, minutely papillose, apical margin denticulate, apex emarginate; the calli substituted by three low, narrow, parallel ribs, the mid-rib somewhat longer, disc minutely pubescent. **Column** 6.5 mm long, very slightly arched, wedge-shaped, narrower towards the apex. **Clinandrium-hood** prominent, without surpassing the body of the column, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigma** apparently lacking in a wide short sub-apical, stigmatic cavity wide, short, sub-apical. **Nectary** very short, wide, barely penetrating behind the perianth, smooth. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, slightly compressed, sub-equal; caudicles soft and granulose, shorter than the pollinia; viscidium semi-liquid, transparent. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Tenerife, 3000 m, 31 X 2009, Pérez 430, VALLE x2! ECUADOR: Sucumbios: La Bonita, 8 VII 1990, pressed cult. 6 XI 1992, Hágsater 10855, AMO! Ibid. pressed cult. 19 IX 1995, AMO! CUCV! Road to La Bonita, 1 XI 1991, pressed cult. 9 VII 1993, J.L.Orchids sub Hágsater 11151, AMO! Santa Bárbara de Sucumbios, 2400 m, 10 II 1959, Harling 4191, S! Napo: Papallacta, road Quita-Baeza, 2800 m, V 1984, Hirtz s.n., MO! (illustration, published Dodson & Dodson, 1989.) Tungurahua: Mt Tungurahua, Baños-Riobamba, 2700 m, VII 1985, Hirtz 2882, MO! Carretera Papallacta-Baeza, 2750 m, 7 VI 1988, Palacios 2582, QCNE! VENEZUELA: Táchira: entre Bramón y Las Delicias, 1750 m, 15 V 1967, Steyermark 98294, VEN!

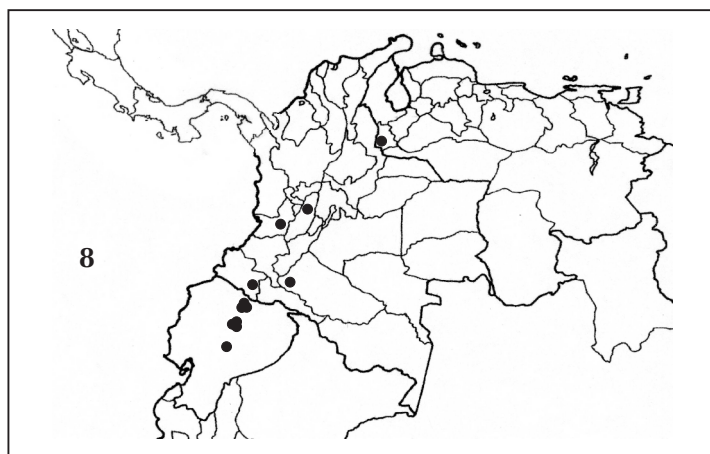
OTHER RECORDS: COLOMBIA: Without locality data, 2500-2600 m, E. Gallego s.n. digital photo, AMO! Ibid. M. Londoño s.n., digital photo, AMO! Caquetá: Belén de Andaquíes, E. Trujillo s.n., digital photo, AMO! Tolima: Ibagué, Inspección de Policía Pastales, 23 II 2014, M. Rincón 110, digital images, AMO! Ibagué, 2014, M. Rincón 278, digital images, AMO! ECUADOR: Napo: Papallacta, road Quita-Baeza, 2800 m, May 1984, Hirtz s.n., illustration published by Dodson (1989). VENEZUELA: Táchira: entre Bramón y Las Delicias, 1750 m, 15 V 1967, Steyermark 98294, illustration, in part, Dunsterville 58, type "A", VEN! (Type "B", corresponds to *E. megalospathum* Rchb.f.) copy of illustration at AMES!

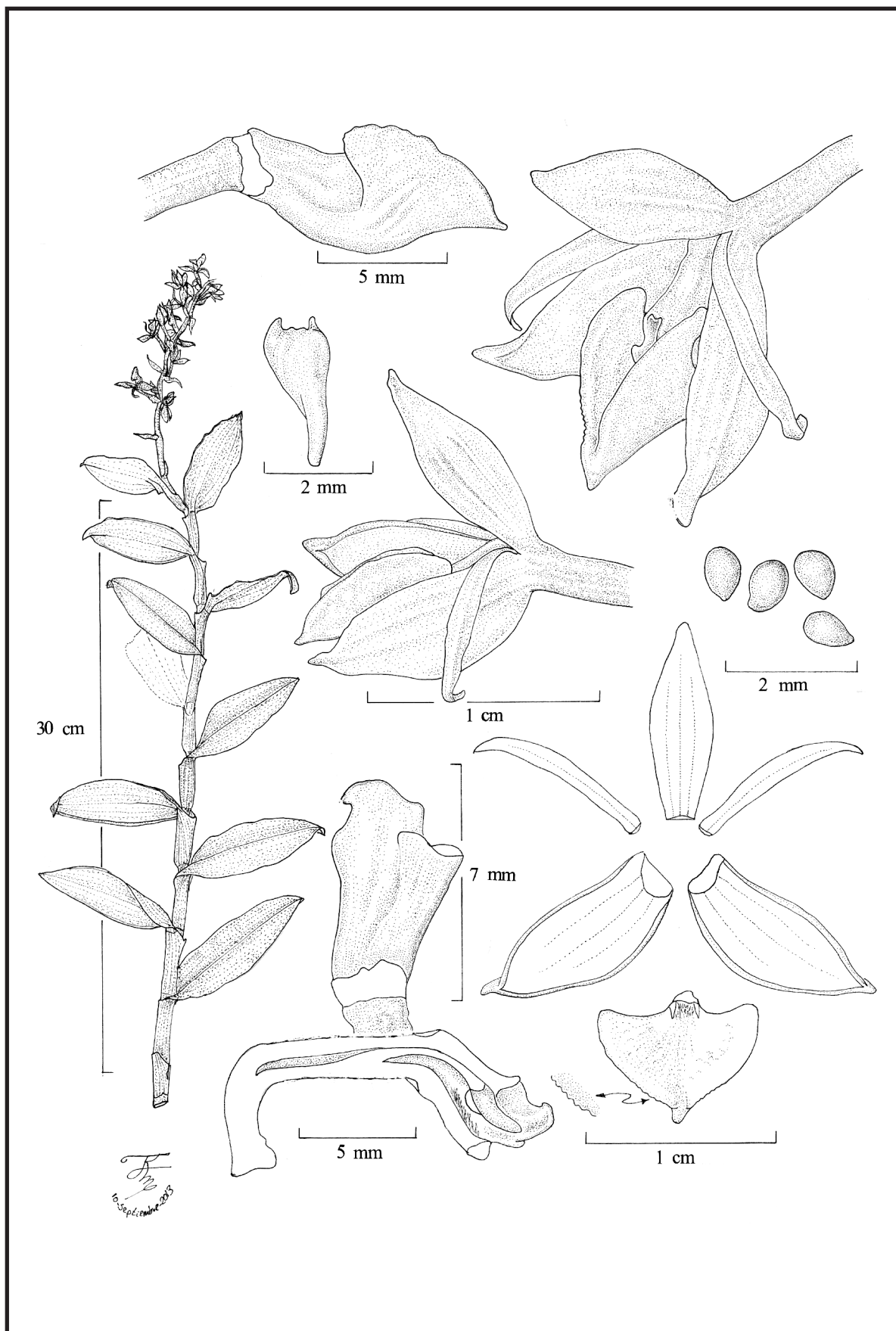
DISTRIBUTION AND ECOLOGY: Known presently from the Cordillera Central of Colombia, and the upper Amazon slope of the Cordillera Oriental of the Andes from western Venezuela to northern Ecuador; epiphytic, growing at 2400-3000 m altitude. Flowering May to October, February.

RECOGNITION: *Epidendrum rhodochilum* belongs to the *Megalospathum* Group characterized by the sympodial, sub-caespitose but branching habit, many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathes, resupinate flowers, the column more or less united to the lip; and the *Megalospathum* Subgroup has the calli substituted by elongate, low ribs, flowers green or greenish brown, lip burgundy red, lustrous, margin denticulate. The species is recognized by the 11-18 cm long stems, peduncle of the inflorescence totally hidden within the spathe, sepals ovate-oblong, 15-17 x 6.5-7.0 mm, petals elliptic-ovate, 15-16 x 5.3-5.5 mm; lip with 3 parallel ribs, the middle one longer, disc minutely pubescent. *Epidendrum megalospathum* Rchb.f. has similar sized plants, but the sepals and petals are narrower, sepals oblong to oblong-elliptic, 15-18 x 4-5.5 mm, petals ovate-elliptic, 14-16 x 4-4.5 mm, the apex of the peduncle and rachis of the inflorescence totally exposed outside the spathe, lip with calli substituted by two low, narrow, parallel ribs, with two lower ribs in the middle forming a "V" shaped structure, and then ending in a minutely papillose, short extension reaching about 1/3 of the lip. *Epidendrum brachyrhodochilum* Hágsater & E.Santiago has shorter stems, 3.5-7 cm long, the peduncle and rachis totally hidden within the spathes, sepals elliptic, 11-12 mm long, petals elliptic-sub-ovate, 11-12 x 5 mm, lip sub-orbicular-obovate, 12-16 x 12-14 mm, disc with 3 parallel ribs all the same size and length, the lateral pair bifurcate at the base and thus appearing as 5 ribs, the lateral ribs very short.

ETYMOLOGY: From the Greek, ροδο, rose, rosy, and χειλος, lip, in reference to the burgundy-red color of the lip.

REFERENCES: Dodson, C. H. & P. M. Dodson, 1989, *E. megalospathum*, in *Orchids of Ecuador*, Icon. Pl. Trop. Ser. II, 5: t. 473. Hágsater, E., & E. Santiago, 2015, *Epidendrum brachyrhodochilum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1508. Santiago, E., & E. Hágsater 2015, *Epidendrum megalospathum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1539.





EPIDENDRUM ROSTRIGERUM Rchb.f.

Plate 1556

EPIDENDRUM ROSTRIGERUM Rchb.f., *Linnaea* 41: 38, 1875.

Type: PERU: [Puno:] Sachapata Peruviae ad truncos arborum, September 1854, **Lechler 2690**. Holotype: W-R! tracing AMES!

Epiphytic or terrestrial, monopodial, branching **herb**, 50-180 cm tall. **Roots** 2-3 mm in diameter, basal, fleshy, white. **Stems** scarcely branching when mature, cane-like, terete, erect; the primary stem 37-170 x 0.5-1 cm, the base covered with sheaths 30-32 mm long, tubular, non-foliar, minutely striated and rugose, becoming fibrous with time. **Leaves** numerous, distributed throughout the stem, articulate, alternate, partly spreading, similar in size; sheath 10-40 x 7-12 mm, tubular, striated, rugose, purple; blade 4-9 x 2-3 cm, oblong-elliptic, acute, margin entire. **Spathes** lacking. **Inflorescence** 13 cm long, apical, racemose, erect, flowering only once, laxly many-flowered; peduncle 1-3 cm long, erect, straight; rachis 10-12 cm long, terete, thin, straight. **Floral bracts** 10-12 x 3-5 mm, prominent, slightly longer than the ovary, but not as long as the flower, narrowly triangular-lanceolate, acuminate, amplexicaul, purple-green. **Flowers** 18-22, successive (though several are open at one time), non-resupinate, fleshy, green tinged reddish purple, the lip yellowish; fragrance not registered. **Ovary** 7-10 mm long, terete, thin, longitudinally striated, not inflated, purple-green. **Sepals** partly spreading, 3-veined, margin entire, spreading; dorsal sepal 9-10 x 3-4 mm, free, narrowly elliptic, apex narrowly rounded; lateral sepals 10-11 x 4-5 mm, minutely apiculate, obliquely united to the very base of the column, oblique, with a low dorsal keel. **Petals** 8-10 x 1-1.5 mm, free, partly spreading, linear, falcate, acute, 1-veined, margin entire, spreading. **Lip** 6-8 x 6-10 mm, united to the column, fleshy, entire, crescent shaped, nearly semi-circular, apex prominently apiculate, ecallose, without ribs, scarcely pubescent at base, cymbiform in natural position, embracing the apex of the column without covering it, margin minutely crenate, spreading. **Column** ca. 5-6 mm long, slightly arched upwards at the clinandrium, thick, with a pair of rounded wings with the apex uncinat. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex rostrate, surpassing the apex of the column. **Pollinia** 4, ovoid. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** shallow, barely penetrating the ovary, not inflated, pubescent. **Capsule** not seen.

OTHER SPECIMENS: ECUADOR: Napo: Environs of Cosanga, 13 XII 1976, *Davis 364*, AMES! S! Guagra Urcu, near summit, 3150 m, 29 IX 1980, *Holm-Nielsen 27573*, AAU! **Morona-Santiago:** Guamote-Macas Rd, 2900 m, 14 X 2004, *Hirtz 9122*, AMO! **PERU: Amazonas:** Bagua, Cordillera Colán SE of La Peca, 8000 ft, 25 IX 1978, *Barbour 3565*, MO! *Ibid.* 8050 ft, 6 X 1978, *Barbour 3780*, MO! (illustration voucher). SEL! USM! *Ibid.* 7750-8075 ft, 16 X 1978, *Barbour 4098*, MO! **Cajamarca:** Santa Cruz, Distr. Pulán, La Zanja, 2900 m, 7 VIII 2008, *Santa Cruz 2425*, USM! **Huancavelica:** Tayacaja, arriba de Marcavalle, distrito de Huachocolpa, 3200 m, 20 IV 1964, *Tovar 4769*, UC! **Pasco:** Oxapampa, Dist. Huancabamba, Quebrada Yanachaga, 2100-2200 m, 27 I 2005, *Arias 103*, MO! P.N. Yanachaga-Chemillén, 3260 m, *Monteagudo 13750*, HOXA! MO! (Photo voucher.) **BOLIVIA: La Paz:** Nor Yungas, 1.6 km E of Catapata on the road between Unduavi and Yolosa, 3100 m, 20 II 1986, *Solomon 14911*, MO!

OTHER RECORDS: PERU: Pasco: Oxapampa: P. N. Yanachaga-Chimillén, *Becerra s.n.*, digital image, AMO! (photo voucher). **PERU: Pasco:** Oxapampa; Huancabamba, P. N. Yanachaga-Chemillén, 3260 m, *Monteagudo 13750*; photographs 44 (1), (2), (3), (4), (5) digital images, AMO!

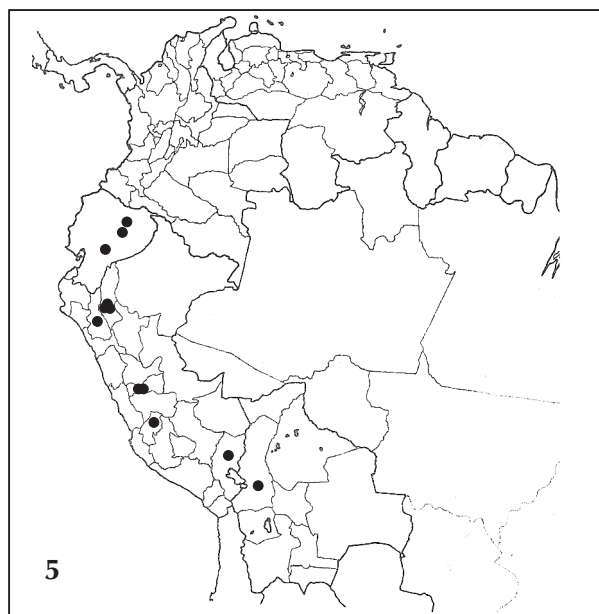
DISTRIBUTION AND ECOLOGY: Widely distributed in Ecuador, Peru and western Bolivia, on the upper slope of the Cordillera Oriental of the Andes, at 2100-3200 m altitude. Epiphytic and terrestrial in cloud forest. Flowering from August to February.

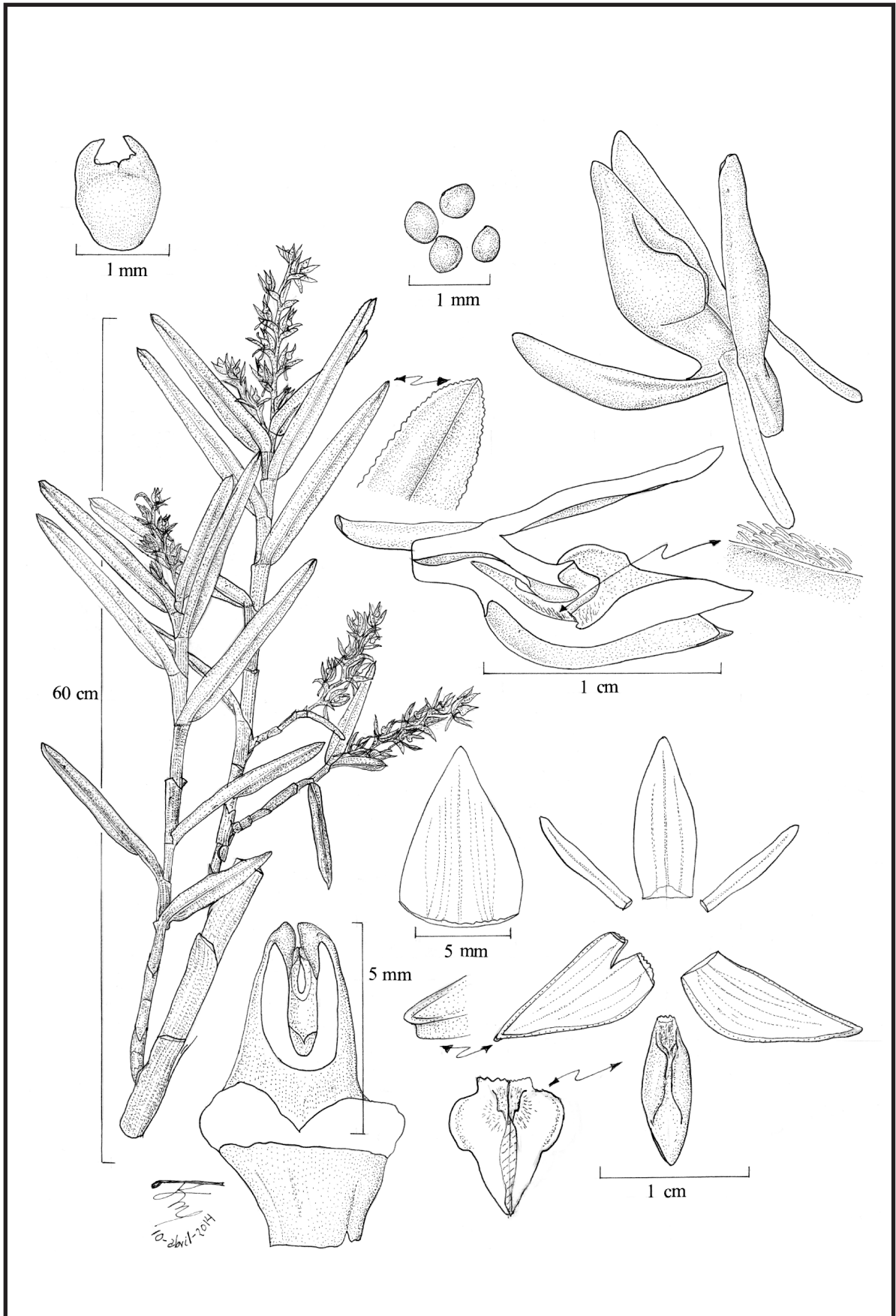
RECOGNITION: *Epidendrum rostrigerum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the oblong-elliptic leaves, laxly many-flowered inflorescence ca. 13 cm long, small flowers (sepals 9-11 mm long), green tinged reddish purple, sepals acute, lip crescent shaped, nearly semi-circular, the apex prominently apiculate, and the apex of the anther rostrate. *Epidendrum probosantherum* Hágsater is vegetatively similar, but has a shorter inflorescence, 5-8 cm long, flowers somewhat larger (sepals 10-13 mm long), sepals acuminate, and the lip deltate with the base truncate and a low rib running down the middle of the blade; it also has a long, rostrate anther. *Epidendrum dermatanthum* Kraenzl. has linear-oblong leaves, large flowers (sepals 15-18 mm long) reddish brown in color, anther obtuse at the apex, and does not surpass the apex of the column. *Epidendrum bangii* Rchb.f. also has large flowers (sepals 14-18 mm long), leaves are lanceolate with the apex acute to acuminate, rachis of the inflorescence somewhat flexuous. *Epidendrum macrostachyum* Lindl. has flowers of similar size (sepals 11.0-11.5 mm long) color of ripe olives, sepals are sub-obtuse at the apex, dorsal reflexed, lateral sepals spreading, leaves are lanceolate-elliptic, and the anther short and obtuse at the apex; this species is widespread but limited to Colombia and Ecuador.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *rostrum*, beak, in reference to the long beak-like anther characteristic of this species and rare in the genus.

REFERENCES: Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1454. Santiago, E., & E. Hágsater, 2015, *Epidendrum dermatanthum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1519. Santiago, E., & E. Hágsater, 2015, *Epidendrum bangii* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1503.





EPIDENDRUM RUGULOSUM Schltr.

EPIDENDRUM RUGULOSUM Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 7: 147. 1920.

Type: COLOMBIA: Cauca: ca. 2000 m, **M. Madero s.n.** Holotype: B (destroyed). Lectotype (here designated): Sketch of flower from holotype: Schlechter & Mansfeld 1929, fig. 199.

Synonym: *Epidendrum carnosiflorum* C. Schweinf., *Bot. Mus. Leafl.* 11: 87, t. 6, f. 1-6, 1943. PERU: Junín: Pichis Trail, Eneñas, at 1700 m, 1 July 1929, **Ellsworth P. Killip & Albert C. Smith 25705**. Holotype: US!

Epiphytic or terrestrial, monopodial, branching **herb**, 60-300 cm tall. **Roots** 4 mm in diameter, at the base of the primary stem, fleshy, thick. **Stems** cane-like, branching, terete, erect, straight; the primary stem 60-90 x 0.9-1.5 cm; the branches (themselves branching) 3-23 x 0.4-0.6 cm. **Leaves** numerous throughout the primary stem, larger than on the branches; 3-9 on the branches, erect-spreading, articulate, alternate, coriaceous; sheath 1.2-3.5 cm long, tubular, minutely striated, rugose; blade lanceolate, apex obtuse, dorsally rugose, ventrally glaucous, with a dorsal keel, minutely apiculate, margin crenulate at the apex; leaves of the primary stem 6-17 x 1.1-1.8 cm, leaves of the branches 3.5-11 x 1.0-1.3 cm. **Spathe** lacking. **Inflorescence** 5.5-12 cm long, apical, flowering only once, racemose, occasionally producing an additional, short raceme from the base of the peduncle and thus paniculate, erect, distichous, few-flowered, somewhat lax-flowered; peduncle 1 cm long, rachis 4.5-9 cm long, zigzag. **Floral bracts** 6-9 mm long, prominent, much longer than the ovary (though not longer than the flower), distichous, spreading, ovate-triangular, acuminate, amplexicaul. **Flowers** 7-13, simultaneous, fleshy, non-resupinate, the lip always facing the rachis, sepals and petals yellowish to pale green, lip and column ivory-white; fragrance sweet, of honey, or Jazmin (fide Collantes). **Ovary** 2.5-4 mm long, narrow at the base, gradually thickened towards the apex, triquetrous, striated. **Sepals** 9-12 x 3-4 mm, partly spreading, free, fleshy, lanceolate, acute, 3-veined, the lateral veins branching so as to appear 5-veined, unornamented, slightly concave, margin entire, spreading; lateral sepals oblique, with a evident dorsal keel. **Petals** 7.5-8.5 x 0.7-1 mm, reflexed, fleshy, linear, obtuse, 1-veined, margin entire, spreading. **Lip** 6.5-9 x 6-9 mm, united to the column, conduplicate in natural position (it breaks when spread), 3-lobed, fleshy, the general shape the basal half obovate-orbicular, the apex triangular-lanceolate, densely pubescent in the disc and over the calli, margin entire; callus a single "Y" shaped platform, continued into a low, rounded rib that disappears shortly; lateral lobes 2.0-3.5 x 3-4 mm, hemi-elliptic embracing the apex of the column in natural position; mid-lobe 3.5-5 x 2-4 mm, triangular-lanceolate, obtuse, very fleshy. **Column** 4-5 mm long, short, straight, thick, the clinandrium-hood upturned, with a triangular, oblique tooth on each side of the apex. **Clinandrium-hood** reduced margin entire. **Anther** ovoid-spherical, the apex rounded, 4-celled. **Pollinia** 4, lentic-shaped, similar in size and shape; caudicles and viscidium not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** small, occupying 1/3 of the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, pubescent in front of the stigmatic cavity. **Capsule**, not seen.

OTHER SPECIMENS AND RECORDS: See appendix.

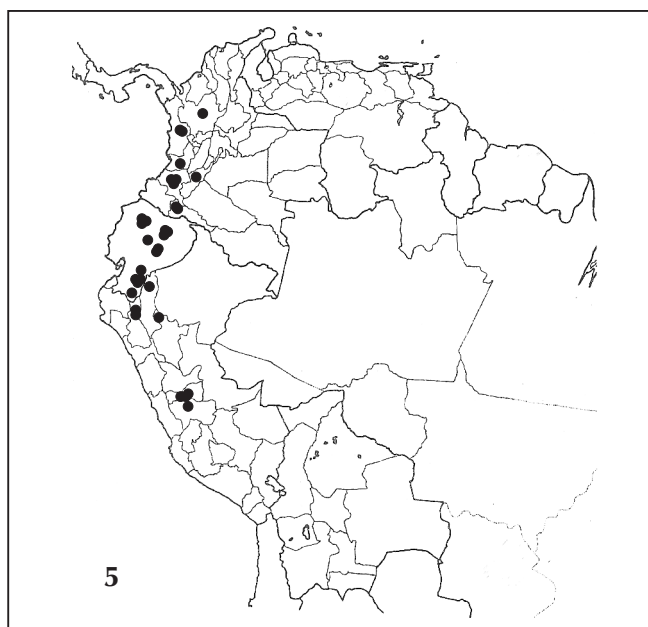
DISTRIBUTION AND ECOLOGY: Widely distributed on the Cordillera Central and Occidental of the Andes from central Colombia both the Pacific and Amazonian slope of the Andes in Ecuador, and the Cordillera Oriental in Peru. Epiphytic or terrestrial, growing at 900-2760 m altitude. Flowering mainly from January to June.

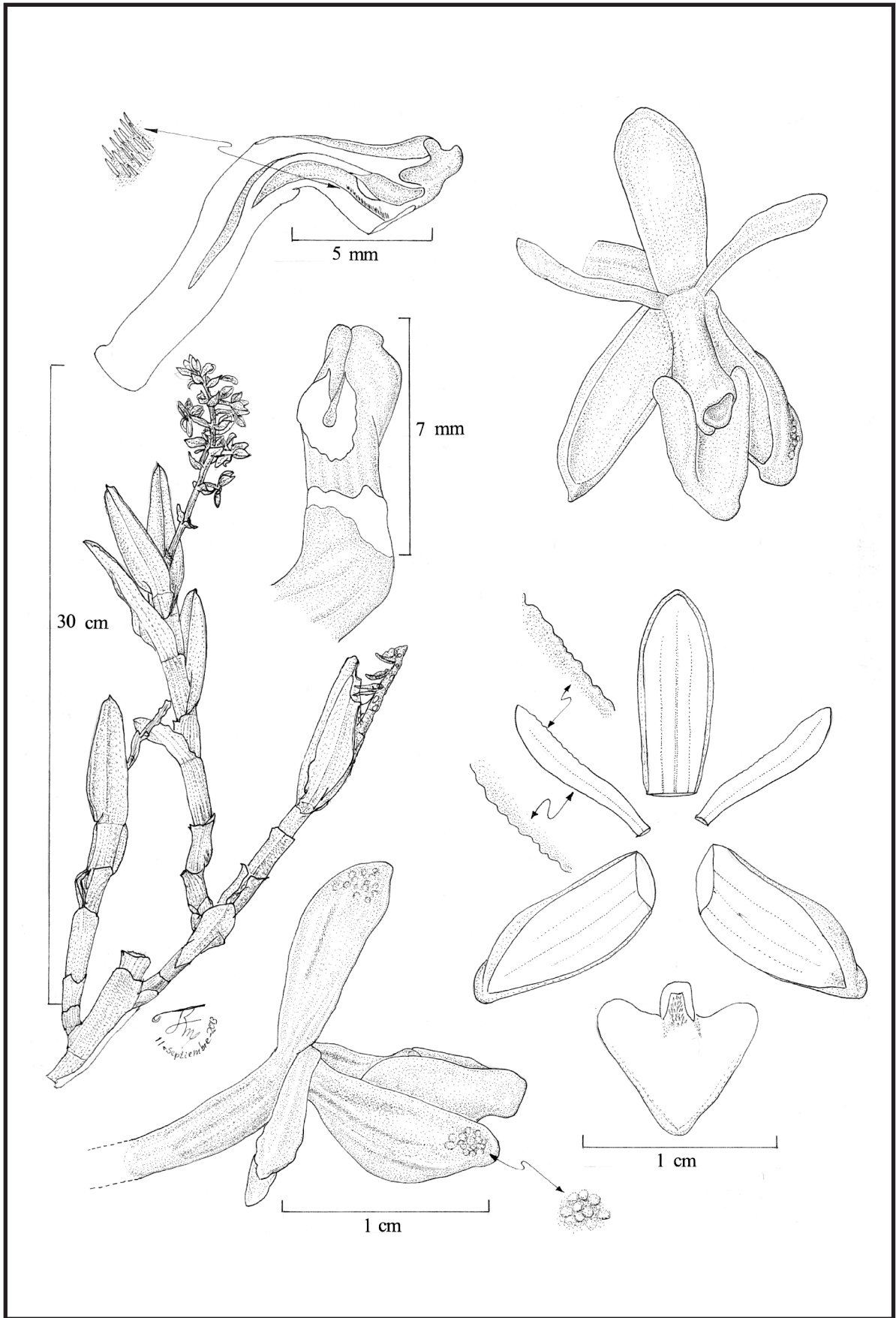
RECOGNITION: *Epidendrum rugulosum* belongs to the Aquaticum Group which is characterized by the monopodial, branching habit, the distichous, erect inflorescence, with fleshy flowers, and the disc of the lip and/or nectary often pilose. The species is recognized by the lanceolate leaves 3.5-17 x 1-1.8 cm, rugose above, glaucous underside, inflorescences erect, distichous, usually racemose, sepals partly spreading, 9-12 mm long, petals linear and reflexed, lip 3-lobed, lateral lobes hemi-elliptic, mid-lobe triangular lanceolate. *Epidendrum lindae* Hágsater has oblong-elliptic leaves 1-3 cm wide, generally paniculate inflorescences, the floral bracts recurved, sepals 6-7 mm long, lateral lobes of the lip obliquely sub-quadrate. *Epidendrum lindamazonicum* Hágsater & G. Calatayud has much shorter leaves, narrowly lanceolate-elliptic, 1.5-3.5 x 0.4-0.7 cm, racemose, laxly few-flowered inflorescences, spreading sepals 8 mm long, lateral lobes of the lip sub-quadrate and much larger than the mid-lobe. *Epidendrum stenocalymnum* Hágsater & G. Calatayud has ovate to narrowly lanceolate leaves 1.2-3.1 x 0.9-1.2 cm, inflorescences shorter, to 5-7.5 cm long, sepals obliquely ovate, 9-10 mm long, petals partly spreading, oblanceolate, and the lip entire, cuneate with the apex rounded and minutely apiculate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin *rugulosus*, somewhat wrinkled; in reference to the rugose leaf sheaths and leaves.

REFERENCES: Escobar R., Rodrigo, (ed.) 1994, **Orquídeas Nativas de Colombia** 5: 773, foto 915; photo by Juan Felipe Posada. Hágsater, E., & G. Calatayud, 2004, *Epidendrum stenocalymnum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 4, **Icon. Orchid.** 7: t. 790. Hágsater, E., & G. Calatayud, 2010, *Epidendrum lindamazonicum* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1349. Løjtnant, B., Notes on the genus *Epidendrum* (Orchidaceae) in Ecuador, **Bot. Notiser** 130: 322, 1977. Santiago, E., & E. Hágsater, 2010, *Epidendrum lindae* in E. Hágsater & L. Sánchez S. (eds.), *The Genus Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1348. Schlechter, R., & R. Mansfeld, 1929, *Figuren-Atlas zu den Orchideenfloren der südamerikanischen Kordillerenstaaten*, **Repert. Spec. Nov. Regni Veg. Beih.** 6-10: fig. nr. 199.





EPIDENDRUM SARCOSTACHYUM Hágsater, E.Santiago & E.Becerra

EPIDENDRUM SARCOSTACHYUM Hágsater, E.Santiago et E.Becerra, *sp. nov.*

Type: PERU: Pasco: Prov. Oxapampa and Pasco, 2700 m, 7 March 1986, *Henk van der Werff, G. Zúñiga, R. Arce & William Pariona 8534*. Holotype: MO! (illustration voucher).

Similar to *Epidendrum coordinatum* Rchb.f. but the lateral sepals very fleshy, flowers dorsally tinged with purple, the petals linear-oblancoate with the margin crenate, and the apex of the column with a pair of apical wings, the upper corner a right angle, the lower corner rounded.

Terrestrial, monopodial, branching **herb** 80-120 cm tall. **Roots** 2-3 mm in diameter, produced from the base of the main stem, rarely and scarce at the base of the branches, fleshy, thick. **Stems** primary stem 70-110 x 0.9-1.1 cm; branches (themselves also branched) 19-27 x 0.6-1 cm; cane-like, terete, erect, straight; base covered by sheaths 2-4 cm long, tubular, non-foliar, striated and rugose. **Leaves** ca. 13 on the main stem, 5-8 on the branches, distributed along the apical half of the stems; articulate, alternate, coriaceous, similar in size (except for the smaller apical leaf), erect, nearly parallel to the stem; sheath 12-40 x 6-11 mm, tubular, minutely striated, rugose; blades on the primary stem, 9-13 x 2.0-2.6 cm, on the branches 5.5-7.8 x 1.6-2.2 cm, lanceolate or elliptic-lanceolate, obtuse, margin entire, green, upper side lustrous, under side glaucous. **Spathe** lacking. **Inflorescence** 8.5-11.5 cm long, apical, racemose, erect, flowering only once, densely few-flowered; peduncle 10-20 mm long, terete, thin, erect, straight; rachis 7.5-9.5 mm long, terete, straight. **Floral bracts** 6-11 x 5-7 mm, slightly longer than the ovary, triangular-ovate, acute, amplexicaul. **Flowers** 11-18, simultaneous, non-resupinate, fleshy, yellow or green, the sepals dorsally tinged purple; fragrance not registered. **Ovary** 8-10 mm long, short, terete, thick, longitudinally striated, not inflated. **Sepals** obtuse, 3-veined, dorsally papillose (especially towards the apex), margin entire, spreading; dorsal sepal 10-11.3 x 4-5.4 mm, spreading, free, oblanceolate to oblong obovate, obtuse, slightly incurved; lateral sepals 10-12 x 5-6 mm, oblong, mucronate, partly spreading, obliquely united to the base of the column and nearly parallel to it, oblique, very fleshy towards the apex. **Petals** 9-10 x 1.75-2 mm, free, spreading, linear-oblancoate, obtuse, 1-veined, slightly oblique, margin crenate, spreading. **Lip** 7 x 8 mm, united to the column, entire, very fleshy, deltate when spread, base sub-truncate to sub-cordate, apex obtuse, cymbiform in natural position, embracing the sides of the apex of the column; ecallose, without ribs, margin entire, spreading. **Column** 7 mm long, short, thick, the apex slightly turned upwards, with a pair of apical wings, the upper corner a right angle, the lower corner rounded. **Anther** and **pollinia** not seen. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** shallow barely penetrating the ovary, retrorsely pubescent in front of the stigmatic cavity. **Capsule** ellipsoid, 3.5-4 x 1.5-1.6 cm; pedicel 5-7 mm long, terete, short; body 21-24 x 15-16 mm; apical neck 8-10 mm long.

OTHER SPECIMENS: PERU: Amazonas: Luya, Camporredondo, Tullanga, Cerro Huicaocunga o Condorpuna, 3310 m, 6 IX 1989, *Díaz 3819*, USM! Chachapayas-Celendín road, between Leimebamba and Calla Calla, 3000 m, 27 V 1984, *Smith 7188A*, MO! Calla Calla slopes, 3-5 km SE of km 422, Leimebamba-Balsas, 3000-3200 m, 22 VIII 1962, *Wurdack 1756*, US! Luya, Distrito San Francisco del Yeso, Ipaña-Las Palmas, 3055 m, 28 IV 2010, *Trujillo 443*, MOL! Cajamarca: Jaén, San José de la Alianza-Rinconada, 2500 m, 17 III 2009, *Vásquez 226*, MOL! Huánuco: Chinchao, San Pedro de Carpish, Arriba del tunel, 3015 m, 25 VIII 2002, *Salinas 621*, USM! Pasco: Distr. Huancabamba, P.N. Yanachaga-Chemillén, parte alta de la trocha Erica, cercanías al macizo de la Cordillera Yanachaga, 3260 m, 22 IV 2007, *Monteagudo 13744*, AMO! Oxapampa: Cordillera Yanachaga, Cerro Pajonal "chacos" 12 km SE of Oxapampa, 2700-2800 m, 7 X 1982, *Foster 9051*, MO! Oxapampa, trail to summit of Cordillera Yanachaga via Río San Daniel, 3150-3300 m, 12 VI 1984, *Smith 7707*, MO! QCA! USM! Santa Barbara, 11 III 2004, *Vásquez 29921*, MO! P.N. Yanachaga-Chemillén, Sector Santa Barbara, 3340 m, 11 III 2004, *Vásquez 29973*, MO! Sector Milpo, 2900 m, 18 III 2004, *Vásquez 30222*, MO! Ibid. sector San Daniel, en la trocha Erica, 3250-3450 m, 1 III 2008, *Vásquez 33832*, USM! Ibid. *Vásquez 33846*, AMO! USM! Dist. Huancabamba, P.N. Yanachaga-Chemillén, Sector Santa Barbara, Naciente de la Quebrada Amistad, 3350-3450 m. 14 VIII 2005, *Wilca 181*, USM! Piura: Huancabamba, Carmen de La Frontera; alturas de Nueva York, 3280-3555 m, 27 VII 2006, *Cano 16726*, USM!

OTHER RECORDS: PERU: Pasco: P.N. Yanachaga-Chemillén, digital photo series, *Becerra s.n.*, photo voucher AMO!

DISTRIBUTION AND ECOLOGY: Known only from northern Peru, Piura to Pasco, from near the summit of the Andes, on the eastern slope, and the Cordillera Colán, at 2500-3500 m altitude; terrestrial, in clearings in wet cloud forest. Flowering in March, July, August-October.

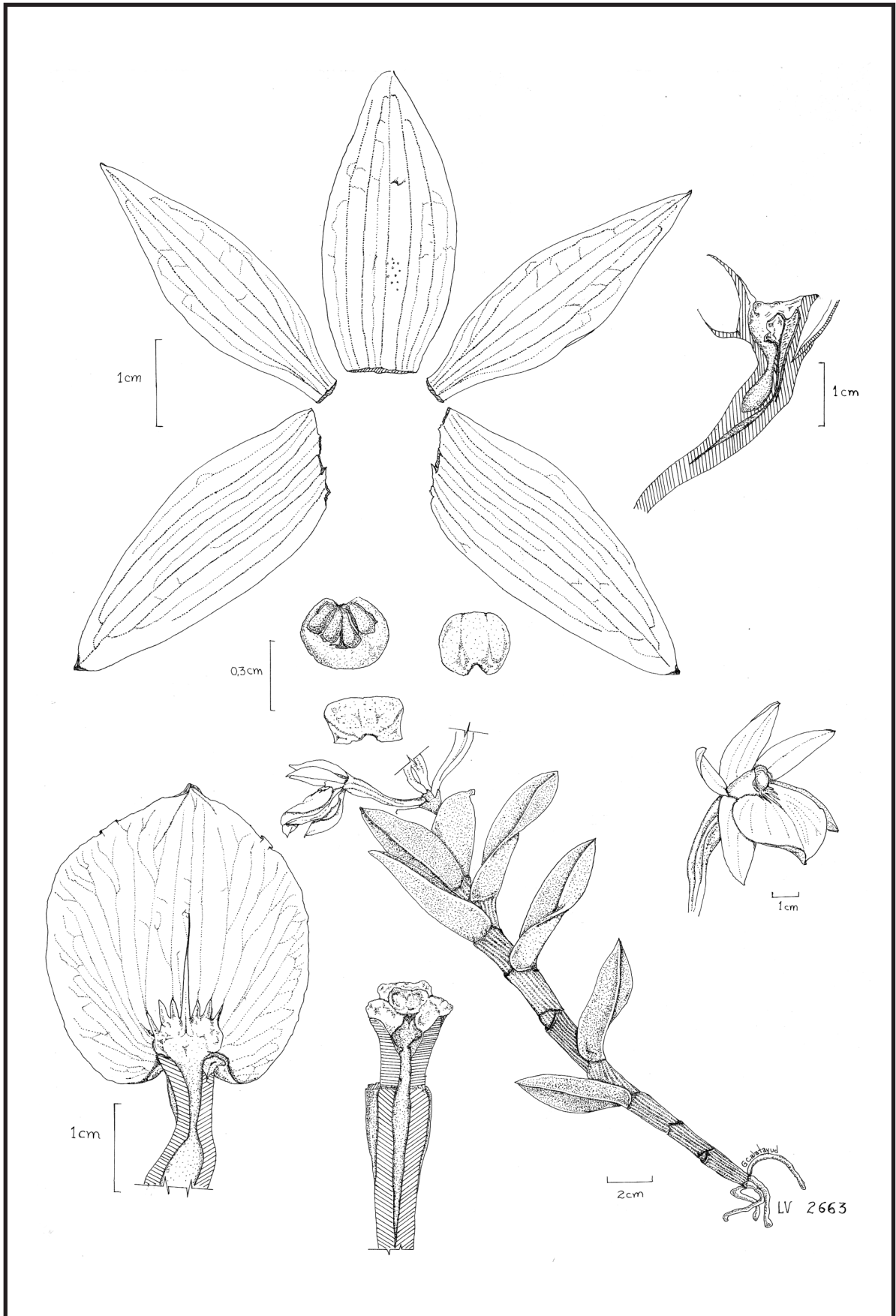
RECOGNITION: *Epidendrum sarcostachyum* belongs to the Macro-stachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the lanceolate to elliptic-lanceolate, erect leaves, nearly parallel the stem, those on the main stem 9-13 x 2-2.6 cm, the upper side lustrous, the lower side glaucous; the inflorescence is relatively short, 8.5-11.5 cm long, with simultaneous yellow to green flowers dorsally tinged purple towards the apex of the 10 mm long sepals, lateral sepals are very fleshy and nearly parallel to the column and obliquely united to it, petals are linear-oblancoate, spreading. *Epidendrum macrostachyum* Lindl. has somewhat spreading leaves, those of the main stem 12.5-13 x 3-3.5 cm, a pyramidal inflorescence extending 16-30 cm long, producing successive flowers ripe olive colored, sepals and petals are spreading and free, the dorsal sepals is reflexed. *Epidendrum rostrigerum* Rchb.f. has oblong-elliptic, somewhat spreading leaves, those of the main stem are 5-9 x 2.5-3 cm, sepals are 10 mm long, acuminate, anther has a rostrate apex clearly surpassing the apex of the column. *Epidendrum dermatanthum* Kraenzl. has linear-oblong leaves, 8.5-18 x 1.7-4 cm, inflorescence is 8-14 cm long, with successive reddish brown flowers, sepals 17-18 mm long, spreading. *Epidendrum chondrochilum* F. Lehm. & Kraenzl. has oblong to narrowly elliptic leaves, those of the main stem 10-15 x 1.2-1.7 cm, sepals and petals reflexed, convex, petals lanceolate and oblique with the margin entire, apex of the column with a pair of rounded wings, and the rachis is generally sinuous. *Epidendrum coordinatum* has very fleshy lateral sepals, with the apex uncinata, petals oblong, apex acute, falcate, column straight with a pair of rounded wings, the lip is very fleshy, deltate-cordiform, base cordate.

CONSERVATION STATUS: DD. Data deficient. It is found in protected parks at high altitude.

ETYMOLOGY: From the Greek *σαρξ*, flesh, and *σῶχος*, ear of corn, in reference to the very fleshy lip of this species with inflorescences which are reminiscent of ears of corn and constitute the Macro-stachyum Group.

REFERENCES: Santiago, E., & E. Hágsater, 2013, *Epidendrum macrostachyum* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1454. Santiago, E., & E. Hágsater, 2015, *Epidendrum coordinatum* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1514. Santiago, E., & E. Hágsater, 2015, *Epidendrum dermatanthum* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1519. Santiago, E., & E. Hágsater, 2015, *Epidendrum rostrigerum* in E. Hágsater & L. Sánchez Saldaña (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1556.





EPIDENDRUM SCUTELLA Lindl.

EPIDENDRUM SCUTELLA Lindl., Bot. Reg. 30: misc. pg. 83. 1844.

Type: ECUADOR: [Pichincha:] Guayan, on the western slope of Pichincha, **Karl Theodor Hartweg s.n.** Holotype: K-L.

Synonym: *Epidendrum platyoon* Schltr., Feddes Repert. Spec. Nov. Regni Veg., Beih. 9: 91-92. 1921. Type: PERU: Cajamarca: Chugur, nordwestlich von Hualgayoc, 2700-3000 m, Mai 1904, **August Weberbauer 4101**. Holotype: B (destroyed). Illustration of flower of type published in Mansfeld, R., Feddes Rep. Spec. Nov. Regni Veg. Beih. 57; t. 120, nr. 473. 1930. Isotype: PR!

Epiphytic, terrestrial or lithophytic, sympodial, caespitose, erect herb, 19-35 cm tall. **Roots** 0.5-1 mm in diameter, produced from the base of the stem, scarce, fleshy, thin, white. **Stems** 13-28 x 0.4-1 cm, simple, cane-like, terete, base covered by 1 or 2 sheaths 18-23 mm long, tubular, non-foliar, scarious. **Leaves** 6-10, distributed throughout the stem, alternate, articulate, unequal in size (the basal one smaller), coriaceous, sub-spreading in relation to the stem; foliar sheaths 10-30 x 6-12 mm, tubular, minutely striated (especially when dry); blade 4.7-12 x 1.2-2.5 cm, ovate-lanceolate, acute, margin entire. **Spathaceous bract** 1, 2.7-4 x 1.8-2 cm (without spreading), conduplicate, obliquely ovate, apex rounded, margin entire. **Inflorescence** 7-8 cm long (including the flowers), apical, erect, few-flowered; peduncle 5 mm long, thick, laterally compressed, erect, straight; rachis 7 mm long, laterally compressed, both generally totally hidden within the spathaceous bract. **Flowers** generally 5, simultaneous, resupinate, lime-green or yellowish green, the calli and the mid-rib white; fragrance afternoon and especially after sundown, of citrus, oranges. **Ovary** 28-40 mm long, terete, thick, slightly inflated behind the perianth to form a small vesicle, ornate with longitudinal ribs, their margin entire. **Sepals** 27-38 x 9-12 mm, partly spreading, cucullate, free, ovate-elliptic, apex acute, 5-veined, margin entire, spreading; lateral sepals oblique. **Petals** 28-36 x 9-12 mm, partly spreading, free, ovate-lanceolate, apex acute, 5-veined, margin entire, spreading. **Lip** 26-36 x 20-30 mm, united to the column, entire, convex, orbicular to orbicular-elliptic, base cordate, apex sub-obtuse, margin entire, spreading; bicallose, the calli small, each prolonged by 2-3 short ribs, with an additional mid-rib, narrow, low, acuminate, disappearing before reaching the middle of the blade. **Column** 9.5-10 mm long, wide, arching upwards. **Clinandrium-hood** prominent (though not surpassing the body of the column), margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obliquely ovoid, similar in size. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** not seen. **Nectary** penetrating just behind the perianth, slightly inflated, forming a small vesicle. **Capsule** not seen.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Widespread along the Cordillera Oriental of the Andes from western Venezuela through Colombia, Ecuador and Peru. Epiphytic, at 2000-3000 m altitude. Flowering throughout the year.

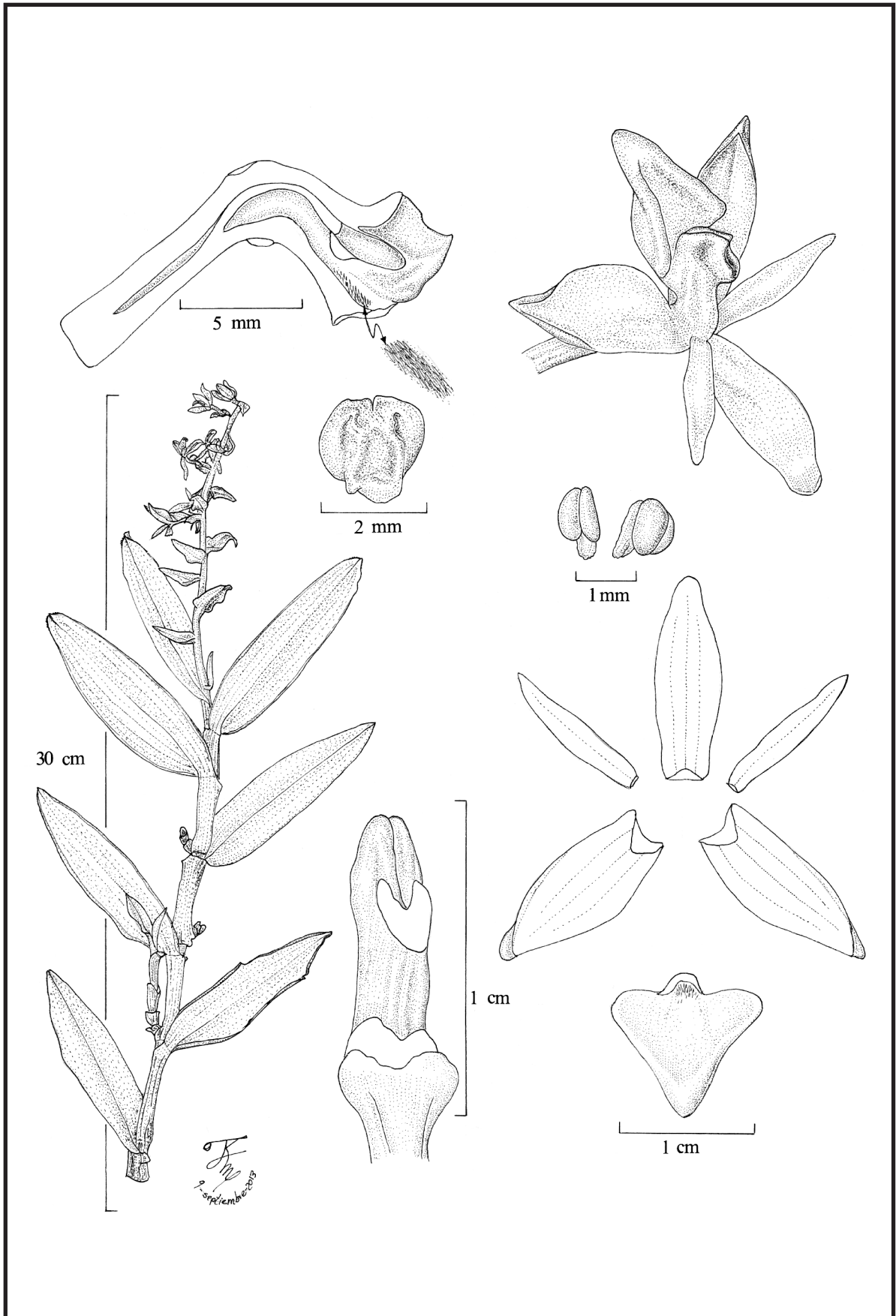
RECOGNITION: *Epidendrum scutella* belongs to Megalospatham Group characterized by the caespitose but branching habit, many-leaved stem, fleshy, oblique leaves, a short, few flowered, raceme subtended by large semi-ovate spathaceous bracts, resupinate flowers, the column more or less united to the lip. The species is recognized by the robust, compact stems, leaves ovate-lanceolate (4.7-12 cm long), with an acute apex, the inflorescence is generally 5-flowered, the flowers lime-green or yellowish green, the lip orbicular to elliptic-orbicular, the base cordate, apex sub-obtuse, and calli small, each prolonged by 2-3 short ribs, with an additional mid-rib, narrow, low, acuminate, reaching the middle of the blade. *Epidendrum rhomboscutellum* Hágsater & E. Santiago has thin stems, narrowly lanceolate leaves (2-6 cm long), the apex acuminate, the inflorescence is 2-flowered, the flowers greenish yellow with the apex of the petals reddish brown, the lip is obovate-rhombic with the base cuneate, and the apex acute; disc with a pair of globose calli. *Epidendrum rhodochilum* (Schltr.) Hágsater & Dodson has pendent plants, green flowers with a red lip, the flowers are smaller (sepals 17 mm long), lip is obovate, obtuse, with the margin denticulate and the lip is free from the column. *Epidendrum megalospatham* Rchb.f. has an oblong-ovate lip with the apical margin denticulate, the elongate rachis has 6-7, laxly distributed flowers, and the lip is partly free from the column. *Epidendrum lagotis* Rchb.f. has narrowly ovate-elliptic leaves (2-6 x 1.0-2.3 cm), a 2-flowered inflorescence, orbicular lip, nearly as wide as it is long, and the petals are spatulate, with the apex somewhat rounded. *Epidendrum miradoranum* Dodson & Bennett also has ovate-lanceolate leaves, but these are shorter (1-2.5 cm long), the apex acuminate, the inflorescence has up to 4, pale green flowers with discontinuous, pale purple lines, the lip is widely cordiform, bicallose, without keels.

CONSERVATION STATUS: DD. Data deficient. Widespread and apparently frequent.

ETYMOLOGY: From the Latin *scutella*, a small drinking cup, having a small pit, possibly in reference to the prominent clinandrium-hood with the sunken anther.

REFERENCES: Bennett, D.E. Jr. & E.A. Christenson, 2001, *Epidendrum scutella* Lindl. in E.A. Christenson (ed.), **Icon. Orchid. Peruv.** t. 654. Christenson, E.A., 2003, photo, *Epidendrum scutella*, in **A Manual to the Orchids of the Machu Picchu Historical Sanctuary**, pg. 15, PROFONANPE, Lima. Hágsater, E. & E. Santiago 2013, *Epidendrum rhomboscutellum*, in E. Hágsater & L. Sánchez S. (eds.), **The Genus Epidendrum**, Part 10, **Icon. Orchid.** 14: t. 1481. Mutis, J.C., 1985, as *Epidendrum lagotis* in **Flora de la Real Expedición Botánica del Nuevo Reyno de Granada**; 9, Microspermae: Orchidaceae 3: t. 29. Ortiz V, P., & C. Uribe V. (eds.), 2007, Gallery of Colombian Orchids, CD, Bogotá. Romero, Gustavo A., 1998, photos, *Epidendrum scutella*, in **Venezuela, Orchid Paradise**, pg. 77, 82-83, Armitano Editores, Caracas. Santiago, E. & E. Hágsater, 2015, *Epidendrum megalospatham* in Hágsater, E., & L. Sánchez Saldaña, (eds.), **The Genus Epidendrum**, Part 11, **Icon. Orchid.** 15(1): t. 1539. Santiago, E. & E. Hágsater, 2015, *Epidendrum rhodochilum* in Hágsater, E., & L. Sánchez Saldaña, (eds.), **The Genus Epidendrum**, Part 11, **Icon. Orchid.** 15(1): t. 1555.





EPIDENDRUM SIGMOSTACHYUM Hágsater, E.Santiago & D.Trujillo

Plate 1560

EPIDENDRUM SIGMOSTACHYUM Hágsater, E. Santiago et D. Trujillo, *sp. nov.*

Type: PERU: Amazonas: Bagua, Cordillera Colán, E of La Peca, 9600 ft, 28 August 1978, **Philip J. Barbour 3241**.

Holotype: USM! Isotype: MO! (Illustration voucher).

Similar to *Epidendrum dermatanthum* Kraenzl. but the leaves oblong-elliptic with the apex obtuse, flowers somewhat smaller, orange colored, lip truncate at the base and column strongly "S" shaped.

Terrestrial, monopodial, branching **herb**, to ca. 150 cm tall. **Roots** not seen. **Stems** cane-like, terete, erect, straight, the primary stem to 136 x 0.5-1 cm; branches produced near the apex of the primary stem. **Leaves** numerous on the main stem, articulate, alternate, partially spreading, similar in size, green above, glaucous beneath; sheaths 13-45 x 5-10 mm, tubular, minutely striated and rugose; blade 8.8-10.4 x 2-3 cm, oblong-lanceolate, obtuse, margin slightly revolute, denticulate towards the apex, with a low dorsal keel. **Spathe** lacking. **Inflorescence** 14 cm long, apical, racemose, flowering only once, laxly few-flowered; peduncle 3 cm long, sub-terete, straight, provided near the base with a bract similar to the floral bracts, 17 mm long, triangular-lanceolate, acute; rachis 11 cm long, terete, thin, straight. **Floral bracts** 11-18 x 7-10 mm, prominent, slightly longer than the ovary, gradually smaller towards the apex of the rachis, narrowly triangular-ovate, acute, amplexicaul. **Flowers** 12, opening in succession, with several open at one time, non-resupinate, fleshy, peach colored with maroon; fragrance not registered. **Ovary** 10-14 mm long, terete, thin, slightly longitudinally striated, not inflated. **Sepals** free, narrowly elliptic, 3-veined, margin entire, spreading; dorsal sepal 13.5 x 4 mm, spreading, apex rounded; lateral sepals 14 x 6 mm, partly spreading, slightly oblique, apex acute, with an evident dorsal keel. **Petals** 12 x 2 mm, free, spreading, linear-oblong, sub-acute, 1-veined, margin entire, spreading. **Lip** 9 x 10 mm, united to the column, very fleshy, especially towards the apex, entire, triangular, base truncate, apex rounded; ecallose, disc slightly pubescent at base, conduplicate in natural position, embracing the apex of the column, margin entire, spreading. **Column** 8-9 mm long, strongly arched at base with the apex abruptly turned upwards, thus "S" shaped, with the apical wings terminating in a straight angle next to the anther, rounded below. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, reniform, apex truncate, minutely apiculate and without surpassing the column. **Pollinia** 4, lentil-shaped, similar in size; caudicles soft and granulose, slightly longer than the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, occupying 1/3rd the length of the stigmatic cavity. **Nectary** shallow, penetrating slightly behind the perianth, not inflated, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: PERU: Amazonas: Bagua, Cordillera Colán E of La Peca, 9600 ft, *Barbour 3242*, MO! (Illustration, AMO!) SEL! USM!

OTHER RECORDS: None seen.

DISTRIBUTION AND ECOLOGY: Presently known from northern Peru, Department of Amazonas, from the Cordillera de Colán, at around 2880 to 3090 m altitude. Flowering in August.

RECOGNITION: *Epidendrum sigmostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the oblong-elliptic leaves 8.8-10.4 x 2-3 cm, peach colored flowers, sepals 13.5-14 mm long, linear-oblong petals 12 x 2 mm, the triangular lip with the base truncate, and the column strongly arched at the base, and the apex turned abruptly upwards, thus "S" shaped. *Epidendrum dermatanthum* Kraenzl. has linear-oblong to lanceolate leaves 8.5-18 x 1.7-4 cm (on the main stem), flowers reddish brown, sepals 15-18 mm long, petals linear-lanceolate, 12-14 x 2.5-3 mm, lip cordiform and column straight. *Epidendrum bangii* Rolfe has lanceolate leaves 5-14 x 1.5-2.4 cm, flowers purple-green to greenish brown, distributed along a generally flexuous rachis, sepals 14-18 mm long, lip cordiform and straight column. *Epidendrum rostrigerum* Rchb.f. is vegetatively very similar, but the flowers are green tinged with reddish purple and the lip yellowish, sepals 9-10 mm long, petals linear-oblong, 8-10 x 1.0-1.5 mm, lip lunate, nearly semi-orbicular, apex of the anther rostrate, surpassing the column.

ETYMOLOGY: From the Greek σιγμα the letter S, and σταχυς, ear of corn, in reference to the S shaped column of this species, which distinguishes it from other species of the Macrostachyum Group, which have inflorescences which are reminiscent of ears of corn.



REFERENCES: Santiago, E., & E. Hágsater, 2015, *Epidendrum bangii* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1503. Santiago, E., & E. Hágsater, 2015, *Epidendrum dermatanthum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1519. Santiago, E., & E. Hágsater, 2015, *Epidendrum rostrigerum* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1556.

Authors: E. Hágsater, E. Santiago & D. Trujillo

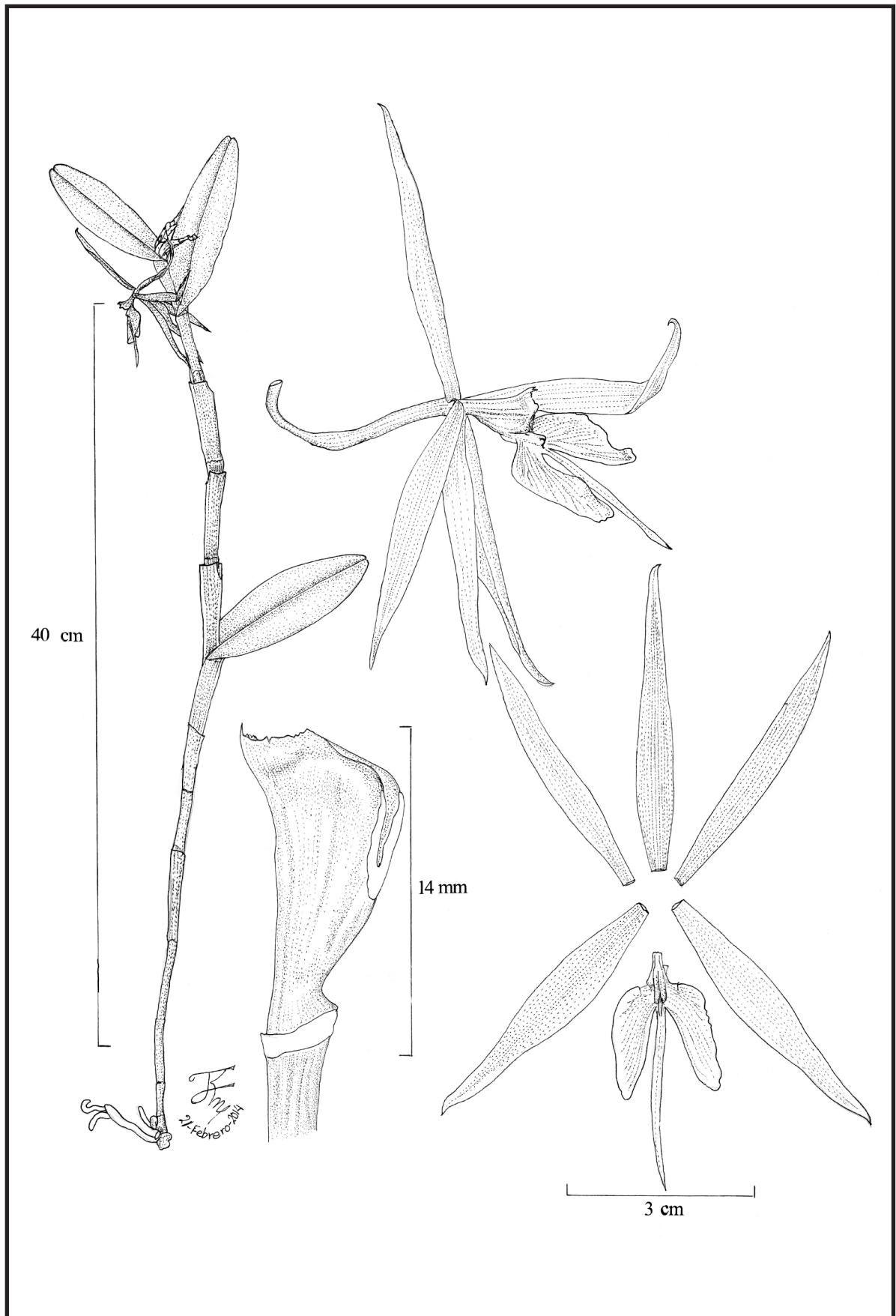
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1560



EPIDENDRUM SPRUCEANUM Lindl.

EPIDENDRUM SPRUCEANUM Lindl., Folia Orch. Epid. p. 80. 1853.

Type: BRAZIL: At the Barra do Rio Negro, on trees, April 1851, **Richard Spruce 1466**. Lectotype (here designated): K 000583718! Isolectotypes: K 000583719! (same locality but no collection number). P! Illustration W-R 5853!

Epiphytic, sympodial, caespitose **herb**, 40-45 cm tall including the inflorescence. **Roots** 2-3 mm in diameter, basal, fleshy. **Stems** 30-39 x 0.7-1.0 cm, laterally compressed, simple, slightly flexuous, totally covered by sheaths. **Leaves** 5-6, distributed along the apical 2/3 of the stems; foliar sheath 2.5-6.0 x 0.7-1.0 cm, tubular, laterally compressed; blade [8.0]10-17.5 x 2.0-4.5 cm, length/width: 2-4:1, narrowly elliptic, apex bilobed, mucronate, coriaceous, with evidently marked veins and keel. **Inflorescence** to 5.5 cm long, apical, pluri-racemose (racemose, producing new racemes from the basal internodes of the primary raceme with age), flowering from each raceme over several years, the racemes evident at the base of the apical leaf; peduncle 0.5-1.5 cm long, short, covered by 1-2 bracts similar to the foliar bracts; rachis 0.5-4.0 cm long, fractiflex. **Spathe** lacking. **Floral bracts** 7-10 x 0.3-0.4 mm, much shorter than the ovary, triangular, acute, embracing. **Ovary** 37-45 x 2-3 mm, terete, unornamented. **Flowers** 1 per raceme at any time, successive, resupinate, sepals and petals green to yellowish, lip and column white; fragrance not registered. **Sepals** [30]48-70 x 3-5[7] mm, spreading, free, linear-lanceolate, acuminate, 7-veined, with secondary veins so as to appear 11-veined, margin entire, revolute; lateral sepals 7 mm wide, oblique. **Petals** [30]47-70 x 2-3 mm, partly spreading, free, linear-lanceolate, acuminate, 5-veined with a pair of secondary veins so as to appear 7-veined; margin entire, spreading. **Lip** 22-45 x 20-22 mm, united to the column, deeply 3-lobed, base truncate; bicallose, calli laminar, prominent; disc with a low, short rib, reaching about 1/10 of the mid-lobe; lateral lobes [15]30-40 x [5]9-13 mm, hemi-ovate, rounded, sub-parallel to the mid-lobe, margin entire, spreading; mid-lobe [20]43-52 x 1-2 mm, linear, acuminate, margin entire, spreading. **Column** 12-20 mm long, straight, strongly dilated towards the apex. **Clinandrium-hood** slightly surpassing the body of the column, erose. **Anther** not seen. **Pollinia** not seen. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** with the body centered.

OTHER SPECIMENS: BRAZIL: Amazonas: Without locality, cult. Jardim Botânico, RB! Inambú, 17 XI 1952, *Castañeda 3590*, COL! Margin of Igapó, Manaus-Porto Velho road, 15 III 1974, *Prance 20574**, AMES! F! HB! MO! NY! RB (fide T. Meneguzzo, 2014), S! (illustration voucher). U! **Rondônia:** Porto Velho-RO, UHE de Samuel, Rio Jamari, 18 I 1989, *Maciel 1599*, MG! **PERU: Loreto:** Puerto Meléndez, below Pongo de Manseriche, [200 m], *Tessmann 4761*, NY!

DISTRIBUTION AND ECOLOGY: Known from the Amazon basin in Brazil and Peru, from Manaus to Puerto Meléndez, below 200 m altitude. Flowering from November to March, possibly throughout the year.

RECOGNITION: *Epidendrum spruceanum* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spatheaceous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The species is recognized by the laterally compressed stems, 5-6 leaves, their length/width ratio 2-4:1, generally 10-17.5 x 2.0-4.5 cm, ovary short, 37-45 mm long, shorter than the sepals and petals which are 48-70 mm long, racemes evident at the base of the leaf, rachis fractiflex, column 12-20 mm long; body of capsule centered. *Epidendrum nocturnum* Jacq. is widely distributed from Florida to Bolivia, has terete stems, shorter leaves, 3.7-14 cm long, longer ovary, 50-70 mm long, about as long as the sepals which are 35-75 mm long, peduncle and rachis shorter, column 15-20 mm long, body of capsule occupying nearly the full length, centered. *Epidendrum tumuc-humaciense* (Veyret) Carnevali & G.Romero along the Amazon slope of the Guyana Shield, from Colombia to the French Guyana, has numerous leaves (6-27), shorter, narrower, ratio 2-3:1, 3-9.2 x 1.2-2.8 cm, distributed throughout the stems, erect, green to reddish, occasionally deep wine-red, ovary generally 80-100 mm long, longer than the sepals (48-81 mm), peduncle and rachis to 2 cm long; body of the capsule occupying the apical half of the capsule. *Epidendrum tridens* Poepp. & Endl. is distributed along the base of the Andes in Ecuador, Peru and Bolivia as well as south of the Guyana Shield in Venezuela, and has 3-5 progressively longer leaves, 3-5:1, (8.5-15 x 2-5 cm), dark green, the underside occasionally tinged purple, and has a longer ovary (60-100 mm), longer than the sepals (40-63 mm), peduncle and rachis very short; column straight, 21-23 mm long; the body of the fruit in at the center of the ovary. *Epidendrum carpophorum* Barb.Rodr. is similar to *E. tridens*, and is found along the Caribbean coast of Venezuela, Guyana and SE Brazil, has dark green leaves occasionally the underside tinged purple, a slightly arching column and the body of the fruit is located slightly displaced towards the apex upper half of the ovary.

*NOTE: The sheet at K of *Prance 20574*, appears to correspond to *Epidendrum micronocturnum* Carnevali & G.A.Romero, though the larger single leaf on the stem in the middle is too large.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In honor of Richard Spruce (1817-1893), English botanist, one of the great Victorian botanical explorers; spent 15 years exploring the Amazon from the Andes to its mouth. His collections from 1849 to 1864, mostly from Brazil are housed at Kew.

REFERENCES: Sánchez S., L. & E. Hágsater, 2010. *Epidendrum carpophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1313. Sánchez S., L., & E. Hágsater, 2015, *Epidendrum tridens* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1565. 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): t. 1566.



Authors: L. Sánchez S. & E. Hágsater

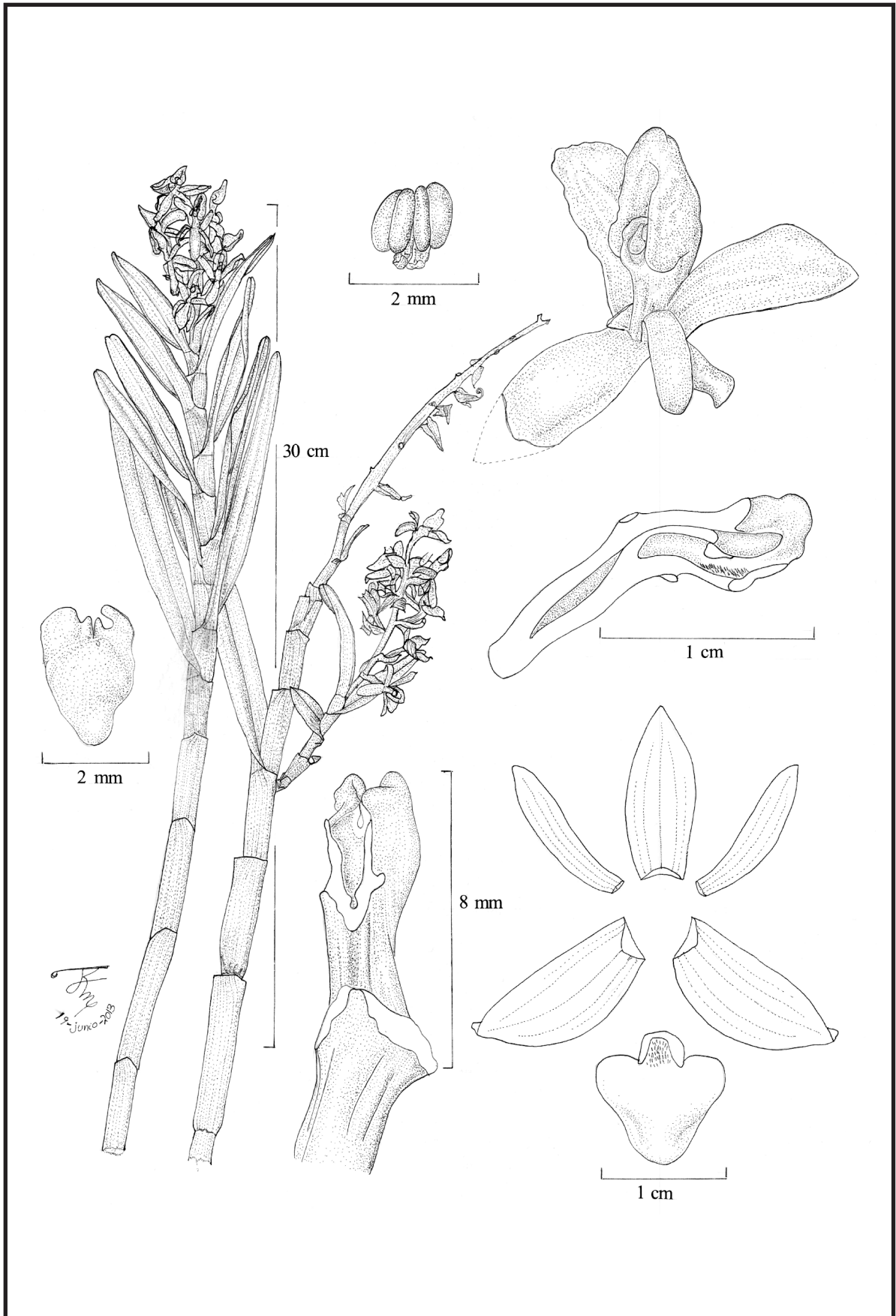
Illustrator: R. Jiménez M.

Editors: E. Hágsater & L. Sánchez S.

Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1561



EPIDENDRUM STENOBRACISTACHYUM Hágater & E.Santiago

Plate 1562

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

Type: COLOMBIA: Boyacá: Sierra Nevada del Cocuy, below [Finca?] El Playón, 3200 m, 11 September 1957, **Peter J. Grubb, B. A. B. Curry & Alvaro Fernández-Pérez 811**. Holotype: US! (Illustration voucher) Isotype: COL! K! LE!

Similar to *Epidendrum chondrochilum* F.C.Lehm. & Kraenzl. but the inflorescence sub-dense with long narrowly triangular floral bracts, slightly longer than the ovary, the rachis straight and the sepals and petals slightly recurved.

Terrestrial, monopodial, branching **herb**, 150-200 cm tall. **Roots** ca. 1-2 mm in diameter, terete, thin, from the base of the main stem. **Stems** cane-like, terete, erect, straight, branching when mature; main stem ca. 150-200 x 1.3 cm, branches 4-30 x 0.5-1.0 cm. **Leaves** numerous on the main stem, distributed throughout the stem, articulate, alternate, sub-erect; sheath 9-56 mm long, tubular, minutely striated, rugose; blade on the main stem 14-16 x 3-4 cm, on the branches 4.3-11.5 x 0.9-1.9 cm, lanceolate, apex obtuse, narrowly bilobed, margin entire, margins slightly revolute in pressed specimens. **Spathe** lacking. **Inflorescence** on main stem 17 cm long, on branches 6.5-12.5 cm, apical, racemose, erect, flowering only once, sub-densely, few-flowered; peduncle 1-1.2 cm long, terete, erect, straight, without bracts; rachis 5.5-16 cm. **Floral bracts** 8-18 x 4-6 mm, prominent, slightly longer than the ovary (gradually diminishing in size towards the apex of the rachis), narrowly oblong or lanceolate-triangular, acuminate, embracing. **Flowers** 10-18, simultaneous, non-resupinate, fleshy, pale yellow-green, column tinted purple; fragrance not recorded. **Ovary** 9 mm long, terete, longitudinally striated, not inflated. **Sepals** 14-15 x 5.7-6.7 mm, free, slightly recurved, narrowly elliptic, acute, 5-veined, margin entire, spreading; lateral sepals slightly oblique, minutely apiculate, with a low dorsal keel. **Petals** 13 x 2.8 mm; free, slightly recurved, oblong, acute, 3-veined, falcate, margin entire, spreading. **Lip** 9 x 10.3 mm, united to the column, embracing the column in natural position, very fleshy, entire, base truncate, deltate, the three corners broadly rounded, margins entire, fleshy, spreading; ecallose, without ribs, disc pubescent at base. **Column** 9 mm long, straight, thin at the base, slightly dilated towards the apex; with a pair of prominent lateral, rounded wings. **Clinandrium-hood** reduced, margin entire. **Anther** 4-celled, ovoid, apex obtuse, short. **Pollinia** 4, obovoid, slightly laterally compressed; caudicles granulate, slightly longer than the pollinia. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** shallow, without penetrating the ovary, wide throughout, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: COLOMBIA: Cauca: Minas-Inzá, *Lehmann 487*, K! **Cundinamarca:** Ridge above upper San Antonio (Río San Martín Valley) 15 km SE of Gutiérrez, 60 km S of Bogotá, 2700 m, 3 VIII 1944, *Grant 9830*, COL! NY! US! (illustration, AMO!) **WIS!** San Antonio San Bernardo, arriba de Santa Rita en filo de Paquiló, 3300 m, 20 VII 1981, *Jaramillo 6807*, COL! **Ibid.** Quebrada de Aguas Claras, arriba de La Soledad, 3100 m, 23 VII 1981, *Jaramillo 6939*, COL! San Bernardo, entre Paquilo y Santa Marta, Quebrada de Aguas Claras, 2730 m, 24 VII 1981, *Jaramillo 7040*, COL! Bogotá, *Karsten s.n.*, W-R 400091 (only the plant, the flowers in the envelope seem larger and dry in a different color) Sibaté, 3000-3100 m, 13 X 1917, *Pennell 2489*, NY! Zwischen Une und Gutiérrez, Passhöhe Río Saname und Río Taqueta, 2900 m, 8 VII 1955, *Renz 8447*, RENZ! Sibaté, San Miguel, 2800-2900 m, 6 VIII 1943, *Schneider 17*, AMES! COL x2! **Huila:** Comisaria del Caquetá, Gabinete, Cordillera Oriental sobre el filo divisorio, 2300-2450 m, 21 III 1940, *Cuatrecasas 8426*, COL! Inspección de Policía de Santa Leticia. Páramo de la Candelaria, 2370 m, 15 VII 1975, *Díaz 598*, COL! Vereda Arrabal, 2380 m, 1 X 1984, *Lozano 4340*, COL! **Nariño:** entre Pasto y El Encano, 3200 m, 11 I 1941, *Cuatrecasas 11918*, COL! CM! US! E of La Victoria, 3000-3200 m, 4 XI 1979, *Luer 4655*, SEL! **Tolima:** Alto de Oseras, 3400 m, 11 I 1883, *Lehmann 2421*, G x2!

OTHER RECORDS: COLOMBIA: Putumayo: Sibundoy, *P. Harding s.n.*, digital photo, AMO! (photo voucher)

DISTRIBUTION AND ECOLOGY: Ranging along the upper reaches of the Cordillera Oriental de los Andes in Colombia, from Boyacá to Huila, and in the Cordillera Central in Tolima, in the Parque Nacional Natural de Puracé (Cauca/Huila), Sibundoy (Putumayo) and Nariño on the border with Ecuador, terrestrial at 2300-3400 m in cloud forest. Flowering in July-March.

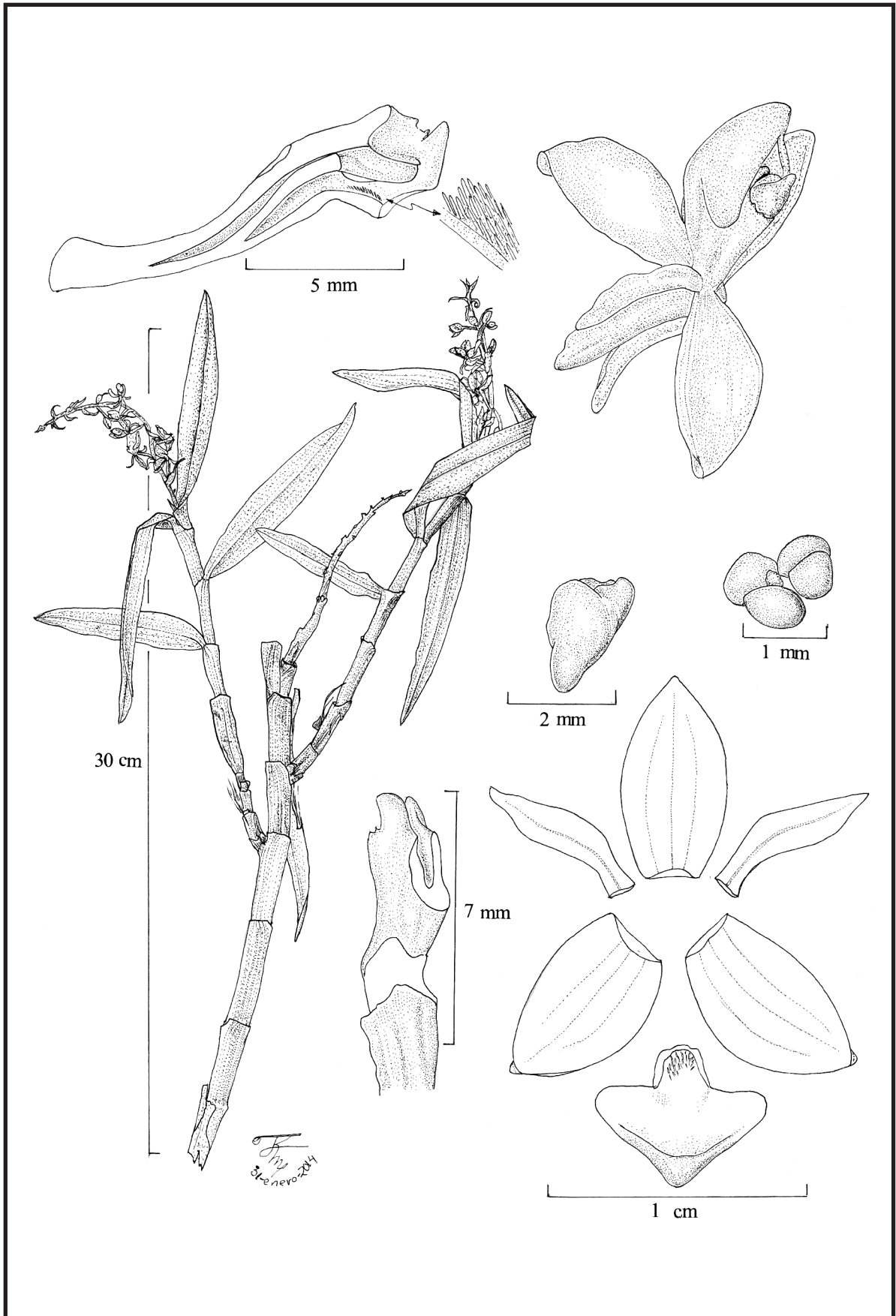
RECOGNITION: *Epidendrum stenobractistachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose and pubescent lip embracing the column, and the nectary pubescent to papillose in front of the stigmatic cavity and at least at the base of the lip. The species is recognized by the lanceolate leaves, sub-dense inflorescence to 17 cm long (on the main stem) with 10-18 greenish yellow flowers, with prominent narrow floral bracts, 4-6 mm wide, slightly longer than the ovary, the sepals elliptic, 14-15 mm long, petals oblong, lip deltate, the base truncate, corners rounded. *Epidendrum chondrochilum* which is vegetatively similar, but the inflorescence is shorter and lax flowered, 4-8 long, with 4-6 greenish brown flowers, the floral bracts are widely ovate, 8-12 mm wide; sepals and petals are spreading or partly spreading, sepals oblong elliptic to 12 mm long, and the petals lanceolate. *Epidendrum recurvitepalostachyum* Hágsater & E.Santiago also has lanceolate leaves by the inflorescence is much shorter, few-flowered, the rachis sinuous, the floral bracts are triangular-ovate, 6-14 x 5-12 mm, sepals and petals recurved, petals oblong-elliptic and the lip deltate with the base slightly cordate.

CONSERVATION STATUS: DD. Data deficient. However, the species appears to be common along its natural range.

ETYMOLOGY: From the Greek στενός, narrow, bract, and σταχυ, ear for corn, in reference to the Macrostachyum Group with the inflorescence reminiscent of an ear of corn.

REFERENCES: Hágsater, E., & E. Santiago, 2015, *Epidendrum recurvitepalostachyum* in E. Hágsater & L. Sánchez Saldaña, (eds.), *The Genus Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1554.





EPIDENDRUM SUMACOSTACHYUM Hágsater & E.Santiago

Plate 1563

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

Type: ECUADOR: Napo: Archidona Cantón, Sumaco Napo-Galeras National Park, Volcán Sumaco, collections made between Summit crater and high camp, 2600 m, 16 March 1996, **John L. Clark 2268**. Holotype: QCNE! (Illustration voucher). Isotype: SEL!

Similar to *Epidendrum microcarpum* Hágsater & Dodson, but the petals falcate, the apex acute, column longer, with a prominent apical tooth, the nectary penetrating the ovary, the lip ecallose, the disc lacking ribs, and the leaves longer.

Epiphytic, monopodial branching **herb**. **Roots** not seen. **Stems** main stem >18 x 0.7 cm (only a portion seen); branches 13-14 x 0.3-0.5 cm; branching when mature, cane-like, terete at base, slightly laterally compressed towards the apex, straight. **Leaves** on the main stem not seen; 4 on the branches, distributed along the apical half, articulate, alternate, partly spreading; sheath (of main stem) 25-36 x 7-8 mm; of branches 5-25 x 4-6 mm; tubular, minutely striated, rugose; blade 6.5-9 x 1.1-1.5 cm, lanceolate, obtuse, apical margin denticulate. **Spathes** lacking. **Inflorescence** 7-8 cm long, apical, racemose, flowering only once, flowers laxly distributed in a helicoid; peduncle 10-12 mm long, laterally compressed, straight; rachis 6-7 cm long, laterally compressed, thin, straight. **Floral bracts** 6-9 x 1-3 mm, the lower ones as long as the ovary, the upper ones becoming shorter, narrowly triangular, acuminate, amplexicaul, apical margin erose. **Flowers** 15-17, simultaneous, non-resupinate, fleshy, green; fragrance not registered. **Ovary** 5-7 mm long, terete, thin, slightly longitudinally striated, not inflated. **Sepals** 7.0-7.6 x 4.2-4.4 mm, free, elliptic, obtuse, 3-veined, minutely apiculate, glabrous, margin entire, spreading; the dorsal sepal spreading, the lateral sepals partly spreading. **Petals** 6.7 x 1.5 mm, free, reflexed, oblong, falcate, acute, 1-veined, margin entire, spreading. **Lip** 4 x 6.5 mm, united to the column, very fleshy, especially towards the apex, entire, deltate, base truncate, apex narrowly rounded; ecallose, disc without ribs, cymbiform in natural position, embracing the apex of the column, margin entire, spreading. **Column** 7 mm long, straight, thick, apex slightly turned upwards, with a pair of prominent, straight teeth. **Clinandrium-hood** reduced, margin denticulate. **Anther** 4-celled, ovoid, apex obtuse. **Pollinia** 4, lentil-shaped, unequal in shape and size. **Rostellum** sub-apical, slit. **Lateral lobes of the stigma** half as long as the stigmatic cavity. **Nectary** shallow, barely penetrating the ovary, pubescent in front of the stigmatic cavity. **Capsule** not seen.

OTHER SPECIMENS: None seen.

OTHER RECORDS: None seen.

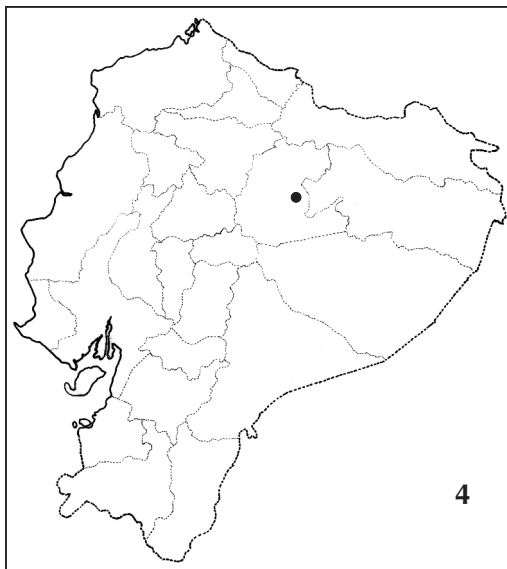
DISTRIBUTION AND ECOLOGY: Presently known only from the Volcán Sumaco in northern Ecuador, on the eastern slope of the Cordillera Oriental of the Andes, epiphytic at 2600 m, in montane rainforest. Flowering in March.

RECOGNITION: *Epidendrum sumacostachyum* belongs to the Macrostachyum Group, which is characterized by the monopodial plants with sub-apical branching, rugose leaf sheaths, large leaves generally spreading, racemose, erect inflorescence, and fleshy flowers generally green to black (ripe olive colored), as well as yellow to pink to purple, with an entire, conduplicate, generally ecallose 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 narrow, lanceolate leaves, 6.5-9 x 1.1-1.5 cm, the short inflorescences with prominent floral bracts, though not longer than the ovary (6-9 mm long), green flowers sepals 7.0-7.6 mm long, obtuse, glabrous, oblong, falcate petals, and the nectary barely penetrating the ovary behind the sepals. *Epidendrum notostachyum* Hágsater & E.Santiago is vegetatively very similar, but the flowers are somewhat larger, sepals 9.0-9.5 mm long, acute, dorsally ornamented with evident papillae, linear-oblancoate, straight petals, never falcate, and a short nectary that does not penetrate the ovary. *Epidendrum microcarpum* Hágsater & Dodson has shorter leaves (on the branches), 4-5.5 x 1.0-1.2 mm, yellowish green flowers, sepals 6.0-6.5 mm long, ventrally and scarcely papillose, linear petals and a short nectary that does not penetrate the ovary. *Epidendrum palaciosii* Hágsater & Dodson has elliptic-lanceolate leaves 10-12 x 3 cm, dense, many-flowered, cylindrical inflorescences, with grayish flowers, sepals 7-8 mm long, dorsally muricate.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the Volcán Sumaco, and $\sigma\tau\alpha\chi\upsilon\sigma$, ear of corn, in reference place where the type was collected, with inflorescences which are reminiscent of ears of corn and constitute the Macrostachyum Group.

REFERENCES: Hágsater, E., & E. Santiago, 2015, *Epidendrum notostachyum* in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 11, **Icon. Orchid.** 15: t. 1545. Hágsater, E., & C.H. Dodson, 2001, *Epidendrum microcarpum* in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 3, **Icon. Orchid.** 4: t. 458. Hágsater, E., & C.H. Dodson, 1993, *Epidendrum palaciosii* in Hágsater, E., & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 171.



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Herbario AMO

México, D.F. MÉXICO

ICONES ORCHIDACEARUM 15(1). 2015. Plate 1563



EPIDENDRUM TAGUATINGENSE (Brieger & Bicalho) Hágsater, Meneguzzo & L.Sánchez Plate 1564

EPIDENDRUM TAGUATINGENSE (Brieger & Bicalho) Hágsater, Meneguzzo et L. Sánchez, *comb. et stat. nov.*

Basionym: *Epidendrum nocturnum* Jacq. var. *taguatingense* Brieger & Bicalho, Relat. Ci. Dept. Inst. Genet. Esc. Super. Agric. Luiz Queiroz 11: 26. 1977. Type: BRAZIL: Distrito Federal, Taguatinga, [ca. 1000 m], *Alaor de Oliveira s.n.*
Holotype: HB (not found, comm. pers., Thiago Meneguzzo, 2014). Neotype here designed: BRAZIL: Distrito Federal: Brasília: Guará. Reserva Ecológica do Guará. Mata Inundada, 18 feb 1989, *Luciano de Bem Bianchetti & A. N. Batista 838*, CEN 14957! (illustration voucher).

Epiphytic, caespitose, sympodial **herb**, 50-107 cm tall including the inflorescence. **Roots** 2.4 mm thick, basal, fleshy. **Stems** 31-94 x 0.4-0.6 cm, cane-like, terete at base, laterally compressed towards the apex, simple, erect. **Leaves** 8-18, erect, distributed along the apical 2/3 of the stem, spaced, generally the basal ones longer, green; foliar sheath 1.5-4.0 x 0.5-0.7 mm, laterally compressed; blade 8-16 x 1.2-3.0 cm, length:width = 4-6:1 or more, narrowly elliptic to lanceolate, acuminate, aristate, coriaceous, slightly carinate. **Spathes** lacking. **Inflorescence** apical, pluri-racemose (producing new racemes from the basal internodes of the inflorescence through time, and thus flowering from the same stem during several years); rachis 1.0-1.5 cm long, inconspicuous, with 1-3 triangular, acute bracts, 0.2-0.3 mm long, occasionally producing a plantlet from a node of the peduncle. **Floral bracts** 5-6 mm long, much shorter than the ovary, amplexicaul, triangular, acute. **Flowers** 1-3 per raceme, successive, one at a time, resupinate, white to greenish white, lip and column white. **Ovary** 60-70 mm long, terete, unornamented. **Sepals** 45-70 x 4-5 mm, spreading, linear-lanceolate, acuminate, mucronate, margin entire, revolute; lateral sepals 6-7 mm wide, oblique. **Petals** 45-70 x 1.0-1.2 mm, slightly inflexed, linear-lanceolate, acuminate, mucronate, margin entire, spreading. **Lip** 47-50 x 13-15 mm, united to the column, 3-lobed, base spreading; lateral lobes 18-20 x 4.5-5.0 mm, semi-ovate, rounded, margin entire; mid-lobe 43-45 x 0.7-0.8 mm, linear, acuminate, margin entire; bicallose, the calli laminar, prominent. **Column** 20-23 mm long, straight to slightly arched, thin at the base, strongly dilated towards the apex. **Clinandrium-hood** surpassing the body of the column, margin not seen. **Anther** ovoid, apex truncate, 4-celled. **Pollinia** 4, semi-obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** not seen. **Lateral lobes of the stigma** not seen. **Nectary** not seen. **Capsule** not seen.

OTHER SPECIMENS: BRAZIL: Distrito Federal: Fazenda Supupira (Cenargen-Embrapa), 7 III 2000, *Batista 1053*, CEN! Fercal; Zona do Calcário, 22 XII 1965, *Belém 2031*, UB! Brasília, Setor Industrial, 18 II 1980, *Heringer 57*, IBGE! Brasília, Picada M-5, 06 III 1978, *Heringer 389*, HB! IBGE! Várzea Bonita, 24 II 1961, *Heringer 7989*, BR! UB! Córrego Sobradinho, Centro Oeste, 1100 m, 18 XII 1994, *Oliveira 44*, UB! Reserva do Guará, Centro Oeste, 1050 m, 6 II 1995, *Oliveira 74*, UB! Brasília, Setor Industrial, 23 I 1966, *Pabst 8748*, Kx2! Área de Proteção Ambiental de Cafuringa. Margem do Córrego Poço Azul, 8 II 2003, *Pellizzaro 47*, CEN! Bacia do Rio São Bartolomeu. Altos do córrego Papuda, córrego existente próximo de área de Profloza junto do trevo da BR-251 com a DF-11, 11 XII 1984, *Pereira 1238*, IBGE! Área de Fercal, 8 I 1987, *Ramos 811*, CEN! **Goiás:** Chapada dos Veadeiros: 5 km E of Alto Paraíso, 1600 m, 15 II 1979, *Gates 186*, HB! UB! RB! SP! Pirenópolis, Centro Oeste, 17 XII 2003, *Heringer 2857*, HEPH! 25 km N of Corumbá de Goiás on road to Niquelândia, ca. 1150 m, 13 I 1968, *Irwin 18529*, BR! Alto Paraíso de Goiás, Chapada dos Veadeiros, 1200 m, 24 I 1978, *Martinelli 3819*, RB! Luziânia, Fazenda Tamburil, 12 XI 2002, *Pereira-Silva 7061*, CEN! Abadiânia, Margem direita do rio Antas, 830 m, 8 VI 2005, *Pereira-Silva 10122*, CEN! Minaçu, coleta de barco no lago em processo de enchimento no AHE Serra da Mesa, 350 m, 27 XI 1996, *Teles 3568*, CEN! Minaçu. Córrego Bateinhas, 460 m, 28 I 1998, *Teles 4055*, CEN!

DISTRIBUTION AND ECOLOGY: Species endemic to the Planalto Central of Brazil in the state of Goiás and the Distrito Federal; epiphytic at 350-1600 m altitude. Flowering from November to February.

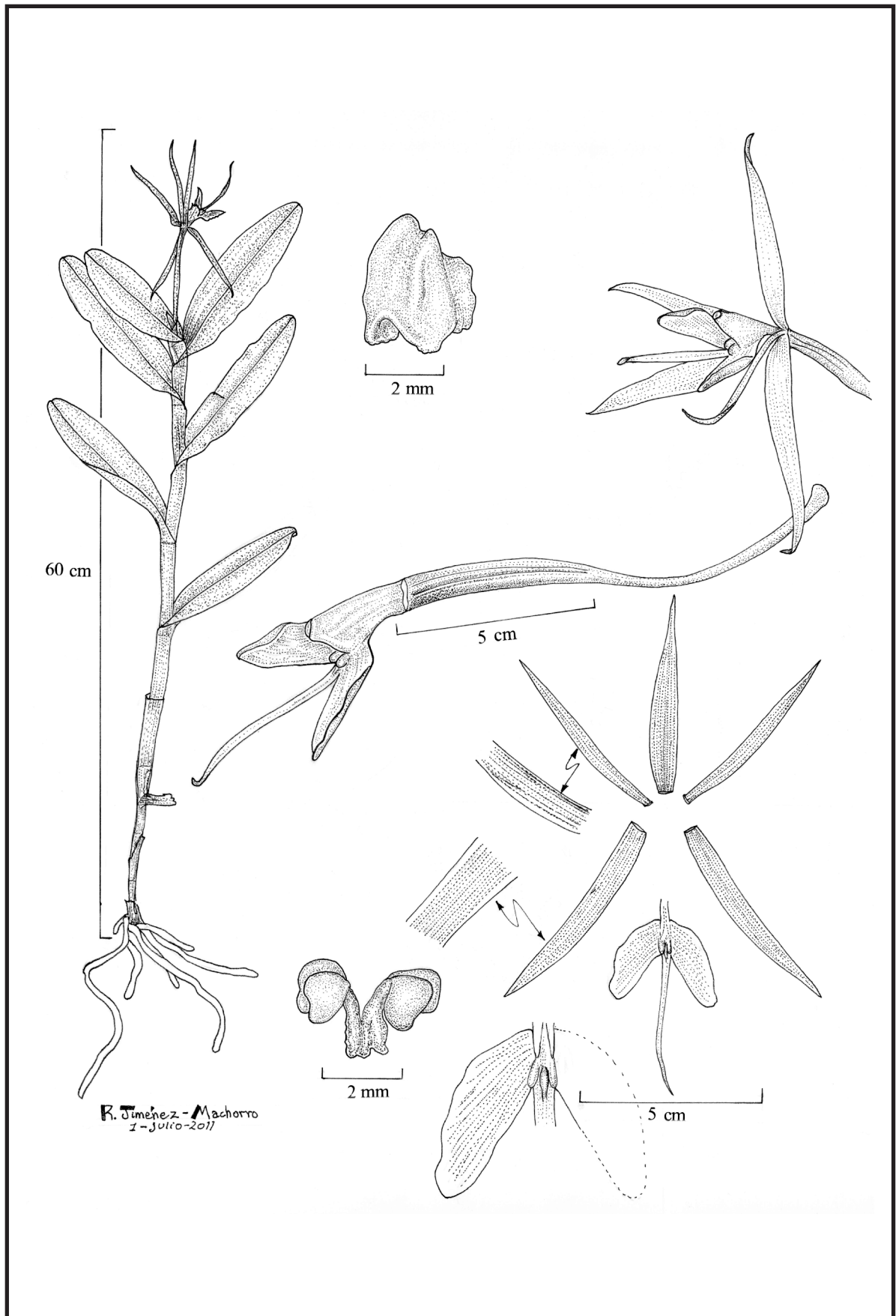
RECOGNITION: *Epidendrum taguatingense* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spathaceous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The species is recognized by the stems 31-94 cm tall, laterally compressed towards the apex, leaves 8-18, 8-16 x 1.2-3.0 cm, length:width = 4-6:1 or more, narrowly elliptic-lanceolate, acuminate, erect, laxly distributed along the apical 2/3 of the stems; ovary 60-70 mm long, shorter than the leaves. *Epidendrum erectum* Brieger & Bicalho, also endemic to the Planalto Central of Brazil in the states of Goiás and Minas Gerais, has laterally compressed stems, 30-90 cm tall, leaves 4-10 x 1.2-2.5 cm, length:width = 2-4:1, erect, densely aggregate along the upper 2/3 of the stems; the ovary generally 45-60 mm long, and the capsule centered on the fruit. *Epidendrum nocturnum* Jacq. is widely distributed from Florida to Brazil, has terete stems, few leaves distributed along the apical 2/3 of the stems, the ovary 50-70 mm long, and the body of the fruit occupying nearly the full length of the capsule. *Epidendrum carpophorum* Barb. Rodr. is found in Venezuela, the Guianas and SE Brazil, has stems ancipitose towards the apex, fewer (4-6), longer and wider (9-14 x 2.5-6.0 cm) leaves, perpendicular to the stem, and a longer ovary, 50-120 mm long.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to the town of Taguatinga, near which it was collected, which was founded on June 5th, 1958 under President Juscelino Kubitschek, in what used to be the Fazenda Taguatinga, invaded by Bandeirantes. It has become the commercial and economic center of the federal capital, Brasília.

REFERENCES: Sánchez, S. L. & E. Hágsater, 2010. *Epidendrum carpophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1313. Hágsater, E., Meneguzzo, T. E. C. & L. Sánchez S., 2015, *Epidendrum erectum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1520.





EPIDENDRUM TRIDENS Poepp. & Endl.

EPIDENDRUM TRIDENS Poepp. & Endl., Nov. Gen. & Sp. Pl. II: 2. tab. 103. 1838.

Type: PERU: [Huánuco:] Subandin. supra arbores. Cuchero. **Eduard Friedrich Poeppig s.n.** Holotype: W-R! Isotype: W-R 42400! (illustration).
Synonym: *Epidendrum tunguraguae* Schltr. Repert. Spec. Nov. Regni Veg. Beih. 8: 87, 1921. Type: ECUADOR: Tunguragua: In rupibus in convalle subandina montis Tunguragua, c 1800 m, Jun. 1886, **August Sodiro 69a**. Holotype: B (destroyed), illustration AMES 36134! Neotype (here designated): Vulkan Tunguragua, 1500-2000 m, blooms in June+July, **Friedrich Carl Lehmann 6719**, Neoholotype: K! illustration, tabula 438, K! Neoisotype: AMES 22640!

Epiphytic, lithophytic or terrestrial, sympodial, caespitose **herb** 26-100 cm tall, including the inflorescence. **Roots** 3-4 mm in diameter, basal, fleshy. **Stems** 18-56 x 0.6-1.5 cm, simple, cane-like, laterally compressed towards the apex, straight, green, sometimes tinged purple. **Leaves** 4-8, distributed along the apical ¾ of the stems, erect, coriaceous; green, sometimes tinged purple, especially the sheaths and underside of the leaves; sheath 2-6 cm long, foliaceous, laterally compressed, ancipitose; blade 8.0-15 x 2-5 cm, unequal, progressively larger towards the apex of the stem, narrowly elliptic, 3-5 times longer than wide, apically unequally bilobed, minutely mucronate, venation and dorsal keel evident, dark green, occasionally tinged purple. **Spathes** lacking. **Inflorescence** apical, racemose, becoming pluri-racemose, producing one flower at a time, over several years from the same stem; peduncle 3-4 mm long, reduced, rachis 5-7[10] mm long. **Floral bracts** 7-11 x 5-6 mm, much shorter than the ovary, triangular, acuminate, amplexicaul. **Ovary** 60-100[120] x 2.0-3.5 [5] mm, long, shorter to slightly longer than the apical leaf, terete, inflated, unornamented. **Flowers** successive, one at a time from each raceme, resupinate, sepals and petals green to yellow, occasionally tinged purple, lip and column white; fragrance at night. **Sepals** 42-73 x 5-8 mm, spreading, linear-lanceolate, acuminate, 10-veined, with numerous secondary veins, margin entire, revolute. **Petals** 40-70 x 2.5-3.0 mm, partly spreading, linear-lanceolate, acuminate, 5-veined, with numerous secondary veins, margins entire, spreading. **Lip** 27-53 x 24-30 mm, united to the column, 3-lobed, margin entire, spreading; bicallose, the calli laminar, prominent; lateral lobes 14-26 x 6-9 mm, semi-ovate, rounded; mid-lobe 20-37 x 2-3 mm, ensiform, acute, margin entire. **Column** 21-25 mm long, straight to slightly arched, strongly dilated towards the apex. **Clinandrium-hood** slightly surpassing the body of the column, generally somewhat dentate, occasionally deeply dentate. **Anther** obovoid, 4-celled. **Pollinia** 4, semi-obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Lateral lobes of the stigma** reduced. **Nectary** penetrating nearly half the length of the ovary, unornamented. **Capsule** ellipsoid, long; pedicel 25-35 x 2.0-2.5 mm, body 45-60 x 17-21 mm, at the center of the capsule; apical neck 13-16 x 2.3-3.5 mm.

OTHER SPECIMENS: See appendix.

OTHER RECORDS: See appendix.

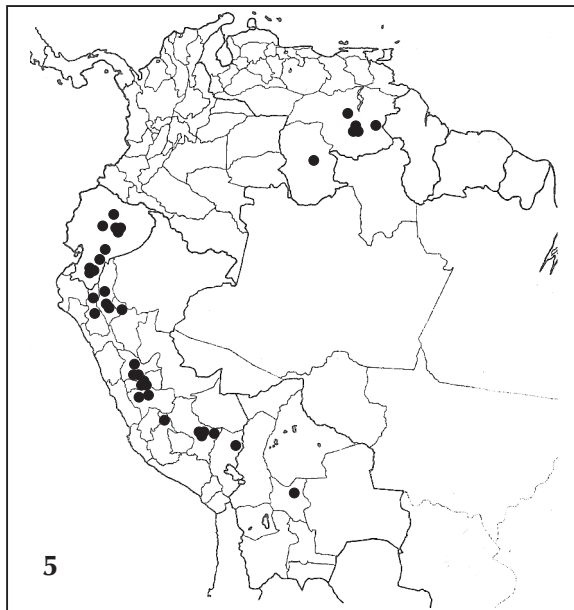
DISTRIBUTION AND ECOLOGY: Known from the Amazon slope of the Cordillera de los Andes in Ecuador, Peru and Bolivia, and up to the southern Guiana Shield in Venezuela, at 643-2900 m altitude. Flowering throughout the year, fruiting mainly from June to September.

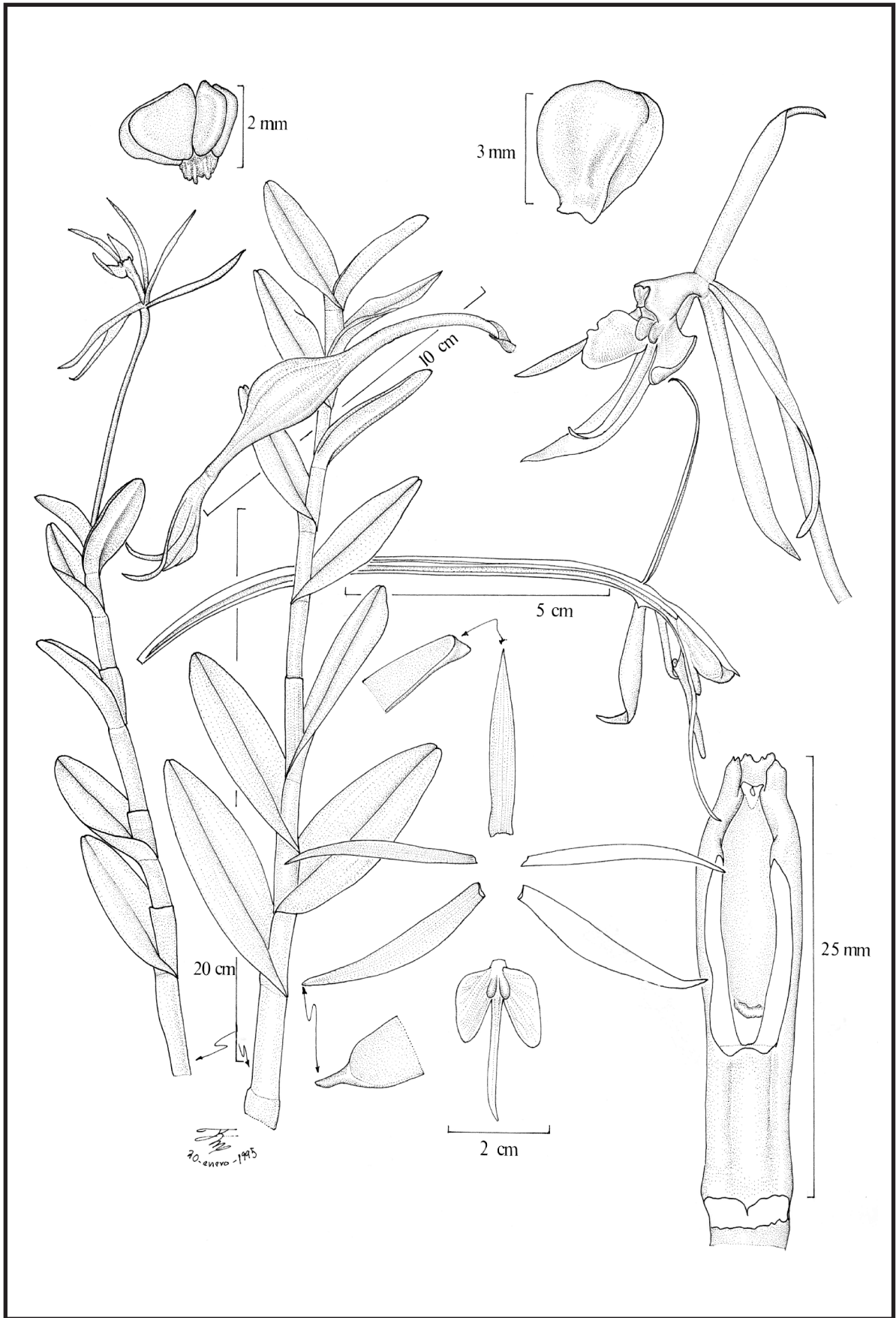
RECOGNITION: *Epidendrum tridens* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spathaceous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The species is recognized by the dark green plants, the underside of the leaves and sheaths tinged with purple, laterally compressed stems, 4-8 erect leaves, generally longer towards the apex of the stem, length/width 3:1-5:1 (8.5-15 x 2-5 cm), distributed along the apical ¾ of the stems, green often tinged with purple; ovary 60-100 [120] mm long, equal or occasionally longer than the apical leaf, sepals 42-73 mm long, lateral lobes of the lip semi-ovate, rounded to acute, acuminate, 14-26 mm long; mid-lobe 20-37 mm long, column 21-25 mm long; body of the capsule centered. *Epidendrum nocturnum* Jacq. is widely distributed from Florida to Bolivia, has green plants, terete stems, smaller leaves distributed along the apical 2/3 of the stems, a short ovary, 50-70 mm long, and the body of the capsule occupying nearly its whole length. *Epidendrum tumuc-humaciense* (Veyret) Carnevali & G.Romero is found along the Guiana Shield, and lower altitude of the Amazon basin in Colombia, Venezuela, Guyana, Surinam, French Guiana and the northern border of Brazil, plants are frequently wine-red, or yellow-green, it has numerous, shorter, narrower, erect leaves, (3-9.2 x 1.2-2.8 cm), distributed throughout the stems, the basal ones generally longer; sepals and petals 48-81 mm long; body of the capsule occupying the apical half of the fruit. *Epidendrum carpophorum* Barb.Rodr. is found along the Atlantic slope of Venezuela, Guyana and SE Brazil, has few leaves distributed along the apical half of the stems, olive-green, the underside tinged purple, leaves wider (2.5-6.0 mm wide), column short, 13-20 mm long, and the body of the capsule is somewhat displaced towards the apex of the fruit. *Epidendrum ramiro-medinae* Hágsater & L.Sánchez is presently known only from southern Colombia along the upper Amazon slope of the Andes, has dark olive-green plants, sheaths and underside of leaves tinged purple, narrow leaves (1.5-2.8 cm wide), ovary short, 75-78 mm long, and column short 13 mm long. *Epidendrum angustilobum* Fawc. & Rendle (syn. *Epidendrum latifolium* (Lindl.) Garay & Sweet) is found along the Atlantic lowlands of Costa Rica and Panama, Colombia, Venezuela and the Guianas, has few, dark green, wide leaves (2-7 cm wide), a long ovary, 120-200 mm long, the mid-lobe of the lip is long, 36-45 mm long, and the body of the capsule is located at the middle of the fruit. *Epidendrum macrophorum* Hágsater & Dodson is found along the Pacific slope of Panama, Colombia, Ecuador and northern Peru, has dark green plants, few, long, wide leaves (9.5-20.0 x 2.3-7.0 cm), a very long ovary, 220-300 mm long, sepals and petals long (55-83 mm long), lateral lobes of the lip 20-30 mm long, mid-lobe 35-52 mm long, column 22-34 mm long, and the body of the capsule displaced towards the apex of the fruit.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: From the Latin, *tridens*, a three-pronged fishing instrument of Poseidon, Greek god of the sea, in reference to the characteristic 3-lobed lip of this group of species.

REFERENCES: Hágsater, E. & C. H. Dodson, 1999, *Epidendrum macrophorum* in E. Hágsater, L. Sánchez S. & J. García-Cruz (eds.), The Genus *Epidendrum*, Part 2, **Icon. Orchid.** 3: t. 350. Sánchez S., L., & E. Hágsater, 2008, *Epidendrum angustilobum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 7, **Icon. Orchid.** 11: t. 1102. Sánchez S., L. & E. Hágsater, 2010, *Epidendrum carpophorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, **Icon. Orchid.** 13: t. 1313. Hágsater, E., & L. Sánchez S., 2015, *Epidendrum ramiro-medinae* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1553. Sánchez S., L., & E. Hágsater, 2015, *Epidendrum tumuc-humaciense* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, **Icon. Orchid.** 15(1): t. 1566.





EPIDENDRUM TUMUC-HUMACIENSE (Veyret) Carnevali & G.Romero

Plate 1566

EPIDENDRUM TUMUC-HUMACIENSE (Veyret) Carnevali & G. Romero, *Lindleyana* 11(4): 246. 1996.

Basionym: *Epidendrum nocturnum* Jacq. var. *tumuc-humaciense* Veyret, Bull. Mus. Natl. Hist. Nat., B, Adansonia 3-4: 186. 1982. Type: FRENCH GUYANA: Tumuc-Humac, frontière Brésil-Guyane. Sommet du Mitaraka Sud, zone supérieure de la savane-roche, 720 m, 14 August 1972, **Jean Jaques de Granville 1232**. Holotype P! Isotype: CAY (not seen).

Terrestrial, lithophytic or epiphytic, sympodial, caespitose **herb**, 30-125 cm tall. **Roots** 2-4 mm in diameter, basal, fleshy, thick. **Stems** cane-like, 18-105 x 0.4-1.2 cm, base terete, laterally compressed towards the apex, simple, straight, green to reddish, occasionally deep wine-red. **Leaves** 6-27, distributed throughout the stem, the basal leaves longer, erect, green to reddish, occasionally deep wine-red; foliar sheath 1.5-5.0 x 0.5-1.2 mm, laterally compressed; blade ovate-elliptic ca. 3:1 (length/width), 3-9.2 x 1.2-2.8 cm, apex slightly bilobed to retuse, aristate, coriaceous, slightly carinate. **Spathaceous bract** lacking. **Inflorescence** apical, pluri-racemose, (racemose, but producing new racemes from basal internodes of the previous inflorescence through time, flowering from the same stem over several years), peduncle inconspicuous, short, to 1 cm long, with 1-3 triangular, acute bracts, occasionally producing a plantlet from the node below the first flower, rachis to 2 cm long. **Floral bract** 5-10 x 4-6 mm, much shorter than the ovary, amplexicaul, triangular, acute. **Flowers** 1-5 per raceme, successive, one at a time, resupinate, yellowish green to yellowish white or rose-white, the lip and column white; fragrance not registered. **Ovary** [40] 80-100 [110] mm long, terete, unornamented, somewhat longer than the sepals. **Sepals** spreading, linear-lanceolate, [35] 48-81 x 3-5 mm, apex acuminate, thickened, margin entire, revolute, lateral sepals oblique. **Petals** [35] 48-81 x 3-5 mm, slightly inflexed, linear-lanceolate, acuminate, mucronate, margin entire, spreading. **Lip** united to the column, 3-lobed, [25] 30-50 x 15-20 mm, base truncate; lateral lobes 15-30 x 5-7 mm, semi-ovate, rounded, margin entire, spreading; mid-lobe linear, 19-42 x 2 mm, acuminate, margin entire, surpassing the lateral lobes about their full length; bicallose, the calli laminar, prominent; disc with a low rib prolonged to about 1/3rd of mid-lobe length. **Column** [16] 19-27 mm long, straight to arching, thin at the base, strongly dilated at the apex, with a pair of lateral, acute, teeth. **Clinandrium-hood** slightly surpassing the apex of the column, dentate. **Anther** obovoid, apex truncate, 4-celled. **Pollinia** 4, semi-obovoid, laterally compressed; caudicles soft and granulose, about as long as the pollinia; viscidium semi-liquid, transparent. **Rostellum** apical, slit. **Lateral lobes of the stigma** small. **Nectary** very deep, penetrating the whole of the ovary, unornamented. **Capsule** ellipsoid, [6.5] 9-11 cm long, with a 5 cm long basal pedicel occupying half the total length, the body, 2.5-4.5 x 1.5-1.7 cm occupying the other half, apical neck short, 1.5 cm long.

OTHER SPECIMENS AND RECORDS: See appendix.

DISTRIBUTION AND ECOLOGY: Known from the Guyana Shield and the lowlands of the Northern Amazon basin in Colombia, Venezuela, Guyana, Surinam, French Guyana on the border with Brazil; growing in Savanna on sandstone and granite from 180 to 1680 m altitude. Flowering from June to February.

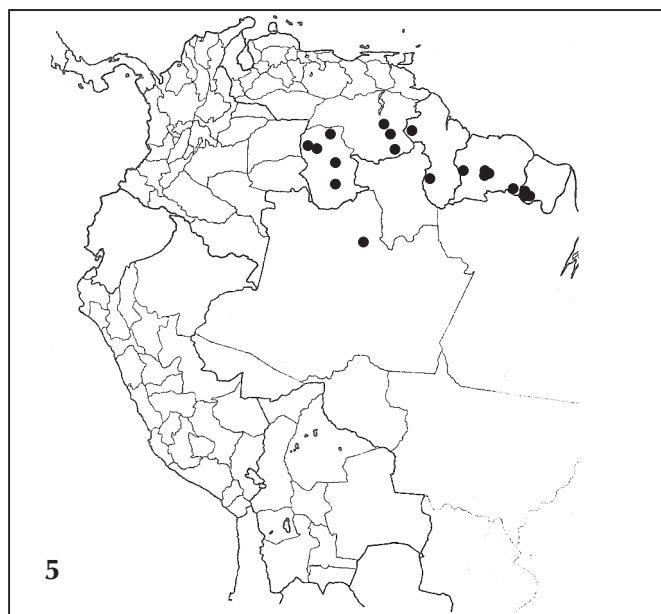
RECOGNITION: *Epidendrum tumuc-humaciense* belongs to the Nocturnum Group which is characterized by the sympodial, caespitose plants, cane-like, non-fusiform stems, successive flowers on a short, racemose or pluri-racemose inflorescence, without spathaceous bracts, and large, star-shaped flowers, with similar sepals and petals; the flowers are mostly indistinguishable in shape. The species is recognized by the laterally compressed stems, numerous erect leaves distributed throughout the stems, the basal ones generally longer, green to reddish, occasionally deep wine-red, solitary, successive flowers; ovary generally 80-100 mm long, and the body of the capsule occupying the apical half of the fruit, the body sub-globose, with basal peduncle half the length of the fruit, the apical neck short. *Epidendrum nocturnum* Jacq. is widely distributed throughout the Neotropics at lower altitudes, has terete stems, few leaves, distributed throughout the apical 2/3; the ovary shorter, 50-70 mm, body of the capsule occupying most of the length of the fruit and centered, both peduncle and apical neck short. *Epidendrum carphorum* Barb.Rodr. is found along the Atlantic lowlands of Venezuela, Guyana down to SE Brazil, the stems have few, wide leaves (2.5-6 cm wide) distributed along the apical half of the laterally compressed stem, capsule is located slightly beyond the apical middle. *Epidendrum erectum* Brieger & Bicalho, in the states of Goiás and Mina Garais, Brazil, has densely aggregate leaves along the apical 2/3 of the stems, a shorter ovary (generally 45-60 mm long), and the body of the capsule located at the middle of the ovary.

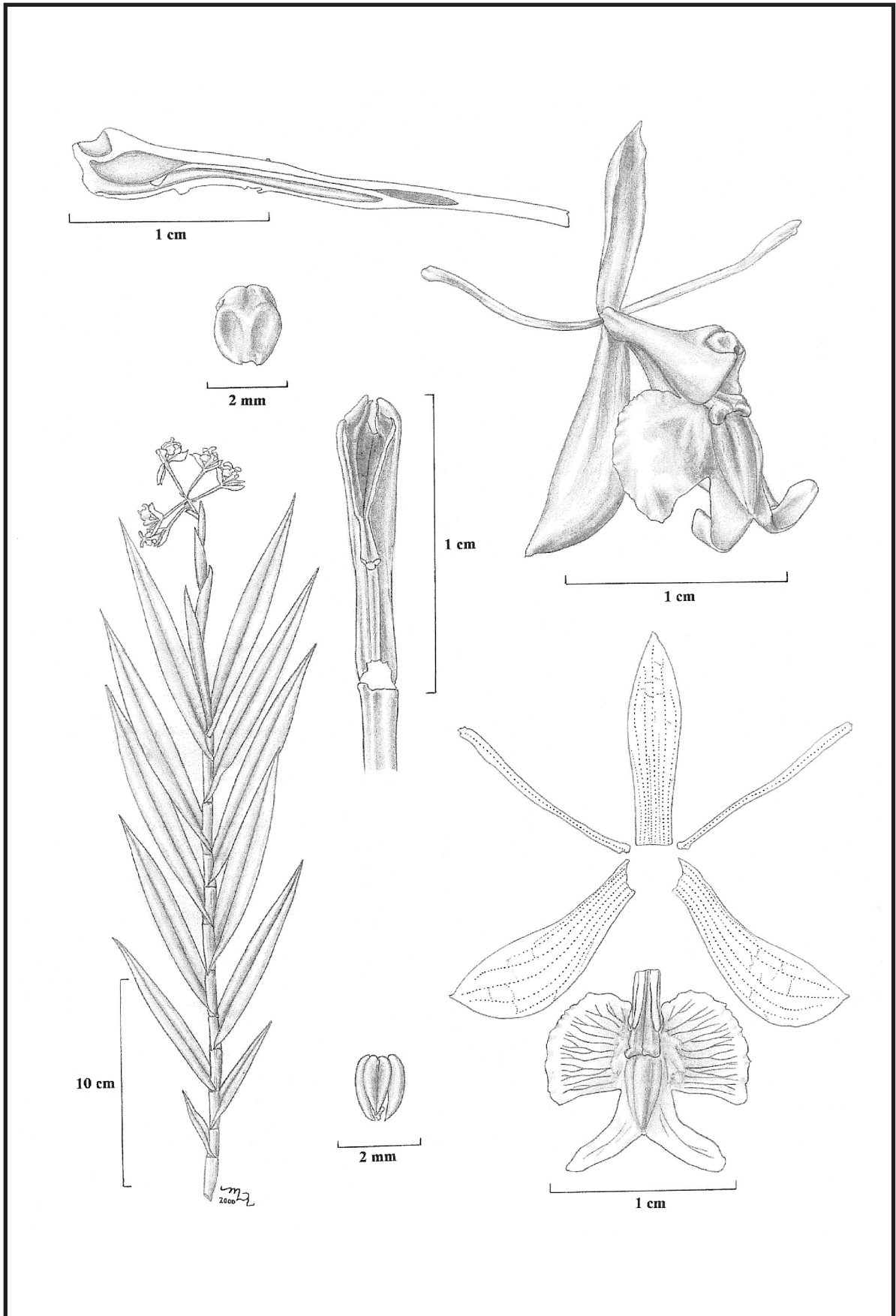
NOTE: Veyret (1982) studied the Nocturnum Group in French Guyana, postulating that apomixis was the cause of the variation in this group of species and thus did not accept the existence of diverse species. She described this entity with the rank of variety. We believe that there are a number of species which occupy different ecological niches, and are probably pollinated by different species of sphingid moths, corresponding to the very different nectary/ovary lengths. The many species are best recognized by a combination of the length of the sepals and ovary, the relative position of the body of the capsule, the shape of leaves and terete or ancipitose stem. Sphingid moths have been seen carrying pollinaria of this group of orchids on their proboscis (Moosberg, Hágsater & Ochse, 2014).

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: In reference to Mount Tumuc-Humac, where the borders of Surinam, French Guyana and Brazil meet, and where the type as collected

REFERENCES: Veyret, Y., 1982, Apomixie et variation chez *Epidendrum nocturnum* Jacq. (Orchidaceae). *Adansonia* 3-4: 183-192. Carnevali, G., & G. Romero, 1996, The *Epidendrum nocturnum* Alliance in the Venezuelan Guyana, *Lindleyana* 11(4): 239-249. Steyermark, J. A. Berry, P. E., Yatskievych, K. & B. K. Holst, 2003, **Flora of the Venezuelan Guyana. 7, Myrtaceae-Plumbaginaceae**, Missouri Botanical Garden Press, St. Luis, Missouri, U.S.A., 765 pp. Moosberg, M., E. Hágsater & M. Ochse, 2014, Ökologische Zusammenhänge anhand von Sammlungsbeispielen erkennen: *Adhemarius sexoculata* Grote, 1867, als Bestäuber bei der Orchideengattung *Epidendrum* Linnaeus, 1753 (Lepitoptera: Sphingidae). *Entomologische Zeitschrift* 124 (3): 167-168. Sánchez S., L. & E. Hágsater, 2010, *Epidendrum carphorum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 9, *Icon. Orchid.* 13: t. 1313. Hágsater, E., Meneguzzo, T. E. C. & L. Sánchez S., 2015, *Epidendrum erectum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 11, *Icon. Orchid.* 15(1): t. 1520.





EPIDENDRUM VIGOSI Hágsater & E.Santiago

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

Type: COLOMBIA: Antioquia: [Río] Porcè, 900 m, [hort.] La Guinea, pressed cult. Mexico City, 19 noviembre 1996, **Luis Carlos Vieira, José Antonio González & Federico Siebert** sub **Eric Hágsater** 11523. Holotype: AMO 19782! (Illustration & photo voucher). Clonotype: 3 julio 1998, AMO 18130!

Similar to *Epidendrum rodrigoii* Hágsater, but the flowers are apple-green with the disc of the lip a solid dark purple blotch, floral bracts very small, lateral sepals spreading, petals partly spreading, base of the lateral lobes of the lip with short, thickened veins sub-parallel to the ribs.

Epiphytic, sympodial, caespitose, erect **herb**, 30-80 cm tall. **Roots** 0.5-1-1.5 mm in diameter, basal, thin. **Stems** 18-50 x 0.4-0.8 cm, simple, cane-like, the base terete, laterally compressed nearly throughout above, thin, erect, straight; base covered by sheaths 28 mm long, tubular, non-foliar, scarious. **Leaves** 7-12, erect-spreading, alternate, articulate, dorsally dark green, ventrally tinged purple, unequal in size, the basal ones smaller; sheath 1.4-2.4 cm long, tubular, minutely striated; blade [2.5-5] 8-23 x 0.7-1.8 cm, narrowly oblong-lanceolate, acuminate, margin entire, spreading. **Spathes** lacking. **Inflorescence** 12-29 cm long, apical, elongate, erect, racemose, producing new racemes (over several years) from the apex of the peduncle, and thus pluri-racemose, pluri-annual, laxly few-flowered; peduncle 11-27 cm long, thin, laterally compressed, erect, straight, provided with 5-9 bracts 0.8-10 cm long, unequal in size, progressively smaller, tubular, ancipitose, acute, the basal ones partly imbricated; rachis 1 cm long, terete, thin, very short. **Floral bracts** 1-2 mm long, much shorter than the ovary, triangular, acute, amplexicaul. **Ovary** 16-20 mm long, terete, thin, not inflated, striated, scarcely papillose. **Flowers** 2-5, simultaneous, aggregate towards the apex of the inflorescence, apple-green with the disc of the lip a solid dark purple blotch, the apex of the column sometimes tinged purple; without fragrance. **Sepals** 11-12 x 2.7-4 mm, free, narrowly obovate-oblancoolate, 5-veined, margin entire, spreading; the dorsal sepals partly spreading; the lateral sepals spreading, slightly oblique. **Petals** 11 x 0.7 mm, partly spreading, free, filiform, obtuse, 1-veined, margin entire, spreading. **Lip** 9.5 x 11 mm, united to the column, 3-lobed, base cordate; bicallose, the calli prominent, sub-globose, somewhat laterally compressed, parallel, close to each other; disc provided with 3 central, parallel ribs which reach the apical sinus of the mid-lobe, and 8 additional, somewhat radiating, short, thickened veins; lateral lobes 4.7 x 6.2 mm, dolabriform, margin erose, spreading; mid-lobe 4.2 x 8.5 mm, bilobed, in a "V" position, formed by a pair of oblong lobes, the apices rounded, margin entire, spreading, each lobe 4.2 x 1.5 mm. **Column** 10 mm long, straight, thin at the base and gradually dilated towards the apex, with a pair of minute teeth at the apex, and a pair of truncate wings below. **Clinandrium-hood** reduced, margin entire. **Rostellum** apical, slit. **Lateral lobes of the stigmatic cavity** small, 1/5th the length of the stigmatic cavity. **Anther** globose, 4-celled. **Pollinia** 4, bird-wing-type, laterally compressed, sub-equal; caudicles laminar, slightly longer than the pollinia; viscidium semi-liquid, transparent. **Nectary** shallow, slightly penetrating the ovary, not inflated, unornamented. **Capsule** 3.4 x 1.2 cm, ellipsoid; pedicel 9 mm long; body 2.4 x 1.2 cm longitudinal neck 10 mm long.

OTHER SPECIMENS: COLOMBIA: Antioquia: Porcesito, valle del Río Medellín, ca. 1100 m, 16 IV 1946, *Hodge 6778**, AMES! COL! US! San Luis; Quebrada La Cristalina, 470-500 m, 24 II 1987, *Ramírez 660*, COL! JAUM! Ibid., 570-770 m, 23 V 1987, *Ramírez 959*, COL! JAUMx2!

OTHER RECORDS: COLOMBIA: Antioquia: Cocorná, 900 m, 2013, *Santiago Mesa s.n.*, digital photo series, AMO!

DISTRIBUTION AND ECOLOGY: Occurs in the foot-hills and wet interior valleys of the Cordillera Central in Colombia, in the Department of Antioquia. It is expected to occur in floristically similar, nearby regions such as the region of the Río Nechí-Tarázá, in the lower areas of the PNN Paramillo (Córdoba), and the Serranía de San Lucas (Bolívar), at about 500-1100 m altitude. Epiphytic in lowland wet forests; flowering throughout the year.

RECOGNITION: *Epidendrum vigosi* belongs to the Pseudepidendrum Group which is characterized by caespitose plants, cane-like stems, acute to acuminate leaves, usually apical inflorescence, the mostly filiform petals and the lip usually 3-lobed (with 3 parallel fleshy keels), the apical lobe often bifurcate, the "bird-wing" type pollinia, at least the inner pair, and Turalvae Subgroup which has a racemose and few-flowered inflorescence on an elongate peduncle, usually producing new racemes over the years and thus pluri-racemose, the rachis very short, and thus compact flowered. The species is recognized by the apple-green flowers, with a deep purple blotch on the disc of the lip, the partly spreading tepals, the very small floral bracts, and the short, thickened veins radiating from the base of the 3 central ribs on the disc. *Epidendrum rodrigoii* Hágsater has olive-green flowers, with the lip pink to lilac, including the 3 ribs of the disc, which are deeper in color and sepals totally reflexed, nearly parallel to the ovary. *Epidendrum esmeraldense* Hágsater, H. Medina & E. Santiago, is similar to the latter, but the flowers are ochre-green, and the lip rich magenta, with the ribs of the disc white. *Epidendrum turalvae* Rchb.f. can be recognized by the narrow, long leaves (7-18.5 x 0.4-1.5 [2.5] cm) though the extremes overlap, flowers are greenish brown, with the lip a translucent white, sometimes with the disc of the lip rose colored, the sepals reflexed and the disc of the lip without thickened veins, only the 3 parallel ribs. *Epidendrum tacarcunense* Hágsater has pale green flowers and a white lip, the disc of the lip purple, and the calli are small and narrow, the sepals totally reflexed, parallel to the ovary, and the petals parallel to the column, it is apparently endemic to the Darién in Panama.

NOTES: *Hodge 6778* was incorrectly identified and cited as *Epidendrum rodrigoii* in the original description of that species (Hágsater, 1993). This compact group of species, the Turalvae Subgroup has very similar flowers, which are easily confused when precise color information is not available.

CONSERVATION STATUS: DD. Data deficient.

ETYMOLOGY: The specific epithet honors the collectors of the type, and is formed by the first two letters of the surname of the three collectors of the type, José Luis Vieira, José Antonio González and Federico Siebert, all well-known orchid amateurs from Medellín, Colombia.

REFERENCES: Hágsater, E., 1993, *Epidendrum rodrigoii* Hágsater, in E. Hágsater & G. A. Salazar (eds.), *The Genus Epidendrum*, Part 1, *Icon. Orchid.* 2: t. 181. Hágsater, E., 1999, *Epidendrum tacarcunense*, in E. Hágsater, L. Sánchez Saldaña & J. García-Cruz (eds.), *The Genus Epidendrum*, Part 2, *Icon. Orchid.* 3: t. 384. Hágsater, E., H. Medina & E. Santiago, 2013, *Epidendrum esmeraldense* in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 10, *Icon. Orchid.* 14: t. 1427. Santiago, E. & E. Hágsater, 2008, *Epidendrum turalvae* Rchb.f. in E. Hágsater & L. Sánchez Saldaña (eds.), *The Genus Epidendrum*, Part 7, *Icon. Orchid.* 11: t. 1193.



Authors: E. Hágsater & E. Santiago

Illustrator: M. López R. Photo: R. Jiménez M

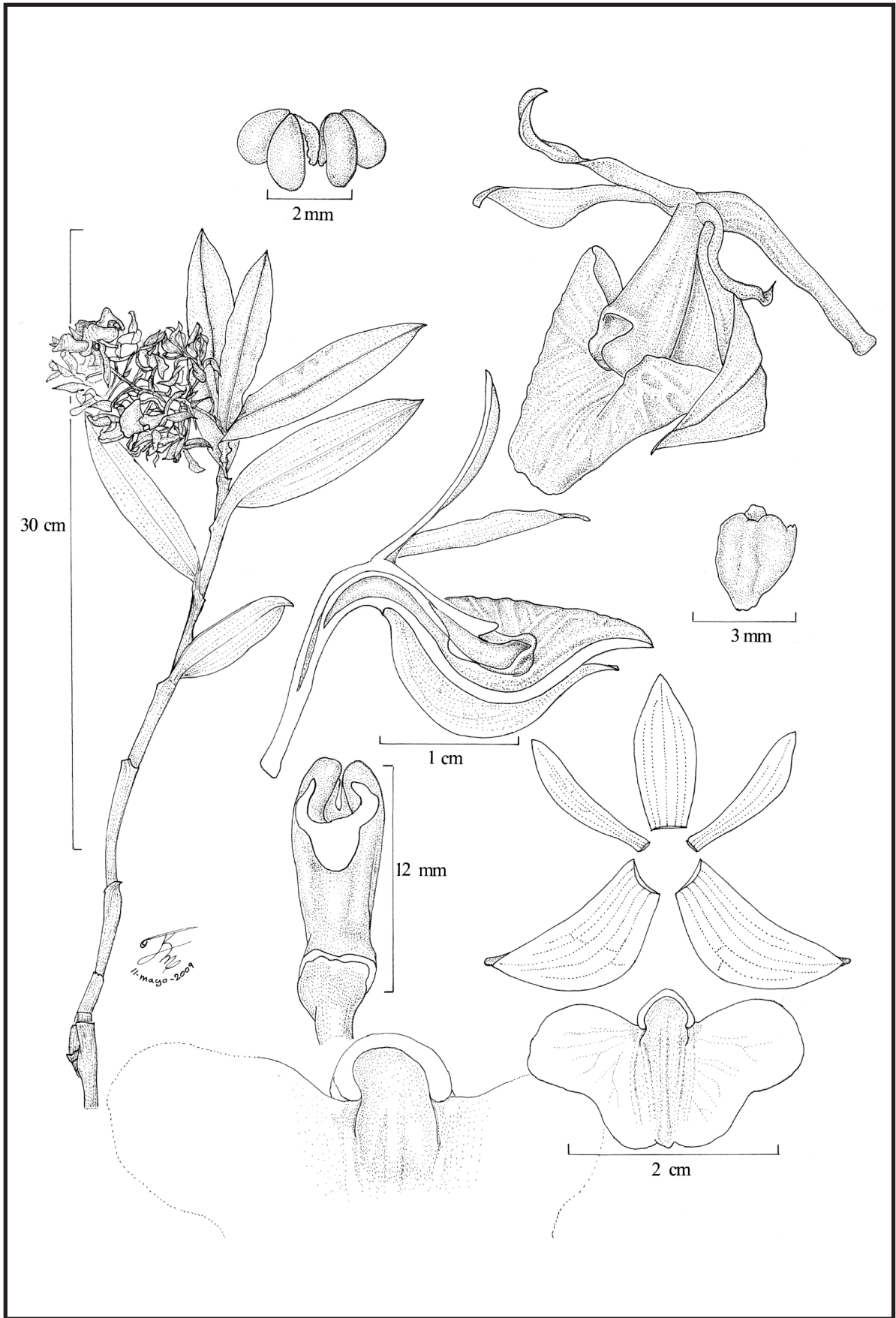
Editors: E. Hágsater & L. Sánchez S.

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ICONES ORCHIDACEARUM 15(1). 2015.

Plate 1567



EPIDENDRUM ZONGOINCOMPTUM Hágsater & E.Santiago

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

Type: BOLIVIA: La Paz: Prov. Murillo; 32.7 km N of (below) dam at Lago Zongo, a few hundred meters above Planta Hidroeléctrica Chururaqui, 2000 m, 29 November 1982, **James C. Solomon 9035**. Holotype: MO! (Illustration voucher) Isotype: SEL!

Similar to *Epidendrum incomptum* Rchb.f. but the flowers pale greenish yellow, column thinner, lip concave at the base, the mid-lobe trapezoid, apically somewhat emarginate and apiculate, ecallose, with a pair of low laminar thickenings and 5 parallel ribs reaching the apex.

Epiphytic, sympodial, erect **herb** ca. 40 cm tall, where the new stems originate from a sub-apical internode of the previous stem. **Roots** not seen. **Stem** 30 x 0.35-0.65 cm, simple, terete, thin, erect, straight; base covered by tubular, no foliar sheaths 0.5-4.5 cm long. **Leaves** 5-6, distributed along the apical half of the stems, alternate, articulate, similar in size and shape; sheaths 1-4 x 0.35-0.65 cm, tubular, slightly infundibuliform at the apex, minutely striated; blades 6.7-12 x 1.9-2.8 cm, oblong-elliptic, acute, margin entire. **Spathe** absent. **Inflorescence** 10 cm long, apical, flowering only once, racemose, arching-nutant, densely many-flowered; peduncle 12 mm long, terete, thin, straight, the base provided with a bract 15 mm long, triangular-lanceolate, apex long-acuminate. **Floral bracts** 2-8 mm long, prominent, but shorter than the ovary, gradually diminishing in size towards the apex of the rachis, narrowly triangular, acuminate, amplexicaul. **Flowers** 22, simultaneous, resupinate, sepals and petals pale greenish yellow; fragrance not registered. **Ovary** 12-15 mm long, terete, thin along the basal $\frac{3}{4}$, inflated at the apical $\frac{1}{4}$, behind the perianth, minutely striated when dry. **Sepals** partly spreading, free, acute, 5-veined; margin entire, spreading; dorsal sepals 15 x 6 mm, narrowly obovate; lateral sepals 18 x 7.2 mm, oblong-elliptic, falcate, oblique, with a low, conspicuous dorsal keel. **Petals** 15 x 2.7 mm, partly spreading, free, oblanceolate, oblique, falcate, apex acute, 3-veined; margin entire, spreading. **Lip** 13.6 x 26 mm, united to the column, 3-lobed, with numerous thickened veins, base sub-cordate, margin entire, revolute in natural position, thus the lip appears trapezoid in natural position; ecallose, with a pair of low, parallel, laminar thickenings at the base, concave between them, disc with 5 parallel, thin, low ribs, the mid-rib elongate, reaching the apex of the blade, forming an apicule, the lateral pair somewhat shorter; lateral lobes 12 x 8.4 mm, obliquely sub-quadrate, corners rounded; mid-lobe 5 x 15 mm, trapezoid, apiculate and slightly bilobed. **Column** 12 mm long, straight, forming a 90° angle with the ovary, the apex with a pair of truncate wings, rounded at the apex. **Clinandrium-hood** reduced, margin entire. **Anther** ovoid, 4-celled, with a low rib in front. **Pollinia** 4, obovoid; caudicles soft and granulose, shorter than the pollinia. **Rostellum** apical, slit. **Lateral lobes of the stigma** prominent, 1/3 the length of the stigmatic cavity. **Nectary** penetrating 1/3 of the ovary, not inflated, unornamented. **Capsule** not seen.

OTHER SPECIMENS: None seen.

DISTRIBUTION AND ECOLOGY: Presently known only from the type, in western Bolivia, north of La Paz city, on the eastern slope of the Andes, at 2000 m altitude. Flowering in November.

RECOGNITION: *Epidendrum zongoincomptum* belongs to the Arbuscula Group, Incomptum Subgroup, which is characterized by the successive lateral growths produced from the middle of the previous growth, few leaves aggregate towards the apex of the stems, a short apical inflorescence with fleshy green to violet-green to black flowers with short ovaries, the lip entire to 3-lobed. The species is recognized by 5-6 leaved stems, the pale greenish yellow flowers, lip 3 lobed, the lateral lobes slightly reflexed, mid-lobe trapezoid, minutely apiculate, ecallose disc with 5 thin ribs. *Epidendrum incomptum* Rchb.f. green flowers, concolor, or sometimes the lip purple, the mid-lobe of the lip sub-quadrate, disc ecallose and without ribs. *Epidendrum homoion* Hágsater & Dodson has olive-green flowers, the posterior margin of the lateral lobes of the lip forming a right-angle with the mid-lobe which is sub-quadrate and deeply emarginate, petals obrullate, very wide, lib bicallose, without ribs. *Epidendrum carchiense* Hágsater & Dodson has 6-7, olive-green to purple flowers, the lip smooth, without ribs, without calli, but a basal pair of small thickenings the mid-lobe entire, apiculate, and the floral segments acuminate, narrow. *Epidendrum marsiorum* R.Vásquez & P.L.Ibisch is another species found in the Valley of Río Zongo, and widespread from eastern Peru (Puno) to Cochabamba, has smaller flowers (sepals 8 mm long), chocolate-purple, concolor, the lip entire, reniform, with the apex mucronate, and the disc bicallose, without ribs.

CONSERVATION STATUS: DD. Data deficient.



ETYMOLOGY: In reference to the Valley of the Río Zongo, and the similarity of this species to *Epidendrum incomptum*.

REFERENCES: Hágsater, E., & C.H. Dodson, 1993, *Epidendrum carchiense* in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 119. Hágsater, E. & C. H. Dodson, 1993, *Epidendrum homoion* in E. Hágsater & G. A. Salazar (eds.), The Genus *Epidendrum*, Part 1, **Icon. Orchid.** 2: t. 145. Santiago, E. & E. Hágsater, 2006, *Epidendrum incomptum* in E. Hágsater & L. Sánchez S. (eds.), The Genus *Epidendrum*, Part 5, **Icon. Orchid.** 8: t. 824. Vásquez, R., P. L. Ibisch, A. Ley & C. Nowicki, 2004, *Epidendrum marsiorum* in Vásquez, Ch., R., & P. L. Ibisch (eds.), **Orquídeas de Bolivia** 2: 125, foto 59.