

ce

ICONES PLEUROTHALLIDINARUM
VIII

REF
QK1
M833
vol. 39
C3

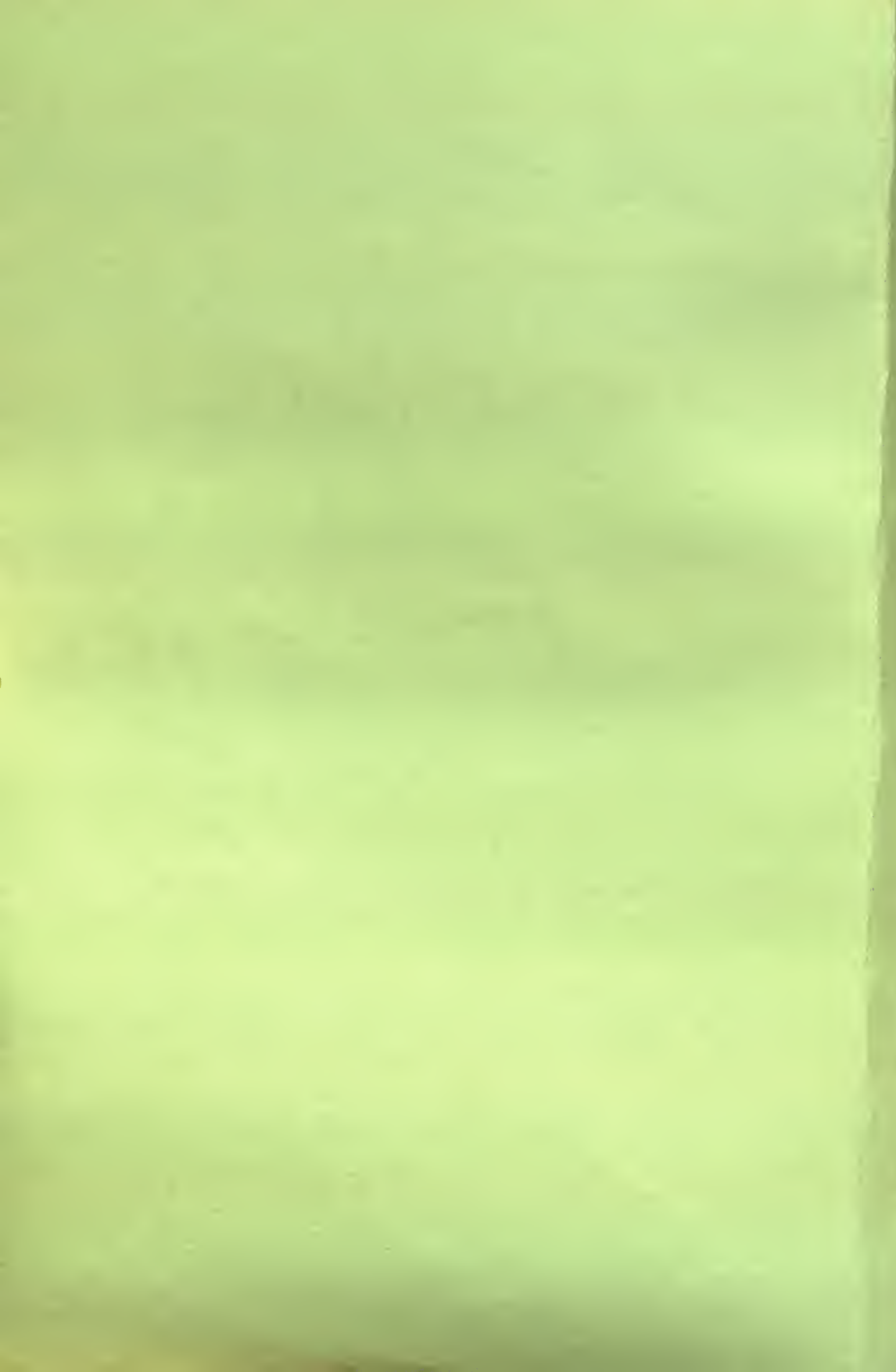
SYSTEMATICS
OF
LEPANTHOPSIS
OCTOMERIA subgenus PLEUROTHALLOPSIS
RESTREPIELLA
RESTREPIOPSIS
SALPISTELE
AND
TEAGUEIA

ADDENDA TO PLATYSTELE, PORROGLOSSUM AND SCAPHOSEPALUM

(ORCHIDACEAE)



Missouri Botanical Garden



ICONES PLEUROTHALLIDINARUM
VIII
SYSTEMATICS
OF
LEPANTHOPSIS
OCTOMERIA subgenus PLEUROTHALLOPSIS
RESTREPIELLA
RESTREPIOPSIS
SALPISTELE
AND
TEAGUEIA

ADDENDA TO PLATYSTELE, PORROGLOSSUM AND SCAPHOSEPALUM

Carlyle A. Luer



Missouri Botanical Garden

MISSOURI BOTANICAL

SEP 10 1991

GARDEN LIBRARY

MONOGRAPHS IN SYSTEMATIC BOTANY
from the Missouri Botanical Garden
Volume 39, August 1991

ISSN 0161-1542

Copyright (c) 1991 by Missouri Botanical Garden
All rights reserved

Carlyle A. Luer
3222 Old Oak Drive
Sarasota, FL. 34239

Composed at 3222 Old Oak Drive, Sarasota, Florida
with WordStar 5.5
and a Hewlett Packard Laserjet Series II
using HP 33412AD and 33412AF

Printed in the United States of America by
Arcade Lithographing Corp., Bradenton, FL.

CONTENTS

Systematics of the genus <i>Lepanthopsis</i>	1
<i>Octomeria</i> subgenus <i>Pleurothallopsis</i>	79
An historical note on <i>Acostaea</i>	82
Systematics of the genus <i>Restrepiella</i>	83
Systematics of the genus <i>Restrepiopsis</i>	87
Systematics of the genus <i>Salpistele</i>	123
Systematics of the genus <i>Teagueia</i>	139
Addenda to <i>Platystele</i>	147
Addenda to <i>Porroglossum</i>	152
Addenda to <i>Scaphosepalum</i>	158



Lepanthopsis melanantha (Reichb. f.) Ames. Fahkahatchee Swamp, Collier County, Florida, U.S.A., altitude 3 meters above sea level, March 1967.

SYSTEMATICS OF THE GENUS *LEPANTHOPSIS* (ORCHIDACEAE)

ABSTRACT

The genus *Lepanthopsis* (Cogn.) Ames is described and a key to the sections and species is given. Each species is described and illustrated with a black and white drawing, and a distribution map is included for each.

New taxa:

- Lepanthopsis* subgen. *Lepanthopsis*
- Lepanthopsis* subgen. *Microlepanthes* Luer, subgen. nov.
- Lepanthopsis* sect. *Fractipecten* Luer, sect. nov.
- Lepanthopsis* sect. *Lepanthopsis*
- Lepanthopsis abbreviata* Luer & Hirtz, sp. nov.
- Lepanthopsis apoda* (Garay & Dunsterville) Luer, comb. nov.
- Lepanthopsis comet-halleyi* Luer, sp. nov.
- Lepanthopsis farrago* (Luer & Hirtz) Luer, comb. nov.
- Lepanthopsis hirtzii* Luer, sp. nov.
- Lepanthopsis obliquipetala* (Ames & Schweinf.) Luer, comb. nov.
- Lepanthopsis ubangii* Luer, sp. nov.

The first species of *Lepanthopsis* to be described was *Pleurothallis floripecten* by Professor Reichenbach in 1854 from a collection near Caracas, Venezuela by the traveler Hermann Wager. In 1859, Lindley included this species in a subdivision entitled *Lepanthiformes* in the *Elongatae*, one of his 12 "sections" of *Pleurothallis* R. Br. (Lindley also included a subdivision entitled *Lepanthiformes* in his sections *Acuminatae* and *Brachystachyae*.) *Lepanthopsis floripecten* has proved to be the most widely distributed and one of the most common species of the genus. It was the only species of *Lepanthopsis* to have been recognized when Lindley published his *Folia Orchidaceae*.

The next two species of the future genus *Lepanthopsis* to be described were the Antillean *Pleurothallis microlepanthes* in 1864 by Grisebach, and *P. melanantha* in 1865 by Reichenbach. Reichenbach followed them with *P. anthothenium* in 1876. João Barbosa Rodrigues described the next as *Lepanthopsis densiflora* in 1891, and the sixth species, *P. astrophora*, was added posthumously for Reichenbach in 1892 by Kränzlin.

Alfred Cogniaux, professor of natural history at Verviers, Belgium, and vice-consul to Brazil, first recognized and described *Lepanthopsis* as a section of *Pleurothallis* in his work on the Orchidaceae in Martius' *Flora Brasiliensis* in 1896. He separated two species from the others of *Pleurothallis* on the basis of elongated secondary stems (ramicauls) with sheaths dilated and ciliate at the ostia; a densely racemose inflorescence, distichous or secund; membranous sepals, the laterals connate; and a very short, broad, footless column. The two species he included were *Pleurothallis congestiflora* Cogn. (a new epithet for the *Lepanthes densiflora* of Barbosa Rodrigues) and *Pleurothallis unilateralis* Cogn. (a new epithet for the *Lepanthes secunda* of Barbosa Rodrigues, but synonymous with Reichenbach's *Pleurothallis floripecten*).

Cogniaux maintained his section *Lepanthopsis* in the Orchidaceae Antillanae of the Symbolae Antillanae edited by Urban, 1910, but included only *P. anthoctenium*, leaving *P. melanantha* and *P. microlepanthes* in section *Lepanthiformes*. He described still another as a new species in *Lepanthes*, *L. serrulata*. In the 1912 edition of Symbolae Antillanae, Cogniaux added three more species in *Pleurothallis*: *P. barahonensis*, *P. constanzensis*, and *P. fuertesii*.

Professor Oakes Ames elevated section *Lepanthopsis* to the generic level in 1933, at which time he recognized only five of the ten species already described. These remaining five species were transferred to *Lepanthopsis* by Garay in 1962, a sixth transfer to *Lepanthopsis* being the Cuban *Lepanthes blepharophylla* Griseb. Unaware of Ames' elevation of *Lepanthopsis* to the generic level, Hoehne made the same proposal in 1936.

Today 37 species are known to constitute the genus. They are widely distributed in the moist tropical forests from southern Mexico to southern Brazil and the Greater Antilles, but the greatest concentration occurs on the island of Hispaniola as endemic species. A peculiar trait of most of the species from Hispaniola is the minute denticulation of the margins of the leaves, although sometimes obscurely so. For reasons unexplained, this character of the leaf also appears in species of other pleurothallid genera (e.g. *Lepanthes* and *Pleurothallis*), and even in some species of other subtribes (e.g. Laeliinae and Oncidiinae, pers. comm., R. L. Dressler).

Lepanthopsis is one of the three pleurothallid genera distinguished by the lepanthiform sheaths of the ramicauls. The term "lepanthiform," used already over a century ago by both Lindley and Reichenbach, refers to the tubular, ribbed sheaths with dilated ostia, and with the ribs and the rimmed margins of the ostia more or less ciliate or scabrous. These sheaths typified the genus *Lepanthes* of Olaf Swartz, but they were noted to occur also in some species attributed to *Pleurothallis*. Ames removed from *Pleurothallis* the lepanthiform-stemmed species with a *Platystele*-like column into *Lepanthopsis*, and the lepanthiform-stemmed species with a longer, well-developed column were removed to *Trichosalpinx* Luer in 1983.

The column of all species of *Lepanthopsis* is short and broad with an absent or obsolescent column-foot formed with the apex of the ovary. The anther is more or less exposed and apical, usually with the stigma transverse, commonly with a pair of stigmatic lobes, one to either side of the anther and rostellum. The lobes of the stigma are confluent in various degrees beneath the rostellar flap. The same condition obtains in various species of the genera *Lepanthes* Sw., *Platystele* Schltr., *Stelis* Sw. and *Pleurothallis* R. Br. subgenus *Pleurothallis*. The few species of *Lepanthopsis* with an entire stigma that also vary in other features are treated in a separate subgenus (*Microlepanthes*). The two pollinia are subspherical and attached to a minute viscidium.

Lepanthopsis (Cogn.) Ames, Bot. Mus. Leaf. 1(9): 3, 1933.

Bas.: *Pleurothallis* sect. *Lepanthopsis* Cogn., Fl. Bras. 3(4): 591, 1896.

Lectotype: *Pleurothallis unilateralis* Cogn., Fl. Bras. 3(4): 592, 1896. (Garay, Orquideología 9: 116, 1974) = *Lepanthopsis floripecten* (Reichb. f.) Ames.

Ety.: From the genus *Lepanthes* Sw. and the Greek *-opsis*, "similar to," referring to the similarity of the species to *Lepanthes*. *Lepanthes* from the Greek *lepis*, "a scale," and *anthos*, "a flower," referring to the small, "scalelike" flowers.

Syn.: *Lepanthopsis* (Cogn.) Hoehne, Bol. Mus. Nac. Rio de Janeiro 12: 29, 1936, *nom. illeg.*

Plants perennial, small to medium in size, epiphytic, caespitose, occasionally scandent; roots few to many, slender. Ramicauls ascending to erect, slender, nonpseudobulbous, shorter to longer than the leaf, unifoliate, rarely producing another ramicaul from the apex, enclosed by a series of ribbed, tubular, more or less imbricating sheaths, dilated at the ostia, more or less ciliate or scabrous on the ribs and the margins of the ostia, the inflorescence emerging laterally with an annulus from near the apex, or abscission layer. Leaf erect, thinly to thickly coriaceous, smooth to denticulate on the margin, sometimes suffused with purple, usually more or less shortly petiolate, the blade broadly to narrowly elliptical, the apex acute to obtuse, notched with an apiculum in the sinus, the base cuneate into the petiole. Inflorescence racemose (rarely reduced to 1 flower), shorter or longer than the leaf, the raceme congested (often in 2 opposite-facing ranks) to lax, strict to flexuous, distichous to secund, usually simultaneously, occasionally successively few- to many-flowered, with the flowers resupinate or non-resupinate, borne by an erect to ascending, slender, glabrous, peduncle, often with a few bracts; floral bracts thin, tubular; pedicels slender; ovary smooth to costate; sepals membranous, variously colored, more or less ovate, 1-3 veined, subcarinate, entire, glabrous to finely pubescent or verrucose, the dorsal sepal essentially free or shortly connate to the lateral sepals (rarely deeply connate), 1- to incompletely 3-veined, the lateral sepals essentially free to nearly entirely connate, 1-veined (rarely faintly 2-veined), all sepals widely spread to form a more or less flat flower, or concave to form a cupped flower, the apices acute, acuminate to obtuse; petals membranous, entire, acute, acuminate to obtuse, glabrous to pubescent, sometimes ciliate; lip more or less fleshy, ovate, cordate or suborbicular, rarely 3-lobed, with or without basal lobes that embrace the column, the apex acute, obtuse or rounded, glabrous to cellular-glandular, sometimes callous, but often with a glenion or a concavity above the base, sometimes with a pair of calli, the base more or less inflexibly attached or fixed to the apex of an obsolete column-foot; column short, broad, more or less cucullate at the apex, the anther and rostellum apical or subapical, with the pollinia 2, obovoid, free or attached to a common viscidium, the stigma apical or subapical, transversely bilobed to entire, the lobes usually presenting to either side of the anther, the base of the column footless, or with a rudimentary column-foot with the apex of the ovary.

The basic vegetative characters of the species of *Lepanthopsis* do not vary significantly from most of the species of *Lepanthes* or *Trichosalpinx*. Except for two prolific species, all the species of *Lepanthopsis* are caespitose. Except for five species segregated into a separate subgenus, the majority of the species, distinguished by a short, footless column with an apical anther and a transversely bilobed stigma, are closely allied. Two easily recognized characters of the inflorescence, whether or not it be strict and simultaneously densely flowered in two opposite-facing ranks, or more or less flexuous and loose, and either simultaneously or successively flowered, permit the species to be divided into two sections.

The five less closely allied species segregated into subgenus *Microlepanthes* have a lip compatible with *Lepanthopsis*; a short, thick column; and an entire, apical stigma. These five species seem intermediate between *Lepanthopsis* and *Trichosalpinx*. Five other aberrant species with mixed features of both genera, but with a thickened lip with remarkable calli seemingly unrelated to *Lepanthopsis*, yet with a more or less cylindrical, footless column with an apical anther, constitute the subgenus *Pseudolepanthes* of *Trichosalpinx*.

Lepanthopsis subgen. Lepanthopsis

Type: *Pleurothallis unilateralis* Cogn. = *Lepanthopsis floripecten* (Reichb. f.) Ames.

The great majority of species are closely related and fall together into this subgenus. The column is short, broad and essentially footless with an apical anther, rostellum and a transversely bilobed stigma. The subgenus is capable of being divided into two sections depending upon the arrangement of the inflorescence.

Lepanthopsis sect. Fractipecten Luer, sect. nov.

Type: *Pleurothallis astrophora* Reichb. f. ex Krzl., Xenia Orch. 3: 85, 1892. = *Lepanthopsis astrophora* (Reichb. f. ex Krzl.) Garay.

Ety.: From the Latin *fractus*, "broken," and *pecten*, "a comb," in reference to the flexuous inflorescence.

Syn.: *Eu-Lepanthopsis* Garay, Arch. Jard. Bot. Rio de Janeiro 12: 180, 1953, nom. illeg.

Inflorescentiae plus minusve laxae fractiflexae.

This section is characterized by the loosely few- to many-flowered, more or less flexuous racemes which are simultaneously or successively flowered. The column is short with an apical, bilobed stigma, as in sect. *Lepanthopsis*. Most of the species of this section are to be found in the Greater Antilles, but a few occur on the nearby mainland of South America.

Lepanthopsis sect. Lepanthopsis

Type: *Lepanthopsis floripecten* Reichb. f.

Syn.: *Lepanthopsis* sect. *Compactae* Garay, Arch. Jard. Bot. Rio de Janeiro 12: 180, 1953, *nomen nudum*.

Ety.: From the Latin *compactus*, "compact," referring to the densely flowered inflorescence.

This section is characterized by the strict, densely and simultaneously many-flowered racemes with the flowers in two opposite-facing ranks that reminded Reichenbach of a little comb. He utilized this similarity for naming the first and fourth species of the genus. The column is short and footless with an apical, bilobed stigma. The species of this section are widely distributed throughout the range of the genus.

Lepanthopsis subgen. Microlepanthes Luer, subgen. nov.

Type: *Pleurothallis microlepanthes* Griseb., Fl. Brit. West Ind. 610, 1864.

Ety.: From the Greek *micro-*, "minute," and the genus *Lepanthes*, referring to the similarity of the plant to a minute *Lepanthes*.

Stigmata apicalia integri.

Similar to the two sections of *Lepanthopsis*, this subgenus is inseparable vegetatively from *Lepanthes* or *Trichosalpinx*, and florally it sits on the boundary between *Lepanthopsis* and *Trichosalpinx*. The inflorescence is characterized by a more or less congested raceme, successively or simultaneously flowered (single-flowered in one species); a simple, more or less suborbicular lip; a short, footless column with an apical anther; and an entire, apical stigma.

This combination of features of the five species included in this section indicate that these species are more closely allied to *Lepanthopsis* than to *Trichosalpinx* where some have recently resided. The lip of all five of these species is similar: rounded, concave, and more or less callous at the base.

EPITHETS PUBLISHED IN *LEPANTHOPSIS*
AND LIST OF ILLUSTRATIONS

<i>Lepanthopsis abbreviata</i> Luer & Hirtz.....	Plate 1.
<i>Lepanthopsis acetabulum</i> Luer.....	Plate 2.
<i>Lepanthopsis acuminata</i> Ames.....	Plate 3.
<i>Lepanthopsis anthoetenium</i> (Reichb. f.) Ames.....	Plate 4.
<i>Lepanthopsis apoda</i> (Garay & Dunsterv.) Luer.....	Plate 33.
<i>Lepanthopsis aristata</i> Dod.....	Plate 5.
<i>Lepanthopsis astrophora</i> (Reichb. f. ex Krzl.) Garay.....	Plate 6.
<i>Lepanthopsis atrosetifera</i> Dod.....	Plate 7.
<i>Lepanthopsis barahonensis</i> (Cogn.) Garay.....	Plate 8.
<i>Lepanthopsis blepharophylla</i> (Griseb.) Garay = <i>Lepanthes blepharophylla</i>	
<i>Lepanthopsis comet-halleyi</i> Luer.....	Plate 34.
<i>Lepanthopsis congestiflora</i> (Cogn.) C. Porto & Brade = <i>Lepanthopsis densiflora</i>	
<i>Lepanthopsis constanzensis</i> (Cogn.) Garay.....	Plate 9.
<i>Lepanthopsis cucullata</i> Dod.....	Plate 10.
<i>Lepanthopsis culiculosa</i> Luer.....	Plate 11.
<i>Lepanthopsis densiflora</i> (Barb. Rodr.) Ames.....	Plate 12.
<i>Lepanthopsis dentifera</i> (L. O. Wms.) Garay = <i>Lepanthopsis barahonensis</i>	
<i>Lepanthopsis dodii</i> Garay.....	Plate 13.
<i>Lepanthopsis domingensis</i> Dod = <i>Lepanthopsis anthoetenium</i>	
<i>Lepanthopsis farrago</i> (Luer & Hirtz) Luer.....	Plate 35.
<i>Lepanthopsis floripecten</i> (Reichb. f.) Ames.....	Plate 14.
<i>Lepanthopsis fueresii</i> (Cogn.) Garay = <i>Lepanthopsis barahonensis</i>	
<i>Lepanthopsis glandulifera</i> Dod.....	Plate 15.
<i>Lepanthopsis haitiensis</i> Dod = <i>Lepanthopsis aristata</i>	
<i>Lepanthopsis hirtzii</i> Luer.....	Plate 16.
<i>Lepanthopsis hotteana</i> (Mansf.) Garay.....	Plate 17.
<i>Lepanthopsis lingulata</i> Dod.....	Plate 18.
<i>Lepanthopsis melanantha</i> (Reichb. f.) Ames.....	Plate 19.
<i>Lepanthopsis micheleae</i> Dod.....	Plate 20.
<i>Lepanthopsis microlepanthes</i> (Griseb.) Ames.....	Plate 36.
<i>Lepanthopsis moniliformis</i> Dod.....	Plate 21.
<i>Lepanthopsis obliquipetala</i> (Ames & Schweinf.) Luer.....	Plate 37.
<i>Lepanthopsis ornipteridion</i> Dod.....	Plate 22.
<i>Lepanthopsis paryskii</i> Dod = <i>Lepanthopsis cucullata</i>	
<i>Lepanthopsis peniculus</i> (Schltr.) Garay.....	Plate 23.
<i>Lepanthopsis pristis</i> Luer & Escobar.....	Plate 24.
<i>Lepanthopsis prolifera</i> Garay.....	Plate 25.
<i>Lepanthopsis pulchella</i> Garay & Dunsterv.....	Plate 26.
<i>Lepanthopsis pygmaea</i> C. Schweinf.....	Plate 27.
<i>Lepanthopsis quisqueyana</i> Dod = <i>Lepanthopsis melanantha</i>	
<i>Lepanthopsis secunda</i> (Barb. Rodr.) Hoehne = <i>Lepanthopsis floripecten</i>	
<i>Lepanthopsis serrulata</i> (Cogn.) Hespenheide & Garay.....	Plate 28.
<i>Lepanthopsis stellaris</i> Dod.....	Plate 29.
<i>Lepanthopsis steyermarkii</i> Foldats.....	Plate 30.
<i>Lepanthopsis ubangii</i> Luer.....	Plate 31.
<i>Lepanthopsis unilateralis</i> (Cogn.) C. Porto & Brade = <i>Lepanthopsis floripecten</i>	
<i>Lepanthopsis vinacea</i> C. Schweinf.....	Plate 32.

KEY TO THE SUBGENERA, SECTIONS AND SPECIES OF *LEPANTHOPSIS*

1 Stigma apical and bilobed.....	2
1' Stigma apical and entire.....	36
Subgenus <i>Lepanthopsis</i>	
2 Raceme strict, congested, with the flowers produced simultaneously in 2 opposite-facing ranks.....	3
2' Raceme strict or flexuous, more or less loosely or successively flowered.....	25
Section <i>Lepanthopsis</i>	
3 Habit scandent, the ramicauls superposed.....	<i>L. prolifera</i>
3' Habit caespitose, the ramicauls not superposed.....	4
4 Inflorescence shorter than or as long as the leaf	5
4' Inflorescence longer than the leaf	8
5 Sepals acuminate; lip obtuse to subacute	<i>L. acetabulum</i>
5' Sepals not acuminate; lip with the apex broadly rounded	6
6 Sepals acute, minutely ciliate	<i>L. abbreviata</i>
6' Sepals obtuse, not ciliate.....	7
7 Lateral sepals deeply connate into an oblong lamina much longer than the lip	<i>L. atrosetifera</i>
7' Lateral sepals deeply connate into a suborbicular lamina only slightly larger than the lip	<i>L. ubangii</i>
8 Leaves smooth on the margins.....	9
8' Leaves with the margins minutely subdenticulate to grossly denticulate (all Hispaniolan)	17
9 Sepals acute, acuminate	10
9' Sepals acute to obtuse, not acuminate	13
10 Lip distinctly 3-lobed, the basal lobes large, auriculate	<i>L. peniculus</i>
10' Lip cordate.....	11
11 Sepals with the apices thickened, narrowly obtuse.....	<i>L. vinacea</i>
11' Sepals not narrowly obtuse.....	12
12 Sepals glabrous, long-acuminate; lip acute to subacute.....	<i>L. acuminata</i>
12' Sepals pubescent, acute, barely acuminate; lip rounded.....	<i>L. hirtzii</i>
13 Lateral sepals deeply connate into an oblong, bifid lamina.....	<i>L. floripecten</i>
13' Lateral sepals not connate into an oblong, bifid lamina	14
14 Sepals pubescent, more than 5 mm long	<i>L. hirtzii</i>
14' Sepals glabrous, less than 4 mm long.....	15
15 Lip ovate, obtuse, without basal lobes	<i>L. densiflora</i>
15' Lip cordate, rounded at the apex, with small basal lobes flanking the column.....	16
16 Sepals more than 2.5 mm long, the laterals oblong.....	<i>L. pristis</i>
16' Sepals less than 1.5 mm long, the laterals ovate	<i>L. culiculosa</i>
17 Petals more than 1.5 mm long	18
17' Petals less than 1 mm long	19
18 Lip with a submarginal groove.....	<i>L. micheleae</i>
18' Lip without a submarginal groove	<i>L. omipteridion</i>

- 19 Sepals acuminate, 3 to 5 mm long *L. aristata*
 19' Sepals obtuse to acute or barely acuminate, less than 2 mm long 20
 20 Sepals glandular-pubescent *L. glandulifera*
 20' Sepals not glandular-pubescent 21
 21 Dorsal sepal suborbicular, broadly obtuse *L. serrulata*
 21' Dorsal sepal acute to subacute 22
 22 Lip with the apex acute to subacute *L. dodii*
 22' Lip with the apex broadly obtuse to round 23
 23 Mature plant less than 2 cm tall excluding the inflorescence *L. pygmaea*
 23' Mature plant more than 3 cm tall excluding the inflorescence 24
 24 Dorsal sepal slightly broader than the combined lateral sepals;
 lip obtuse at the apex *L. anthoctenium*
 24' Dorsal sepal slightly narrower than the combined lateral sepals;
 lip broadly rounded at the apex *L. moniliformis*

Section *Fractipecten*

- 25 Habit scandent, the ramicauls superposed *L. steyermarkii*
 25' Habit caespitose, the ramicauls not superposed 26
 26 Lateral sepals connate into a deeply concave synsepal *L. cucullata*
 26' Lateral sepals not connate into a concave synsepal 27
 27 Column with the gynostemium elongated, held above and
 forward of the lip *L. barahonensis*
 27' Column short and broad, intimately associated with the lip 28
 28 Dorsal sepal suborbicular, concave; petals ca. 0.5 mm long *L. melanantha*
 28' Dorsal sepal acute to obtuse, not concave; petals 1 mm long or longer 29
 29 Lateral sepals acuminate 30
 29' Lateral sepals not acuminate 31
 30 Lip cordate, acute, with basal lobes embracing the column *L. astrophora*
 30' Lip suborbicular with minimal basal lobes *L. pulchella*
 31 Lateral sepals broadly obtuse; lip bicallous *L. constanzensis*
 31' Lateral sepals acute to subacute; lip not bicallous 32
 32 Petals subulate; lip 3-lobed with the middle lobe clavate *L. lingulata*
 32' Petals ovate, acute; lip cordate to ovate 33
 33 Lip cordate with basal lobes embracing the column 34
 33' Lip triangular with rounded basal lobes not embracing
 the column *L. hotteana*
 34 Sepals glabrous 35
 34' Sepals long-pubescent at the apex *L. micheleae*
 35 Plant more than 5 cm tall; lip grooved along the margins *L. micheleae*
 35' Plant less than 4 cm tall; lip not grooved along the margins *L. stellaris*

Subgenus *Microlepanthes*

- 36 Inflorescence reduced to a single flower *L. apoda*
 36' Inflorescence racemose 37
 37 Sepals deeply connate into a sepaline tube *L. obliquipetala*
 37' Sepals not deeply connate into a tube 38
 38 Petals transversely thickened at the apex *L. farrago*
 38' Petals not transversely thickened at the apex 39
 39 Lip with the apex bilobed *L. comet-halleyi*
 39' Lip with the apex entire *L. microlepanthes*

***Lepanthopsis abbreviata* Luer & Hirtz, sp. nov.**

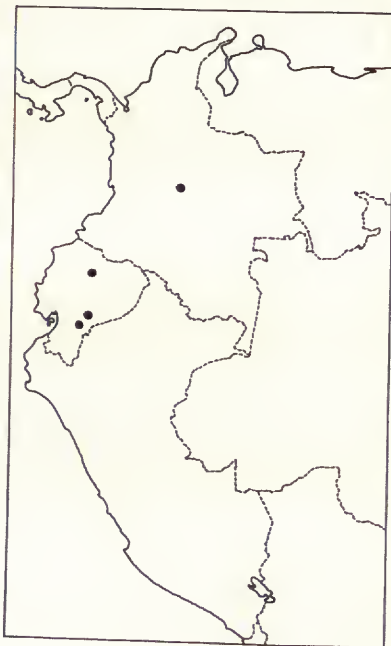
Ety.: From the Latin *abbreviatus*, "abbreviated," referring to the short inflorescence.

Planta mediocris caespitosa, inflorescentia folio oblongo duplobreviore, racemo congestissimo disticho minutifloro, sepalis ovatis acutis minute ciliatis, sepalis lateralibus supra medium connatis, petalis orbicularibus, labello minute ciliato suborbiculato sinu parvo profundo basi bilobato.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2.5-4 cm long, enclosed by 5-7 lepanthiform sheaths, the ribs microscopically scabrous, the margins of the ostia shortly ciliate. **Leaf** erect, coriaceous, elliptical-oblong, subacute to obtuse, 15-23 mm long, 5-7 mm wide, the base cuneate into a petiole 1-1.5 mm long. **Inflorescence** a dense, simultaneously several-flowered raceme in 2 opposite ranks, 5-7 mm long, borne by a filiform peduncle 5-7 mm long, from near the apex of the ramicaul; floral bracts 0.3 mm long; pedicels 0.3 mm long; ovary 0.25 mm long; sepals translucent pale yellow to purple, minutely ciliate, ovate, acute, low-carinate, the dorsal sepal 1.25 mm long, 0.9 mm wide, 1-veined, connate to the lateral sepals for 0.1 mm, the lateral sepals oblique, 1.25 mm long, 1.1 mm wide, connate 0.7 mm, 1-veined; petals similarly colored, cellular-ciliate, suborbicular, obtuse, 0.4 mm long, 0.4 mm wide, 1-veined; lip yellow, cellular-glandular, suborbicular, slightly concave, 0.9 mm long, 0.9 mm wide, the base bilobed, the basal lobes obtuse, embracing the column, the disc with a small, narrow, deep cavity in the center; column 0.3 mm long and broad, the anther apical, the stigma bilobed, apical.

ECUADOR: Prov. of Napo: epiphytic in forest between Cotundo and Coca, alt. 1000 m, Feb. 1984, A. Hirtz 1524 (Holotype: MO), C. Luer illustr. 11697; Prov. of Morona-Santiago: in trees along Río Yunganza below Limón, alt. 950 m, 17 Feb. 1986, C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11857 (MO); Cordillera de Cutucú east of Méndez, alt. 1000 m, 5 Feb. 1987, C. Luer, J. Luer & A. Hirtz 12647 (MO). COLOMBIA: El Viadal, flowered in cultivation by M. & O. Robledo at La Ceja, Colombia, 12 Nov. 1977, C. Luer 2176 (SEL).

This species is widely distributed and relatively frequent at lower altitudes of the eastern slopes of the Andes of Ecuador and Colombia. It is easily recognized by the short, tiny-flowered inflorescences only half the length of the leaves. The sepals are ovate and minutely ciliate, the laterals connate more than half their length. The rounded lip has a narrow but deep central sinus.

***Lepanthopsis acetabulum* Luer, Phytologia 55: 196, 1984.**

Ety.: From the Latin *acetabulum*, "a vinegar cup," hence the pelvic-femoral socket, referring to the resemblance of the cavity of the lip to the acetabulum of the pelvis.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-10 cm long, enclosed by 6-8 blackish, ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly linear-elliptical, acute, 2.5-6 cm long, 0.3-0.7 cm wide, the base cuneate into a petiole 2-5 mm long. **Inflorescence** a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 18 mm long, borne by a filiform peduncle 20-40 mm long, from near the

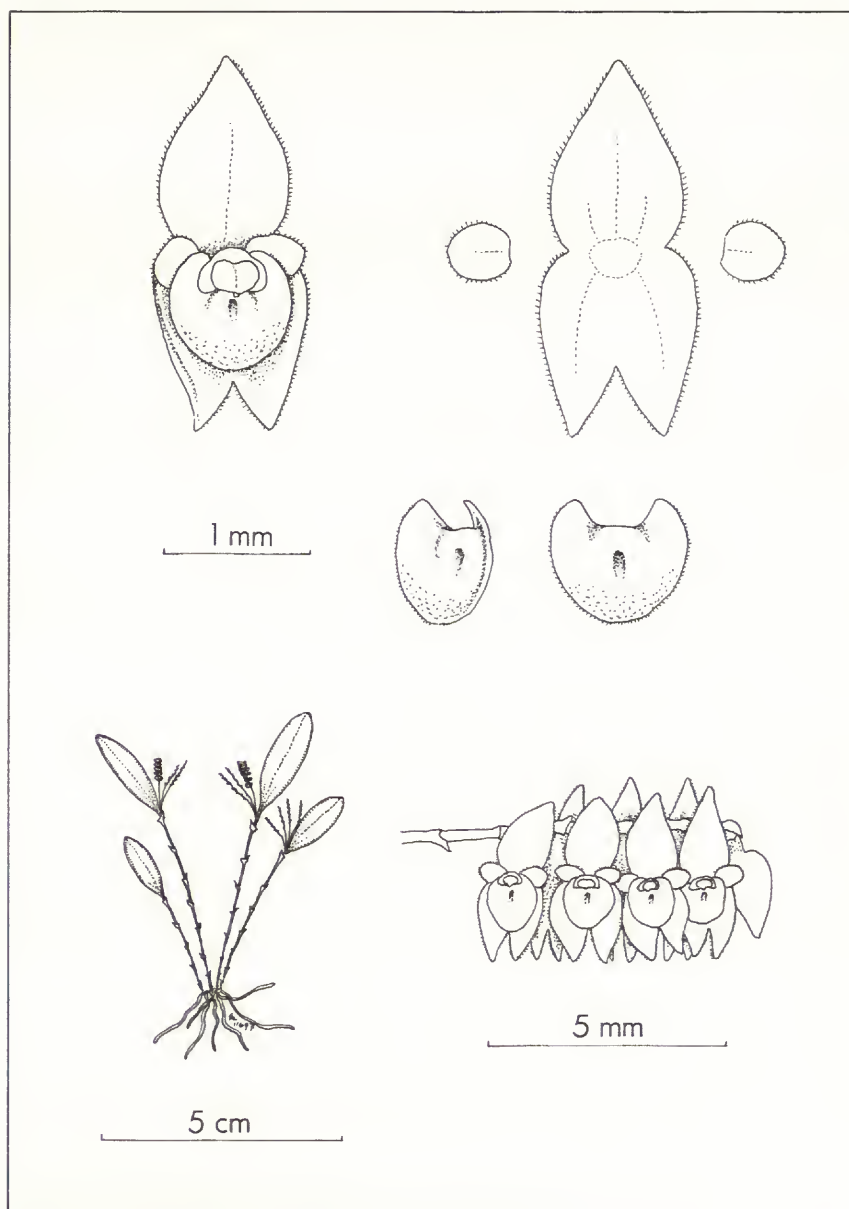


Plate 1. *Lepanthopsis abbreviata* Luer & Hirtz

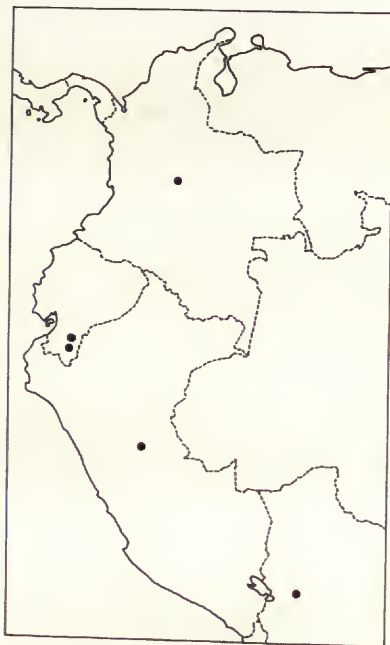
apex of the ramicaul; floral bracts 0.5-1 mm long; pedicels 0.25 mm long; ovary 0.5 mm long; sepals dark purple, cellular-ciliate, otherwise glabrous, subcarinate, the dorsal sepal ovate, acute, shortly acuminate, 3-4 mm long, 1.6 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals ovate, oblique, acute, acuminate, approximate, 3-4 mm long, 1 mm wide, 1-veined, connate 0.75 mm; petals dark purple, cellular-ciliate, elliptical, obtuse, 1 mm long, 0.75 mm wide; lip lighter purple, cellular-pubescent, broadly cordate, 2 mm long, 1.75 mm wide, the apex obtuse, the base with obtuse lobes encircling the column, the disc with a large, deep, rounded glenion with elevated margins at the base; column 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

ECUADOR: Prov. of Zamora-Chinchipec: Valladolid, alt. 1800 m, 3 Jan. 1983, *S. Dalström* 417 (Holotype: SEL), *C. Luer* illustr. 9166; Retorno, between Loja and Zamora, alt. ca. 2000 m, 15 Apr. 1980, *D. D'Alessandro* 94 (SEL).

COLOMBIA: Dept. of Cundinamarca: Alto de Gutierrez south of Bogotá, flowered in cultivation by M. & O. Robledo at La Ceja, 19 Mar. 1989, *C. Luer* 14270 (MO).

PERU: Dept. of Huánuco, between Tingo Maria and Pucallpa, Mar. 1975, collected by Janet Kuhn, flowered in cultivation at J. & L. Orchids, Easton, CT., 12 Nov. 1977, *C. Luer* 2175 (SEL).

BOLIVIA: Dept. of La Paz: Prov. of Murillo, Valle de Río Zongo, alt. 1400-1600 m, 22 Apr. 1982, *J. C. Solomon* 7499 (LP, MO).

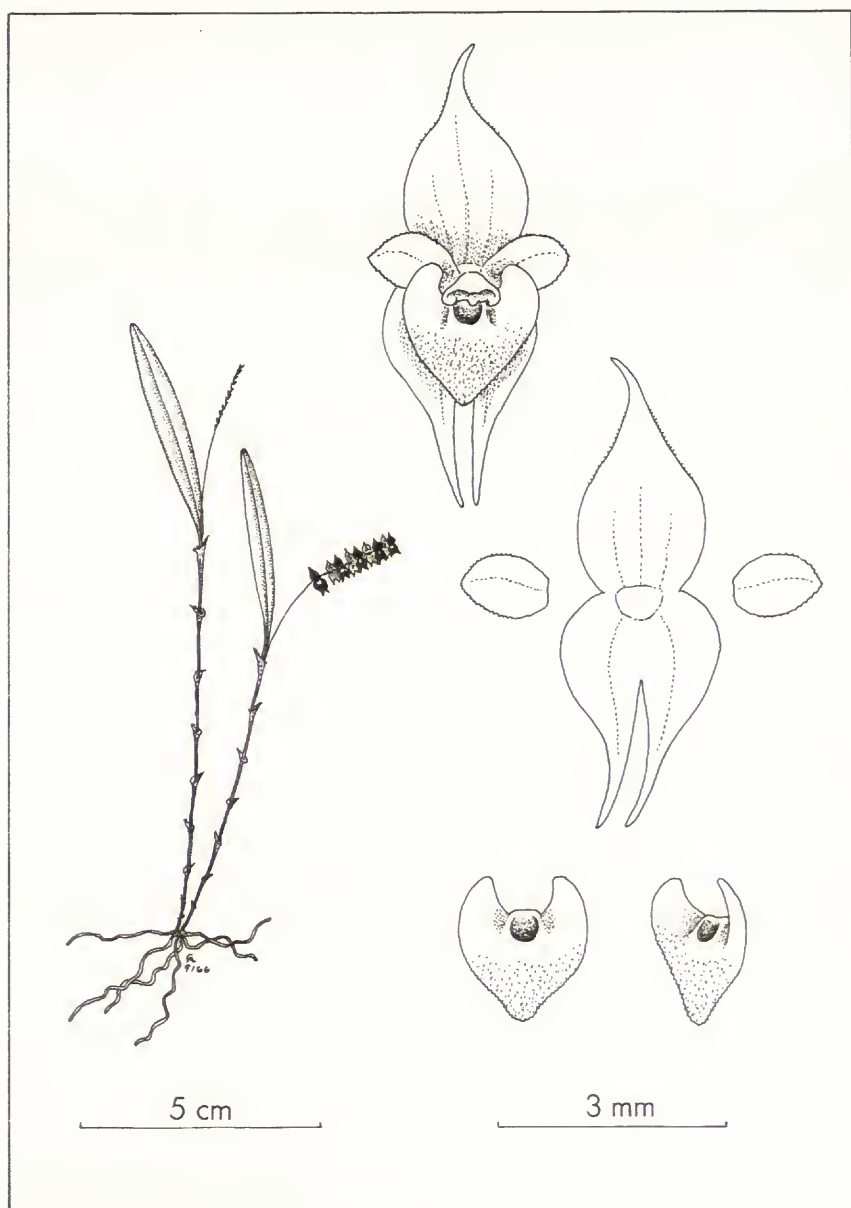


This species occurs locally from the Eastern Cordillera of Colombia to northern Bolivia. It is related to *L. acuminata*, but *L. acetabulum* is easily identified by the long, narrow leaves; inflorescences shorter than the leaves; minutely ciliate sepals and petals; shortly acuminate sepals; and a well-developed, round glenion with elevated margins.

***Lepanthopsis acuminata* Ames, Bot. Mus. Leaf. 6: 70, 1938.**

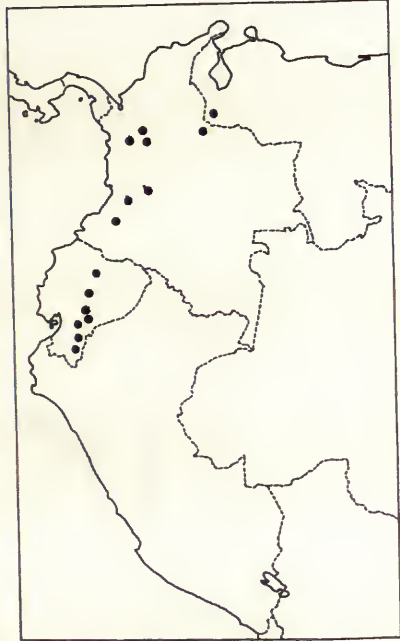
Ety.: From the Latin *acuminatus*, "acuminate," referring to the acuminate apices of the sepals.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-6 cm long, occasionally proliferating another ramicaul, enclosed by 4-8 minutely ciliate lepanthiiform sheaths. **Leaf** erect, coriaceous, sometimes suffused with purple or red, oblong-elliptical, obtuse, 10-22 mm long, 6-8 mm wide, the base cuneate into a petiole 2-4 mm long. **Inflorescence** a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 5 cm long, borne by a filiform peduncle 1.5-3 cm long, from near the apex of the ramicaul; floral bracts 0.75-1 mm long; pedicels 0.5-0.75 mm long; ovary 0.5 mm long; sepals yellow-green, more or less suffused with

Plate 2. *Lepanthopsis acetabulum* Luer

purple or brown, glabrous, subcarinate, narrowly ovate, acute, long-acuminate, the dorsal sepal 3-5 mm long, 1-1.2 mm wide, 3-veined at the base, barely connate to the lateral sepals, the lateral sepals oblique, 3-5 mm long, 0.4-0.6 mm wide, 1-veined, connate 0.5 mm; petals similarly colored, broadly elliptical, obtuse, 0.5-0.8 mm long, 0.3-0.5 mm wide, 1-veined; lip red to purple, cordate-ovate, 1.25 mm long, 1.1 mm wide, cellular-ciliate, the apex subacutely obtuse to narrowly obtuse, the basal lobes obtuse, embracing the column, the disc concave centrally above the base; column 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

COLOMBIA: Dept. of Valle de Cauca: La Cumbre, Western Cordillera, epiphytic in forest, alt. 700-2200 m, 11-18 Sept. 1922, Killip 11298 (Holotype: AMES); above Tocotói, west Andes of Cali, alt. 1600-1800 m, F. C. Lehmann 8244 (K); Dept. of Antioquia: Munic. of Frontino, above Frontino, alt. 1900 m, 5 May 1983, C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 9031 (SEL); Represa de Peñol, alt. 1850 m, collected by M. Robledo et al., flowered in cultivation at La Ceja, 9 Apr. 1988, C. Luer 13101 (MO); Munic. of Yarumal, road to El Cedro, alt. 1650 m, 15 Mar. 1989, C. Luer, J. Luer, S. Dalström & W. Teague 14156 (MO). Dept. of Cauca: above Popayán, alt. 1600-1800 m, F. C. Lehmann 7094 (K). Dept. of Norte de Santander: Alto de Santa Inéz, alt. 2150 m, 13 May 1984, C. Luer, J. Luer, R. Escobar & E. Valencia 10350 (MO). Dept. of Tolima: around Dolores, alt. 1500-1800 m, F. C. Lehmann 7093 (K). VENEZUELA: Edo. Táchira: Río Copao, alt. 2000 m, 13 May 1951, O. Renz 6957 (AMES). ECUADOR: Prov. of Loja: cloud forest above Yangana, alt. 2400 m, 23 Mar. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 10863 (MO). Prov. of Morona-Santiago: forest along Río Upano 12 Km north of Macas, alt. 1100 m, 15 Jan. 1989, C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13925 (MO); Cordillera del Cutucú, between Méndez and Morona, alt. 950 m, 17 Jan. 1989, C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13966 (MO); Campamento Guarumales, alt. 1650 m, 24 Mar. 1991, C. Luer & J. Luer 15240 (MO). Prov. of Napo: Cosanga, alt. 1900 m, 18 Nov. 1984, A. Hirtz 2122 (MO). Prov. of Pastaza: cloud forest north of Mera, alt. 1350 m, 12 Apr. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 11199 (MO). Prov. of Zamora-Chinchipec: east Andes around Zamora, alt. 1000-1400 m, Nov. 1988, F. C. Lehmann s.n. (K); cloud forest south of Zamora toward Zumba, alt. 1450 m, 27 Mar. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 10965 (MO).



Apparently this species was first recognized by L. O. Williams who wrote the original description while working under Professor Oakes Ames, but the description was modified and published under Ames' name. *Lepanthopsis acuminata* is relatively frequent and widely distributed in the moist forests of the Andes of Colombia, Venezuela and Ecuador. Vegetatively it is indistinguishable from several of its near allies, but it is recognized by the delicate inflorescences usually more than twice as long as the leaf; congested racemes of double-ranked, small flowers with long-acuminate sepals, the laterals connate only near the base; and a cordate, subacute lip with basal lobes that embrace the column.

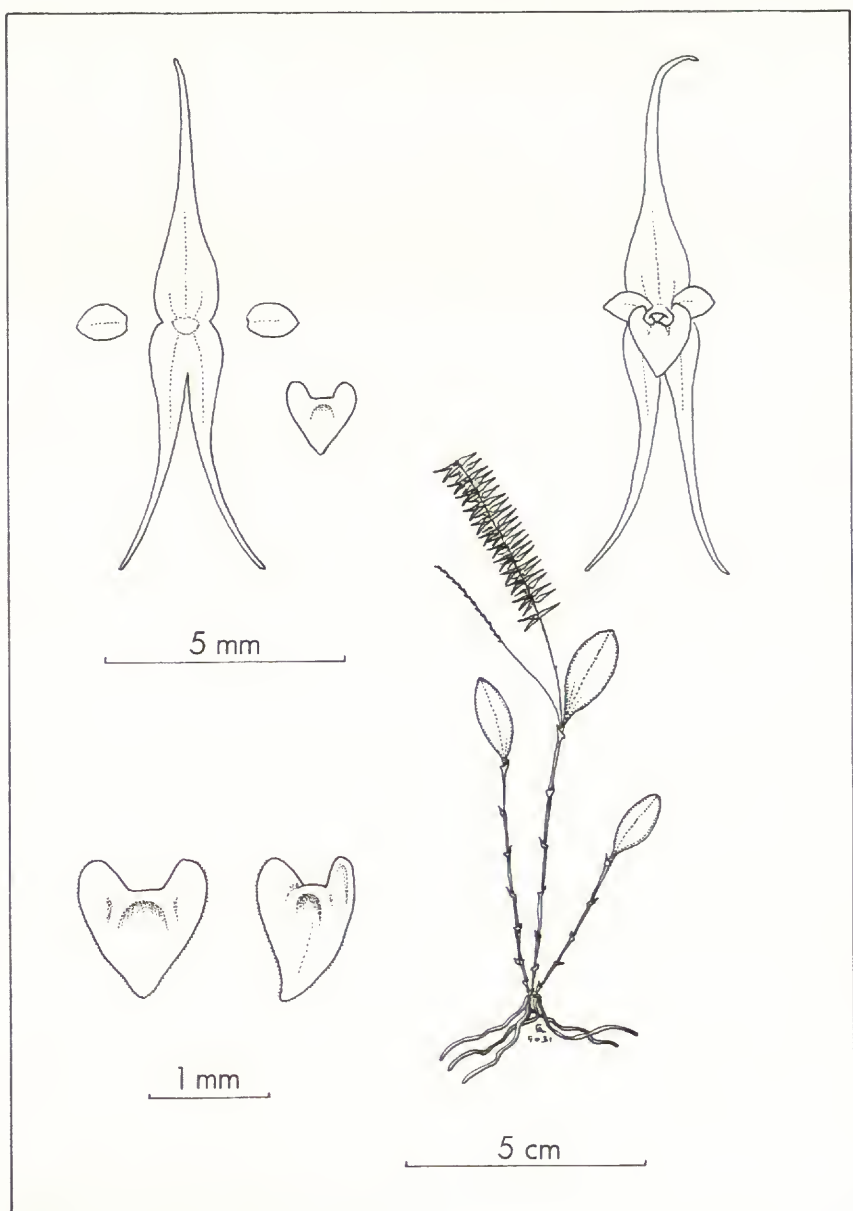


Plate 3. *Lepanthopsis acuminata* Ames

***Lepanthopsis anthoetenium* (Reichb. f.) Ames, Bot. Mus. Leafl. 1: 9, 1933.**

Bas.: *Pleurothallis anthoetenium* Reichb. f., *Linnaea* 41: 94, 1876.

Ety.: From the Greek *antho-*, "of a flower," and *ctenion*, "a comb," hence "a floral comb," referring to the appearance of the raceme.

Syn.: *Lepanthopsis domingensis* Dod, *Moscoso* 1: 44, 1977.

Ety.: Named for the Dominican Republic where this species occurs.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-4 cm long, enclosed by 3-6 lepanthiform sheaths with the ribs and dilated ostia ciliate. Leaf erect, coriaceous, oblong-elliptical, subacute to obtuse, 15-20 mm long, 7-9 mm wide, microscopically denticulate on the margins, the base cuneate into a petiole 1.5-2 mm long. Inflorescence a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 3 cm long, borne by a filiform peduncle 1.5-2 cm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 1 mm long; ovary 0.5 mm long, costate; sepals yellow or yellow-green, more or less suffused with purple, glabrous, subcarinate, the dorsal sepal ovate, subacute, 2 mm long, 1.5 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals narrowly oblong-ovate, subacute, 2.5 mm long, connate above the middle into a lamina 1.5 mm wide, each 1-veined; petals similarly colored, ovate, subacute, 0.75 mm long, 0.4 mm wide, without a visible vein; lip broadly cordate, 1.4 mm long, 1.4 mm wide, the apex obtuse, the base with obtuse lobes embracing the column, the disc slightly concave with a shallow concavity above the base; column 0.7 mm long and broad, the anther apical, the stigma bilobed, apical.

HAITI: without locality, *Poiteau s.n.* (Holotype: W).

DOMINICAN REPUBLIC: Azua: Sierra de Ocoa, Bejucal, Río de Canal, alt. 1000 m, 3 Mar. 1929, *E. L. Ekman H-11757* (AMES, S); Los Haitises, near Río Barracote, alt. 250 m, 19 Mar. 1969, *A. H. Liogier* (AMES, NY); La Nevera, between Valle Nuevo and San José de Ocoa, alt. 2100 m, 30 May 1969, *A. H. Liogier 15484* (AMES, NY); Los Narrastos, *D. Dod s.n.* (MO), *C. Luer* illustr. 11697; Jarabacoa, Río Baiguate, alt. 500 m, 3 June 1976, flowered in cultivation 4 Jan. 1977, *D. D. Dod 578* (type of *L. domingensis*: SDM, AMES, NY, SEL, US); San José de Ocoa, Palmarito, alt. 1000 m, 5 Mar. 1976, *D. D. Dod 579*; Barahona, Argentina, Bretón, Polo, alt. 1250 m, 21 Nov. 1976, *D. D. Dod 584*.

CUBA: near Monte Verde, 1859, *C. Wright 1509* (AMES, G, K); Río Bayamita, alt. 900-1050 m, 5-7 Apr. 1907, *W. R. Maxon 3949* (AMES, US); Pinar del Río, Sierra del Rosario, Pico Tey, alt. 600 m, Jan. 1953, *H. Alain 2749* (AMES).



This species was described by Reichenbach about a quarter of a century after he described the first species of the genus, *L. floripecten*. He noted the great similarity between the two and gave the second the same name as the first, but in Greek instead of Latin. *Lepanthopsis anthoetenium* is isolated on the islands of Cuba and Hispaniola, undoubtedly island-descendants of a common ancestor. It is distinguished from *L. floripecten* by the broadly cordate lip with basal lobes that embrace the column. The lip of *L. floripecten* is smaller and suborbicular without basal lobes that embrace the column.

When Dod described *L. domingensis*, he dismissed *L. anthoetenium* as having much larger flowers. The flowers of specimens of *L. anthoetenium* that I have examined have flowers of the same size. I have examined rehydrated flowers of an isotype of *L. domingensis* and can find no specific difference.

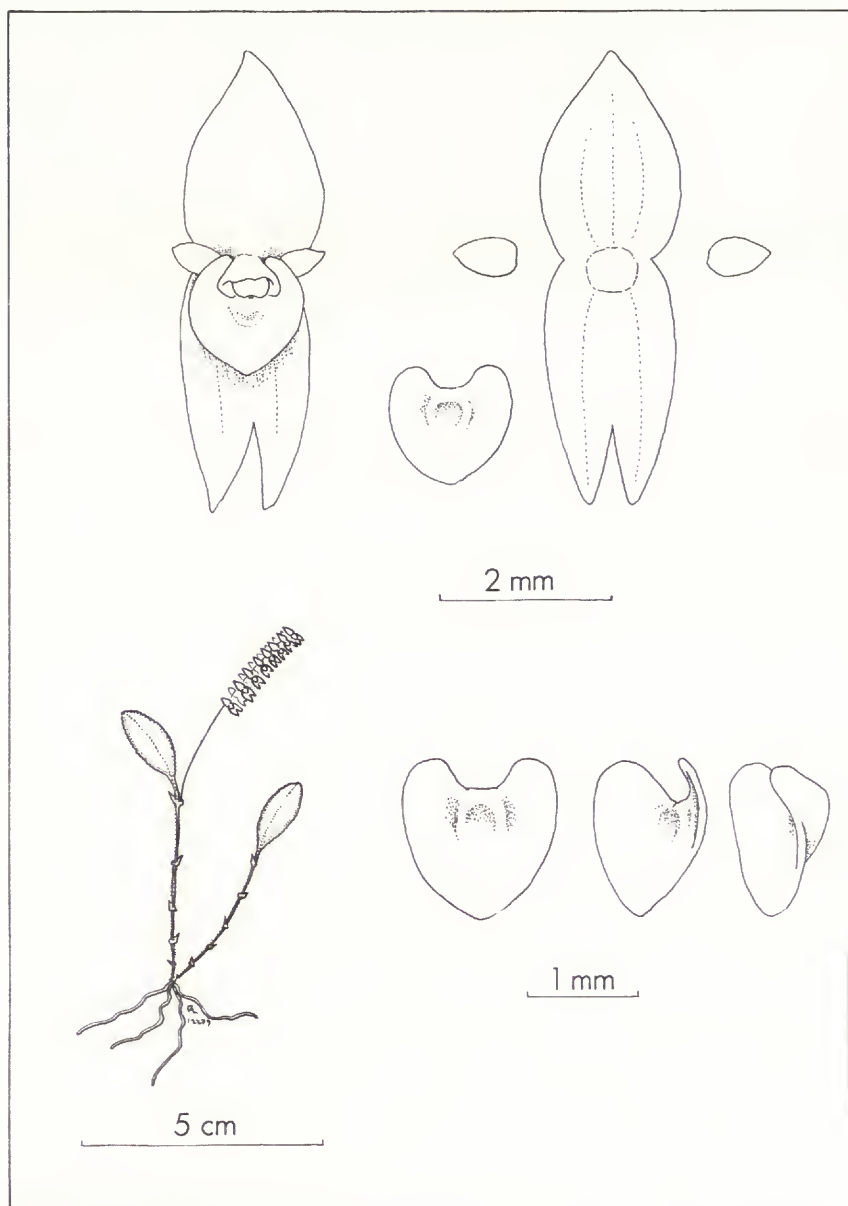


Plate 4. *Lepanthopsis anthoctenium* (Reichb. f.) Ames

***Lepanthopsis aristata* Dod, Moscosoa 4: 143, 1986.**

Ety.: From the Latin *aristatus*, "aristate," referring to the sepals.

Syn.: *Lepanthopsis haitiensis* Dod, Moscosoa 4: 148, 1986.

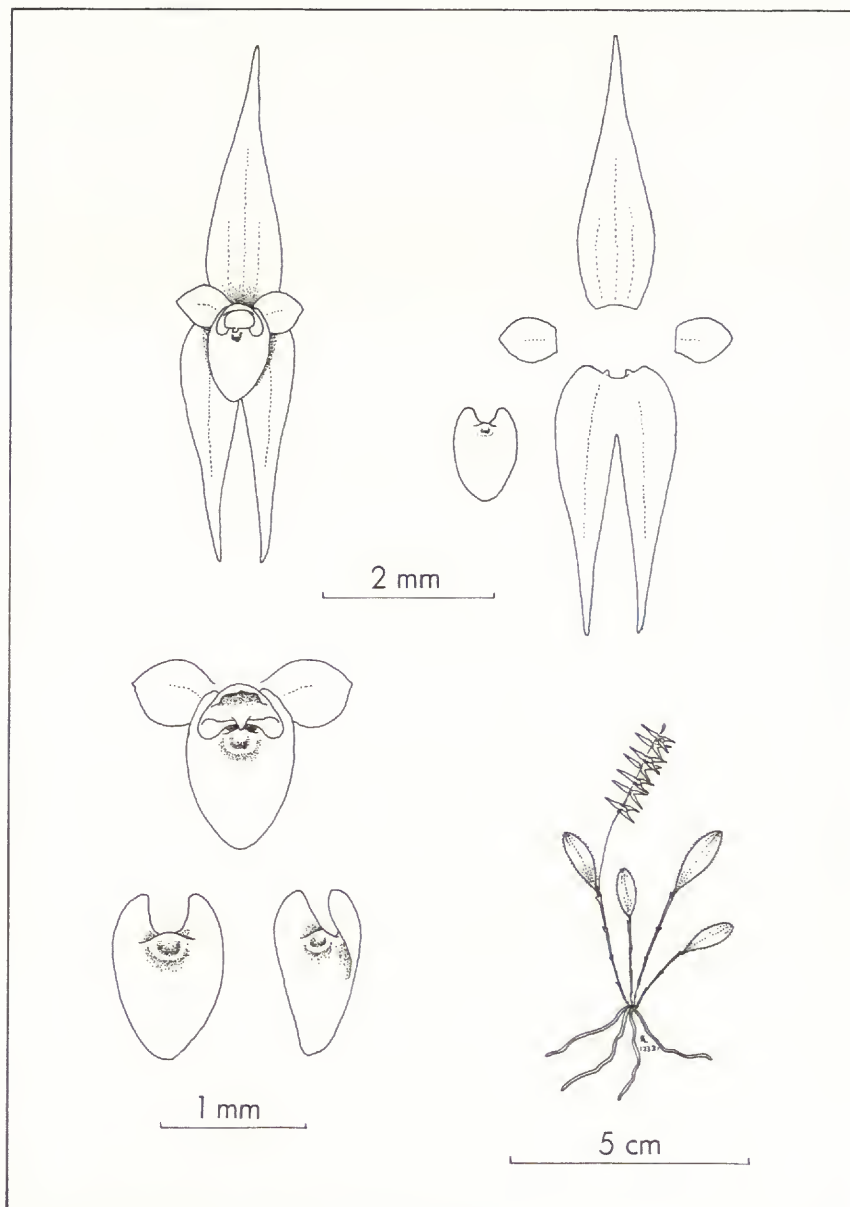
Ety.: Named for Haiti where the species occurs.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-3 cm long, enclosed by 4-5 lepanthiform sheaths with minutely ciliate ostia. **Leaf** erect, coriaceous, with the margins minutely denticulate, elliptical, subacute, 7-13 mm long, 3.5-4.5 mm wide, the base cuneate into a petiole 1-1.5 mm long. **Inflorescence** a subcongested, distichous, strict, simultaneously several-flowered raceme in 2 opposite-facing ranks, with the flowers ca. 2.5 mm apart, 25-35 mm long including the capillary peduncle 15-20 mm long, from near the apex of the ramicaul; floral bracts 0.6 mm long; pedicels 0.75 mm long; ovary 0.5 mm long; flowers translucent purple, glabrous; **sepals** membranous, subcarinate, narrowly ovate, acute, lightly acuminate, the dorsal sepal 3-5 mm long, 1 mm wide, 3-veined, essentially free from the lateral sepals, the lateral sepals 3-5 mm long, 0.75-1 mm wide, 1-veined, connate 1 mm to near the middle; **petals** elliptical-ovate, subacute to obtuse, 0.6 mm long, 0.4-0.6 mm wide, 1-veined; **lip** ovate-cordate, subacute to obtuse, 1-1.2 mm long, 0.75 mm wide, the basal lobes subacute, embracing the column, the disc with a well-developed glenion at the base; **column** 0.4 mm long, 0.6 mm wide, the anther apical, the stigma bilobed, apical.

HAITI: Massif de la Hotte, Les Cayes, Formond, epiphytic in forest, alt. 950 m, 20 Feb. 1982, flowered in cultivation 24 June 1982, D. D. Dod 953 (Holotype: JBSD; Isotypes: AMES, MO, NY, SEL, US); C. Luer illustr. 12331A; same locality, 2 May 1982, flowered in cultivation 4 Nov. 1982, D. D. Dod 956 (JBSD, type of *L. haitiensis*, AMES, MO, NY, SEL, US); C. Luer illustr. 12331; Rivière Glacé, alt. 859 m, 29 Apr. 1982, flowered in cultivation 24 Mar. 1983, D. D. Dod 957 (JBSD).

This species is apparently endemic on the Hotte Massif of Haiti. The flowers are borne in a strict, distichous, not-too-crowded raceme. The flowers, comparatively large for the size of the plant, vary little from the usual forms seen in the genus. The sepals, varying in length from 3 to 5 millimeters, are narrowly ovate with the acute apices more or less acuminate; the petals are short and broad; the lip is cordate with the basal lobes flanking the column. A specimen with the longer sepals was described as *L. aristata*, while a specimen with the shorter sepals was described as *L. haitiensis*.



Plate 5. *Lepanthopsis aristata* Dod

***Lepanthopsis astrophora* (Reichb. f. ex Krzl.) Garay, *Caldasia* 8: 520, 1962.**

Bas.: *Pleurothallis astrophora* Reichb. f. ex Krzl., *Xenia Orchidacea* 3: 85, 1892.

Ety.: From the Greek *astrophoros*, "star bearing," referring to the appearance of the inflorescence.

Plant medium in size to large for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-7 cm long, enclosed by 4-6 minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 1.2-2.5 cm long, 0.6-1 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a loose, flexuous, more or less successively several-flowered raceme, up to 6 flowers open simultaneously, up to 12 cm long, borne by a filiform peduncle up to 5 cm long, from near the apex of the ramicaul; floral bracts 0.75-1 mm long; pedicels 2.5-4 mm long; ovary 0.5 mm long; **sepals** bright to pale violet, microscopically pubescent, ovate, acute, acuminate, the dorsal sepal 2.5-3.5 mm long, 1.25-1.75 mm wide, 1-veined, the lateral sepals oblique, 2.5-3 mm long, 1-1.5 mm wide, connate at the base for 0.5 mm, 1-veined; **petals** violet, microscopically pubescent, ovate, acute, 2 mm long, 0.8 mm wide, the margins cellular-ciliate; **lip** dark violet, ovate-cordate, subacute, 1.5 mm long, 0.8-1 mm wide, the basal lobes subacute, auriculate, embracing the column, the disc with a well-developed glenion at the base, attached to the base of the column; **column** broad, 0.4 mm long, 0.6 mm broad, the anther apical, the stigma bilobed, apical.

VENEZUELA: without locality, flowered in cultivation in Hamburg by Herm Gartendirector *Wendland* s.n. (Holotype: W); without locality, flowered in cultivation at Glasnevin, 20 Oct. 1893, (K). Edo. Carabobo, Buena Vista, alt. 4500 ft., May 1846, *L. Schlim* 577 (G). Dist. Fed.: between Colonia Tovar and Junquito, alt. 1300-1500 m, 20 Oct. 1965, *J. Steyermark* 94380 (VEN); same area, obtained from G. C. K. Dunsterville via the Brooklyn Botanic Garden, flowered in cultivation by A. & P. Jesup in Bristol, CT, 26 Apr. 1987, *C. Luer* 12852 (MO). Edo. Bolívar: Cerro Naiguatá, alt. 1500-1635 m, 15 Nov. 1963, *J. Steyermark* 92015 (AMES, VEN); 8 Oct. 1966, *J. Steyermark* 97490 (VEN); between Portachuelo and Peña, alt. 1300-1500 m, 11 Nov. 1966, *J. Steyermark* & *M. Fariñas* 97596 (VEN), 1 May 1967, *J. Steyermark*, *G. Bunting* & *R. Dressler* 98259 (VEN); Fila del Cororo, north of Rio de Naiguatá, alt. 1400 m, 22 Nov. 1980, *B. Manara* s.n. (VEN). Edo. Sucre: Arismendi, Peninsula of Paria, above Melenas, alt. 730-1050 m, 1 Dec. 1979, *J. Steyermark* & *R. Liesner* 120926 (VEN); headwaters of Rio Tacarigua, alt. 700-900 m, 23 Feb. 1980, *J. Steyermark* & *R. Liesner* 121678 (VEN). Edo. Yaracuy: El Amparo, Candelaria, alt. 1100-1300 m, 27 Dec. 1972, *J. Steyermark* & *V. Careño* E. 106862 (VEN); headwaters of Quebrada Amparo, alt. 1250 m, 30 Nov. 1974, *J. Steyermark* & *V. Careño* E. 111148 (VEN); San Felipe, Cumbre Gamelotal, alt. 1300 m, 6 Dec. 1980, *J. Steyermark* & *V. Careño* E. 123756 (VEN).



Although this species is variable and widely distributed in Venezuela, it has yet to be discovered outside that country. Vegetatively some populations are considerably larger than others. The small but brilliant violet flowers are resupinate and produced several at a time in a loose, flexuous raceme. The sepals are ovate and acuminate, the petals are ovate and microscopically ciliate, and the lip is cordate.

Lepanthopsis astrophora grows and flowers readily in cultivation. Divisions of a single, awarded clone cultivated by the Jesups in Connecticut are thriving in numerous collections of miniature species.

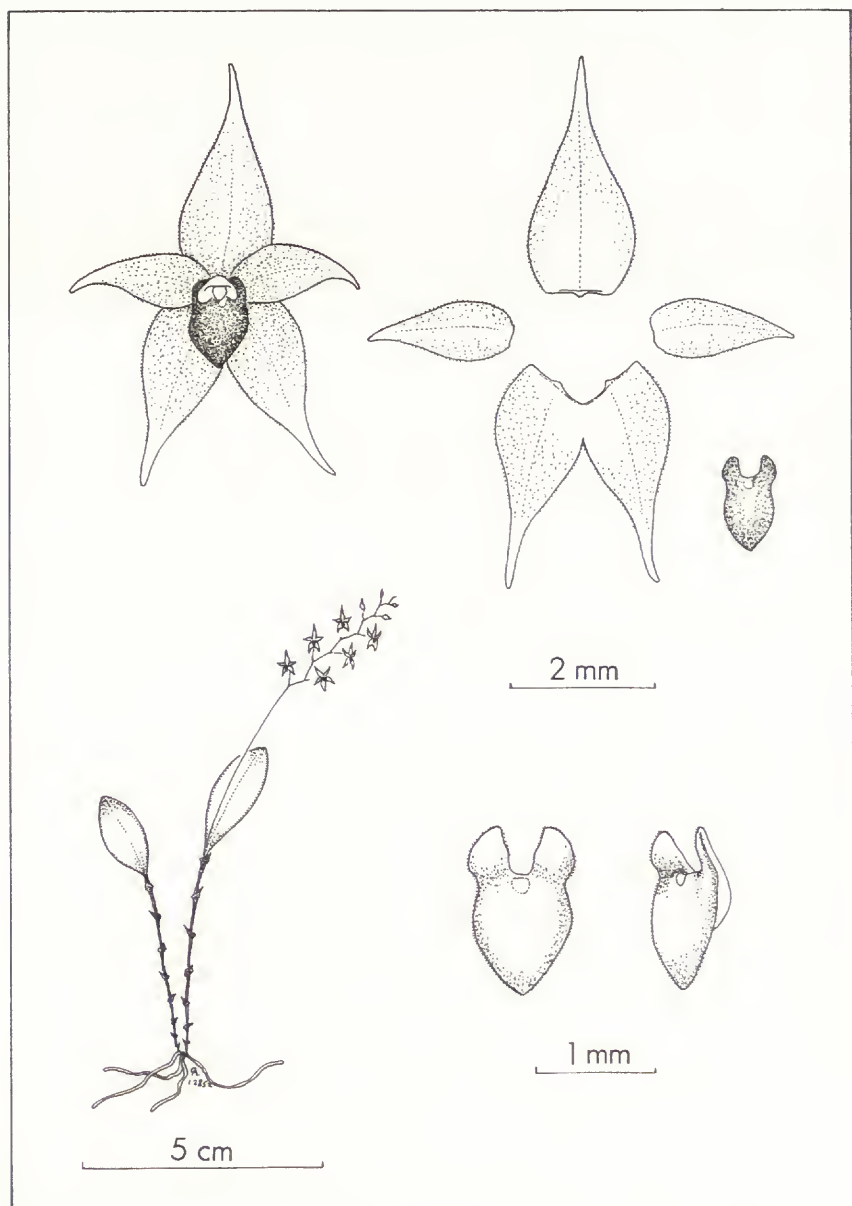


Plate 6. *Lepanthopsis astrophora* (Reichb. f. ex Krzl.) Garay

***Lepanthopsis atrosetifera* Dod, Moscosoa 4: 145, 1986.**

Ety.: From the Latin *atrosetifer*, "bearing a dark bristle," referring to the sheaths of the ramicauls.

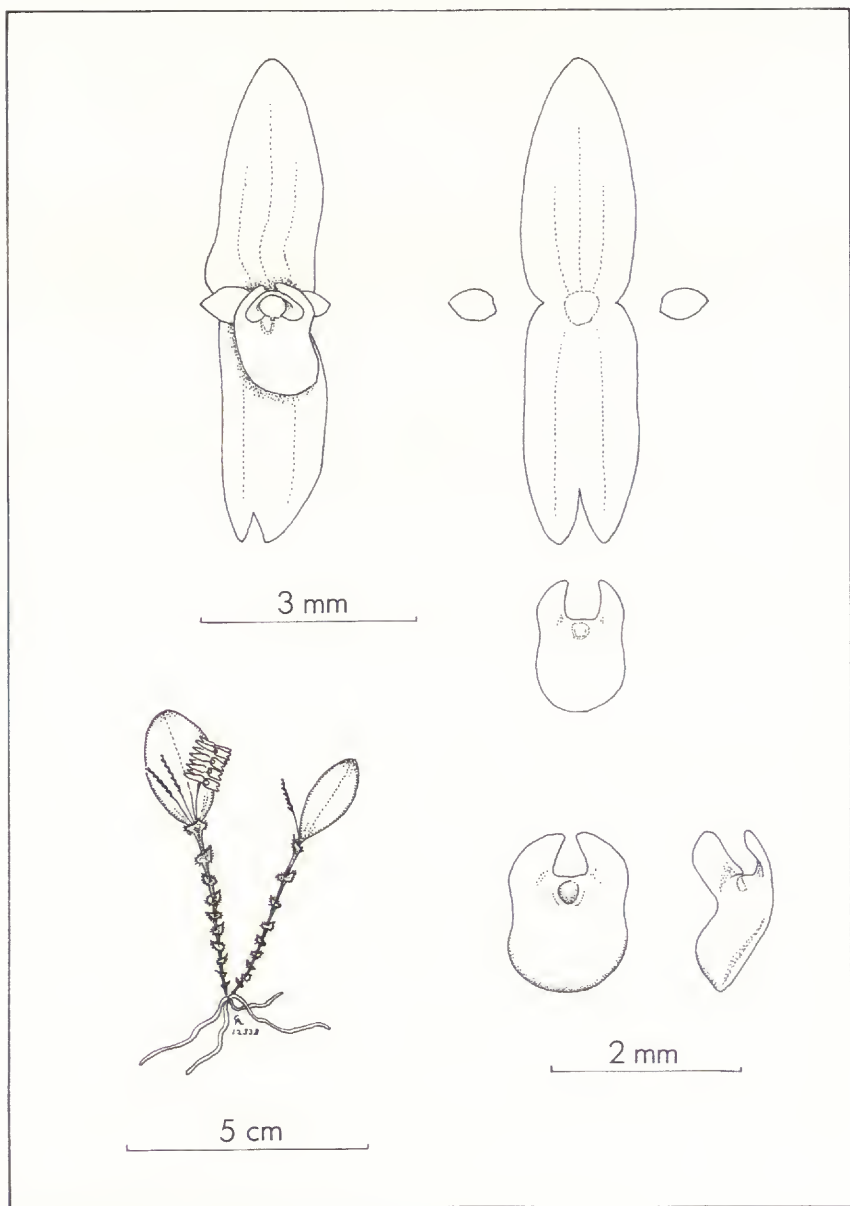
Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-7 cm long, enclosed by 5-12 lepanthiform sheaths with dilated, long-ciliate ostia. **Leaf** erect, coriaceous, with the margins microscopically subdenticulate, elliptical, subacute, 20-30 mm long, 7-10 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, strict, simultaneously several-flowered raceme in 2 opposite-facing ranks, 10 mm long including the capillary peduncle 10 mm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; flowers translucent yellow-green, glabrous; **sepals** membranous, subcarinate, the dorsal sepal oblong-ovate, obtuse, 3.5 mm long, 1.5 mm wide, 3-veined, essentially free from the lateral sepals, the lateral sepals connate 2.5 mm into an oblong, bifid lamina with obtuse apices, 3.5 mm long, 1.5 mm wide, each 1-veined; **petals** elliptical-ovate, subacute to obtuse, 0.6 mm long, 0.4 mm wide, 1-veined; **lip** oblong-cordate, with the apex broadly rounded, 1.75 mm long, 1.25 mm wide, the basal lobes more or less auriculate, subacute, embracing the column, the disc with a well-developed glenion at the base; **column** 0.5 mm long, 0.8 mm wide, the anther apical, the stigma bilobed, apical.

HAITI: Massif de la Hotte, Les Cayes, Formond, epiphytic in forest, alt. 950 m, 24 Feb. 1982, flowered in cultivation 5 Sept. 1983, *D. D. Dod* 955 (Holotype: JBSD; Isotypes: AMES, MO, NY, SEL, US); C. Luer illustr. 12289; Formond, alt. 1100 m, 4 May 1982, flowered in cultivation 3 Aug. 1983, *D. D. Dod* 963 (JBSD); Rivière Glacé, 850 m, 29 Apr. 1982, flowered in cultivation 31 Dec. 1983, *D. D. Dod* 962 (JBSD).

This species is apparently endemic on the Hotte Massif of Haiti. It is similar both vegetatively and florally to the widely distributed *L. floripecten* which is frequent on the continent.

Lepanthopsis atrosetifera is distinguished by the more numerous sheaths of the ramicauls with longer cilia on the margins of the dilated ostia, and a shorter inflorescence, usually no longer than the leaf. Both species bear the flowers in a strict, crowded, distichous raceme. The lateral sepals of both species are connate to near the apex into an oblong synsepal, and the lips of both species are more or less cordate and rounded with the basal lobes flanking the column.



Plate 7. *Lepanthopsis atrosetifera* Dod

Lepanthopsis barahonensis (Cogn.) Garay, J. Arnold Arbor. 50: 464, 1969.

Bas.: *Pleurothallis barahonensis* Cogn., in Urban, Symb. Antill. 7: 177, 1912.

Ety.: Named for the community of Barahona near the site where the species was collected.

Syn.: *Pleurothallis fuertesii* Cogn., in Urban, Symb. Antill. 7: 178, 1912.

Ety.: Named in honor of M. Fuertes who collected this specimen.

Syn.: *Pleurothallis dentifera* L. O. Wms., Ceiba 1: 227, 1951.

Ety.: From the Latin *dentifer*, "bearing teeth," referring to the margins of the leaf.

Syn.: *Lepanthopsis dentifera* (L. O. Wms.) Garay, J. Arnold Arbor. 50: 464, 1969.

Syn.: *Lepanthopsis fuertesii* (Cogn.) Garay, J. Arnold Arbor. 50: 464, 1969.

Plant small to very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-45 mm long, enclosed by 3-7 lepanthiform sheaths with shortly ciliate ostia. **Leaf** erect, coriaceous, sometimes suffused with purple, with the margins minutely denticulate, elliptical, subacute to obtuse, 6-12 mm long, 3.5-6 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a loose, distichous, flexuous, few-flowered raceme, 2- to 3 flowers open simultaneously, up to 15 mm long including the capillary peduncle 5-8 mm long, from near the apex of the ramicaul; floral bracts 0.75 mm long; pedicels 1.5-2 mm long; ovary 0.4-0.5 mm long; **sepals** yellow to light brown, more or less lightly suffused with purple, glabrous, subcarinate, ovate, subacute to acute, more or less concave, the dorsal sepal 2 mm long, 1.25 mm wide, 3-veined, essentially free from the lateral sepals, the lateral sepals 2 mm long, 1.1 mm wide, 2-veined at the base, connate 0.75 mm to near the middle; **petals** elliptical-ovate, slightly oblique, acute, 1.25 mm long, 0.5 mm wide, 1-veined; **lip** ovate-cordate, obtuse, cellular-glandular, 1 mm long, 0.75 mm wide, the base subcordate with the basal angles rounded, not embracing the column, the disc featureless except for a minute pair of calli at the base; **column** cylindrical, comparatively elongate, 0.75 mm long, 0.6 mm wide, the anther apical, the stigma bilobed, apical.

DOMINICAN REPUBLIC: Barahona: epiphytic in mountains near Barahona, alt. 600 m., Sept., *H. von Türckheim* & *M. Fuertes* 3574 (Holotype: xx); above Barahona, in moss on trees, alt. 1800 m, Sept., *M. Fuertes* 1048 (xx, type of *L. fuertesii*); epiphytic on hardwood trunks, Guimbi, Galata, alt. 1800 m, 21 June 1942, *Holdridge* 1296 (AMES, type of *L. dentifera*); Constanza: Loma del Campanario, Ciénaga de La Culata, alt. 1650-1850 m, *A. H. Liogier* 16037, 16043, 16078 (AMES, NY); Jarabacoa, Loma de la Sal, alt. 1300-1400 m, 30 Oct. 1968, *A. H. Liogier* 13335, 13349 (AMES, NY); Pedernales: Lomo del Toro, 11 Apr. 1963, *J. de Js. Jiménez* 4672 (AMES); Pedro García, Loma del Puerto, alt. 700-800 m, 3 May 1969, *A. H. Liogier* 15056 (AMES, NY); between Valle Nuevo and San José de Ocoa, alt. 2100 m, 30 May 1969, *A. H. Liogier* 15504 (AMES, NY); Puerto Plata, Sierra de Yoroa, alt. 850 m, 12 June 1969, *A. H. Liogier* 15678 (AMES, NY); Bahoruco: Sierra de los Comisarios, alt. 1900 m, 29 Aug. 1926, *E. L. Ekman* 6977 (AMES); Sierra de Bahoruco, seasonally wet, broadleaf forest, alt. 1700 m, 7 May 1986, *C. Luer*, *J. Luer*, *D. Dod* & *T. Dod* 12189, 12207, 12210, 12211, 12212 (MO); Lomo de Toro, alt. 1800-2000 m, Feb. 1981, collected by *D. Dod*, flowered in cultivation 4 May 1986 *C. Luer* 12165 (MO).



This species is frequent and variable in size in seasonally moist forests of Hispaniola at altitudes around 1500 meters above sea level. In common with several other species as well as some species of several other pleurothallid genera on the island, the leaves are minutely cellular-denticulate on the margins. Two or three tiny, pale flowers are produced simultaneously in a short, loose, flexuous raceme. The sepals and petals are ovate and acute. Most diagnostic is the obtuse, ovate-cordate lip without retrorse basal lobes, and the exposed shaft of the comparatively elongate column that is not embraced or encircled by basal lobes of the lip.

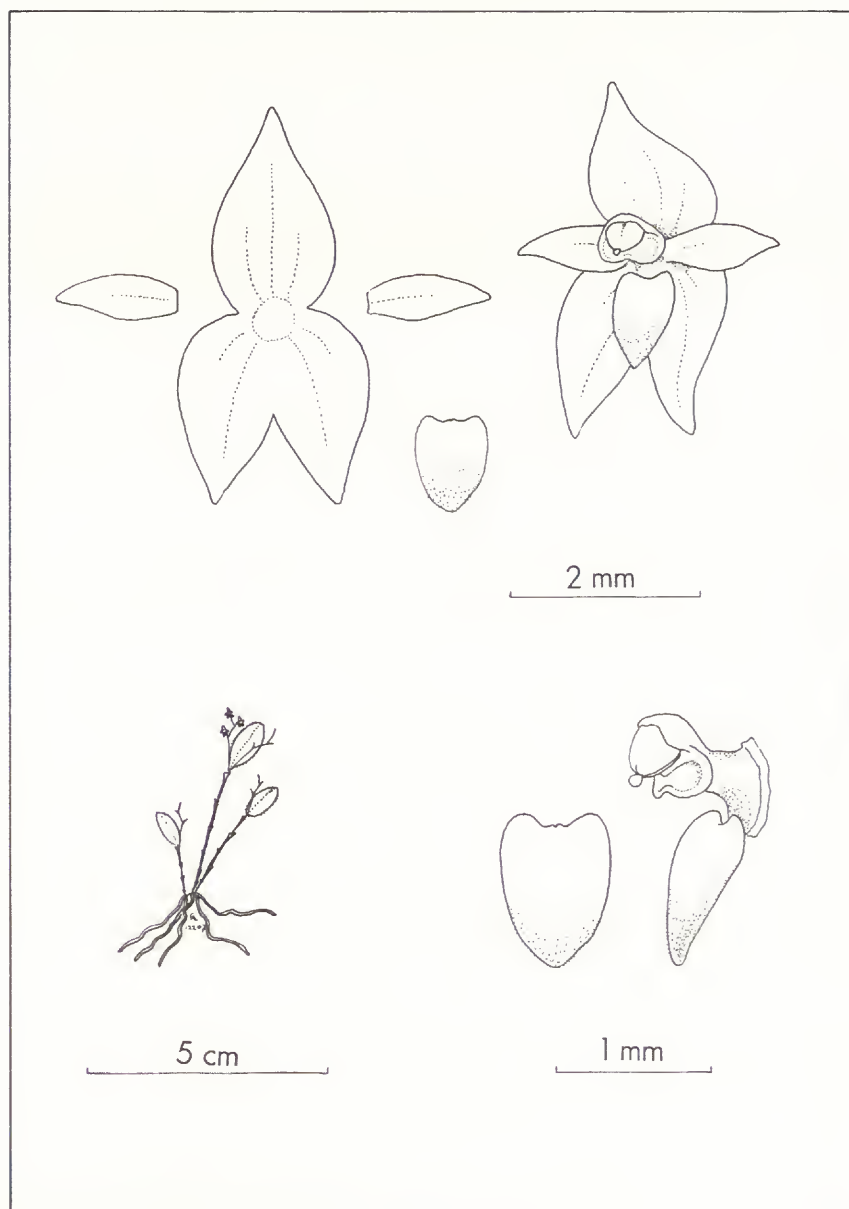


Plate 8. *Lepanthopsis barahonensis* (Cogn.) Garay

***Lepanthopsis constanzensis* (Cogn.) Garay, Arch. Jard. Bot. Rio de Janeiro 12: 197, 1953.**

Bas.: *Pleurothallis constanzensis* Cogn., in Urban, Symb. Antill. 7: 177, 1912.

Ety.: Named for the community of Constanza near the site where the species was collected.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-35 mm long, enclosed by 4-7 lepanthiform sheaths with shortly ciliate ostia. **Leaf** erect, coriaceous, with the margins minutely denticulate, elliptical to broadly elliptical, obtuse, 10-14 mm long, 6-9 mm wide, the rounded base contracted into a petiole 2-3 mm long. **Inflorescence** a loose, distichous, flexuous, many-flowered raceme, sometimes 2- to 3 flowers open simultaneously, up to 45 mm long including the capillary peduncle 8-9 mm long, from near the apex of the ramicaul; floral bracts 0.5-1 mm long; pedicels 1.5-2.5 mm long; ovary 0.5 mm long; **sepals** light yellow-green, more or less suffused with purple, to creamy white, glabrous, subcarinate, ovate to broadly ovate, subacute to obtuse, the dorsal sepal 1.5-2 mm long, 1.1-1.5 mm wide, 3-veined toward the base, essentially free from the lateral sepals, the lateral sepals oblique, 1-1.5 mm long, 1 mm wide, 1-veined, connate 0.5 mm to near the middle; **petals** elliptical-ovate, oblique, acuminate, acute, 1.2-2 mm long, 0.5-0.8 mm wide, i-veined; **lip** suborbicular-cordate, lightly concave, the apex obtuse to round, 0.8-1 mm long, 0.8-1 mm wide, the basal lobes obtuse, surrounding the column, the disc with a pair of erect, parallel, rounded calli in the center, cleft between; **column** 0.5 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

DOMINICAN REPUBLIC: epiphytic in shady forest near Constanza, alt. 1400 m, July, *H. von Türckheim* 3482 (Holotype: xx); without locality, *E. L. Ekman* 11821 (S); Azua: Sierra de Ocoa, Bejucal, alt. 1400 m, 6 Mar. 1929 *E. L. Ekman* 11821 (AMES); La Vega, La Cienaga north of Constanza, alt. 1700 m, 16 May 1959, *J. Jiménez* 4000 (US); Río Grande on the new road to Valle Nuevo, *J. Jiménez* 2993 (US); Bonao, Alto Casabito, alt. 1200 m, 13 Apr. 1969, *A. H. Liogier & E. J. Marciano* 14771 (AMES, NY); Sierra de Bahoruco, seasonally wet, broadleaf forest, alt. 1700 m, 7 May 1986, *C. Luer, J. Luer, D. Dod & T. Dod* 12202 (MO); Lago Taro, Aug. 1983, collected by D. Dod, flowered in cultivation, *C. Luer* 12304 (MO).

HAITI: Massif de la Salle, Morne des Commissaires, Grand Gosier, alt. 1500 m, 3 Sept. 1926, *E. L. Ekman* 6861 (AMES, S).



This species is relatively frequent in the seasonally moist forests of the island of Hispaniola. In common with several other species as well as with some species of other genera of pleurothallids on the island, the leaves are minutely cellular-denticulate on the margins. *Lepanthopsis constanzensis* is identified by the elongated, flexuous raceme. When the inflorescence is short, the plant resembles *L. barahonensis*. The sepals are usually broadly ovate, and the acuminate petals are nearly as long. Most diagnostic is the rounded, collarlike lip with a pair of adjacent, rounded calli in the center of the disc below the apex of the column.

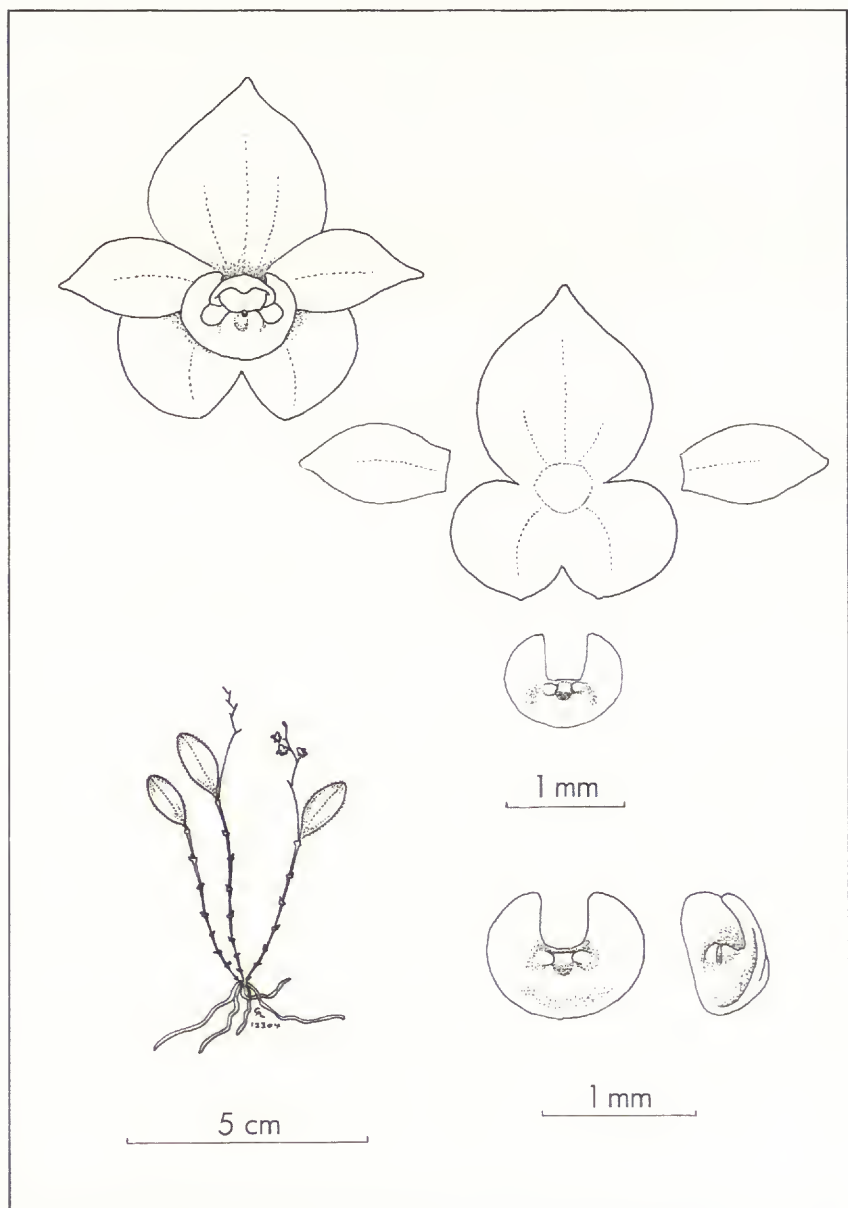


Plate 9. *Lepanthopsis constanzensis* (Cogn.) Garay

***Lepanthopsis cucullata* Dod, Moscosoa 4: 145, 1986.**

Ety.: From the Latin *cucullatus*, "cucullate," referring to the deeply concave synsepal.

Syn.: *Lepanthopsis paryskii* Dod, Moscosoa 4: 152, 1986.

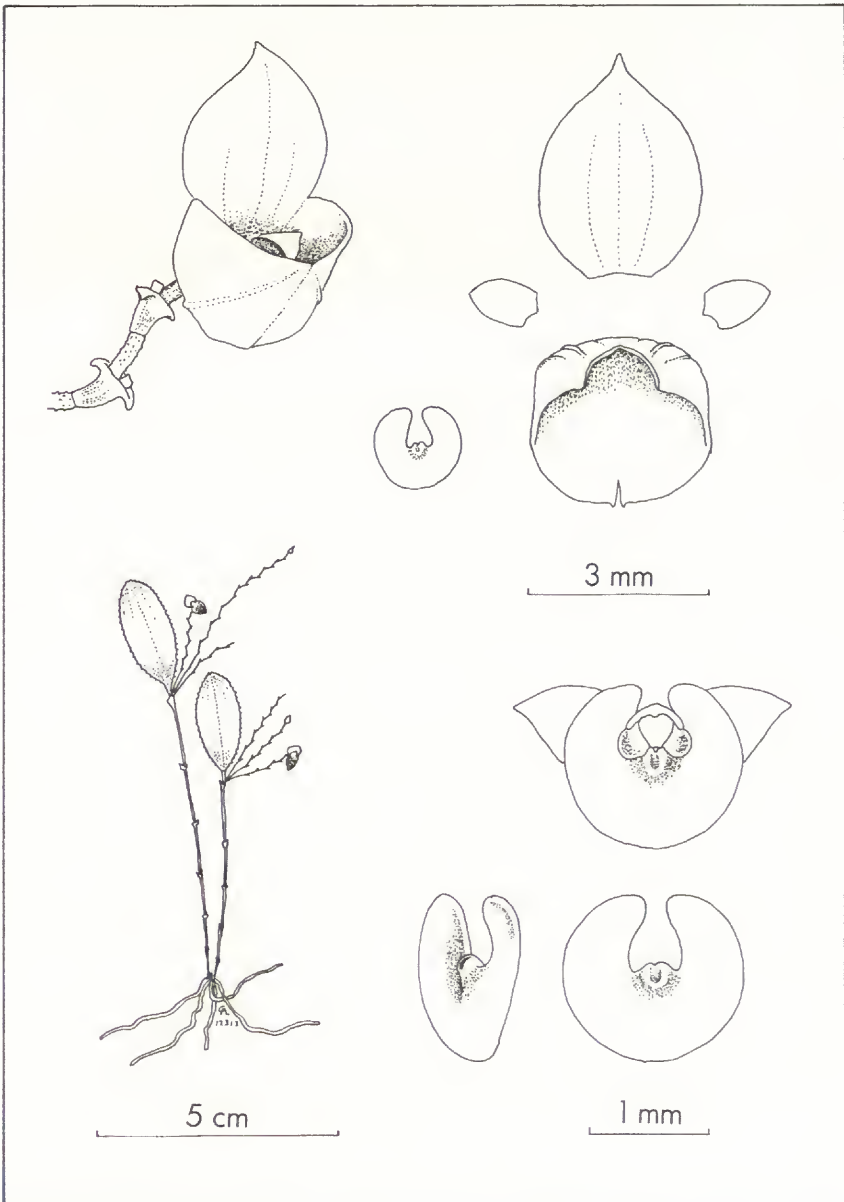
Ety.: Named in honor of Paul Paryski, assistant director of the National Parks of Haiti.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-6 cm long, enclosed by 4-8 lepanthiform sheaths with minutely scabrous ostia. **Leaf** suffused with purple beneath, erect, coriaceous, with the margins minutely denticulate, elliptical, subacute to obtuse, 15-28 mm long, 6-9 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a subcongested, distichous, slightly flexuous, successively many-flowered raceme, 1.5-5 cm long including the capillary peduncle ca. 5 mm long, from near the apex of the ramicaul; floral bracts 0.75 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; **sepals** membranous, glabrous, the dorsal sepal red-purple, broadly ovate to suborbicular, obtuse, convex, shortly acuminate, 3.75 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals light green, connate into deeply concave synsepal, 2.75 mm long, 3 mm wide unexpanded, each 3-veined, the broadly rounded apex shortly cleft into 2 obtuse apices; **petals** dark purple, ovate, subacute to obtuse, variously angled on the lower margin above the base, 1 mm long, 0.8 mm wide; **lip** sub-orbicular-cordate, 1.5 mm long, 1.5 mm wide, the basal lobes obtuse, encircling the column, the disc with a well-developed, elevated glenion at the base; **column** 0.5 mm long, 0.8 mm wide, the anther apical, the stigma bilobed, apical.

HAITI: Massif de la Hotte, Les Cayes, Formond, epiphytic in forest, alt. 950 m, 17-26 Feb. 1982, flowered in cultivation 24 Feb. 1983, *D. D. Dod 950* (Holotype: JBSD; Isotypes: AMES, MO, NY, SEL, US); C. Luer illustr. 12313; same locality, 19 Feb. 1982, flowered in cultivation 16 Nov. 1982, *D. D. Dod 952* (JBSD, type of *L. paryskii*, AMES, MO, NY, SEL, US); Formond, alt. 1050 m, *D. D. Dod 1022* (JBSD).



This species is apparently endemic on the Hotte Massif of Haiti. The successive flowers are borne in a slightly flexuous raceme that eventually far exceeds the leaf in length. The lateral sepals are connate into a deeply concave synsepal while the broad dorsal sepal stands erect above to expose the contents on the back wall of the interior of the flower: the column surrounded by a suborbicular lip and flanked by a small pair of petals. This is a pattern frequently seen in other pleurothallid genera such as *Pleurothallis* and *Stelis*. It is apparently unique in *Lepanthopsis*.

Plate 10. *Lepanthopsis cucullata* Dod

***Lepanthopsis culiculosa* Luer, Phytologia 55: 197, 1984.**

Ety.: From the Latin *culiculosus*, "full of gnats," referring to the numerous, minute flowers.

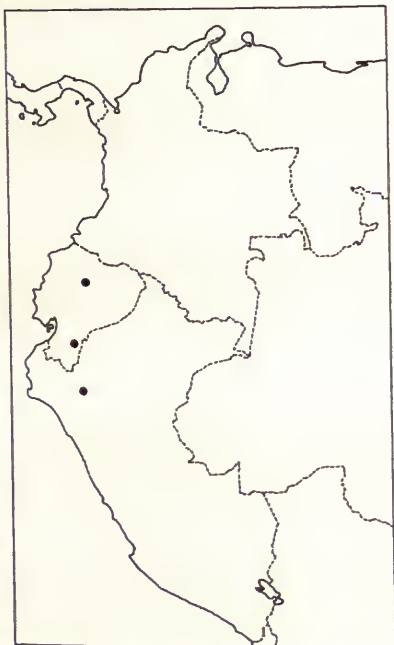
Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-3 cm long, occasionally proliferating another ramicaul, enclosed by 3-6 minutely ciliate, lepanthiform sheaths. Leaf erect, thickly coriaceous, narrowly elliptical, acute, 17-22 mm long, 3-5 mm wide, the base narrowly cuneate into a petiole 1-2 mm long. Inflorescence a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 38 mm long, borne by a filiform peduncle 10-20 mm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 0.25 mm long; ovary 0.5 mm long; sepals yellow, glabrous, ovate, acute to narrowly obtuse, the dorsal sepal 1.3-1.5 mm long, 0.8 mm wide, 1-veined, barely connate to the lateral sepals, the lateral sepals 1.3-1.5 mm long, 0.6 mm wide, 1-veined, connate 0.75 mm; petals elliptical-oblong, obtuse, 0.4 mm long, 0.2 mm wide; lip yellow, transversely cordate, cellular-glandular, 0.6 mm long, 0.8 mm wide, the apex broadly obtuse or rounded, the base with obtuse lobes to either side of the column, the disc with a central depression above a horseshoe-shaped callus at the base; column 0.4 mm long and broad, the anther apical, the stigma bilobed, apical.

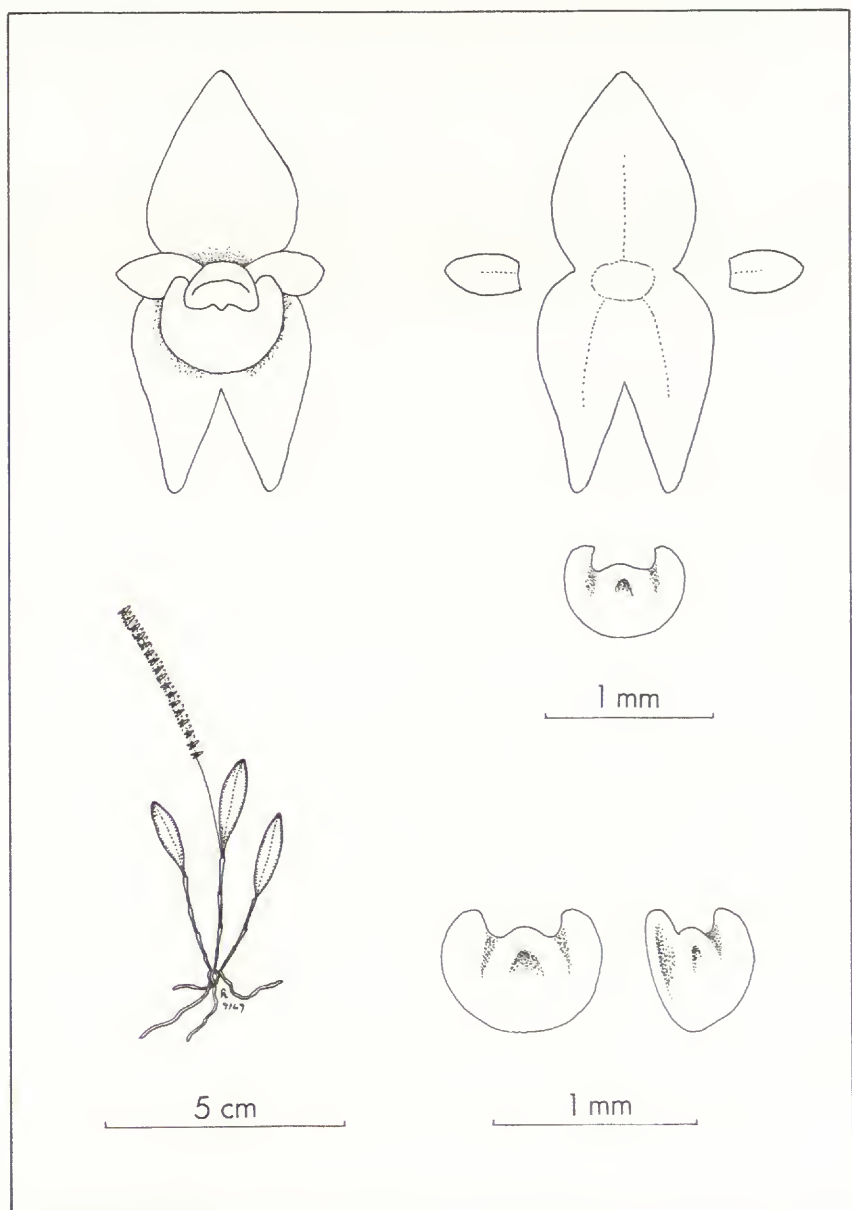
ECUADOR: Prov. of Napo: Cosanga, alt. 2000 m, 1983, *A. Hirtz* 978 (Holotype: SEL), C. Luer illustr. 9169. Prov. of Loja: above Vilcabamba, alt. 2100 m, *D. D'Alessandro* 1024 (SEL); Cajanuma Range south of Loja, alt. 2500 m, 21 Mar. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 10776 (MO).

PERU: Dept. of Amazonas: Chachapoyas, Cerros Calla Calla above Leimebamba on road to Balsas, alt. 2800 m, 13 Oct. 1964, P. C. Hutchison & J. K. Wright 6913 (AMES, JEPS).

This tiny-flowered species occurs not infrequently in the Oriente of Ecuador and northern Peru. It is identified by the small habit with a dense raceme of numerous, minute flowers in two ranks far exceeding the leaf in length. The flowers are practically identical to those of the tiny, Haitian *L. pygmaea*, apparently an example of parallelism. The ovate sepals of both species are barely more than one millimeter long; the obtuse petals are less than half a millimeter long; and the transversely cordate lip has an inverted, U-shaped callus at the base.

Lepanthopsis culiculosa is distinguished from *L. pygmaea* by the larger habit with longer leaves and racemes, and leaves with all the margins smooth. Numerous species of pleurothallids from Hispaniola, including *L. pygmaea*, have minutely denticulate foliar margins.



Plate 11. *Lepanthopsis culiculosa* Luer

***Lepanthopsis densiflora* (Barb. Rodr.) Ames, Bot. Mus. Leaf. 1(9): 11, 1933.**

Bas.: *Lepanthes densiflora* Barb. Rodr., Vellozia 1, ed. 2: 119, 1891.

Ety.: From the Latin *densiflorus*, "densely flowered," referring to the inflorescence.

Syn.: *Pleurothallis congestiflora* Cogn., Fl. Bras. 3(4): 591, 1896.

Ety.: From the Latin *congestiflorus*, "with congested flowers," referring to the densely flowered inflorescence.

Syn.: *Lepanthopsis congestiflora* (Cogn.) C. Porto & Brade, Rodriguesia 1(2): 37, 1935.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-15 mm long, enclosed by 3-4 lepanthiform sheaths with microscopically scabrous margins of the ostia. Leaf erect, coriaceous, narrowly elliptical, acute, 10-18 mm long, 3-4 mm wide, the base narrowly cuneate into a petiole 1-2 mm long. Inflorescence a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 15-25 mm long, borne by a filiform peduncle 15-25 mm long, from near the apex of the ramicaul; floral bracts 0.75 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; sepals yellow-green, glabrous, ovate, acute, 1-veined, the dorsal sepal 1.5 mm long, 0.6 mm wide, the lateral sepals 1.5 mm long, connate to near the middle, 1 mm wide together; petals translucent yellow-green, suborbicular, obtuse, 0.3 mm long, 0.3 mm wide, without a visible vein, the margins cellular; lip purple, ovate, obtuse, 0.9 mm long, 0.7 mm wide, the disc featureless, the base truncate, fixed to the base of the column; column 0.3 mm long and broad, the anther apical, the stigma bilobed, apical.

BRAZIL: Edo. Minas Gerais: epiphytic in shady forest, Serra de San José d'El-Rei, *J. Barbosa Rodrigues s.n.* (Holotype: ?). Edo. São Paulo: São Paulo, native within the Jardim Botânico, 15 March 1937, *O. Handro s.n.* (HB), C. Luer illustr. 14726.

This small species is apparently endemic in southern Brazil where it might not be as rare as the few collections would seem to suggest. It is characterized by the small habit, and a densely many-flowered raceme of tiny flowers in an inflorescence that is about as long as the leaf and ramicaul together. The sepals are ovate, about 1.5 mm long, the petals are suborbicular, and the comparatively large, featureless lip is ovate.

***Lepanthopsis dodii* Garay, J. Arnold Arbor. 50: 464, 1969.**

Ety.: Named in honor of the Rev. Donald D. Dod, formerly of Santo Domingo, Dominican Republic, co-discoverer of this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-4 cm long, enclosed by 4-7 lepanthiform sheaths with shortly ciliate ostia. Leaf erect, coriaceous, with the margins minutely denticulate, elliptical, subacute to obtuse, 12-20 mm long, 5-7 mm wide, the base cuneate into a petiole 2-3 mm long. Inflorescence a congested, distichous, strict, simultaneously many-flowered raceme in 2 opposite-facing ranks, up to 40 mm long including the capillary peduncle 10-13 mm long, from near the apex of the ramicaul; floral bracts 0.75 mm long; pedicels 0.75 mm long; ovary 0.5 mm long; flowers yellow, glabrous; sepals membranous, cream-colored, subcarinate, ovate, acute, lightly acuminate, the dorsal sepal 1.5-2 mm long, 0.8-1.2 mm wide, 1-veined, essentially free from the lateral sepals, the lateral sepals 1.6-1.8 mm long, 0.6-0.8

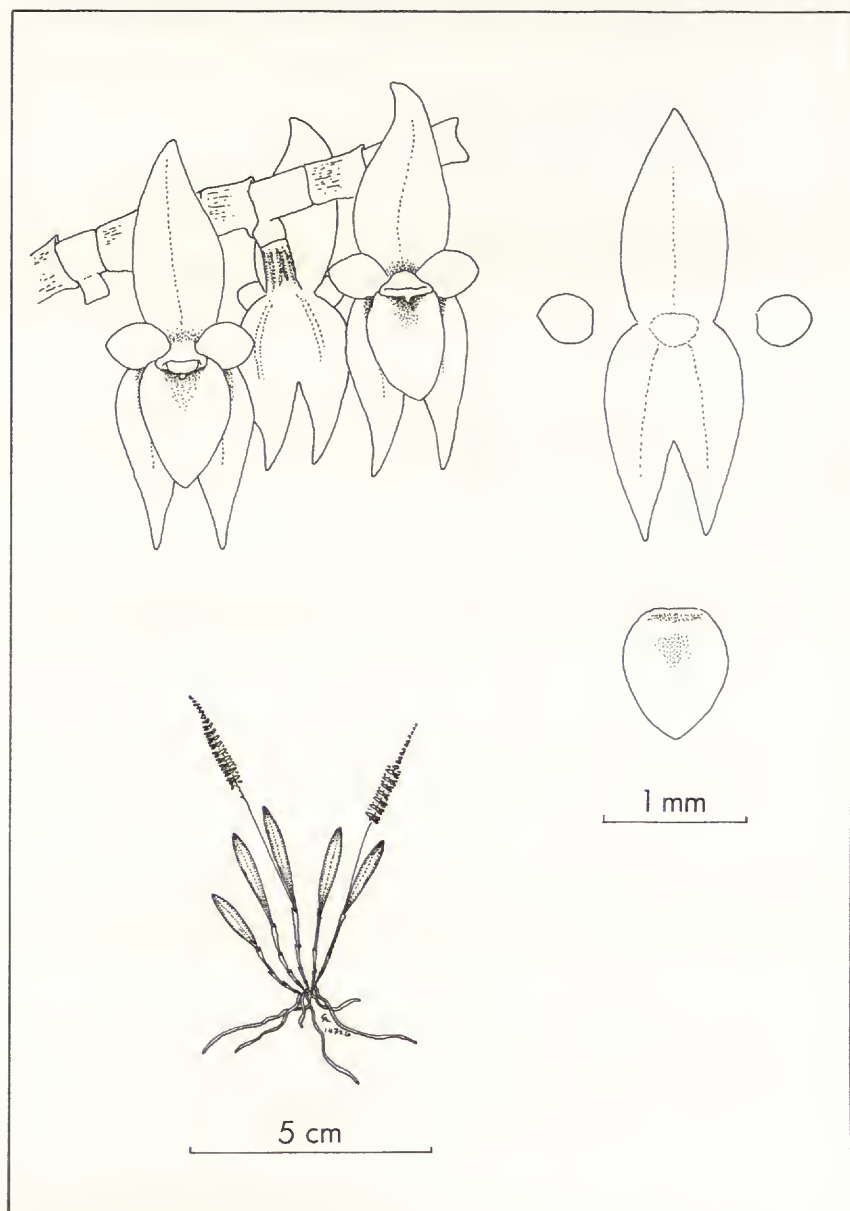


Plate 12. *Lepanthopsis densiflora* (Barb. Rodr.) Ames

mm wide, 1-veined, connate 0.75 mm to near the middle; petals elliptical-ovate, acute, slightly acuminate, 0.8-1.2 mm long, 0.4-0.5 mm wide, 1-veined; lip ovate-cordate, subacute to obtuse, cellular-glandular, 1-1.25 mm long, 1 mm wide, the basal lobes rounded, embracing the column, the disc with a well-developed glenion at the base; column 0.5 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

DOMINICAN REPUBLIC: Polo, epiphytic, March 1968, D. D. Dod, H. P. Jesup & C. Wüchner 43 (Holotype: AMES); Lomo Pie Pol near Barahona, alt. 950 m, Jan. 1985, D. Dod 1103, flowered in cultivation 4 May 1986, C. Luer 12153 (MO).

HAITI: Rivière Glace, 23 Aug. 1984, collected by D. Dod, flowered in cultivation 4 May 1986 C. Luer 12274 (MO).

This species is apparently uncommon on the island of Hispaniola, but it occurs in both Haiti and the Dominican Republic where it was first reported by Donald D. Dod. The first plant was found by H. P. Jesup, who continues to cultivate it successfully in his greenhouse in Connecticut.

In common with several other species, as well as some species in other genera of pleurothallids on the island, the leaves are minutely, cellular-denticulate on the margins. A strict, densely simultaneously flowered raceme in two opposite-facing ranks of tiny, yellow flowers are produced simultaneously. The sepals and petals are ovate and acute, and the basal lobes of the obtuse, ovate-cordate lip with a well-developed glenion encircle the column.



***Lepanthopsis floripecten* (Reichb. f.) Ames, Bot. Mus. Leaffl. 1(9): 11, 1933.**

Bas.: *Pleurothallis floripecten* Reichb. f., Bonplandia 2: 25, 1854.

Ety.: From the Latin *flori-*, "of a flower," and *pecten*, "a comb," hence "a floral comb," referring to the appearance of the inflorescence.

Syn.: *Lepanthes secunda* Barb. Rodr., Gen. Sp. Orch. Nov. 2: 70, 1882.

Ety.: From the Latin *secundus*, "second, with the flowers facing the same side," a misconception of the inflorescence of this species.

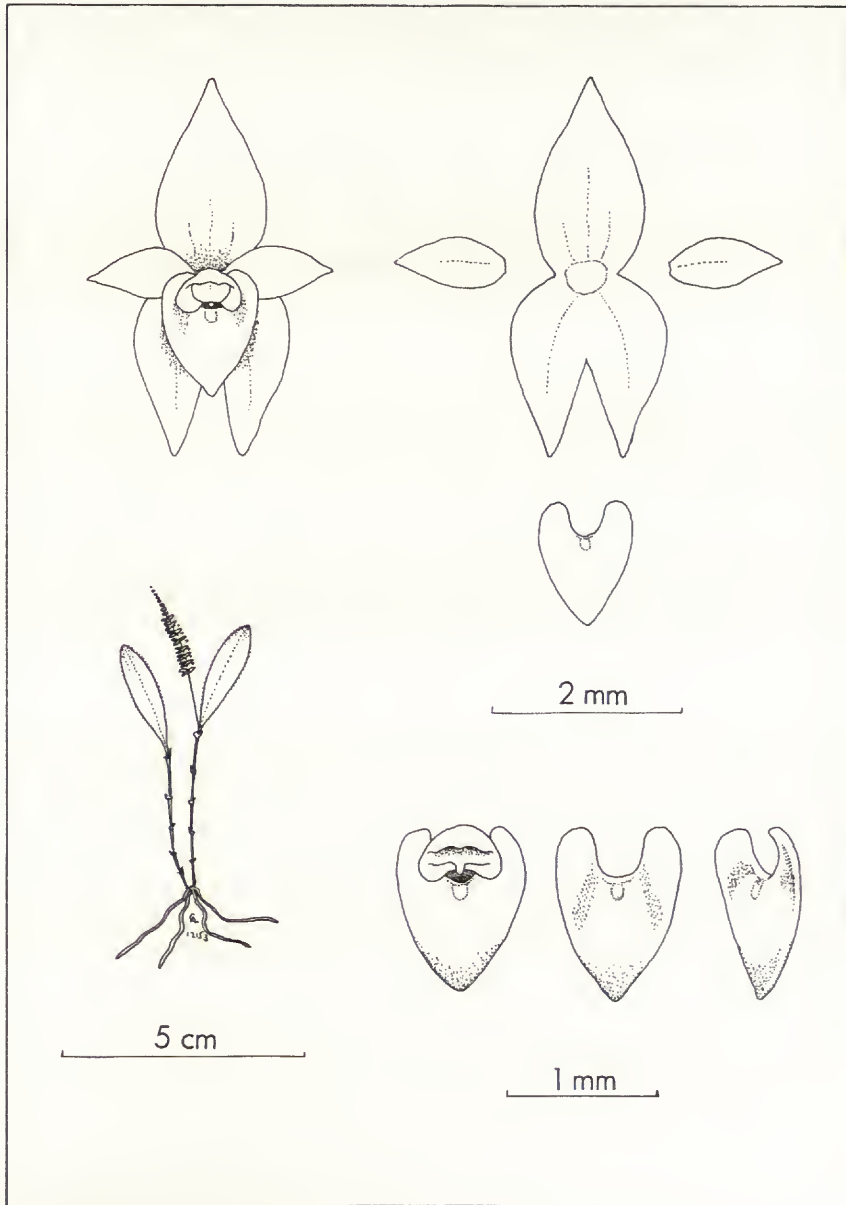
Syn.: *Pleurothallis unilateralis* Cogn., Fl. Bras. 3(4): 592, 1896, non *P. secunda* Poepp. & Endl.

Ety.: From the Latin *unilateralis*, "unilateral," a translation of *secundus*.

Syn.: *Lepanthopsis unilateralis* (Cogn.) C. Porto & Brade, Rodriguesia 1(2): 37, 1935.

Syn.: *Lepanthopsis secunda* (Barb. Rodr.) Hoehne, Bol. Mus. Nac. Rio de Janeiro 12: 29, 1936.

Plant medium to large in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-10 cm long, enclosed by 4-8 dark, lepanthiform sheaths with the dilated ostia ciliate. Leaf erect, coriaceous, oblong-elliptical, subacute to obtuse, 15-45 mm long, 6-17 mm wide, the base cuneate into a petiole 2-5 mm long. Inflorescence a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 25 cm long, borne by a filiform peduncle 2-6 cm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 0.5 mm long; ovary 1 mm long, costate; sepals yellow-green or yellow-orange more or less suffused with purple or brown, glabrous, subcarinate, slightly thickened at the apex, the dorsal sepal narrowly

Plate 13. *Lepanthopsis dodii* Garay

ovate, narrowly obtuse, 3.5-4 mm long, 1.5-1.8 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals connate to near the apex into an oblong lamina with obtuse apices, 3.5-4.5 mm long, 1.5-1.75 mm wide, each sepal 1-veined; petals similarly colored, broadly elliptical, obtuse, 0.9 mm long, 0.7 mm wide, 1-veined; lip suborbicular, 0.9-1 mm long, 0.8-1 mm wide, the apex rounded, the base truncate with short, obtuse, basal lobes below the column, the disc slightly concave centrally above the base; column 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.



- VENEZUELA: Dist. Fed.: Jaji near Caracas, *H. Wagener s.n.* (Holotype: W; Isotype: K); Edo. Bolívar: Auyan-tepui, alt. 1660 m, 12 May 1964, *J. Steyermark* 93778, 93786 (AMES, VEN); Edo. Bolívar: Auyan-tepui, alt. 1690 m, 2 May 1964, *J. A. Steyermark* 93220 (AMES); Torono Tepui, alt. 1760-1880 m, 1 Mar. 1955, *J. Steyermark* & *J. Wurdack* 1209 (VEN); Meseta de Jana, alt. 1850 m, Feb. 1974, *G. C. K. Dunsterville* 499; Cerro Marutani, Río Carla, alt. 1200 m, 11 Jan. 1981, *J. Steyermark*, *B. Maguire*, *C. Brewer Carías* & *V. Carreño E.* (VEN); Munic. Raul Leoni, north of Apáraman Tepui, alt. 950 m, Sept. 1986, *A. Fernández* 3525 (VEN). Terr. Amazonas: Cerro Asisia, around Lago Asisia, alt. 1310 m, 8 May 1973, *J. Hoyos* & *G. Morillo* 118 (VEN); Atabapo, Cerro Marahuaca, alt. 1225 m, 19 Feb. 1985, *R. Liesner* 17701 (VEN); Cerro Marahuaca, alt. 1140 m, 28 Feb. 1985, *J. Steyermark* & *B. Holst* 130908 (VEN); Río Negro, Cerro Aratitoyope, alt. 990-1670 m, 24 Feb. 1984, *J. Steyermark*, *P. Berry* & *F. Delascio* 130097, 130136 (MO, VEN). MEXICO: Edo. Chiapas: Munic. Ocosingo, near Laguna Ocotál Grande, alt. 950 m, 20 July 1954, *R. L. Dressler* 1470 (AMES). GUATEMALA: Prov. of Baja Verapaz: epiphytic in forest near Parque Nacional de Quetzal, alt. 1600 m, 11 Feb. 1990, *C. Luer*, *J. Luer* & *M. Behar* 14584 (MO). HONDURAS: Dept. of Comayagua: Minas de Oro, alt. 4200 ft., 5 July 1932, *J. B. Edwards* 194 (AMES); Siguatepeque, alt. 4000 ft., 22 Sept. 1932, *J. B. Edwards* 252 (AMES); hills above the plains of Siguatepeque, alt. 1350 m, 30 July 1936, *T. G. Yuncker*, *R. F. Dawson* & *H. R. Youse* 6212 (AMES, II, HB, K, MO). Dept. of Morazán: near Hoya Grande, alt. 1500 m, 28 July 1946, *L. O. Williams* & *A. Molina* 10166 (AMES). Dept. de Olancho: Montaña de Chifringo, alt. 1090 m, 6 Oct. 1979, *C. Cerrato* & *D. Pereira* 74 (H, MO). EL SALVADOR: Dept. of Chalatenango: between Dulce Nombre de María and San Fernando, alt. 1300 m, 18 May 1976, *H. Clason* 460 (AMES). NICARAGUA: Prov. of Matagalpa: Finca Bavaria, alt. 1150 m, *A. Heller* 4111 (SEL). COSTA RICA: without locality, *A. Endres* 525 (W). Prov. of Cartago: road to San Cristóbal, June-July, *A. Endres* 555-44 (AMES); Las Concavas, Sept. 1941, *C. H. Lankester* 1497 (AMES). PANAMA: without locality, cited by *Dunsterville* & *Garay*, *Venezuelan Orchids Illustrated* 2: 186. COLOMBIA: without locality, *J. Linden* 1655 (W). Dept. of Antioquia: Munic. of Santo Domingo, alt. 2000 m, collected by *R. Escobar* & *E. Valencia*, Aug. 1966, flowered in cultivation at Colombrorquídeas, 6 Apr. 1988, *C. Luer* 13049 (MO). Dept. of Valle de Cauca: Hoya del Río Cali, alt. 1580-1650 m, 7 Nov. 1944, *J. Cuatrecasas et al.* 18762 (AMES). ECUADOR: Prov. of Loja: above Vilcabamba, alt. 2400 m, *D. D'Alessandro* 140 (SEL), *C. Luer* illustr. 9167. Prov. of Morona-Santiago: new road west of Macas toward Guamote, alt. 1900 m, 16 Jan. 1989, *C. Luer*, *J. Luer*, *P. Jesup*, *A. Jesup* & *A. Hirtz* 13941, 13942 (MO). Cordillera del Cutucú, new road between Méndez and Morona, alt. 950 m, 19 Jan. 1989, *A. Hirtz*, *A. Andreetta* & *S. Ortega* 4133 (MO).

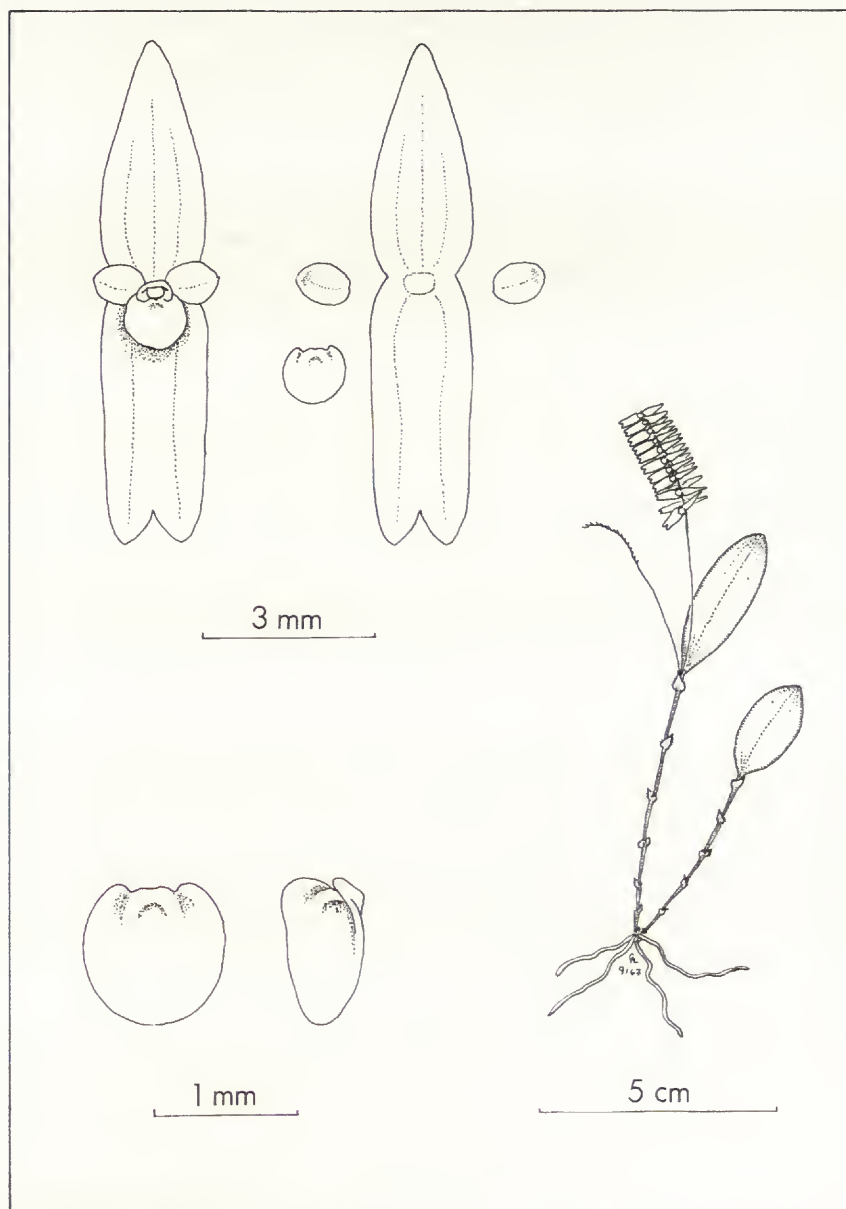


Plate 14. *Lepanthopsis floripecten* (Reichb. f.) Ames

PERU: Dept. of Cuzco: Prov. of Convención, Sachayoc, alt. 1800 m, *Vargas 6297* (AMES).
 BRAZIL: Edo. Espírito Santo: Peira Azul, alt. 1000 m, 30 July 1970, *R. Kautsky 266* (HB). Edo. Paraná: Tacarehy, 11 Jan. 1915, *P. Dusén 16323* (AMES, S); Munic. Guaratuba, Rio da Praia, 10 July 1964, *M. Leinig 333* (HB); Munic. de Paranaguá-Paraná, Porto Don Pedro II, 30 Aug. 1910, *R. Lange 10203* (HB). Edo. Rio de Janeiro: Morro Queimado, flowered in cultivation, 1 April 1948, *A. C. Brade 18912* (HB, RB); Serra de Carioca, alt. 700 m, 17 June 1957, *G. Pabst 1117* (HB). Edo. São Paulo: Iguape, alt. 300 m, 1921, *A. C. Brade 8642* (HB). Edo. Santa Catarina: Joinville, alt. 30 m, 22 July 1952, *R. Reitz 4765* (HB); Pântano do Sul, alt. 300 m, 13 Apr. 1971, *Klein & Brosolin 9198* (HB).

This, the first species of the genus to be described, is the most frequent and most widely distributed species of the genus, and one of the most widely distributed of the subtribe as well. Vegetatively it is similar to several others in the genus, but the double-ranked inflorescence of congested, transverse flowers with the peduncle is more or less twice the length of the leaf; the sepals are narrow, the laterals deeply connate to near the obtuse apices; the petals are broadly elliptical; and the slightly concave suborbicular lip has short basal lobes that do not surround the column.

***Lepanthopsis glandulifera* Dod, Moscosoa 1: 46, 1977.**

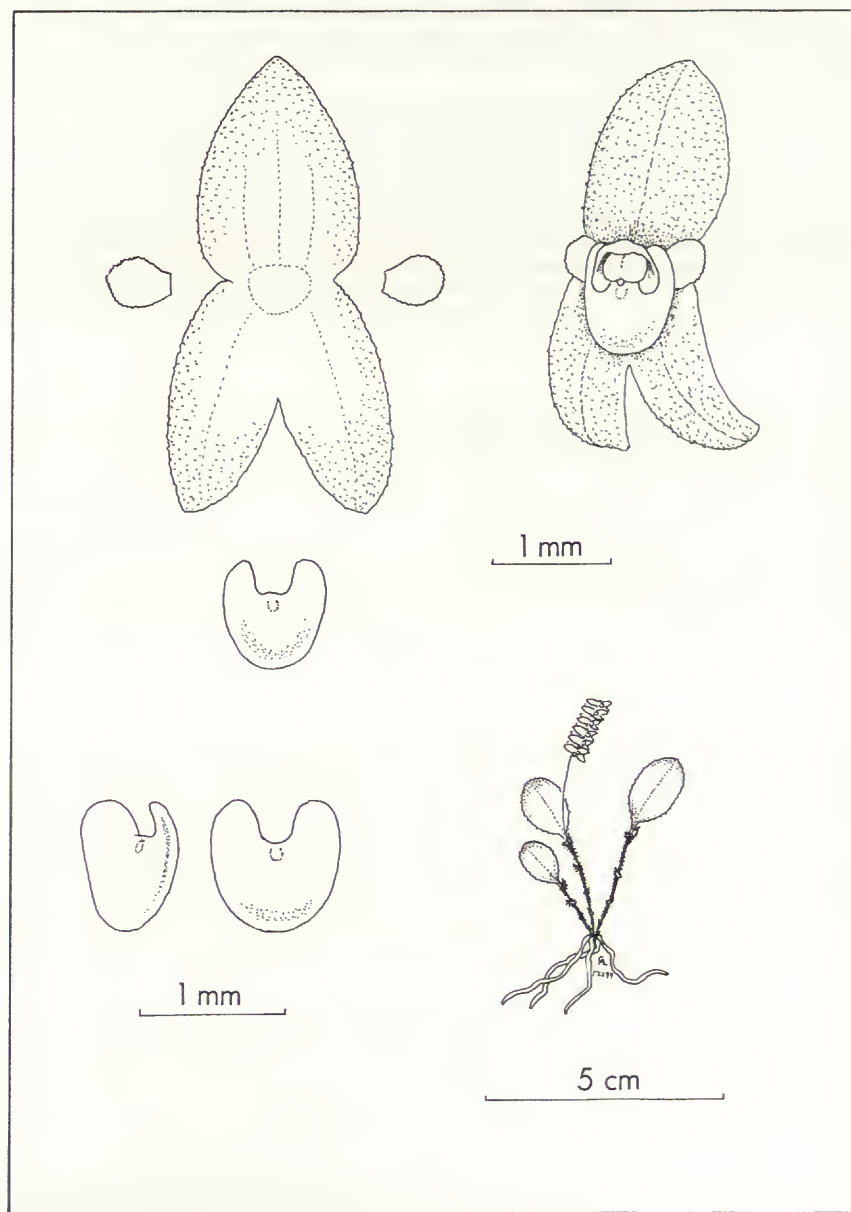
Ety.: From the Latin *glandulifer*, "bearing glands," referring to the cellular-glandular integument of the floral parts.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 15-25 cm long, enclosed by 3-4 sparsely long-ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, oblong-elliptical, minutely denticulate, 10-16 mm long, 7-11 mm wide, the apex obtuse to rounded, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 15 mm long, borne by a filiform peduncle up to 15 mm long, from near the apex of the ramical; floral bracts 1 mm long; pedicels 1 mm long; ovary 0.6 mm long, thickly costate; **sepals** yellow, subcarinate, diffusely minutely glandular-pubescent within, the dorsal sepal ovate, subacute, 1.9 mm long, 1.3 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals narrowly oblong-ovate, obtuse, 1.8 mm long, 0.8 mm wide, 1-veined, connate 1 mm to near the middle; **petals** cellular-ciliate, broadly elliptical-obovate, obtuse, 0.5 mm long, 0.4 mm wide, without a visible midvein; **lip** suborbicular-cordate, slightly concave, cellular-glandular, 1 mm long, 1 mm wide, the apex rounded, the basal lobes rounded and embracing the column, the disc with a minute glenion at the base; **column** 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

DOMINICAN REPUBLIC: Constanza, Río Grande de Constanza near the falls, alt. 1160 m, 21 Feb. 1976, *D. D. Dod 580* (Holotype: SDM; Isotypes AMES, MO, NY, SEL, US), C. Luer illustr. 12299; Loma Prieta, el Convento, alt. 1600 m, 1 Mar. 1974.

This species, apparently endemic in a small area of the Dominican Republic, is another of the many discoveries by Donald D. Dod. *Lepanthopsis glandulifera* is distinguished from its numerous close relatives by the sparsely long-ciliate, lepanthiform sheaths; the minutely glandular-pubescent floral parts; tiny, rounded petals; and a rounded lip with basal auricles that embrace the column.



Plate 15. *Lepanthopsis glandulifera* Dod

***Lepanthopsis hirtzii* Luer, sp. nov.**

Ety.: Named in honor of Alexander C. Hirtz of Quito, Ecuador, who discovered this species.

Planta mediocris caespitosa, inflorescentia folio elliptico duplolongiore, racemo congestissimo disticho multifloro, sepalis anguste ovatis acutis minute pubescentibus, sepalis lateralibus supra medium connatis, petalis late ellipticis, labello minutissime ciliato suborbiculato basi bilobato.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, relatively stout, 1.5-3.5 cm long, enclosed by 4-6 coarsely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 10-17 mm long, 8-11 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a dense, simultaneously many-flowered raceme in 2 opposite ranks, 5-22 mm long, borne by a filiform peduncle 15-20 mm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 1 mm long; ovary thick, costate, 0.75 mm long; flowers light brown; **sepals** narrowly ovate, acute, low-carinate, shortly pubescent, the dorsal sepal 6 mm long, 2 mm wide, 3-veined, essentially free from the lateral sepals, the lateral sepals 6 mm long, 2 mm wide, connate 2.5 mm, each 1-veined; **petals** broadly elliptical, obtuse, cellular-ciliate, 1.2 mm long, 0.8 mm wide, 1-veined; **lip** suborbicular, 1.2 mm long, 1.2 mm wide, the base bilobed, the basal lobes obtuse, embracing the column, the disc with a small cavity above the base; **column** 0.6 mm long and broad, the anther apical, the stigma bilobed, apical.

ECUADOR: Prov. of Zamora-Chinipe: epiphytic in forest above Valladolid, alt. 2700 m, 23 Mar. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 10953 (Holotype: MO).

COLOMBIA: Intend. of Putumayo: Forest east of San Francisco toward Mocoa, alt. 1600 m, collected by R. Escobar et al., Jan. 1987, flowered in cultivation at Colomborquídeas, 17 Mar 1989, C. Luer 14217 (MO).



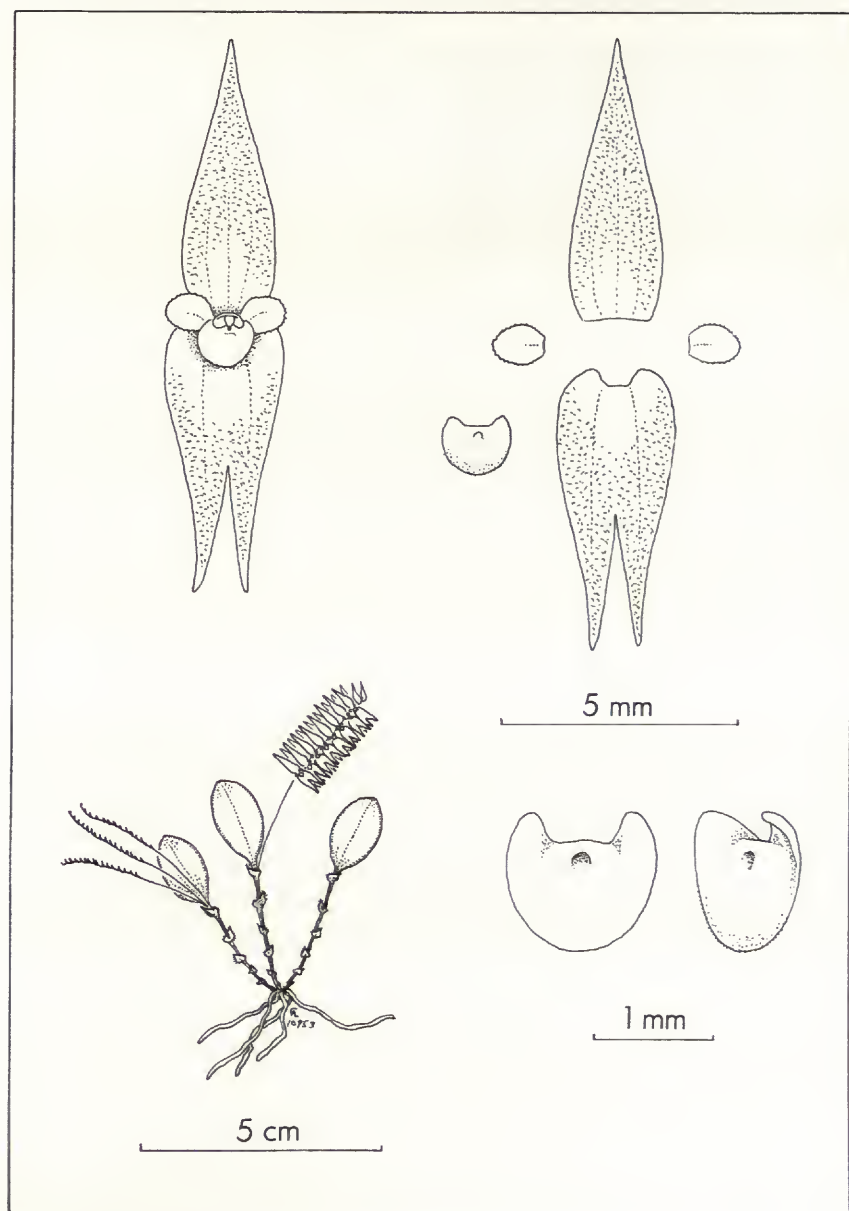
This species is found occasionally from southern Colombia to southern Ecuador. It is distinguished from others in the genus by the stout ramicauls with coarsely pubescent, cauline sheaths; elliptical-oblong leaves; inflorescences at least twice as long as the leaf; densely flowered racemes in two, opposite-facing rows; narrowly ovate, acute, pubescent sepals, the laterals connate more than half the length; and a suborbicular lip with basal lobes embracing the column.

***Lepanthopsis hotteana* (Mansf.) Garay, Arch. Jard. Bot. Rio de Janeiro 12: 180, 1953.**

Bas.: *Pleurothallis hotteana* Mansf., Ark. Bot. 22A (17): 11, 1928.

Ety.: Named for the Massif de la Hotte near the site where the species was collected.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-6 cm long, enclosed by 7-10 lepanthiform sheaths with ciliate ribs and dilated ostia. **Leaf** erect, coriaceous, with the margins marginate and denticulate, elliptical, subacute to obtuse, 8-15 mm long, 6-8 mm wide, the base cuneate into a petiole 2-5 mm long. **Inflorescence** a loose, distichous, flexuous, few-flowered raceme, 2- to 3 flowers open simultaneously, up to 15 mm long including the capillary peduncle 5 mm long, from near the apex of the ramicaul; floral bracts 0.75-1 mm long; pedicels 1.5-2 mm long; ovary 0.4-0.5 mm long; flowers light yellow, glabrous; **sepals** subcarinate, ovate, subacute to acute, the dorsal sepal 1.75 mm long, 1 mm wide, 1-veined, essentially free from the lateral sepals, the lateral sepals oblique, 1.5 mm long, 0.9 mm wide, 1-veined, connate

Plate 16. *Lepanthopsis hirtzii* Luer

0.5 mm; **petals** narrowly ovate, acute, 1.5 mm long, 0.4 mm wide, 1-veined; **lip** cordate-triangular, obtuse, 1 mm long, 1 mm wide, the basal lobes rounded, embracing the column, the disc featureless except for a low, transverse callus at the base; **column** 0.5 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

HAITI: Massif de la Hotte in the western part on the summit of Morne La Hotte, alt. 2410 m, 13 Sept. 1928, E. L. Ekman 10646 (Holotype: S; Isotypes: AMES, K), C. Luer illustr. 14800; Massif de la Hotte, top of Mt. Formon, alt. 2225 m, 1 Jan. 1927, E. L. Ekman 7496 (AMES); Morne des Commissaires, alt. 5800 ft., 30 July 1944, J. T. Curtis 4756 (AMES); Morne Guimby, alt. 6200 ft., 16 Sept. 1955, G. R. Proctor 10834 (AMES).



This species apparently is confined to the mountainous regions of the Massif de la Hotte in Haiti. In gross appearance it is indistinguishable from *L. barahonensis* of lower altitudes in neighboring Dominican Republic. Both species have slender ramicauls and denticulate leaves, and a loose, several-flowered inflorescence about as long as the leaf. The tiny flowers are also very similar, but *L. hotteana* is distinguished by the longer, more pointed petals; a cordate-triangular lip with basal lobes embracing the column; and a broad, relatively flat column as seen in most other species, not elongate and cylindrical as in *L. barahonensis*.

Lepanthopsis lingulata Dod, Moscosoa 4: 150, 1986.

Ety.: From the Latin *lingula*us, "with a tongue," referring to the middle lobe of the lip.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-15 mm long, enclosed by 3-4 lepanthiiform sheaths with minutely ciliate ostia. **Leaf** erect, coriaceous, smooth, elliptical, obtuse, 6-12 mm long, 3-6 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a subcongested, distichous, slightly flexuous, simultaneously few-flowered raceme, 10-20 mm long including the capillary peduncle 5-8 mm long, from near the apex of the ramicaul; floral bracts 0.6 mm long; pedicels 1 mm long; ovary 0.5 mm long; flowers red, glabrous; **sepals** membranous, subcarinate, the dorsal sepal triangular, acute, 1.5 mm long, 0.8 mm wide, 3-veined, essentially free from the lateral sepals, the lateral sepals triangular, acute, 1.1 mm long, 0.6 mm wide, 1-veined, connate 0.3 mm; **petals** narrowly linear-triangular to setiform, acute, 1 mm long, 0.15 mm wide; **lip** trilobed, 0.8 mm long, 0.8 mm wide, the anterior lobe narrowly oblong, subclavate, rounded, antrorse, 0.4 mm long, the basal lobes falcate, subacute, surrounding the column, the disc thickened and cleft at the base beneath the column; **column** 0.3 mm long, 0.6 mm wide, the anther apical, the stigma bilobed with the receptive surfaces extended laterally.

HAITI: Massif de la Hotte, Camp Perrin, southeast side of to the road to Jeremie, 1 Km south of the Rivière Glacé, alt. 850 m, 29 Apr. 1982, flowered in cultivation 22 July 1982, D. D. Dod 958 (Holotype: JBSD; Isotypes: AMES, MO, NY, SEL, US); C. Luer illustr. 12337; Formond, alt. 950 m, 2 May 1982, flowered in cultivation 2 Aug. 1982, D. D. Dod 959 (JBSD).



This minute species is apparently endemic on the Hotte Massif of Haiti. The tiny, red flowers are borne in a loose, distichous, simultaneously few-flowered raceme. The sepals are triangular and acute; the petals are setiform; and the lip, unique in the genus, is three-lobed with the protuberant middle lobe narrow and subclavate.

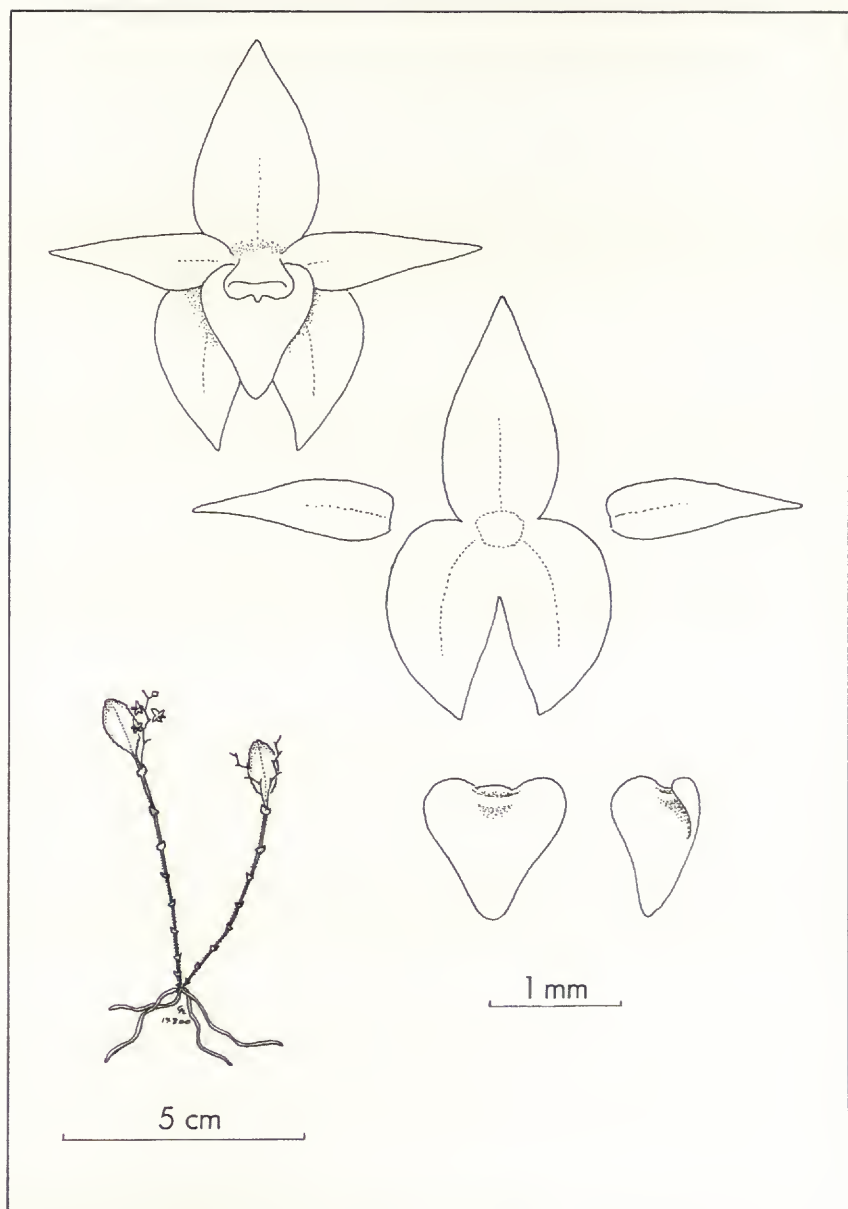
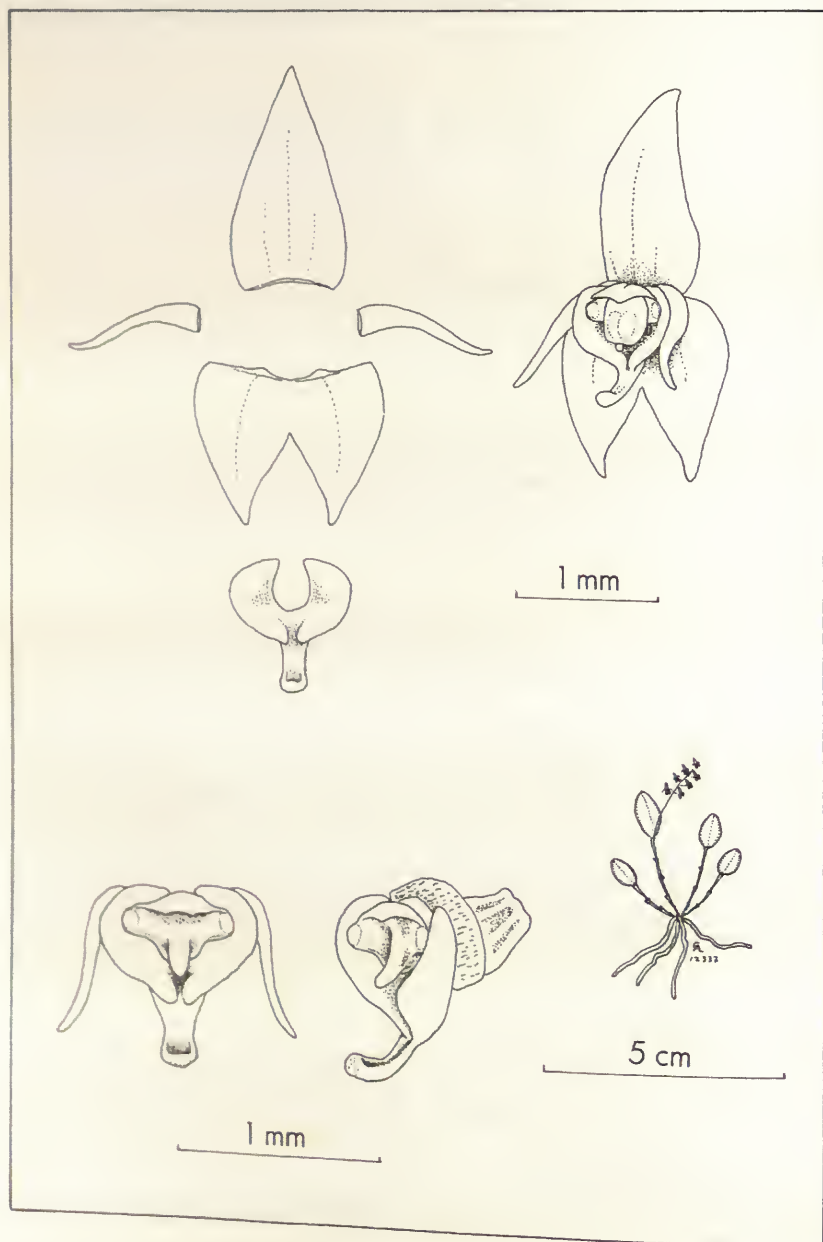


Plate 17. *Lepanthopsis hotteana* (Mansf.) Garay



***Lepanthopsis melanantha* (Reichb. f.) Ames, Bot. Mus. Leafl. 1: 19, 1933.**

Bas.: *Pleurothallis melanantha* Reichb. f., Flora 48: 275, 1865.

Ety.: From the Greek *melananthos*, "a black flower," referring to the color of the flowers.

Syn.: *Pleurothallis floripicta* Lindley, Mem. Amer. Acad. Arts 8: 219, 1861, *nomen*.

Ety.: From the Latin *floripictus*, "with colored flowers," referring to the dark colors.

Syn.: *Lepanthes harrisii* Fawc. & Rendle, J. Bot. 48: 5, 1909.

Ety.: Named in honor of William Harris, superintendent of the Jamaican botanical gardens.

Syn.: *Lepanthes brevipetala* Fawc. & Rendle, J. Bot. 48: 5, 1909.

Ety.: From the Latin *brevipetalus*, "with short petals," referring to the petals.

Syn.: *Lepanthopsis quisqueyana* Dod, Moscosoa 4: 155, 1986.

Ety.: Named for Quisqueya, an Indian name used by Dominicans for their country, meaning "the lovely land."

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-5 cm long, enclosed by 4-8 long-ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 12-25 mm long, 6-13 mm wide, the base cuneate into a petiole 2-4 mm long. **Inflorescence** a congested, distichous, simultaneously several-flowered raceme, up to 10 mm long, borne by a filiform peduncle 15-30 mm long, from near the apex of the ramicaul; floral bracts 0.75-1 mm long; pedicels 0.5-1 mm long; ovary 0.5 mm long, costate; **sepals** dark red-purple, glabrous, subcarinate, the dorsal sepal broadly ovate, obtuse, concave, 1.25-1.5 mm long, 1.25-1.5 mm wide, 3-veined near the base, free from the lateral sepals, the lateral sepals oblong, obtuse, 1.5-1.8 mm long, 0.8-1 mm wide, 1-veined, connate below the middle; **petals** oblong-obovate, obtuse, 0.5-0.6 mm long, 0.2-0.4 mm wide, without a visible vein; **lip** broadly cordate, 1 mm long, 1 mm wide, the apex obtuse to rounded, the basal lobes broadly rounded, embracing the column, the disc slightly concave with a distinct, shallow glenion just above the base; **column** 0.4 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

CUBA: without locality, 1860-64, *C. Wright* 3342 (Holotype: W; Isotypes: G, K).

HAITI: Plaine du Nord, Citadelle, *D. Dod* 1226 (JBSD).

DOMINICAN REPUBLIC: near Constanza, alt. 1250 m, 1909, *Türckheim* 3089; Cordillera Septentrional: Navarrete, Loma del Murazo, alt. 1083 m, 7 Mar. 1985, flowered in cultivation 20 Nov. 1985, *D. D. Dod* 1186 (JBSD, type of *L. quisqueyana*; AMES, MO, NY); Yaroa, *A. Liogier* 1123, 11299 (JBSD, NY); Cordillera Central: Monción, Monte Cristi, Lagunas de Cenobí, Río Cenobí, alt. 800 m, 22 June 1929, *E. L. Ekman* H-12966 (AMES, S); Monción, Río Toma, *D. Dod* 827 (JBSD); Piedra Blanca, Loma de Yautía, *D. Dod* 1201; Jarabacoa, Río Baiguat, *D. Dod* 1202 (JBSD); Río Bao, Mata Grande, *D. Dod* 1203; San José de Ocoa, *D. Dod* 1204 (JBSD; without locality, collected by *D. Dod*, flowered in cultivation in Santo Domingo, 28 May 1986, *C. Luer* 12292 (MO).

JAMAICA: without locality, *Harris* s.n.; Blue Mountains, alt. 5000 ft., Nov. 1881, *Morris* 17 (K).

USA: Florida: Collier Co., epiphytic on custard-apple in the Fahkahatchee Swamp, alt. ca. 3 m, Oct. 1964, *C. Luer* s.n. (photo).



This species is relatively frequent, variable in size and widely distributed in the moist forests on all the large islands of the Greater Antilles and rare in the Fahkahatchee Swamp of southern Florida.

Lepanthes melanantha is recognized by the small habit with long-ciliate, lepanthiform sheaths; a relatively short, distichous raceme of a few simultaneous, dark purple flowers usually surpassing the leaf in length; a broadly ovate, concave dorsal sepal; oblong lateral sepals connate below the middle; minute petals; and a broadly cordate, obtuse lip with a well-defined glenion.

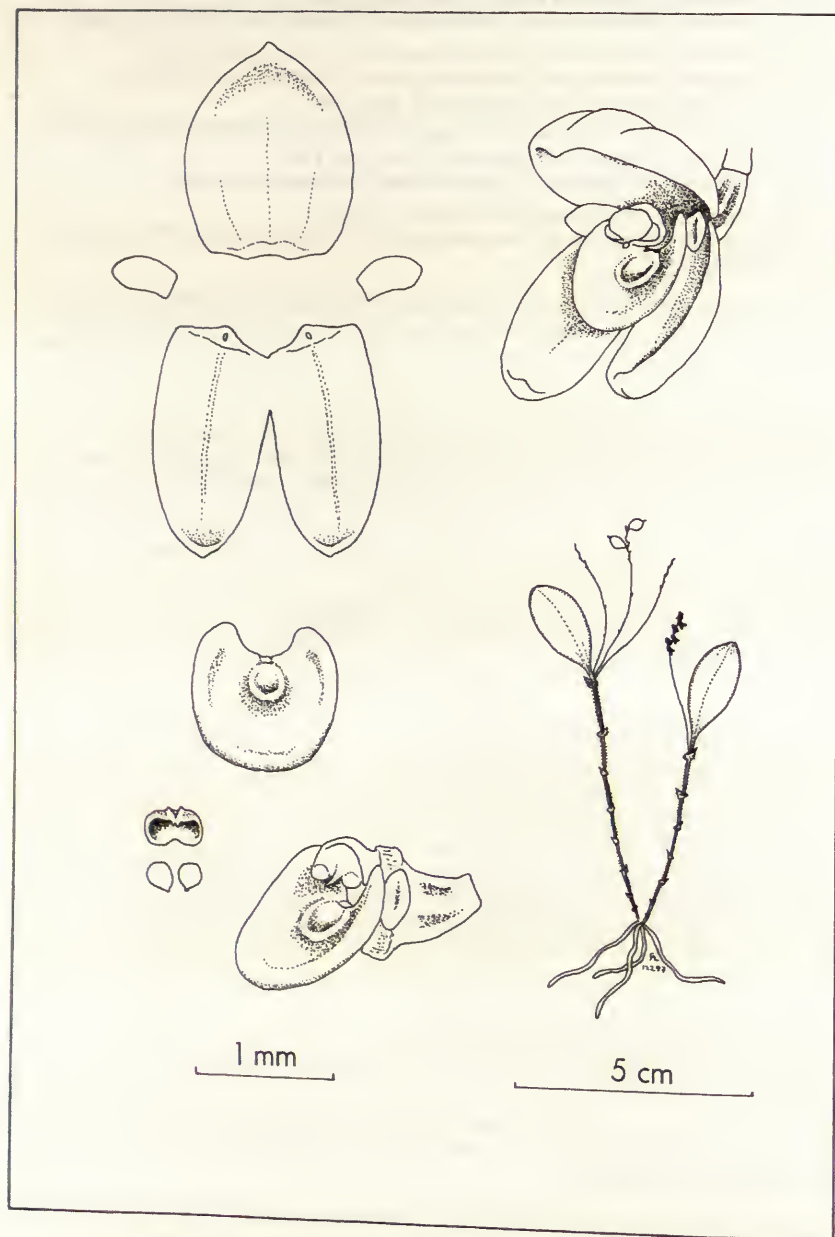


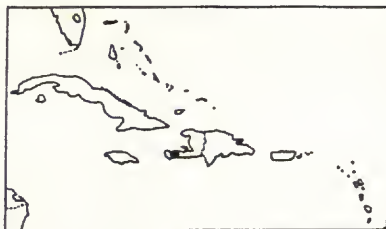
Plate 19. *Lepanthopsis melanantha* (Reichb. f.) Ames

***Lepanthopsis micheleae* Dod, Moscosoa 3: 119, 1984, as *michelii*.**

Ety.: Named in honor of Madame Michele Bennett de Duvalier, orchid enthusiast, interested in preserving the Massif de la Hotte in the National Park of Haiti.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-10 cm long, enclosed by 7-10 lepanthiform sheaths with dilated, ciliate ostia. **Leaf** erect, coriaceous, with the margins minutely denticulate, elliptical, subacute to obtuse, 18-38 mm long, 9-13 mm wide, the base cuneate into a petiole 4-8 mm long. **Inflorescence** a loose, distichous, lightly flexuous, simultaneously few-flowered raceme, up to 35 mm long including the capillary peduncle 10-15 mm long, from near the apex of the ramicaul; floral bracts 1-1.5 mm long; pedicels 1 mm long; ovary 0.8 mm long; flowers purple; **sepals** membranous, subcarinate, ovate, subacute, minutely ciliate, loosely long-pubescent toward the apices, sometimes glabrous, the dorsal sepal 2-2.5 mm long, 1.5 mm wide, 1-(3)-veined, essentially free from the lateral sepals, the lateral sepals free to the base, oblique, 2-2.5 mm long, 1.5 mm wide, 1-veined; **petals** ovate, acute, slightly acuminate, 1.5-1.75 mm long, 1 mm wide, 1-veined, microscopically ciliate toward the apex with a few hairs, sometimes glabrous; **lip** ovate-cordate, cellular-glandular, 1.75 mm long, 1.25 mm wide, the apex rounded with a narrowly grooved margin, the basal lobes rounded, embracing the column, the disc with a well-developed glenion at the base; **column** 0.5 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

HAITI: Massif de la Hotte, Les Cayes, epiphytic in broad-leaf forest, Formond, alt. 950 m, 5 May 1982, flowered in cultivation 19 Oct. 1982, *D. D. Dod* 917 (Holotype: JBSD; isotypes: AMES, MO, NY, US), C. Luer illustr. 14799; same area, Formond, alt. 1150 m, 1 Jan. 1983, flowered in cultivation 17 Oct. 1983, *D. D. Dod* 918 (JBSD); a glabrous form, *D. Dod* s.n. (MO), C. Luer illustr. 12294.



This species is one of the more distinct species of the genus found on the island of Hispaniola. It is endemic to one area, the Massif de la Hotte, in southwestern Haiti. It is readily identified by the large size (ramicauls up to 10 centimeters long); a loose, few-flowered inflorescence; sepals with long-pubescent apices; and an obtusely cordate lip with grooved margins. Occasional plants with totally hairless sepals and petals occur.

***Lepanthopsis moniliformis* Dod, Moscosoa 1: 47, 1977.**

Ety.: From the Latin *moniliformis*, "in the form of a necklace," referring to the ramicaul. Although *moniliform* implies contracted at intervals like a string of beads, the ramicauls seem dilated at intervals because of the inflated ostia of the lepanthiform sheaths.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-5 cm long, enclosed by 8-12 dark brown, lepanthiform sheaths with long-ciliate, markedly dilated ostia. **Leaf** erect, coriaceous, with the margins minutely denticulate, elliptical, subacute to obtuse, 12-22 mm long, 6-8 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a congested, distichous, strict, simultaneously many-flowered raceme in 2 opposite-facing ranks, up to 30 mm long including the capillary peduncle 10-15 mm long, from near the apex of the ramicaul; floral bracts 0.8 mm long; pedicels 0.4 mm long; ovary 0.4 mm long; flowers purple, glabrous; **sepals** membranous, subcarinate, ovate, acute, the dorsal sepal 1.8-2 mm long, 1-1.2 mm wide, 1-veined, essentially free from the lateral sepals, the lateral sepals 1.8 mm long, 0.6 mm wide, 1-veined, connate 0.75 mm to near the middle; **petals** elliptical-ovate, obtuse, 0.8 mm long, 0.5 mm wide, 1-veined; **lip** ovate-cordate, obtuse to rounded, cellular-glandular, 1.25 mm long, 0.8 mm wide, the basal lobes rounded, embracing the column, the disc with a well-developed glenion at the base; **column** 0.5 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

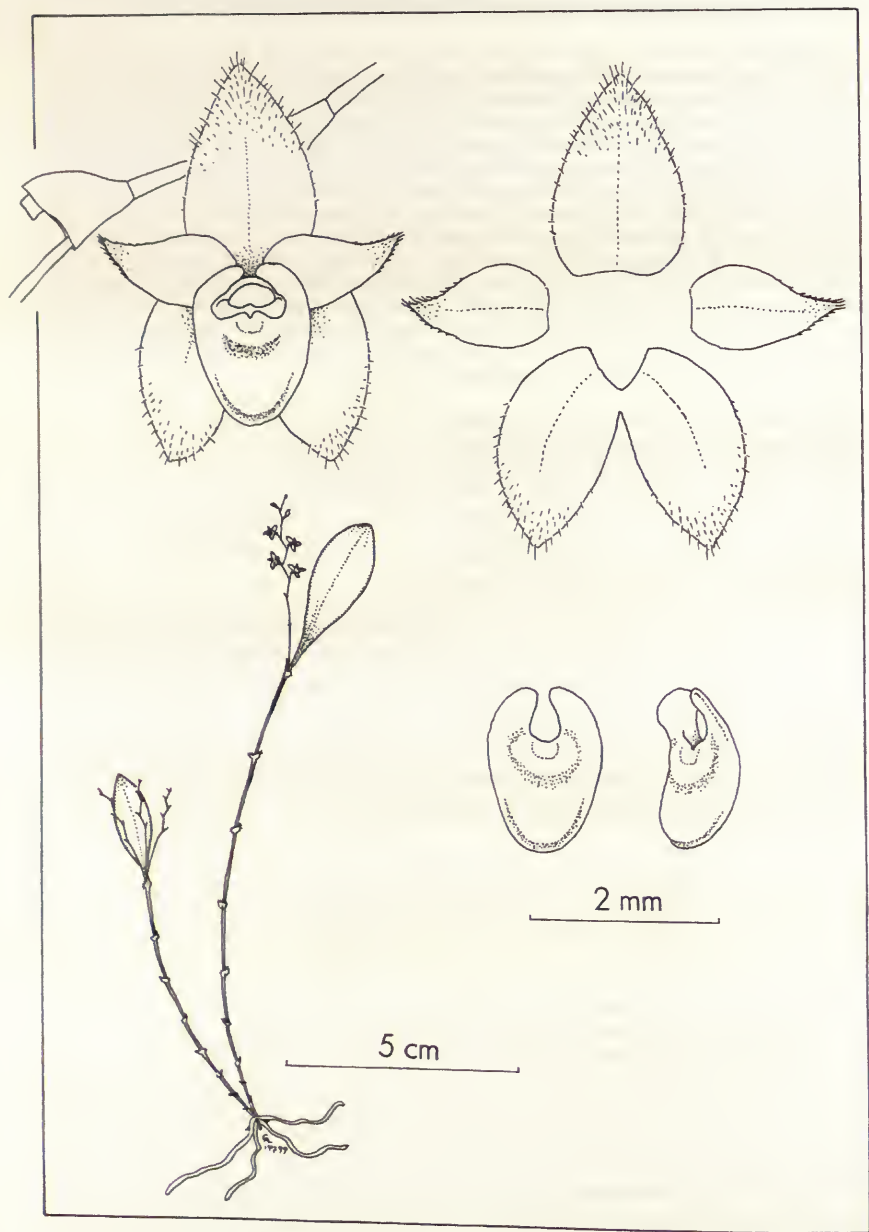
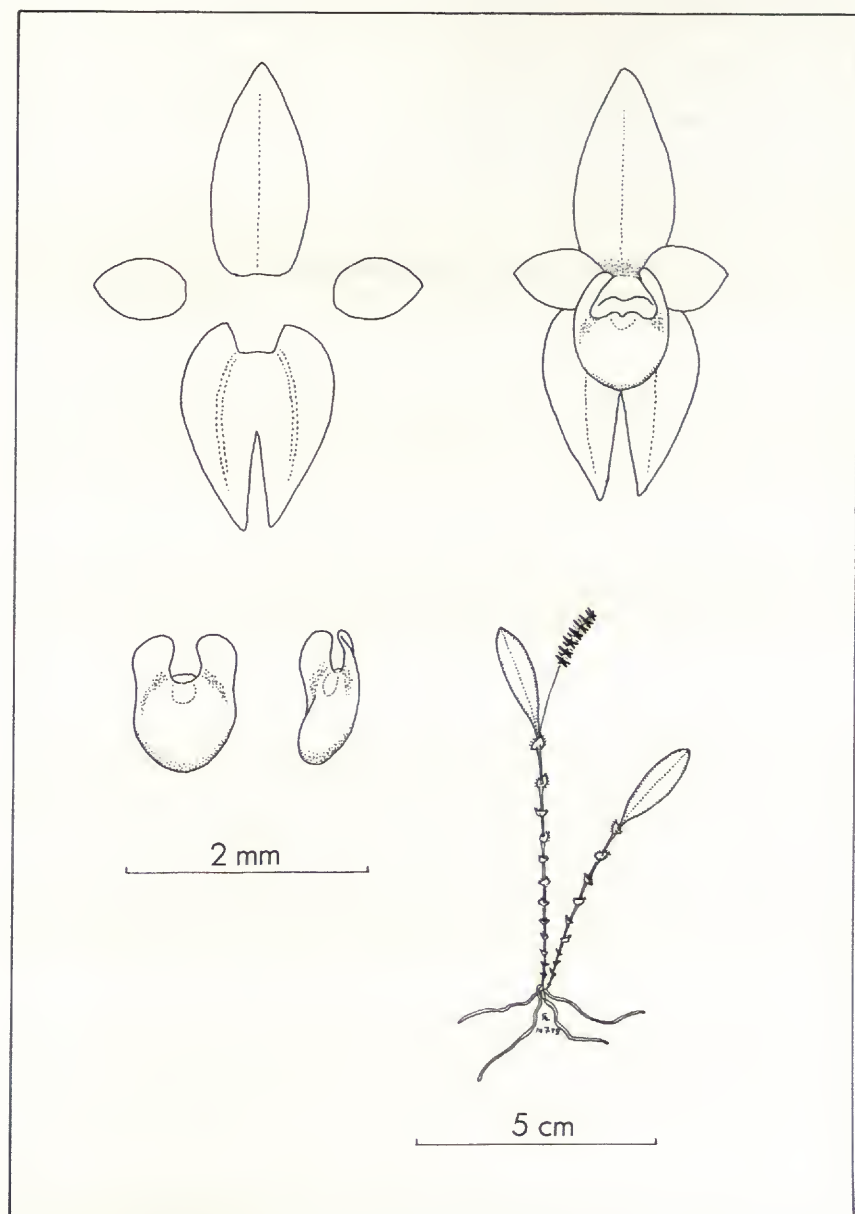


Plate 20. *Lepanthopsis micheleae* Dod

Plate 21. *Lepanthopsis moniliformis* Dod

DOMINICAN REPUBLIC: on old fallen tree in virgin forest, Argentina, Bretón, Polo, Barahona, alt. 1200 m, 13 Nov. 1976, flowered in cultivation 4 Jan. 1977, *D. D. Dod* 583 (Holotype: SDM; isotypes: AMES, NY, SEL, US), C. Luer illustr. 14798; epiphytic, between Los Pinos and Pueblo Viejo, Escondido, Duvergé, alt. 1300 m, 28 Mar. 1975, flowered in cultivation 16 Nov. 1976, *D. D. Dod* 586 (US); Zapotén Duvergé, 17 Apr. 1976, *D. D. Dod* 591; Sierra de Bahoruco, alt. 1700 m, 6 May 1986, C. Luer, J. Luer & *D. D. Dod* 12198, 12216 (MO).



This species is endemic in the Dominican Republic where it was discovered by Donald D. Dod. It is similar to *L. dodii*, but *L. moniliformis* differs in the numerous, dark sheaths of the ramicauls with markedly dilated and ciliate ostia. In common with several other species, the leaves are minutely, cellular-denticulate on the margins. The flowers are dark purple instead of yellow; the petals are obtuse instead of acute; and the apex of the lip is rounded.

***Lepanthopsis ornipteridion* Dod, Moscosoa 4: 152, 1986.**

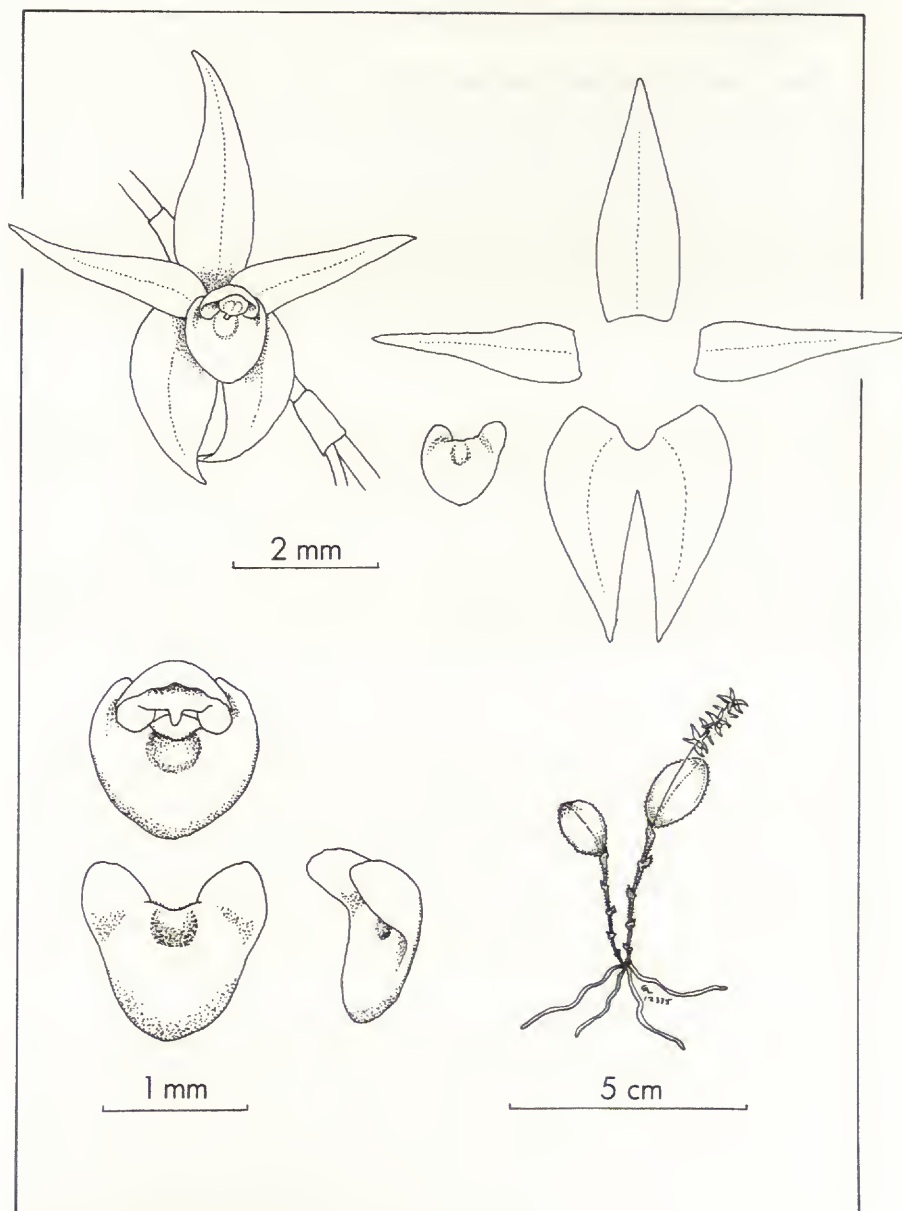
Ety.: From the Greek *ornipteridion*, "a little bird-wing," in allusion to the petals.

Plant small, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 2-4 cm long, enclosed by 6-8 coarsely ciliate, lepanthiform sheaths. Leaf erect, coriaceous, with the margins minutely denticulate, elliptical, subacute to obtuse, 2-3 cm long, 0.8-1.4 mm wide, the base cuneate into a petiole 1-1.5 mm long. Inflorescence a subcongested, distichous, simultaneously several-flowered raceme in 2 opposite-facing ranks, 3.5-10 cm long including the peduncle 1.5-2 cm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 1 mm long; ovary 0.6 mm long; flowers translucent purple, glabrous; sepals membranous, subcarinate, narrowly ovate, acute, the dorsal sepal 3.5-4.5 mm long, 1.25 mm wide, 1-veined, essentially free from the lateral sepals, the lateral sepals oblique, 3.5-4.5 mm long, 1.9 mm wide, 1-veined, connate 0.5 mm to near the middle; petals narrowly triangular-ovate, acute, slightly acuminate, 3 mm long, 0.8 mm wide at the base, 1-veined; lip ovate-cordate, obtuse, cellular-glandular, 1.2 mm long, 1.2 mm wide, the basal lobes obtuse, auriculate, embracing the column, the disc with a large, flat glenion at the base; column 0.5 mm long, 0.8 mm wide, the anther apical, the stigma bilobed, apical.

HAITI: Massif de la Hotte, Les Cayes, Formond, epiphytic in forest, alt. 1300 m, 5 May 1982, flowered in cultivation 3 June 1983, *D. D. Dod* 960 (Holotype: JBSD; Isotypes: AMES, MO, NY, US); C. Luer illustr. 12335; Formond, alt. 1650 m, 8 Jan. 1983, flowered in cultivation 20 Aug. 1984, *D. D. Dod* 961 (JBSD).



This species is apparently endemic on Hotte Massif of Haiti. The flowers are borne in a subdense, distichous, several-flowered raceme. The length of the raceme of the specimen illustrated is considerably shorter than its capacity as indicated by the type-specimen. The sepals and comparatively large petals are narrowly ovate, and the basal lobes of the cordate lip surround the column.

Plate 22. *Lepanthopsis ornipteridion* Dod

***Lepanthopsis peniculus* (Schltr.) Garay, Orchid J. 2: 468, 1954.**

Bas.: *Pleurothallis peniculus* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 110, 1920.

Ety.: From the Latin *peniculus*, "a little brush," referring to the appearance of the inflorescence.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-11 cm long, enclosed by 5-9 ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, narrowly elliptical, acute, 2-5.5 cm long, 5-6 mm wide, the base cuneate into a petiole 2-5 mm long. **Inflorescence** a subdense, simultaneously many-flowered raceme in 2 opposite ranks, up to 5 cm long, borne by a slender peduncle 8-15 mm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; **sepals** purple, glabrous, narrowly ovate, acute, long-acuminate, subcarinate, 1-veined, the dorsal sepal 6.5 mm long, 1.4 mm wide, barely connate to the lateral sepals, the lateral sepals 6 mm long, 1.2 mm wide, essentially free to the base; **petals** purple, broadly elliptical, obtuse, 1.3 mm long, 0.9 mm wide, 1-veined; **lip** purple, 3-lobed, 1.8 mm long, 1.3 mm wide across the basal lobes expanded, the apical lobe oblong with the apex rounded, 1 mm long, 0.5 mm wide, the basal lobes oblong-auriculate, about the same size as the apical lobe, the disc with a pair of erect lamellae at the base of the apical lobe; **column** 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

COLOMBIA: Dept. of Cauca: without locality, *M. Madero s.n.* (Holotype destroyed at B?). Dept. of Cundinamarca: cloud forest above Gutierrez, alt. 2700 m, 19 May 1984, *C. Luer, J. Luer & R. Escobar 10378* (MO). Dept. of Santander: headwaters of Quebrada Chiriviti, west of Galan, alt. 8900 ft., 8 Sept. 1944, *N. C. Fasset 25722* (AMES, US); epiphytic east of Bucaramanga toward Berlin, alt. 2880 m, 8 Nov. 1981, *C. Luer, J. Luer, R. Escobar & D. Portillo 6613* (SEL). Dept. of Tolima: above Río Cabrera, alt. 2400-3200 m, 10 Jan. 1883, *F. C. Lehmann 2367* (G, US).



The inflorescence of this species reminded Schlechter of a kind of little brush, the Latin "*peniculus*" (das Bürstchen). Perhaps he had a tiny bottle brush in mind. *Lepanthopsis peniculus* is uncommon, but widely distributed from southern to eastern Colombia. It is recognized by the large habit with long, narrow leaves; racemes of numerous purple flowers with widely spread, acuminate sepals; and a three-lobed lip with a pair of lamellae at the base of the middle lobe.

***Lepanthopsis pristis* Luer & Escobar, Orquideología 16(3): 27, 1986.**

Ety.: From the Greek *pristis*, "a sawfish," referring to the appearance of the inflorescence.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-6 cm long, enclosed by 6-9 lepanthiform sheaths, the ribs microscopically scabrous, the margins of the ostia coarsely ciliate. **Leaf** erect, coriaceous, elliptical, acute, 2-4 cm long, 0.9-1.3 cm wide, the base cuneate into a petiole 3 mm long. **Inflorescence** a dense, simultaneously many-flowered raceme in 2 opposite ranks, up to 2-3 cm long, borne by a filiform peduncle 3-5 cm long, from near the apex of the ramicaul; floral bracts 1 mm long; pedicels 0.5 mm long; ovary 0.75 mm long; **sepals** white, glabrous, subcarinate, the dorsal sepal ovate, acute, 3 mm long, 1.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblong, oblique, thickened at the subacute apex, 3.75 mm long, 1 mm wide, connate 1 mm, 1-veined; **petals** white, glabrous, suborbicular, obtuse, 0.8 mm long, 0.75 mm wide, 1-veined; **lar**, 1 mm long, 1 mm wide, the disc with a well-developed glenion at the base, the truncate base flanked by short, obtuse basal angles; **column** broad, 0.5 mm long, the anther apical, the stigma bilobed, apical.

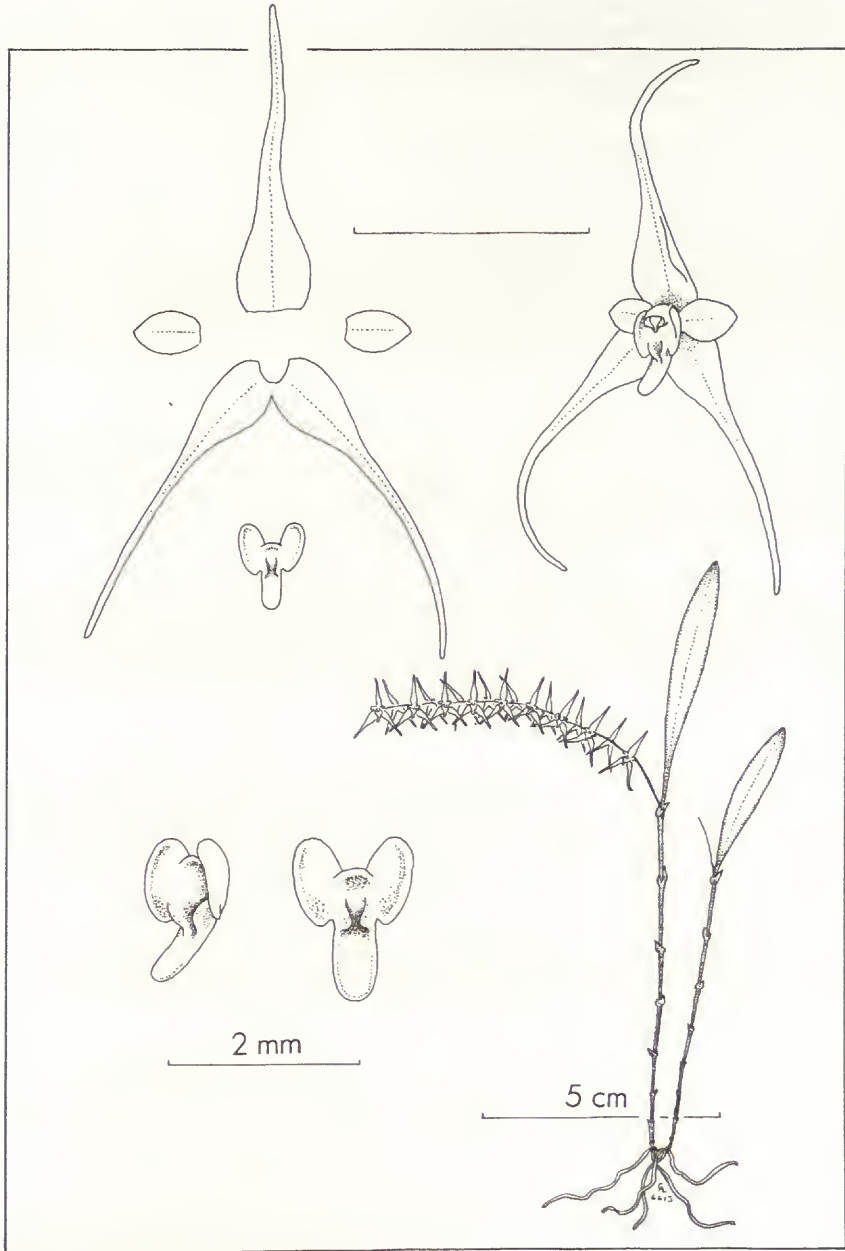


Plate 23. *Lepanthopsis peniculus* (Schltr.) Garay

COLOMBIA: Dept. of Antioquia: Munic. of Cocorná, Río Cocorná, alt. 1650 m, 21 Aug. 1984, R. Escobar, C. Head & E. Valencia 3383 (Holotype: MO), C. Luer illustr. 10466; flowered in cultivation by P. Jesup in Bristol, CT., 26 Apr. 1987, C. Luer 12887 (MO).

This species, presently known from only one locality in the Central Cordillera of Colombia, is distinguished from others in the genus by the snow white flowers, oblong lateral sepals free except at the base, and orbicular petals and lip. Vegetatively the plant is not remarkable. The raceme consists of two, opposite-facing rows of very close, evenly spaced, white flowers.



***Lepanthopsis prolifera* Garay, Orchid J., 2: 468, 1954.**

Ety.: From the Latin *proliferus*, "proliferate," referring to the habit of the plant.

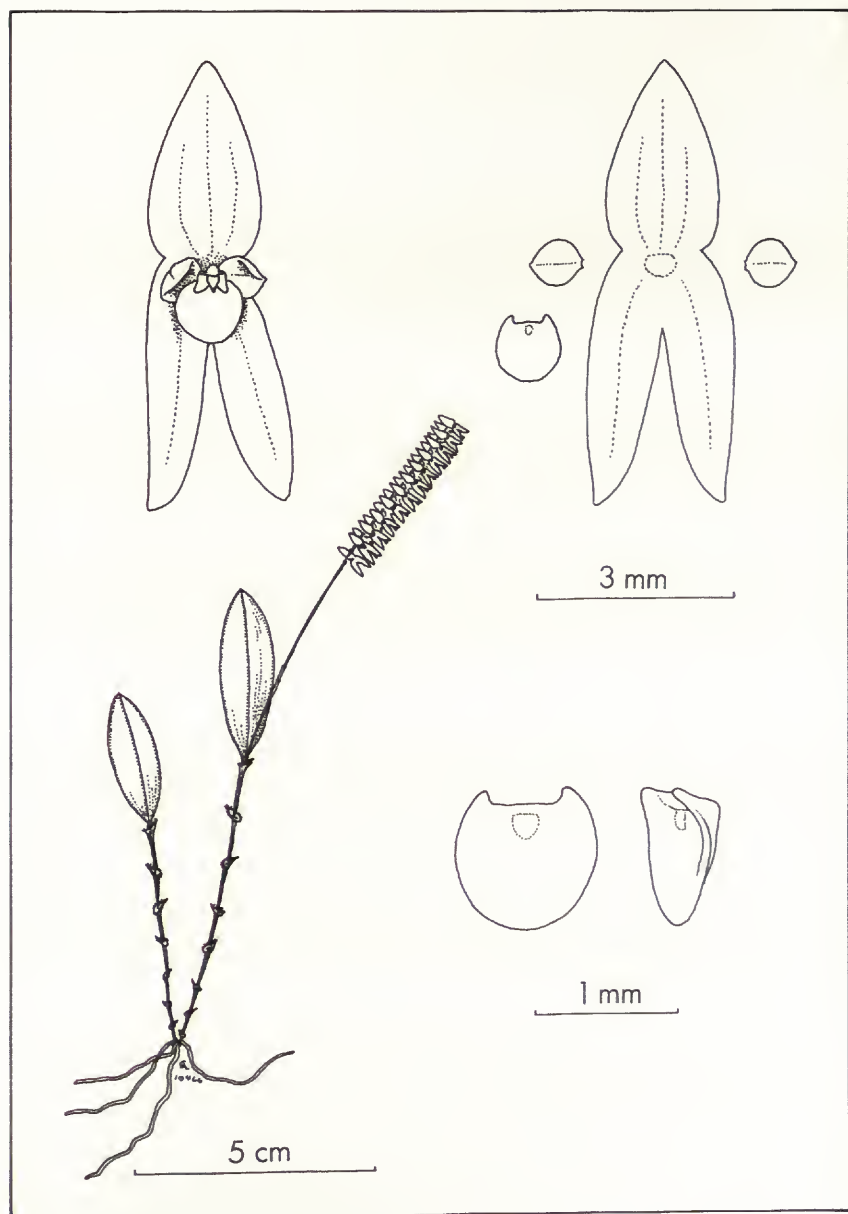
Plant medium in size for the genus, epiphytic, prolific; roots slender, from the apices of the ramicauls. Ramicauls erect, slender, 2-7 cm long or longer, enclosed by 4-8 minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 10-24 mm long, 3-5 mm wide, the base cuneate into a petiole 1-3 mm long. **Inflorescence** a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 12 mm long, borne by a filiform peduncle 10-12 mm long, from near the apex of the ramicaul; floral bracts 0.6 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; **sepals** appear to have been purple, glabrous, the margins of the laterals microscopically cellular-ciliate, subcarinate, ovate, acute, acuminate, the dorsal sepal 2-2.4 mm long, 1.4 mm wide, obscurely 3-veined at the base, the lateral sepals oblique, 2.5 mm long, connate 0.75 mm, 1.75 mm wide together, each 1-veined; **petals** broadly elliptical or suborbicular, obtuse, 0.75 mm long, 0.6 mm wide, without a visible vein; **lip** broadly cordate, 1 mm long, 1.25 mm wide, the apex obtuse, the basal lobes obtuse, embracing the column, the disc thickened centrally, with a circular concavity above the base as a prominent glenion, and with an inverted "V-shaped" concavity between the glenion and the apex; **column** 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

COLOMBIA: Dept. of Norte de Santander: Sarare, forest between Alto del Oro and Alto de Santa Inés, alt. 1800-2200 m, 18-21 Oct. 1941, J. Cuatrecasas, R. E. Schultes & E. Smith 12537 (Holotype: US; Isotype: AMES), C. Luer illustr. 14456; J. Cuatrecasas et al. 12593-C (US).

Although some species of *Lepanthopsis* are occasionally prolific, *L. prolifera* is the first of two species that have been discovered to be exclusively prolific. It is apparently endemic in the Eastern Cordillera of Colombia.

The inflorescence is a classical, congested, double-ranked raceme of little flowers with acuminate sepals. The laterals are connate to near the middle and the apices are more or less approximate. The lip is broadly cordate with a prominent glenion and a second cavity between the glenion and the apex. The margins of the lip are not thickened as illustrated by Garay.



Plate 24. *Lepanthopsis pristis* Luer & Escobar

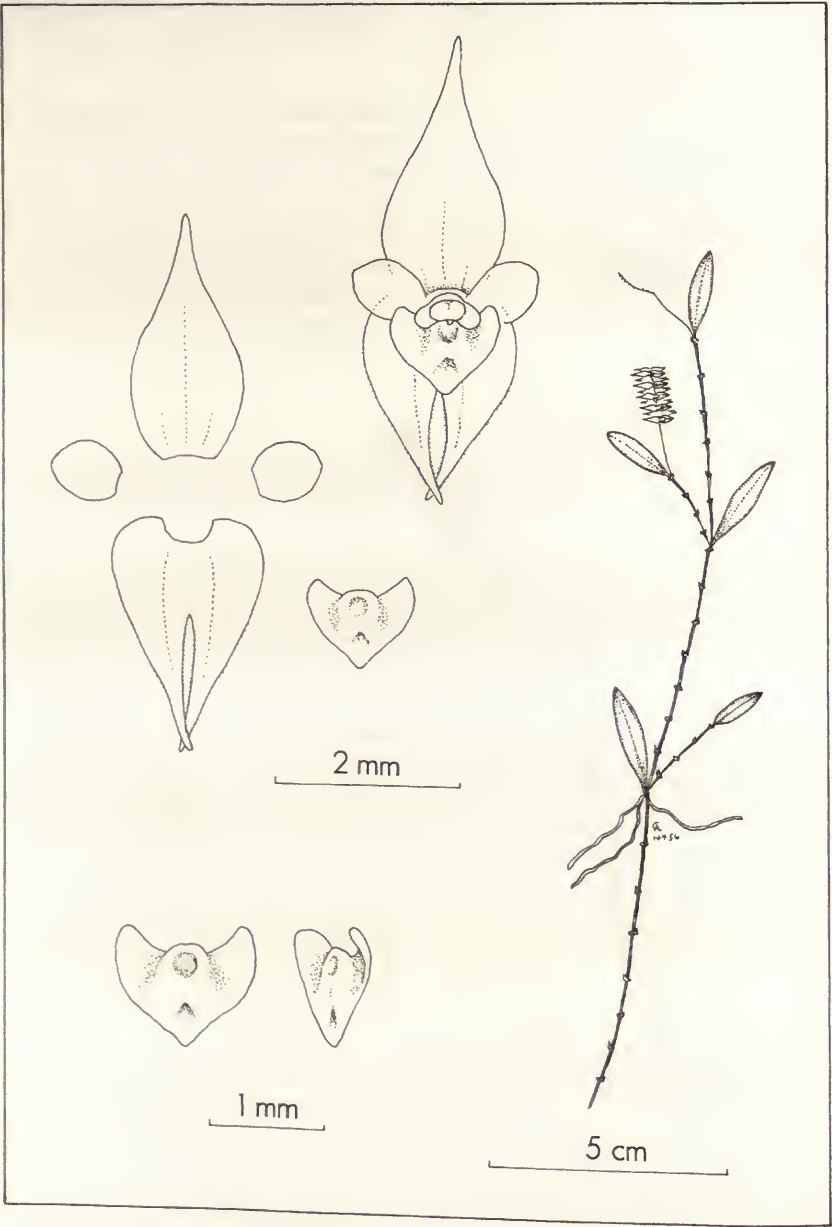


Plate 25. *Lepanthopsis prolifera* Garay

***Lepanthopsis pulchella* Garay & Dunsterville, Venez. Orchids Illustr. 3: 160, 1965.**

Ety.: From the Latin *pulchellus*, "pretty," referring to the appearance of the flowers.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-5 cm long, enclosed by 5-6 brown, minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, oblong-elliptical, obtuse, 10-20 mm long, 5-8 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a loose, simultaneously several-flowered, distichous raceme, 4-6 cm long, including the filiform peduncle 1 cm long, from near the apex of the ramicaul; floral bracts 0.75-1.25 mm long; pedicels 1 mm long; ovary 0.5 mm long; **sepals** translucent pale rose, glabrous, ovate, acute, acuminate, the dorsal sepal 2-5 mm long, 0.8-1.2 mm wide, 1-veined at the base, the apex thickened, the lateral sepals oblique, 2-4 mm long, 0.8-1.2 mm wide, 1-veined, connate at the base; **petals** translucent pale rose, elliptical, acute, lightly oblique, 1.5-2.5 mm long, 0.6-1 mm wide, 1-veined, the margins microscopically irregular; **lip** pale rose, suborbicular, slightly concave, cellular-glandular, 0.8-1 mm long, 0.8-1 mm wide, the basal lobes obtuse, embracing the column, the disc barely thickened at the base, fixed to the base of the column; **column** 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

VENEZUELA: Edo. Bolívar: Km 136 south of El Dorado, alt. 1200 m, Jan. 1964, G. C. K. & E. Dunsterville 849 (Holotype: AMES); same collection, J. A. Steyermark, G. C. K. & E. Dunsterville 9290 (AMES), C. Luer illustr. 14797; Auyan-tepui, Río Churún, alt. 1660 m, 12 May 1964, J. A. Steyermark 93776 (AMES); Road between Sta. Elena and Uairén, flowered in cultivation in Caracas, June 1976, G. C. K. Dunsterville s.n. (VEN), C. Luer illustr. 14549.



This species is apparently confined to southeastern Venezuela. Vegetatively it is indistinguishable from several of its near allies, but it is easily recognized by the loose, distichous raceme, longer than the leaf, of small, widely spread, simultaneous flowers. The ovate, acuminate sepals vary considerably in length; the petals are elliptical and acute; the lip is suborbicular with basal angles flanking the short, membranous column.

***Lepanthopsis pygmaea* C. Schweinf., Amer. Orchid Soc. Bull. 14: 518, 1946.**

Ety.: From the Latin *pygmaeus*, "pygmy," referring to the minute habit.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-12 mm long, enclosed by 3-5 minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, some margins microscopically subdenticulate, elliptical, subacute to obtuse, 7-11 mm long, 3-5 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, simultaneously several-flowered raceme in 2 opposite ranks, up to 6 mm long, borne by a filiform peduncle 10-15 mm long, from near the apex of the ramicaul; floral bracts 0.5 mm long; pedicels 0.5 mm long; ovary 0.4 mm long; **sepals** pale yellow, glabrous, ovate, acute, the dorsal sepal 1.2 mm long, 0.8 mm wide, 1-veined (with traces of lateral veins at the base) barely connate to the lateral sepals, the lateral sepals 1.3 mm long, 0.45 mm wide, 1-veined, connate 0.5 mm, 0.9 mm wide together; **petals** broadly elliptical, obtuse, 0.5 mm long, 0.3 mm wide; **lip** light yellow, suborbicular-cordate, cellular-glandular, 0.6 mm long, 0.6 mm wide, the apex broadly obtuse or rounded, the base with obtuse lobes to either side of the column, the disc with a central depression above a horseshoe-shaped callus at the base; **column** 0.3 mm long and broad, the anther apical, the stigma bilobed, apical.

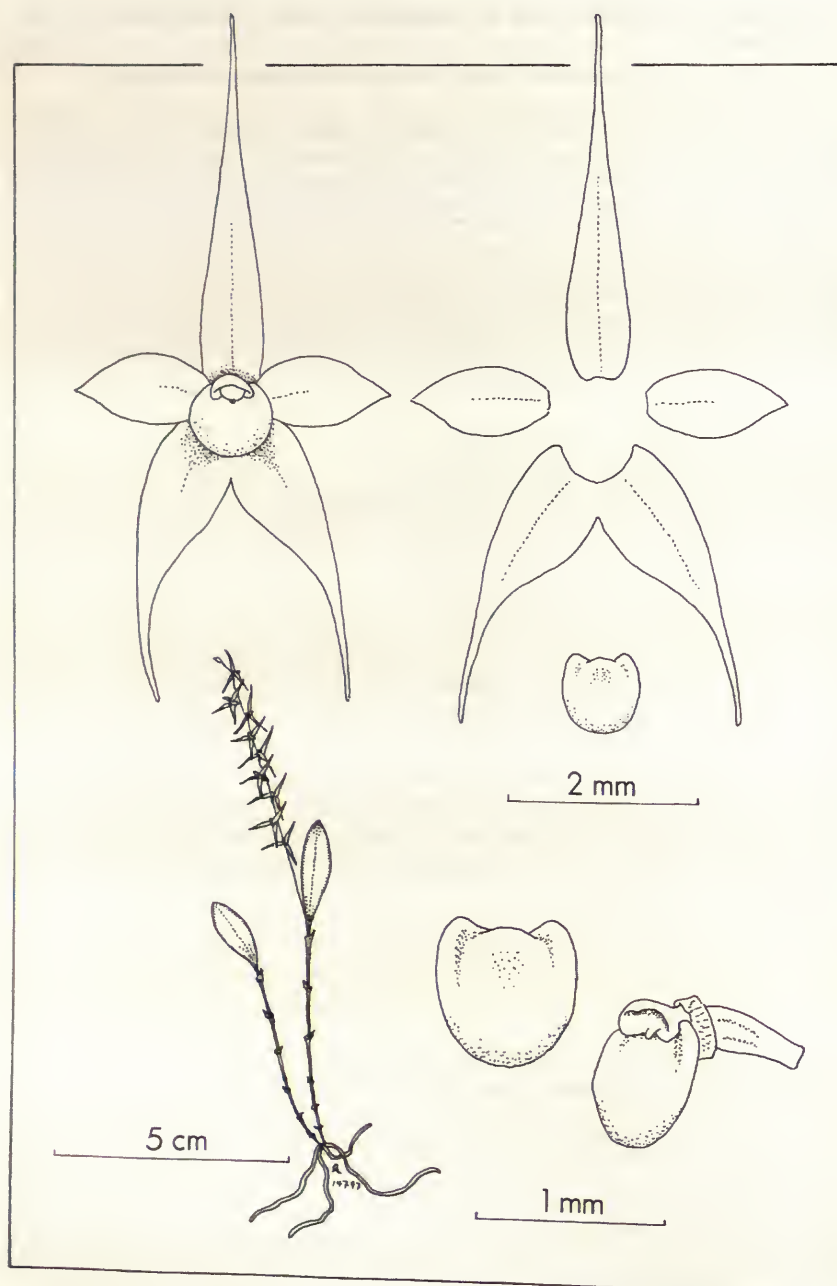
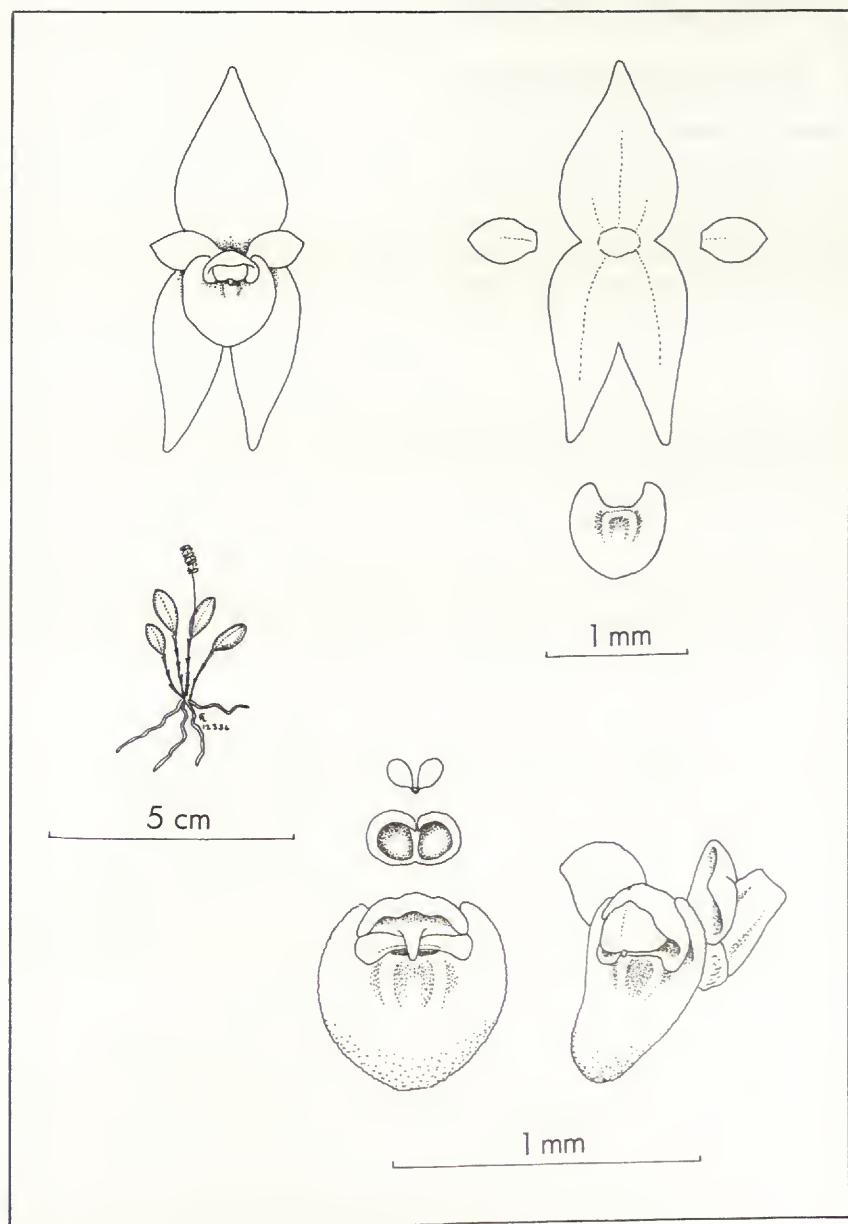


Plate 26. *Lepanthopsis pulchella* Garay & Dunsterv.

Plate 27. *Lepanthopsis pygmaea* C. Schweinf.

HAITI: Rivière Glace, 8 May 1944, J. T. Curtis 52 (Holotype: AMES); Formond #6, 2 Aug. 1982, D. Dod s.n. (MO), C. Luer illustr. 12336.



This tiny species is apparently endemic in the mountains of Haiti. The flowers are almost identical to those of *L. culiculosa* known from the Oriente of Ecuador and Peru. The isolated *L. pygmaea* is identified by the very small habit with a dense raceme of minute flowers in two ranks borne by a peduncle that barely surpasses the leaf in length. The margins of some of the leaves exhibit the minute denticulations seen on so many pleurothallids from Hispaniola. Dillon's drawing shows them, but they are not mentioned by Schweinfurth. Vegetatively, *L. pygmaea* is less than half the size of *L. culiculosa*.

The sepals of both species are ovate, only a little more than a millimeter in length; the obtuse petals are less than half a millimeter long; and the rounded, cordate lip has an inverted, U-shaped callus at the base. The latter feature is not noted in Schweinfurth's description and Dillon's drawing of *L. pygmaea*, made from dried material. However, it is plainly visible on the lip of pickled material from Dod's collection. The lip with callus is essentially the same on both the Haitian and Ecuadorian plants. I assume that the simple flowers of these two taxa have evolved independently, and only by chance look so much alike.

***Lepanthopsis serrulata* (Cogn.) Hespeneheide & Garay, Caldasia 10: 233, 1968.**

Bas.: *Lepanthes serrulata* Cogn., in Urban, Symb. Antill. 6: 694, 1910.

Ety.: From the Latin *serrulatus*, "serrulate," referring to the margins of the leaves.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-4 cm long, enclosed by 4-6 lepanthiform sheaths with the ribs and dilated ostia ciliate. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 15-20 mm long, 9-12 mm wide, minutely denticulate on the margins, the base cuneate into a petiole 1.5-2 mm long. **Inflorescence** a congested, simultaneously many-flowered raceme in 2 opposite ranks, 3.5-5.5 cm long including the filiform peduncle 1-3 cm long, from near the apex of the ramicaul; floral bracts 0.5-1 mm long; pedicels 1 mm long; ovary 0.5 mm long, costate; sepals membranous, rose or light green veined in purple, glabrous, subcarinate, the dorsal sepal transversely ovate to suborbicular, the apex broadly obtuse to rounded, 1.75 mm long, 1.75 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals ovate, oblique, subacute to obtuse, 1.75 mm long, connate to near the middle into a suborbicular, bifid lamina 1.75 mm wide, each 1-veined; petals rose, broadly ovate, subacute to obtuse, 0.3 mm long, 0.3 mm wide, without a visible vein; lip purple, suborbicular to broadly cordate with the apex rounded, 1.5 mm long, 1.5 mm wide, the base with obtuse lobes embracing the column, the disc slightly concave with a prominent, circular glenion at the base; column 0.5 mm long and broad, the anther apical, the stigma bilobed, apical.

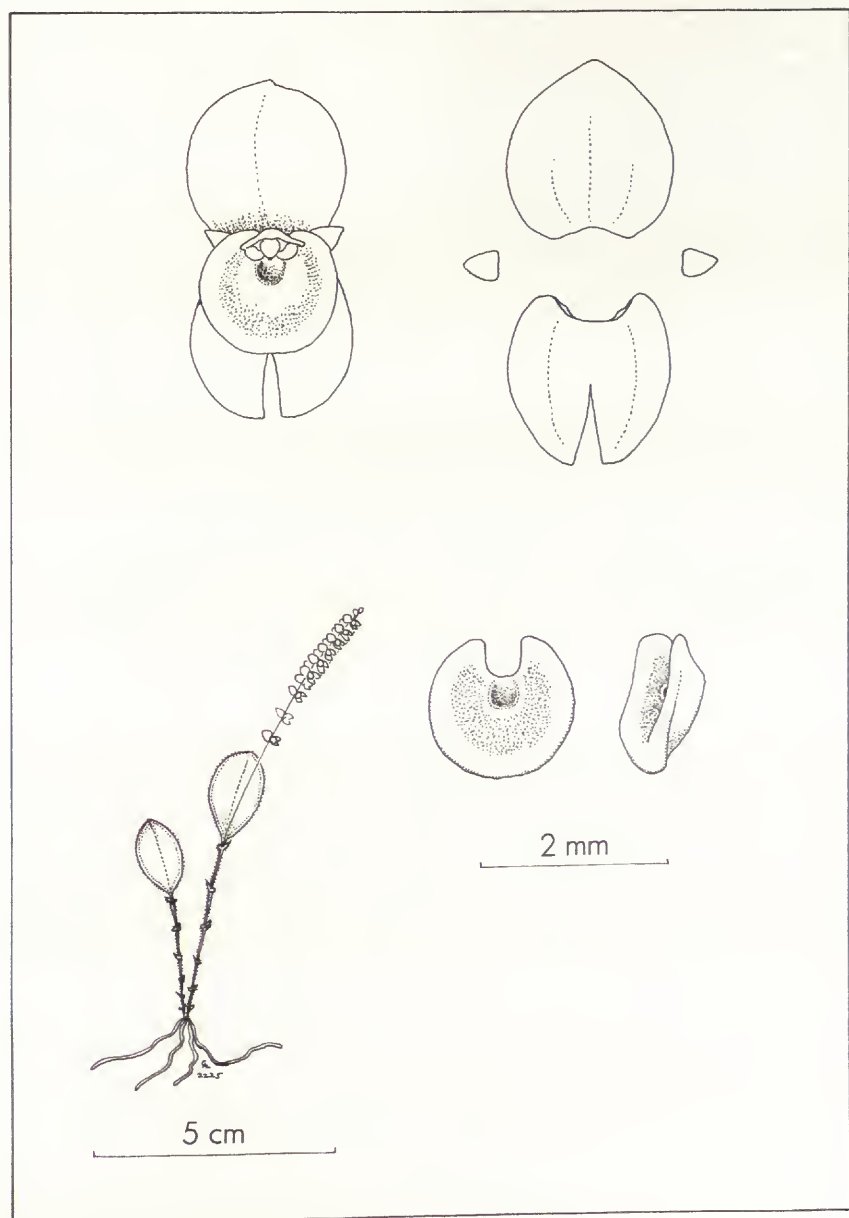
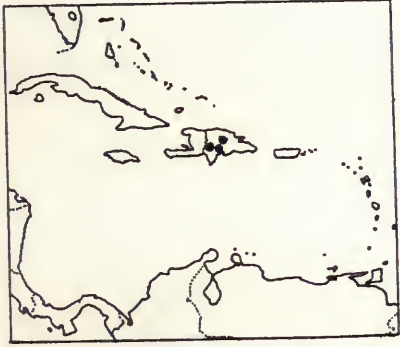


Plate 28. *Lepanthopsis serrulata* (Cogn.) Hespenheide & Garay

DOMINICAN REPUBLIC: epiphytic in forest near Constanza, alt. 1250 m, *H. von Türckheim* 3232 (Holotype: ?); Río Grande on the New Road to Valle Nuevo, alt. 1400 m, 16 July 1955, *J. Jiménez* 2995 (US); Santiago, Río Bao at Los Montones, 27 Mar. 1961, *J. Jiménez* 4434 (US); Jarabacoa: Ciénaga de Manabao, Tablones River, alt. 1000 m, 10 Dec. 1969, *A. H. Liogier* 17189 (AMES, NY); Jarabacoa, collected by D. Dod, flowered in cultivation by P. & A. Jesup, 18 Nov. 1977, *C. Luer* 2225 (SEL); Polo, near the Haitian border, Mar. 1969, collected by P. Jesup, D. Dod & C. Withner, flowered in cultivation 16 June 1991, *P. Jesup* s.n. (MO).



This species is infrequent and endemic in the Dominican Republic. It is most closely related to the frequent *L. anthoetnium*. In habit, the two species are indistinguishable with their minutely serrulate leaves, and the flowers are also basically similar.

Lepanthopsis serrulata is distinguished by the suborbicular dorsal sepal, and the lateral sepals connate into a similar but bifid synsepal. The lip is comparatively large and suborbicular, nearly as wide as the dorsal sepal. A prominent, circular glenion is present at the base.

Lepanthopsis stellaris Dod, *Moscoso* 1: 54, 1978.

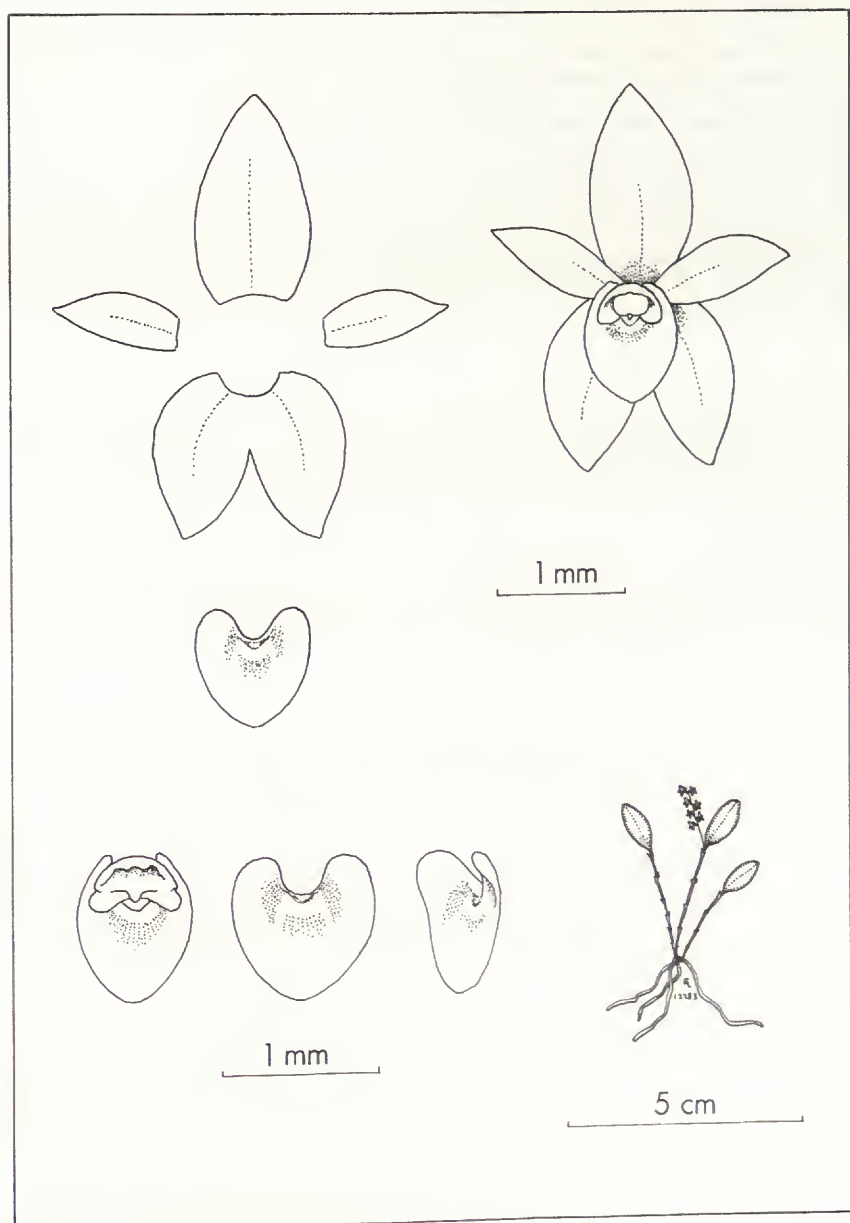
Ety.: From the Latin *stellaris*, "like a star," in allusion to the appearance of the flower.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-3 cm long, enclosed by 5-6 lepanthiiform sheaths with the ostia microscopically ciliate. **Leaf** erect, coriaceous, with the margins lightly denticulate, elliptical, obtuse, 7-11 mm long, 4-5 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, distichous, lightly flexuous, simultaneously several-flowered raceme, 10-20 mm long including the peduncle 5 mm long, from near the apex of the ramicaul; floral bracts 0.75 mm long; pedicels 1 mm long; ovary 0.4 mm long; flowers translucent purple, glabrous; **sepals** membranous, subcarinate, ovate, acute to subacute, the dorsal sepal 1.5 mm long, 1 mm wide, 1-veined, essentially free from the lateral sepals, the lateral sepals oblique, 1 mm long, 0.75 mm wide, 1-veined, connate 0.25 mm to below the middle; **petals** ovate, acute, slightly acuminate, 1 mm long, 0.5 mm wide, 1-veined; **lip** ovate-cordate, with the apex obtuse to rounded, 1 mm long, 1 mm wide, the basal lobes rounded, embracing the column, the disc with a shallow glenion at the base; **column** 0.4 mm long, 0.5 mm wide, the anther apical, the stigma bilobed, apical.

DOMINICAN REPUBLIC: Constanza: El Convento, Loma Prieta, epiphytic in cloud forest, alt. 1600 m, 20 Feb. 1976, *D. D. Dod* 630 (Holotype: SDM; Isotypes: AMES, NY, SEL, US); same area, alt. 1450 m, 16 Nov. 1974, *D. D. Dod* 461 (SDM); flowered in cultivation, *C. Luer* 12283 (MO).



This rare species is apparently endemic in the mountains of southwestern Dominican Republic. The purple flowers are borne in a subdense, distichous, lightly flexuous, several-flowered raceme. The sepals and comparatively large petals are widely spread and ovate. The basal lobes of the cordate lip embrace the column.

Plate 29. *Lepanthopsis stellaris* Dod

***Lepanthopsis steyermarkii* Foldats, Acta Bot. Venez. 3: 356, 1968.**

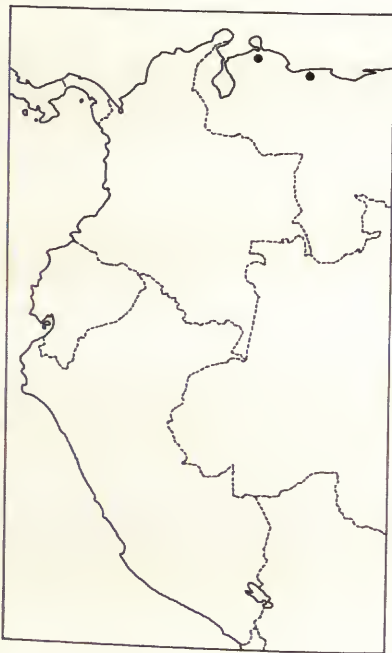
Ety.: Named in honor of Julian A. Steyermark who discovered this species among numerous others.

Plant small, epiphytic, prolific; roots slender from the apices of the ramicauls. Ramicauls erect, slender, 1-3 cm long, enclosed by 3-5 minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 10-15 mm long, 3-5 mm wide, the base cuncate into a petiole 1-2 mm long. **Inflorescence** a loose, simultaneously few-flowered raceme in 2 opposite ranks, up to 20 mm long including the filiform peduncle 3-4 mm long, from near the apex of the ramicaul; floral bracts 0.5-0.75 mm long; pedicels 0.75 mm long; ovary 0.5 mm long; **sepals** translucent greenish white, more or less suffused with rose, glabrous, subcarinate, ovate, subacute, slightly acuminate, the dorsal sepal concave, 1.2-1.7 mm long, 0.9 mm wide, 3-veined, the lateral sepals oblique, 1.2-1.4 mm long, 0.8 mm wide, connate 0.5 mm, 1-veined; **petals** broadly elliptical, subacute, 0.6 mm long, 0.5 mm wide, 1-veined; **lip** purple, microscopically cellular-glandular, broadly cordate, 0.6 mm long, 0.7 mm wide, the apex obtuse, the basal lobes rounded, embracing the column, the disc thickened centrally, with a circular concavity above the base; **column** 0.3 mm long and broad, the anther apical, the stigma bilobed, apical.

VENEZUELA: Edo. Falcón: Sierra San Luis, alt. date, *Julian A. Steyermark* 99218 (Holotype: VEN). Dist. Fed.: between Colonia Tovar and El Limón, alt. 1500 m, July 1971, *G.C.K. Dunsterville* 1190; El Zumbador, La Grita, collected by J. M. Wubben, flowered in cultivation in Rading, Holland, 4 Sept. 1984, *C. Luer* 10447 (MO).

Lepanthopsis steyermarkii and *L. prolifera* are the only two species of the genus known to be exclusively prolific. The former is apparently endemic in coastal Venezuela. It was first discovered by the late Dr. Julian Steyermark, noted for his extensive field work and botanical research in both North and South America.

The inflorescence is a short, loose, double-ranked raceme of tiny flowers with ovate sepals. The laterals are connate to near the middle and the apices are spread. The lip is broadly cordate with a prominent cavity above the base and basal lobes embracing the column.



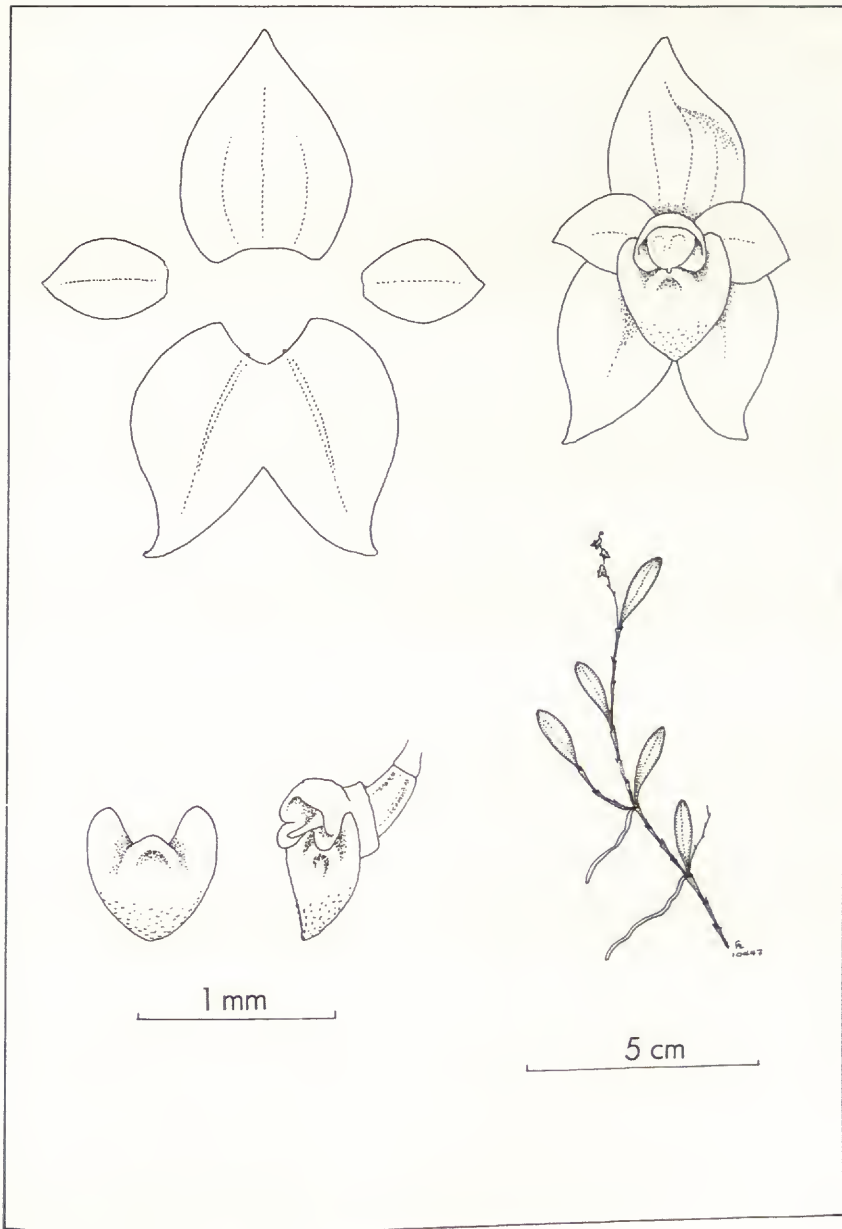


Plate 30. *Lepanthopsis steyermarii* Foldats

Lepanthopsis ubangii Luer, sp. nov.

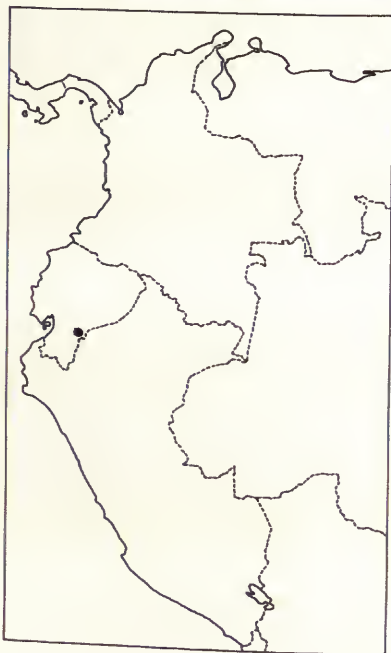
Ety.: Named for the large, platelike lip reminiscent of the practice of the Ubangi tribe.

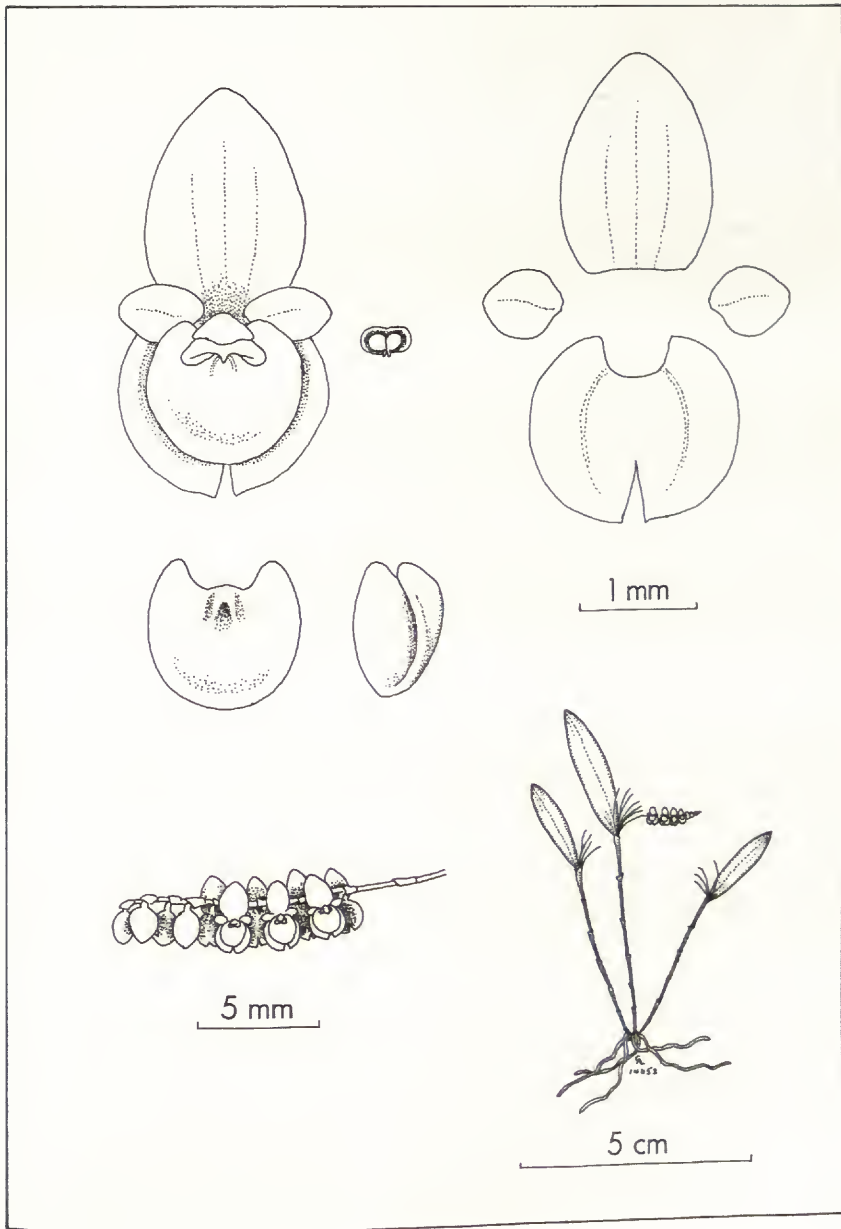
Planta mediocris, inflorescentia congesta disticha abbreviata, labello rotundato pro flore proportione magno.

Plant medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-4 cm long, enclosed by 5-7 blackish, minutely ciliate-scabrous, lepanthiform sheaths. Leaf erect, coriaceous, narrowly elliptical, acute, 15-25 mm long, 5-6 mm wide, the base cuneate into a petiole 1 mm long. Inflorescence a congested, simultaneously several flowered raceme in 2 opposite ranks, up to 10 mm long, borne by a filiform peduncle 10 mm long, from near the apex of the ramicaul; floral bracts 0.8 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; sepals dark purple, glabrous, subcarinate, the dorsal sepal ovate, obtuse, 1.8 mm long, 1.25 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals semi-orbicular, obtuse, approximate, 1.6 mm long, 1 mm wide, 1-veined, connate 0.75 mm, forming a round, bifid lamina 2 mm wide; petals dark purple, glabrous, broadly ovate, obtuse, 0.6 mm long, 0.6 mm wide, 1-veined; lip purple, rounded, 1.25 mm long, 1.25 mm wide, the apex rounded, the base broadly cordate with obtuse lobes embracing the column, the disc with a forked callus above the base, concave between the prongs of the callus; column 0.25 mm long, 0.5 mm broad, the anther apical, the stigma bilobed, apical.

ECUADOR: Prov. of Zamora-Chinipe: Cordillera del Condor, epiphytic in forest east of Los Encuentros, alt. 1800 m, 22 Jan. 1989, C. Luer, J. Luer, P. Jesup & A. Jesup 14053 (Holotype: MO).

To date this species has been found on only one occasion in the Cordillera del Condor of southeastern Ecuador. Although basically similar to most of the other species of the genus in Ecuador, especially *L. abbreviata* with the tiny flowers in a very short inflorescence, *L. ubangii* is readily identified by the proportionately large, round lip that is nearly as large as the round synsepal behind. The disc of the lip bears a bifid callus at the base, concave between the branches of the callus.



Plate 31. *Lepanthopsis ubangii* Luer

***Lepanthopsis vinacea* C. Schweinf., Bot. Mus. Leafl. 18: 109, 1958.**

Ety.: From the Latin *vinaceus*, "wine-colored," referring to the color of the flowers.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-9.5 cm long, enclosed by 4-9 lepanthiform sheaths with the ostia ciliate. **Leaf** erect, coriaceous, elliptical, subacute, 15-25 mm long, 9-11 mm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, simultaneously many-flowered raceme in 2 opposite ranks, up to 45 mm long, borne by a filiform peduncle 15-35 mm long, from near the apex of the ramicaul; floral bracts 0.5 mm long; pedicels 0.25 mm long; ovary 0.5 mm long; **sepals** bright purple to red-brown, cellular-glandular, ovate, subacute, shortly acuminate into thickened, narrowly obtuse apices, subcarinate, the dorsal sepal 2.5-3 mm long, 1.25 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals 2.5-3 mm long, 0.75 mm wide, 1-veined, connate 0.5 mm; **petals** similarly colored, broadly elliptical, obtuse, 0.6 mm long, 0.5 mm wide, 1-veined; **lip** purple, broadly cordate, 0.75 mm long, 0.85 mm wide, the apex broadly obtuse or rounded, the base with obtuse lobes to either side of the column, the disc with a central depression above a curved callus across the base; **column** 0.5 mm long, 0.5 mm broad, the anther and the bilobed stigma apical.

VENEZUELA: Edo. Bolívar: Ptáritepui, alt. 1600-2000 m, 17 Dec. 1952, B. Maguire & J. Wurdack 33866 (Holotype: AMES); forest 110 Km south of El Dorado, July 1957, G. C. K. Dunsterville 425; 125 Km south of El Dorado, alt. 1155 m, 25 Dec. 1963, J. Steyermark, G. C. K. & E. Dunsterville 92184 (AMES, VEN); Auyantepui, alt. 1660 m, 12 May 1964, J. Steyermark 93776 (VEN); Cerro Uei, 120 Km south of El Dorado, alt. 865-1050 m, 27 Dec. 1970, J. Steyermark, G. C. K. & E. Dunsterville 104559 (VEN); Meseta de Jaua, alt. ca. 1950 m, May 1974, G. C. K. Dunsterville s.n. (VEN).
ECUADOR: Prov. of Morona-Santiago: forest north of Gualaquiza, alt. 1600 m, 17 May 1988, C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13418 (MO), same area, alt. 1800 m, 30 Jan. 1986, S. Dalström & T. Höijer 1118 (MO); ; Cordillera del Condor, east of Guismé, 20 Jan. 1989, C. Luer, J. Luer, P. Jesup & A. Jesup 14010 (MO). Prov. of Napo: El Chaco, alt. 1500 m, A. Hirtz 912 (SEL), C. Luer illustr. 9168. Prov. of Zamora-Chinchipe: Cordillera del Condor east of Los Encuentros, alt. 1600 m, 4 Feb. 1987, C. Luer, J. Luer & A. Hirtz 12627 (MO).



This species, originally described from a Venezuelan collection, occurs frequently in the Oriente of Ecuador. Dunsterville included several forms of the flowers in his second illustration of *L. vinacea* in *Orchids of Venezuela*, An Illustrated Field Guide.

Lepanthopsis vinacea is recognized by the small to medium-sized habit; congested racemes of numerous, purplish flowers in two opposite ranks about twice as long as the leaf; shortly acuminate, narrowly obtuse sepals; short, obtuse petals; and an obtuse, broadly cordate lip.

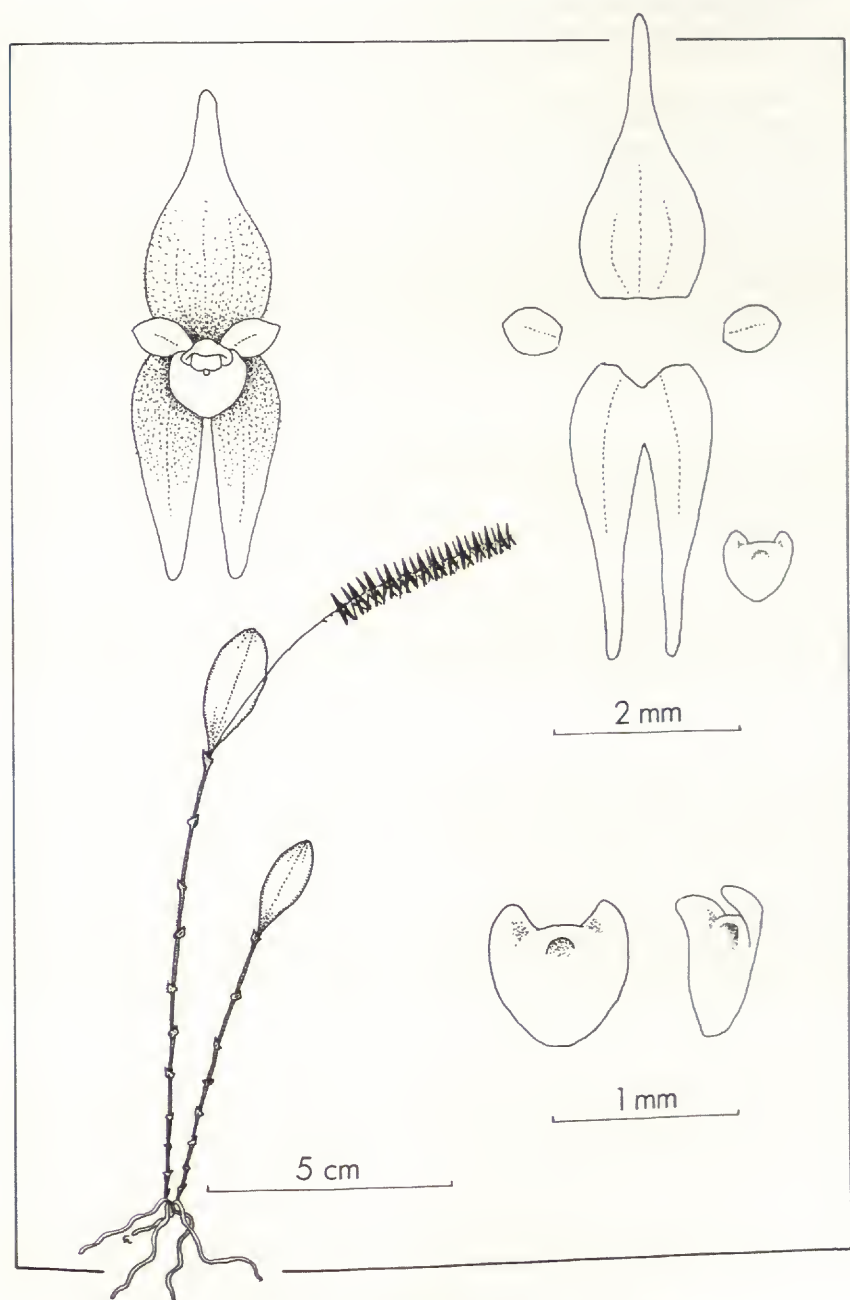


Plate 32. *Lepanthopsis vinacea* C. Schweinf.

***Lepanthopsis apoda* (Garay & Dunsterville) Luer, comb. nov.**

Bas.: *Pleurothallis apoda* Garay & Dunsterville, Venez. Orch. Ill. 3: 246, 1965.

Ety.: From the Greek *apoda*, "without a foot," referring to the footless column.

Syn.: *Trichosalpinx apoda* (Garay & Dunsterville) Luer, *Phytologia* 54: 394, 1983.

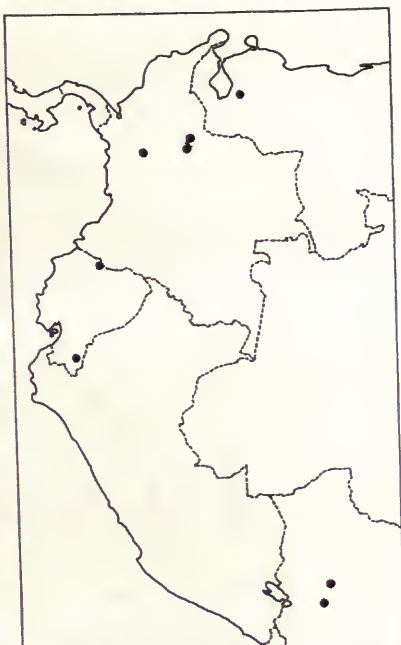
Plant small, epiphytic, caespitose; roots slender. Ramicauls erect to suberect, slender, 2-4.5 cm long, enclosed by 4-5 brown, closely fitting, minutely scabrous-spiculate, ribbed sheaths with thickened margins. **Leaf** green, more or less suffused with purple on veins and margins, erect, coriaceous, narrowly elliptical, acute, 20-28 mm long, 3.5-5 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a single, successive flower; peduncle less than 4-6 mm long, from near the apex of the ramicaul; floral bract 2-2.5 mm long; pedicels 2-3 mm long; ovary 1.5-2.5 mm long; **sepals** yellow to light red-orange, glabrous, the dorsal sepal ovate-triangular, acute, 5-7 mm long, 2-2.25 mm wide, 3-veined, connate only basally to the lateral sepals, the lateral sepals connate to near the middle into a deeply concave synsepal, 5-7 mm long, 4-6 mm wide expanded, the apex bifid, acute; **petals** ovate, acute, long-acuminate, 4-6 mm long, 1.5-2.5 mm wide; **lip** orange, suborbicular-subcordate, 2.5-2.75 mm long, 2-2.25 mm wide, the apex broadly obtuse to rounded, the basal lobed broadly rounded, surrounding the column, the disc lightly concave above a transverse callus across the base, inflexibly attached to the base of the column; **column** stout, terete, 0.5-0.6 mm long, the anther apical, the stigma apical, entire, transverse.

VENEZUELA: Edo. de Trujillo; epiphytic in dwarf rain forest, between Boconó and Guaramacal, alt. 9000-9500 ft., Feb. 1961, G. C. K. Dunsterville 596 (Holotype: AMES).

COLOMBIA: Dept. of Antioquia: Munic. of El Carmen, above San Lorenzo, alt. 2500 m, 21 Mar. 1989, C. Luer, J. Luer & W. Teague 14333 (MO). Dept. of Santander: epiphytic in scrub vegetation above Guaca, alt. 2700 m, 6 Mar. 1981, C. Luer & R. Escobar 6600 (SEL); cloud forest east of Bucaramanga toward Berlin, alt. 3000 m, 7 May 1984, C. Luer, J. Luer, R. Escobar & E. Valencia 10192 (MO).

ECUADOR: Prov. of Carchi: El Mirador, alt. 3300 m, between Julio Andrada and Playón de San Francisco, Aug. 1990, A. Hirtz, X. Hirtz, J. del Hierro & F. Sarmiento 4935 (MO). Prov. of Zamora-Chinchipe: epiphytic in scrubby trees above Valladolid, alt. ca. 2500 m, Feb. 1979, C. Luer, J. Luer & A. Hirtz 4119 (SEL).

BOLIVIA: Dept. of La Paz: Prov. of Nor Yungas, Hda. Simaco above the way to Tipuani, alt. 1400 m, Mar. 1920, O. Buchtien 5083 (US); east of Chuspipata above Yolasa, alt. 1850 m, 21 Jan. 1988, C. Luer, J. Luer, R. Vásquez, J. Solomon, T. & D. Mulder & A. Vogel 12909 (MO).



Exactly where to place this widely distributed Andean species in the classification of the Pleurothallidinae has been a problem, and I am not certain that it has been settled yet. The single-flowered inflorescence is an exception in any of the three lepanthiform genera. The morphology of the petals, lip and column eliminate *Lepanthes* from consideration.

The lip is rounded with large basal lobes that surround the column, and the base is inflexibly attached to the base of the column. The column is short, cylindrical and footless with an apical anther and rostellum and an apical, entire stigma. These characters seem to associate this species best with those brought together in subgenus *Microlepanthes* of *Lepanthopsis*. However, it is difficult to disqualify *Trichosalpinx* completely, because a short, cylindrical and footless column is also found in the few, aberrant species treated in subgenus *Pseudolepanthes* of *Trichosalpinx*. The latter species have a hinged lip with an assortment of calli on the disc.

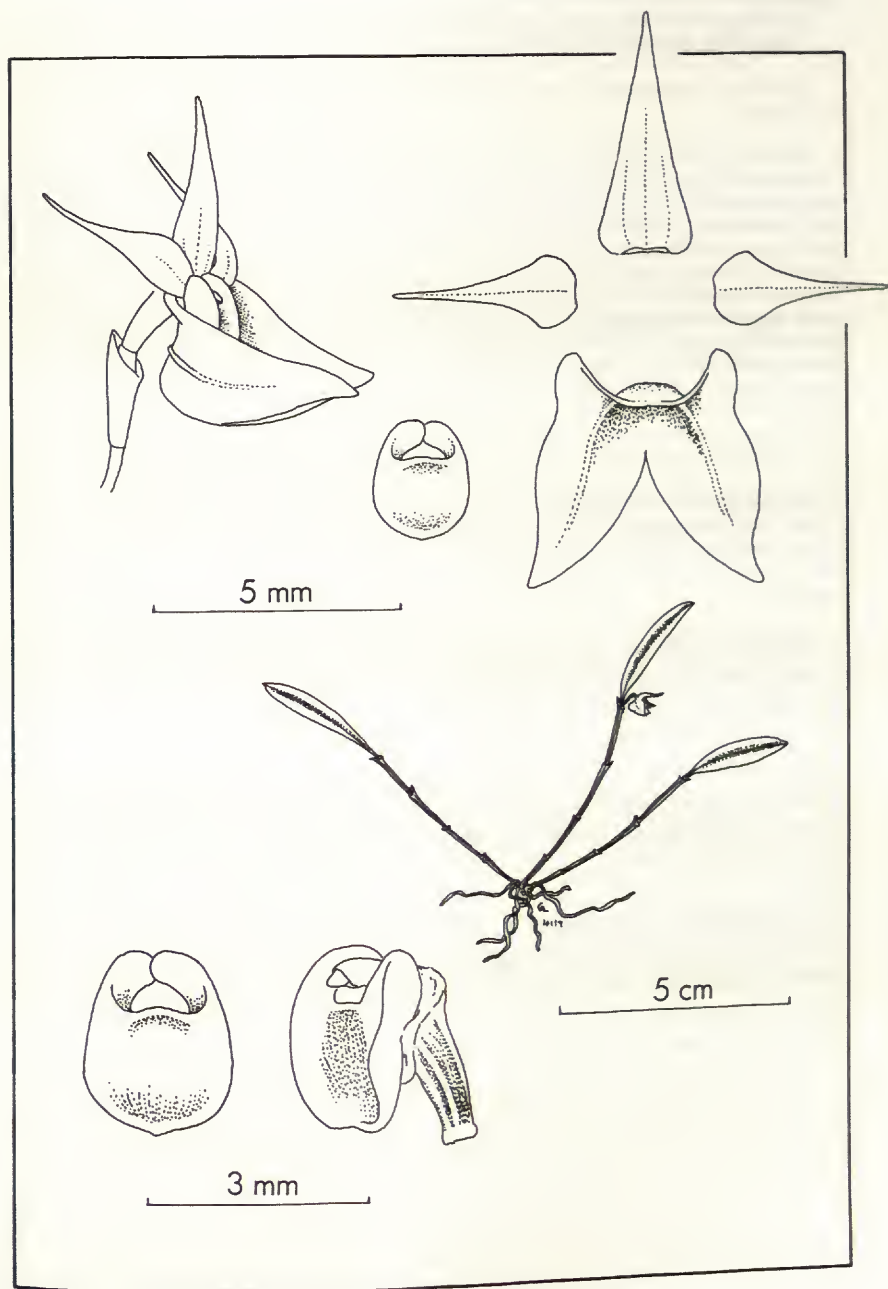


Plate 33. *Lepanthopsis apoda* (Garay & Dunsterv.) Luer

***Lepanthopsis comet-halleyi* Luer, sp. nov.**

Ety.: Named for Halley's Comet that shone so brightly in the early morning sky at Monteverde at the time this species was discovered.

Species haec *Lepanthopsis microlepanthis* (Griseb.) Ames affinis, sed labello obovoideo bilobo differt.

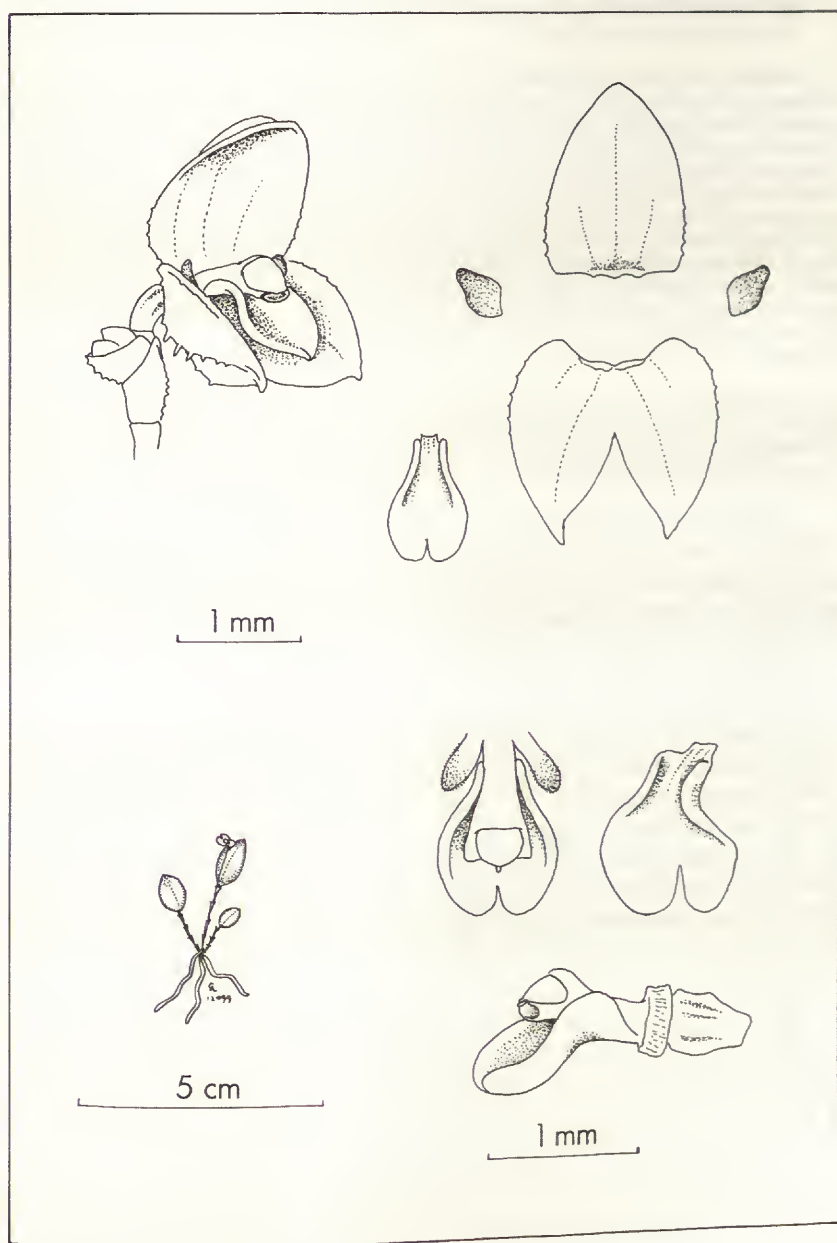
Plant very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 7-15 mm long, enclosed by 3-6 minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 5-11 mm long, 4-7 mm wide, the base cuneate into a twisted petiole 0.5 mm long. **Inflorescence** a congested, successively few-flowered raceme, up to 3 mm long, borne by a filiform peduncle 6-8 mm long, from near the apex of the ramicaul; floral bracts 0.75 mm long; pedicels 0.75 mm long; ovary 0.5 mm long, carinate; **sepals** red-brown, subcarinate, sparsely spiculate along the ribs, the dorsal sepal ovate, obtuse, concave, 1.6 mm long, 1.2 mm wide, 3-veined above the base, barely connate to the lateral sepals, the lateral sepals ovate, acute to subacute, 1.6 mm long, 1 mm wide, 2-veined at the base, connate below the middle; **petals** thick, microscopically pubescent, ovate, oblique, obtuse, 0.4 mm long, 0.4 mm wide, without a visible midvein; **lip** fleshy, cellular-glandular, obovoid-pyriform, concave, 1 mm long, 1 mm wide, the apex cleft into 2 rounded lobes, the margins below the middle incurved and embracing the column, base narrowly cuneate, inflexibly attached to the base of the column; **column** stout, terete, 0.75 mm long, 0.4 mm broad, the anther apical, the stigma apical and entire.

COSTA RICA: Prov. of Puntarenas: epiphytic in fallen branches along the road to the Monteverde forest preserve, alt. 1500 m, 18 March 1986, C. Luer, J. Luer & D. Dod 12099 (Holotype: MO).

This little species was discovered growing with *Lepanthes comet-halleyi* Luer on fallen branches of large trees along the trail to the Monteverde forest preserve in Costa Rica. Its closest relative appears to be the minute *Lepanthopsis microlepanthes* from the islands of the Greater Antilles.

Lepanthopsis comet-halleyi is distinguished by the lip cleft into a pair of round, apical lobes. The column with the dorsal anther and the entire, apical stigma is the same in both species.



Plate 34. *Lepanthopsis comet-halleyi* Luer

***Lepanthopsis farrago* (Luer & Hirtz) Luer, comb. nov.**

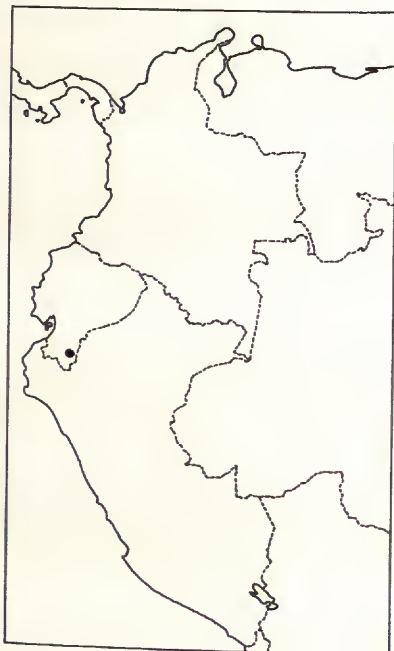
Bas.: *Trichosalpinx farrago* Luer & Hirtz, Die Orchidee 37: 141, 1986.

Ety.: From the Latin *farrago*, "a mixture, a hodgepodge," referring to the unusual combination of morphological features.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-4 cm long, enclosed by 3-6 closely fitting, ribbed sheaths with the margins of the ostia thickened and minutely ciliate. **Leaf** erect, coriaceous, narrowly elliptical, acute, 12-25 mm long including the 2-3 mm long petiole, 3-5 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a distichous, subdense, simultaneously several- to many-flowered raceme, 2-5.5 cm long including the filiform peduncle less than 1 cm long, from near the apex of the ramicaul; floral bracts 2 mm long; pedicels 1 mm long; ovary costate, 0.4 mm long; **sepals** yellow, glabrous, carinate, ovate with acute, thickened apices, free except at the bases, 1-veined, the dorsal sepal concave, 2 mm long, 1.2 mm wide, the lateral sepals 2 mm long, 1 mm wide; **petals** cuneate, 1 mm long, 0.8 mm wide, 1-veined, the subtruncate apex broadly obtuse with the margin thickened; **lip** thick, suborbicular, concave, 0.6 mm long, 0.75 mm wide, the apex rounded with a broad, short apiculum, the base broadly truncate with a broad, flat callus, inflexibly attached to the base of the column; **column** stout, terete, 0.8 mm long, the anther apical, the stigma subapical and entire.

ECUADOR: Prov. of Zamora-Chinipe: epiphytic in scrubby trees in paramo east of Yangana, alt. 3200 m, 22 Mar. 1985, C. Luer, J. Luer, A. Hirtz & W. Flores 10779 (MO).

When first described, it was not clear to which genus this species should be assigned. The lepanthiform-sheathed ramicauls indicated one of three genera: *Lepanthes*, *Lepanthopsis*, or *Trichosalpinx*, and the petals transverse and thickened at the apex suggested *Stelis*. At that time I excluded *Lepanthopsis* because of the short, stout, terete column with an apical anther and single-lobed stigma. In the meantime, I have discovered that these criteria are shared by a small group of species with features most closely resembling those of *Lepanthopsis microlepanthes*.



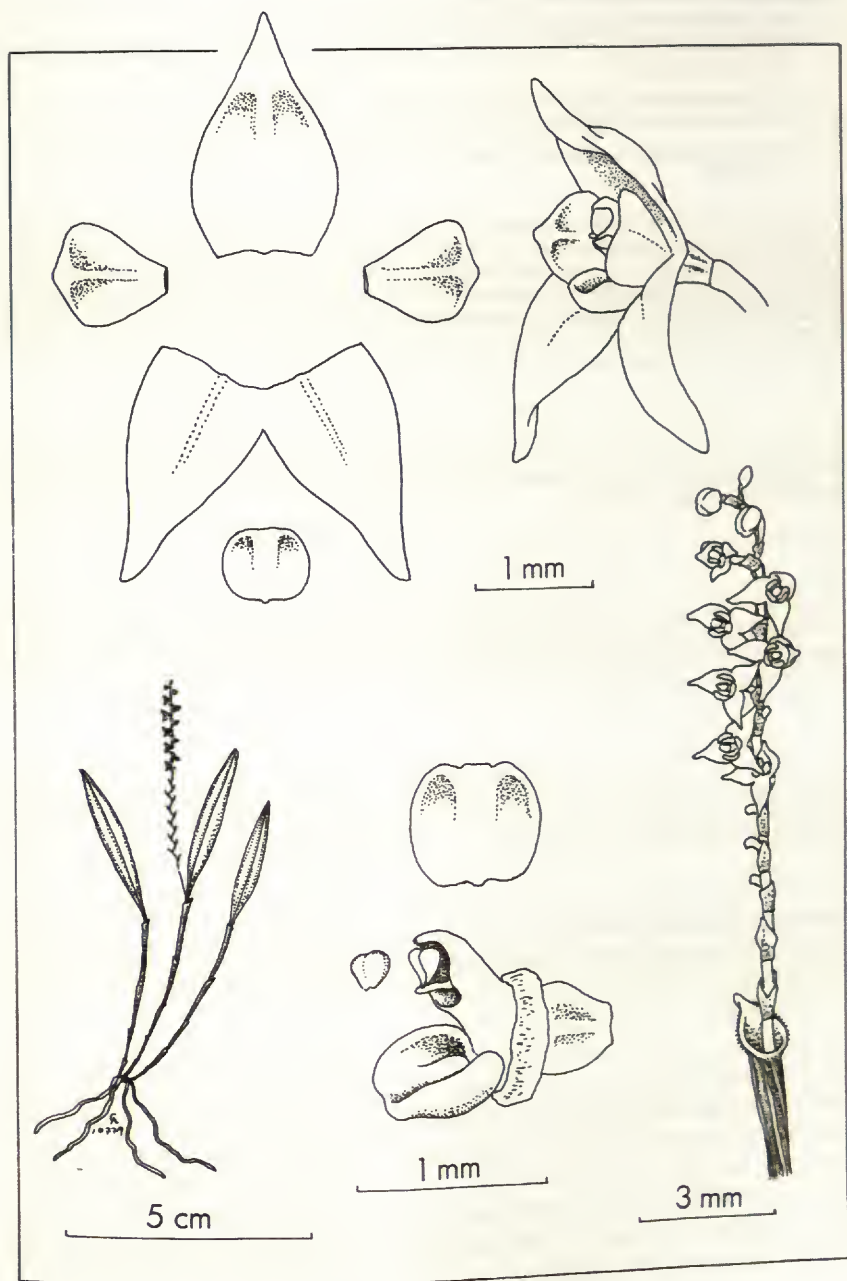


Plate 35. *Lepanthopsis farrago* (Luer & Hirtz) Luer

***Lepanthopsis microlepanthes* (Griseb.) Ames, Bot. Mus. Leaf. 1(9): 24, 1933.**

Bas.: *Pleurothallis microlepanthes* Griseb., Fl. Brit. West Indes 610, 1864.

Ety.: From the Greek *micro-*, "minute," and the genus *Lepanthes*, referring to the tiny, *Lepanthes*-like plant.

Syn.: *Lepanthes leonii* C. Schweinf. in Leon, Fl. Cuba 1: 362, 1946.

Ety.: Named in honor of Hermano Leon who collected the specimen described.

Syn.: *Trichosalpinx microlepanthes* (Griseb.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 68, 1986.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-5 mm long, enclosed by 2-3 microscopically scabrous, lepanthiform sheaths. **Leaf** erect, coriaceous, broadly elliptical, 5-10 mm long, 4-7.5 mm wide, the apex obtuse to rounded, the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, successively several-flowered raceme, up to 5 mm long, borne by a filiform peduncle 2-4 mm long, from near the apex of the ramicaul; floral bracts 0.5 mm long; pedicels 0.5-0.75 mm long; ovary 0.4 mm long; **sepals** yellow-green, more or less suffused with brown, glabrous, the dorsal sepal suborbicular, obtuse, concave, 1 mm long, 1 mm wide, 3-veined near the base, barely connate to the lateral sepals, the lateral sepals ovate, obtuse, 1.2 mm long, 0.6 mm wide, 1-veined, connate to above the middle; **petals** ovate, subacute, 0.6 mm long, 0.3 mm wide; **lip** fleshy, suborbicular, concave, 0.8 mm long, 0.6 mm wide, the apex rounded, the base cuneate with erect margins and a transverse callus within, inflexibly attached to an obsolescent column-foot; **column** stout, terete, 0.4 mm long, 0.2 mm broad, the anther apical, the stigma apical and entire.

JAMAICA: epiphytic in moss, along the Mabess River, alt. 1000 m, *Macfadyen et al. s.n.* (Holotype: K); Mason River Savanna northwest of Kellits, alt. 2300 m, 14 Oct. 1957, *G. R. Proctor 16721* (AMES); epiphytic on Johnson Mountain, alt. 650 m, 14 Nov. 1985, *C. Luer, J. Luer, P. Jesup & A. Jesup 11496* (MO). Without locality, 1854, *Mr. Wilson s.n.* (K).

CUBA: Prov. de Oriente: Sierra Maestra, Lomo del Gato, alt. 1000 m, 11 July-14 Aug. 1921, *León, Clement & Roca 10371, 10548* (NY; AMES, type of *Lepanthes leonii*); Sierra Maestra, Pico de La Bayamesa, alt. 4900-5200 ft., 16 July 1955, *R. E. Schultes et al. 602* (AMES).

This tiny species is known from eastern Cuba and Jamaica. Vegetatively it is comparable to *Lepanthes*, *Lepanthopsis*, or *Trichosalpinx*. Floral-ly it is best treated in *Lepanthopsis*. The column is short and cylindrical with a dorsal anther and a protruding, apical rostellum and stigma. The stigma is transverse and entire, not similar to the typical, transversely bilobed stigma of *Lepanthopsis*, but within limits that must be accepted within a pleurothallid genus, everything else being in agreement. The short column of this species and also *Lepanthopsis barahonensis* with a distinct shaft and a transverse stigma is about intermediate between *Lepanthopsis* and *Trichosalpinx*.



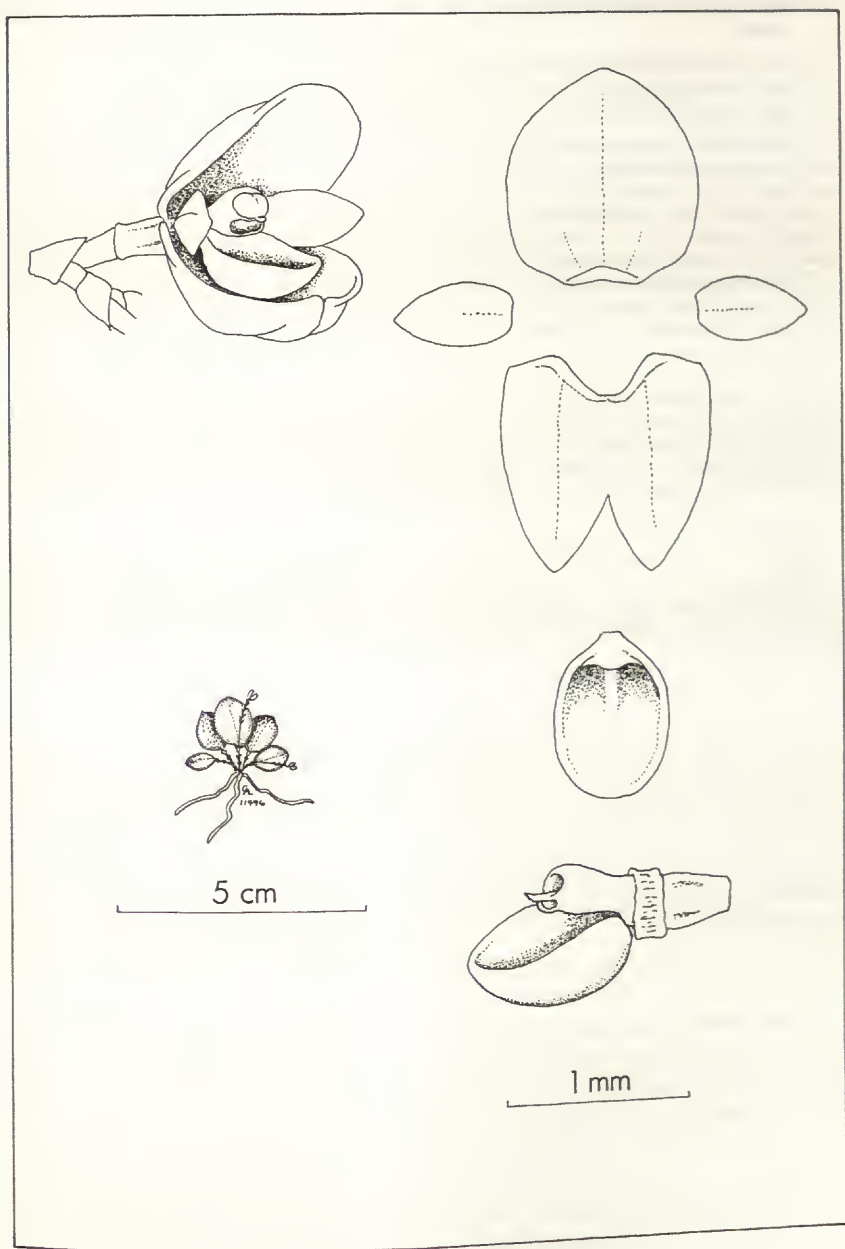


Plate 36. *Lepanthopsis microlepanthes* (Griseb.) Ames

Lepanthopsis obliquipetala (Ames & Schweinf.) Luer, comb. nov.

Bas.: *Physosiphon obliquipetala* Ames & Schweinf., Sched. Orchid. 8: 12, 1925.

Ety.: From the Latin *obliquipetalus*, "with oblique petals," referring to the shape of the petals.

Syn.: *Stelis obliquipetala* (Ames & Schweinf.) L.O.Wms., Ceiba 5: 54, 1956.

Syn.: *Pleurothallis connata* Luer, Selbyana 5: 388, 1981.

Ety.: From the Latin *connatus*, "connate," referring to the deeply connate sepals.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-8 cm long, enclosed by 4-6 closely fitting, minutely scabrous, lepanthiform sheaths. Leaf erect, coriaceous, narrowly elliptical, acute, 4-6 cm long, 0.5-0.7 cm wide, the base cuneate into a petiole 5-6 mm long. Inflorescence a subcongested, 2-ranked, simultaneously several- to many-flowered raceme, up to 8 cm long including the filiform peduncle 1-1.5 cm long, from near the apex of the ramicaul; floral bracts 1-2.5 mm long; pedicels 1-1.25 mm long; ovary 6-costate, 0.5-0.75 mm long; sepals yellow-green, more or less suffused with brown, glabrous, carinate, the dorsal sepal oblong, obtuse, 2.5-3.5 mm long, 1.75-2 mm wide, 3-veined above the base, connate to the lateral sepals for 1-2 mm to form a sepaline tube dilated at the base, the lateral sepals connate 2.5-3.5 mm into a concave, oblong lamina bifid at the apex into subacute apices, 3-4.5 mm long, 2-3 mm wide unexpanded, 2 veined; petals subelliptical, oblique, broadly obtuse, the labellar margin broadly dilated beyond the apex, 1 mm long, 1 mm wide, 1-veined; lip fleshy, transversely subcordate, concave, 0.75 mm long, 1 mm wide, the apex rounded, the base broadly truncate with the basal angles more or less lobulated to either side of the base of the column, inflexibly attached to an obsolescent column-foot; column stout, tetete, 0.5 mm long, 0.25 mm broad, the anther apical, the stigma apical and entire.

COSTA RICA: Prov. of Cartago: Santa Clara, alt. 6500 ft., C. H. Lankester 680 (Holotype: AMES).

COLOMBIA: Dept. of Valle del Cauca: west cordillera of Cali, alt. 2000 m, 15 Aug. 1884, F. C. Lehmann 4114 (G).

ECUADOR: Prov. of Morona-Santiago: Cordillera del Condor, east of Guismé, alt. 1650 m, 21 May 1988, C. Luer, A. Hirtz, W. Flores, A. Andreeva & W. Teague 13527 (MO). Prov. of Napo: between Cotundo and Coca, alt. 1100 m, 18 Nov. 1984, A. Hirtz 2116 (MO), C. Luer illustr. 10502. Prov. of Tungurahua: Leito, alt. 3000 m, 12 Oct. 1984, A. Hirtz 1988 (MO), C. Luer illustr. 10503. Prov. of Zamora-Chinchi: Cordillera del Condor, east of Los Encuentros, alt. 1650 m, 21 Jan. 1989, C. Luer, J. Luer, P. Jesup & A. Jesup 14043 (MO).

This species was first collected by Consul Lehmann in 1884 in Colombia, but the specimen lay unidentified at G (Geneva). In the early part of this century, it was discovered in Costa Rica by Charles Lankester, and described in *Physosiphon* because of the deep connation of the sepals. It is relatively frequent and widely distributed in eastern Ecuador.

Several to many of the tiny, tubular flowers are borne simultaneously in a two-ranked raceme. The sepals are deeply connate into a bottle-shaped sepaline tube, but the morphology of the round, concave lip and column with an apical anther and stigma is nearly the same as that of *Lepanthopsis microlepanthes*.



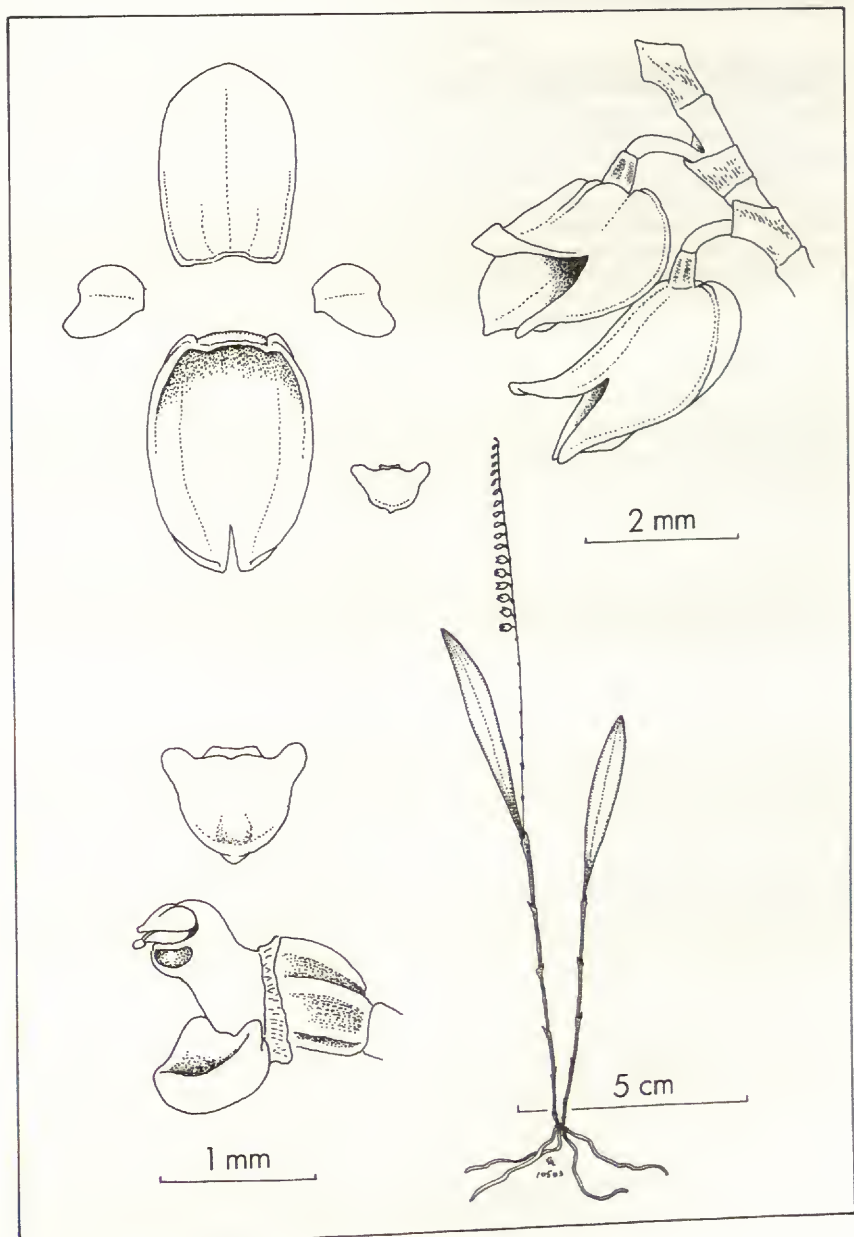


Plate 37. *Lepanthopsis obliquipetala* (Ames & Schweinf.) Luer

ACKNOWLEDGMENTS

I am grateful to Dr. Robert L. Dressler and H. Phillips Jesup for their criticisms and suggestions, and to Rev. Donald D. Dod for his help in obtaining rare specimens.

REFERENCES

- AMES, O., 1933. A new genus of the Pleurothallidinae. Bot. Mus. Leaflet 1-31.
 COGNIAUX, A., 1896. Section *Lepanthopsis*. Orchidaceae in Martius' Flora Brasiliensis 591-594.
 DOD, D. D., 1986. Orquideas nuevas a la ciencia, endemias en la Española. El género *Lepanthopsis* en la Española. Moscosoa 4: 133-157.
 DRESSLER, R. L., 1981. The orchids: natural history and classification. Harvard University Press, Cambridge.
 GARAY, L., 1953. A revision of the genus *Lepanthopsis*. Orchid J. 467-469.
 LINDLEY, J., 1859. Folia Orchidaceae, part 9.
 LUER, C. A., 1986. Icones Pleurothallidinarum I. Systematics of the Pleurothallidinae. Monogr. Syst. Bot. Missouri Bot. Gard. 15: 35, 36, 67, 68.

INDEX OF SCIENTIFIC NAMES

- Eu-*Lepanthopsis* 4
Laeliinae 2
Lepanthes 2, 3, 4, 68, 72, 74
Lepanthes blepharophylla 2, 5
 brevipetala 43
 densiflora 1, 30
 harrisii 43
 leonii 74
 secunda 1, 32
 serrulata 1, 58
Lepanthopsis 1, 2, 3, 4, 6, 26, 72, 74
 subgen. Lepanthopsis 1, 4, 6
 subgen. Microlepanthes 1, 2, 4, 7, 68
 sect. Compactae 4
 sect. Fractipectin 1, 4, 7
 sect. Lepanthiformes 1
 sect. Lepanthopsis 1, 2, 4, 6
Lepanthopsis abbreviata 1, 5, 6, 8, Plate 1., 64
 acetabulum 5, 6, 8, Plate 2.
 acuminata 5, 6, 10, Plate 3., 12
 anthoctenium 5, 7, 14, Plate 4., 60
 apoda 1, 5, 7, 68, Plate 33.
 aristata 5, 7, 16, Plate 5.
 astrophora 4, 5, 7, 18, Plate 6.
 atrosetifera 5, 6, 20, Plate 7.
 barahonensis 5, 7, 22, Plate 8., 24, 40, 74
 blepharophylla 5
 comet-halleyi 1, 5, 7, 70, Plate 34.
 congestiflora 5, 30
 constanzensis 5, 7, 24, Plate 9.
 cucullata 5, 7, 26, Plate 10.
 culiculosa 5, 6, 28, Plate 11., 58
 densiflora 5, 6, 30, Plate 12.
 dentifera 5, 22
 dodii 5, 7, 30, Plate 13., 48
 domingensis 5, 14
 farrago 1, 5, 7, 72, Plate 35.
 floripectin 3, 4, 5, 6, 14, 20, 32, Plate 14.
 fuertesii 5, 22
 glandulifera 5, 7, 36, Plate 15.
 haitiensis 5, 16
 hirtzii 1, 5, 6, 38, Plate 16.
 hotteana 5, 7, 38, Plate 17.
 lingulata 5, 7, 40, Plate 18.
 melanantha Frontispiece, 5, 7, 43, Plate 19.
 micheleae 5, 6, 7, 45, Plate 20.
 melichii 45
 microlepanthes 5, 7, 72, 74, Plate 36., 76
 moniliformis 5, 7, 45, Plate 21., 48
Lepanthopsis obliquipetala 1, 5, 7, 76, Plate 37.
 ornipteridion 5, 6, 48, Plate 22.
 paryskii 5, 26
 peniculus 5, 6, 50, Plate 23.
 pristis 5, 6, 50, Plate 24.
 prolifera 5, 6, 52, Plate 25., 62
 pulchella 5, 7, 55, Plate 26.
 pygmaea 5, 7, 28, 55, Plate 27.
 quisqueyana 5, 43
 secunda 5, 32
 serrulata 5, 7, 58, Plate 28., 60
 stellaris 5, 7, 60, Plate 29.
 steyermarkii 5, 7, 62, Plate 30.
 ubangii 1, 5, 6, 64, Plate 31.
 unilateralis 5, 32
 vinacea 5, 6, 66, Plate 32.
Oncidiinae 2
Physosiphon 76
Physosiphon obliquipetala 76
Platystele 2
Pleurothallis 1, 2, 26
 subgen. Pleurothallis 2
 sect. Acuminatae 1
 sect. Brachystachyae 1
 sect. Elongatae 1
 sect. Lepanthiformes 2
 sect. Lepanthopsis 3
Pleurothallis anthoctenium 1, 2, 14
 apoda 68
 astrophora 1, 4
 barahonensis 2, 22
 congestiflora 1, 30
 connata 76
 constanzensis 2
 dentifera 22
 floripectin 1, 32
 floripicta 43
 fuertesii 2, 22
 hotteana 38
 melanantha 1, 2, 43
 microlepanthes 1, 2, 4, 74
 peniculus 50
 unilateralis 1, 3, 4, 32
Stelis 2, 26, 72
Stelis obliquipetala 76
Trichosalpinx 2, 3, 4, 68, 74
 subgen. Pseudolepanthes, 68
Trichosalpinx apoda 68
 microlepanthes 74

OCTOMERIA SUBGENUS PLEUROTHALLOPSIS (ORCHIDACEAE)

ABSTRACT

The genus *Pleurothallopsis* Porto & Brade is reduced to a monotypic subgenus of *Octomeria* R. Br. The species is described and illustrated with a black and white drawing and a distribution map is included.

New taxon and combination:

Octomeria subgen. **Pleurothallopsis** (Porto & Brade) Luer, subgen. nov.

Octomeria nemorosa (Barb. Rodr.) Luer, comb. nov.

The solitary Brazilian species that comprises this subgenus was first described in *Lepanthes* as *Lepanthes nemorsa* by Barbosa Rodrigues in 1882 without knowing anything about a missing lip or pollinia. His accompanying illustration, however, left no doubt about the remaining morphology. In 1896, still without knowledge of the lip or pollinia, Cogniaux transferred the species to *Pleurothallis*, but a new epithet was required because *P. nemorosa* was already occupied (*P. nemorosa* Barb. Rodr.).

In 1935, a plant was discovered that answered all the known physical requirements of the original *L. nemorosa*, and in addition the missing parts could be now be supplied. The lip was found to be very much like that of many species of *Octomeria*, and the pollinia were found to be eight in number. Declaring that the species did not belong in *Pleurothallis* because of the eight pollinia, and not in *Octomeria* because the petals were less than half the length of the sepals, and the peduncle was elongated, Dr. Paulo de Campos Porto and Dr. Curt Brade proposed a new, monotypic genus, *Pleurothallopsis*. A fine illustration was published in 1949 by Hoehne in *De Orchidaceas do Brasil*.

From a distant locality, another plant answering all the known morphological features has recently been discovered. Apparently the only difference is the color, the flowers of the previous specimens being described as yellow-green, and the flowers of the latest being white with three purple veins on the sepals.

The column and lip of this species are the same as those seen in many species of *Octomeria*, and except for the number of pollinia, the petals, column and lip are the same as those found in many species of *Restrepiopsis* which has four pollinia. As very briefly treated in *Icones Pleurothallidarum* I, *Octomeria* is described without subgenera, but with two sections. If transferred to *Octomeria*, *Pleurothallopsis nemorosa* would fall into subsection *Pusillae* of section *Octomeria* because of the caespitose habit and connate lateral sepals. However, the exceptionally small petals and the elongated peduncle set this species apart. It is not logical to maintain the segregation into a monotypic genus on this basis alone while the morphology of the column and lip are inseparable from *Octomeria*. Therefore, the genus *Pleurothallopsis* should be included in *Octomeria*, probably best as a subgenus.

Octomeria subgen. *Pleurothallopsis* (Porto & Brade) Luer, subgen. nov.

Bas.: *Pleurothallopsis* Porto & Brade, Arq. Inst. Biol. Veg. 3: 133, 1937.

Ety.: Named for the similarity to the genus *Pleurothallis* R. Br.

The description of the only species suffices for the subgenus.

***Octomeria nemorosa* (Barb. Rodr.) Luer, comb. nov.**

Bas.: *Lepanthes nemorosa* Barb. Rodr., Gen. Sp. Orch. Nov. 2: 54, 1882.

Ety.: From the Latin *nemorosus*, "pertaining to the forest," referring to the habitat.

Syn.: *Pleurothallis sylvatica* Cogn., Fl. Bras. 3(4): 455, 1896.

Ety.: From the Latin *sylvaticus*, "pertaining to the forest," referring to the habitat.

Syn.: *Pleurothallopsis nemorosa* (Barb. Rodr.) Porto & Brade, Arq. Inst. Biol. Veg. 3: 133, 1937.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2.5-5 cm long, enclosed by 3-4 loose, glabrous, tubular sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 2.5-5 cm long, 1.3-2 cm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a solitary flower borne by an erect, slender peduncle 2-4 cm long, from near the apex of the ramicaul; floral bract 3 mm long; pedicel 1 mm long; ovary 2 mm long, costate; **sepals** white with purple veins, membranous, glabrous, the dorsal sepal ovate, subacute, 8 mm long, 3.5 mm wide, 3-veined, free from the lateral sepals, the lateral sepals connate to near the apex into an ovate, obtuse lamina with the free tips acute, 8 mm long, 4.5 mm wide, each sepal 3-veined; **petals** translucent, elliptical-oblong, the apex obtuse to rounded, minutely erose, 3 mm long, 1.5 mm wide, 1-veined; **lip** white, oblong-trilobed, 4.5-5 mm long, 2.5-3 mm wide, the lobes basal, erect, subfalcate, 0.5 mm long, the middle lobe oblong, erose, the apex subtruncate to rounded, the disc with a pair of low, parallel calli below the middle, the base recurved, truncate, hinged to the column-foot; **column** slender, 2.5 mm long, the anther subapical with eight, obovoid pollinia, the stigma ventral.

BRAZIL: Edo. do Rio de Janeiro: shady forest of Mt. Louro, Serra de Santa Anna, *Barbosa Rodrigues s.n.* (Holotype: ?); Itatiaya, Serra Negra, collected by L. Lanstyk, 1935, flowered in cultivation at Estação Biológica, Itatiaya, 28 Feb. 1936, *Porto & Brade s.n.* (RB). Edo. do Bahia: Munic. Itororó, alt. 200-300 m, collected by E. Ferreira da Silva, flowered in cultivation by V. Paiva Castro #3, Feb. 1990, *C. Luer 14695* (MO).

Apparently this species is widely distributed in Brazil, but rarely seen. It is distinguished from the other species of *Octomeria* by the following combination of features: a caespitose habit, an elongated peduncle, smaller petals less than half the size of the sepals, and lateral sepals connate into a synsepal. One species is known.



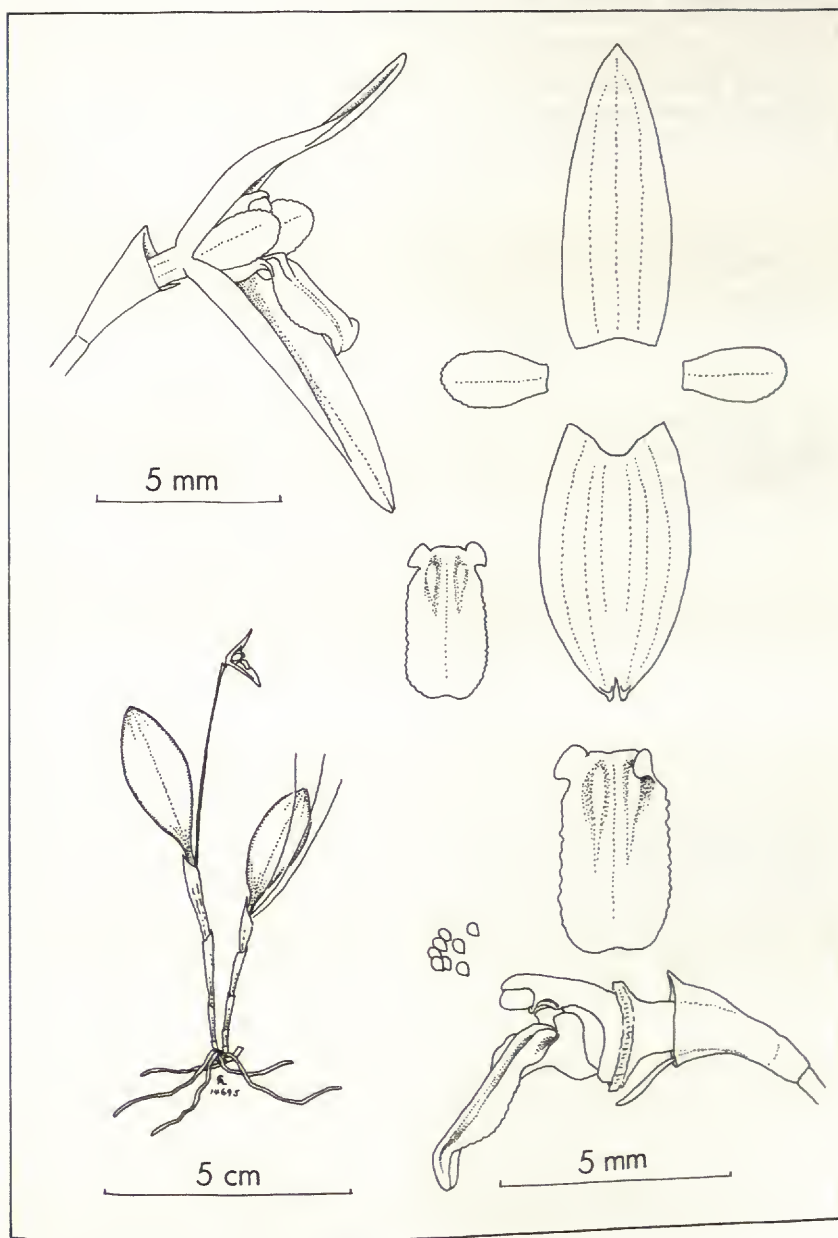


Plate 1. *Octomeria nemorosa* (Barb. Rodr.) Luer

Drawings of *Acostaea* at W (Vienna) made by A. R. Endres in 1867 were reported in *Systematics of Acostaea*. The actively motile lip in the resupinate flower of *Acostaea* had not been previously reported. The actively motile lip of *Porroglossum muscosum* had been first reported in 1887 by W. Bean. I have recently had the opportunity to examine a massive accumulation of miscellaneous herbarium specimens of the Reichenbach herbarium (at W) that had been on loan to AMES for 37 years. Among them are many superb illustrations made by Endres in the last century. One is a detailed drawing, as reproduced below, of *Acostaea costaricensis* with the following, meticulously handwritten note:



Leaves somewhat coriaceous; bright green; veins slightly anastomosing. Scapes filiform, bearing from 3 to 8 membranous flowers which are of a pale rose colour.

Labellum very irritate; at the time of expansion of the flower it occupies the position represented in figs. 1, 2, and 3; but the least touch, or a slight gust of wind causes it to clap close to the column, never relaxing into its former position.

Costa Rica
1867.
4000' alt.

Endres. W.

"Labellum very irritate; at the time of expansion of the flower it occupies the position represented in figs. 1, 2, and 3; but the least touch, or a slight gust of wind causes it to clap close to the column, never relaxing into its former position."

Although his last observation seems incorrect, Endres' remarkable, unpublished observations of an actively motile lip precede that of Bean by 20 years.

SYSTEMATICS OF THE GENUS *RESTREPIELLA* (ORCHIDACEAE)

ABSTRACT

The monotypic genus *Restrepiella* Garay is reviewed and illustrated.

This genus was proposed in 1966 by Leslie A. Garay to accommodate seven species that could not satisfactorily be maintained in the polymorphic genus *Pleurothallis* R. Br. *Restrepiella* was based on the following combination of four distinguishing characters: a fasciculate inflorescence, abbreviated pedicels, "dissimilar floral segments", and four pollinia (Garay, 1967). This brought together three discordant groups. To be sure, the three groups agreed in these general, inclusive features (although the intended meaning of "dissimilar floral segments" is unknown), but the groups disagreed from each other in other, far more important characters: vegetative morphology, floral morphology, and morphology of the column and pollinia.

Pleurothallis ophiocephala Lindley, the first discordant element, was designated as the type. This species is characterized by robust ramicauls incompletely covered by a tubular sheath near or below the middle and a few imbricating sheaths at the base. The shortly petiolate leaf is large, rigid and leathery. The inflorescence consists of a fascicle of single, successive flowers produced laterally from within a conspicuous spathe a short distance below the leaf-ramicaul abscission layer, and without an annulus. The sepals are thick and fleshy and shortly pubescent, the lateral sepals connate into a synsepal. The petals are pubescent and ciliate. The lip is thick and rigid with erect, obtuse, marginal angles above the base. The column is stout with longitudinal, marginal wings, and with a hooded, denticulate clinandrium that covers the ventral anther containing four, equal-sized pollinia. This species is extremely similar to many of those in *Myoxanthus* Poepp. & Endl. and *Pleurothallis* subgenus *Acianthera* (Scheidw.) Luer, but differing from both in the number of pollinia, four instead of two.

As originally proposed, *Restrepiella* also included two species, the second discordant element, which have been removed to *Dresslerella* Luer. These two species differ markedly from *R. ophiocephala* vegetatively. The ramicauls are short and more or less prostrate; the leaves are fleshy and pubescent or ciliate; and the floral parts are variable. The pollinarium consists of a pair of average-sized pollinia flanked on either side by a tiny pollinium, for a total of two large and two small pollinia.

The rest of the species constituted the third discordant element that has been described as *Restrepiopsis* (Luer, 1978). The species segregated into this genus are more closely related to *Octomeria* Sw. than to *Dresslerella*, *Pleurothallis*, or *Restrepiella*. The ramicauls are enclosed by a series of imbricating sheaths (except when shed) reminiscent of *Octomeria* and *Restrepia* H.B.K.

The leaves vary in size and thickness. Like several other pleurothallid taxa, the inflorescence consists of a fascicle of single, successive flowers produced laterally from near the apex of the ramicaul, also without an annulus, but without a conspicuous spathe. The sepals are fleshy or membranous, essentially glabrous, the lateral sepals free or lightly coherent (except in one species). The petals are membranous and entire, not ciliate. The lip is thick or thin, very similar to some lips seen in *Octomeria* with thin, erect, basal lobes. The column is slender without longitudinal, marginal wings, and the clinandrium is short and smooth exposing a subapical anther containing four, equal-sized pollinia.

After removal of non-conforming species to *Dresslerella* and *Restrepiopsis*, *Restrepiella* is left as a monotypic genus. It might alternatively be treated as a monotypic subgenus of *Pleurothallis*.

Restrepiella Garay & Dunsterv., *Venezuelan Orchids Illustrated* 4: 266, 1966.

Type: *Pleurothallis ophiocephala* Lindley, Edwards' Bot. Reg. 24: Misc. 34, 1838.

Ety.: Named for the genus *Restrepia* H.B.K. plus the Latin suffix denoting a similarity.

The description of the only species suffices for the genus.

Restrepiella ophiocephala (Lindley) Garay & Dunsterv., *Venez. Orchids Ill.* 4: 266, 1966.

Bas.: *Pleurothallis ophiocephala* Lindley, Edwards' Bot. Reg. 24: Misc. 34, 1838.

Ety.: From the Greek *ophiocephalus*, "snake-headed," in allusion to the appearance of the flower.

Syn.: *Pleurothallis peduncularis* Hook., J. Bot. 3: 308, t. 9, 1841, not Lindley 1843.

Ety.: From the Latin *peduncularis*, "pedunculate," referring to the inflorescence.

Syn.: *Pleurothallis puberula* Kl., Allg. Gartenzeitung 22: 393, 1854.

Ety.: From the Latin *puberulus*, "minutely pubescent," referring to the flowers.

Syn.: *Restrepia ophiocephala* (Lindley) Reichb. f., Bonplandia 2: 88, 1854.

Syn.: *Pleurothallis stigmatoglossa* Reichb. f. ex Lindley, *Folia Orchid. Pleuroth.* 18, 1859, *nomen nudum*.

Ety.: From the Greek *stigmatoglossa*, "a spotted lip," referring to the labellum.

Plant perennial, medium in size to large, epiphytic, densely caespitose; roots coarse. Ramicauls erect, stout, terete, 10-25 cm long, with a tubular sheath near or below the middle and 2-3 sheaths at the base. **Leaf** erect, thickly coriaceous, ovate, 10-20 cm long, 3-4 cm wide, the apex acute to narrowly obtuse, shallowly notched with a mucro in the sinus, the base cuneate into a petiole 1-2 cm long. **Inflorescence** a succession of single flowers borne in a fascicle within a conspicuous spathe 1-2 cm long, emerging laterally without an annulus from near the apex of the ramicaul; peduncles stout, 3-5 mm long; floral bract thin, tubular, 5-8 mm long; pedicel stout, 2-3 mm long, with a filament 1-2 mm long; ovary minutely verrucose, 6-8 mm long; sepals thick, fleshy, minutely pubescent externally and internally, greenish or yellowish, variously spotted and suffused with red-purple usually below the middle, the dorsal sepal elliptical, obtuse, free, 15-21 mm long, 5-7 mm wide, convex above the lower third with the margins more or recurved, the lateral sepals connate into an elliptical lamina similar to the dorsal sepal, 14-20 mm long, 6-9 mm wide, the apex rounded, shallowly notched, convex with recurved margins above the lower third; petals dull yellow, spotted with red-purple, elliptical, obtuse, 5-7 mm long, 2-2.5 mm wide, ciliate, the inner surface minutely pubescent; lip yellow, spotted with purple, thick, rigid, oblong-ovoid, 3-3.5 mm long, 1.5 mm wide, with obtuse, erect, basal angles, the disc broadly and shallowly channelled between a low pair of parallel calli, the base hinged to the column-foot; column red, stout, 2.5 mm long, broadly longitudinally winged, the clinandrium hooded, bidentate and minutely denticulate, the anther and stigma ventral, the pollinia 4, obovoid with short caudicles, attached to a common viscidium, the base of the column developed into a column-foot with the apex of the ovary.

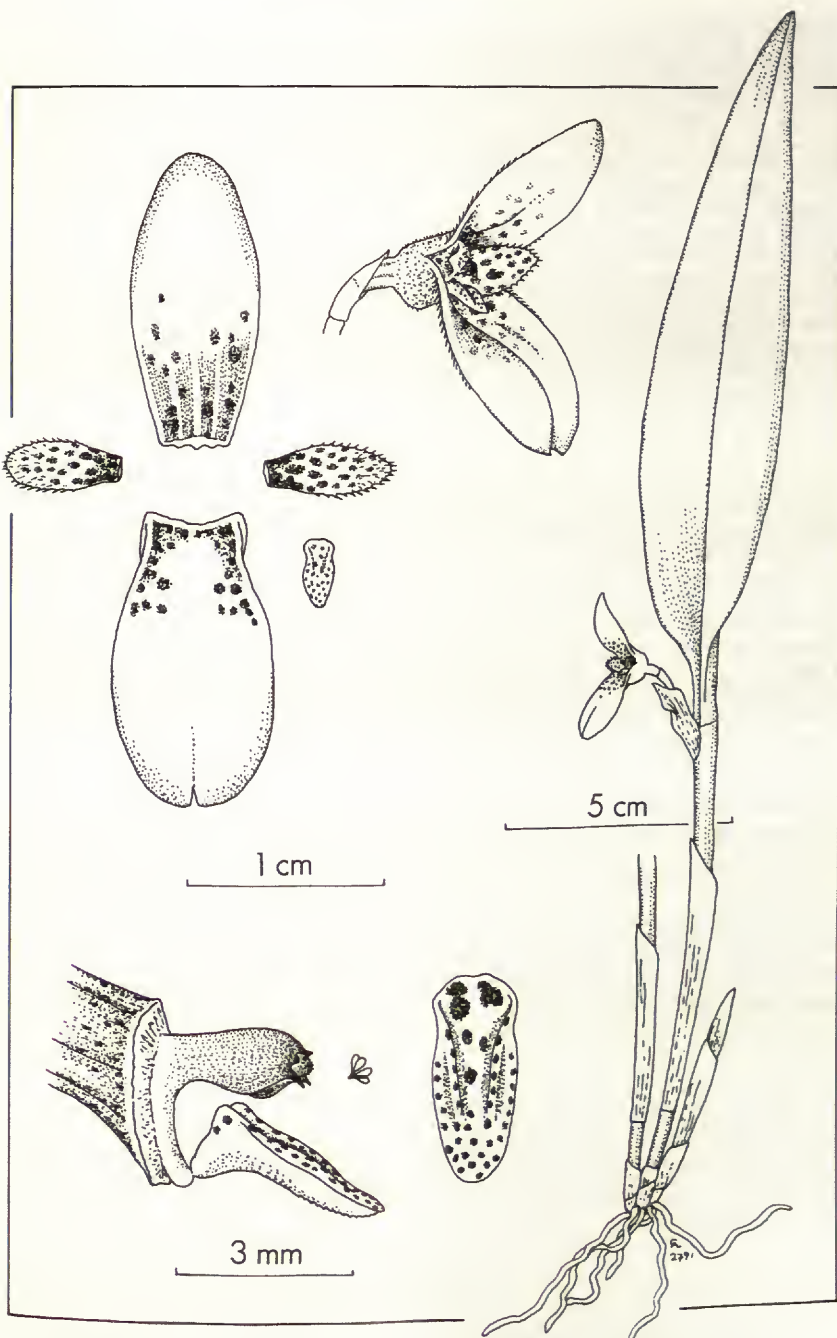


Plate 1. *Restrepiella ophiocephala* (Lindley) Garay & Dunsterville

MEXICO: without locality: *Loddiges s.n.* (Holotype: K). Edo. Chiapas: Soconusco, Mt. Boquerón, coffee plantation, 13 June 1935, *O. Nagel 4363* (AMES); Mt. Ovando, Dec. 1937, *E. Matuda 2083* (AMES); among the ruins of Bonampak, alt. 670 m, 18 Mar. 1975, *W. S. Hoover 252* (MO). Edo. Córdoba: alt. 1200 m, 27 Dec. 1897, *C. Conzatti & V. Gonzales 638* (AMES); 17 Feb. 1866, *M. Bourgeau 1934* (AMES, P). Edo. Guerrero, Mt. Piloncillo, alt. 1200 m, 20 Nov. 1933, *O. Nagel 4929* (AMES). Edo. Oaxaca: "ad quercis, sierrae Oaxacae," alt. 6000 ft., 1848, *H. Galeotti 5268* (W). Edo. Vera Cruz: Cordova, near Orizaba, 17 Feb. 1866, *M. Bourgeau 1934* (K, P); San Andreas, Tuxtla, Cerro Xoxobi, 25 Mar. 1967, *M. Peña de Sousa 91, 95* (AMES); Zacuapan, Feb. 1913, *C. A. Purpus 6461* (AMES); Zacuapan, coffee plantation, alt. 900 m, 10 Nov. 1932, *O. Nagel 1510* (AMES); near Tezonapa, alt. 450 m, 27 Mar. 1937, *O. Nagel 3626* (AMES); without locality, Apr. 1933, *C. A. Purpus 15269, 16303* (AMES); "Vera Cruz," flowered in cultivation, 26 Feb. 1978, *C. Luer 2791* (SEL). "Mirador," 1842-1843, *Liebmann 279, 280, 281* (W).



BELIZE: Dist. Toledo, alongside Mafredi Creek, alt. 40 m, 6 Oct. 1979, flowered in cultivation 13 Jan. 1980, *B. R. Adams 220* (K).

GUATEMALA: on trees below Alotenango, 1862, *Salvin & Godman s.n.* (K); without locality: *Mr. Skinner s.n.* (BM, type of *Pleurothallis peduncularis*); "Virginia," *Margaret W. Lewis 28* (AMES); collected by H. Morgan, flowered in cultivation 10 Dec. 1974, *C. Luer 346* (SEL). Alta Verapaz: flowered in cultivation by Otto Mittelstaedt at Cobán, 13 Feb. 1990, *C. Luer 14607* (MO).

EL SALVADOR: Dept. of Santa Ana: Cerro Monte Cristi, alt. 3600 ft., 28 Sept. 1958, *M. L. van Severen s.n.* (AMES); Faldas bajas del Cerro Verde, alt. 650 m, *F. Hamer 116*; Cerro Chino, cerca del Pedregal San Isidro, alt. 800 m, 6 Mar. 1966, *F. Hamer 116* (AMES).

NICARAGUA: Jinotega: Finca Santa Fe, alt. 900 m, *A. Heller 1665* (SEL).

COSTA RICA: Prov. of Alajuela: San Ramón, *A. Endres s.n.* (W); Santa Maria National Park, alt. 800-900 m, 3 Jan. 1978, *R. Liesner 4749* (MO). Prov. of Guanacaste: La Tejona, north of Tilarán, alt. 600-700 m, 13-25 Jan. 1926, *P. C. Standley & J. Valero 44851, 45967* (AMES).

This species is characterized by a stout ramicaul with a tubular sheath near the middle and a few at the base; a thickly coriaceous, shortly petiolate leaf; and a single-flowered, short-pedunculate inflorescence subtended by a large sheath near the apex of the ramicaul. The gaping, bilabiate flower is fleshy and shortly pubescent. The color varies from yellow with a few red flecks to rose and diffusely spotted with purple. The petals are ciliate and pubescent. The lip is thick with erect basal, marginal angles. The column is stout with a denticulate apex and a ventral anther with four pollinia.

Restrepiella ophioccephala is found relatively frequently but locally in low-land humid forests of Central America from Mexico into Costa Rica. The report of one plant having been found in southwestern Florida (Luer 1974) was undoubtedly based on misinformation.

REFERENCES

- BRAAS, L. A., G. J. BRAEM & H. MOHR, 1982. Beiträge zur subtribus Pleurothallidinae. Die Orchidee 33: 147-156.
 DRESSLER, R. L., 1981. The orchids: natural history and classification. Harvard University Press, Cambridge.
 GARAY, L. A., 1967. The Genus *Restrepiella*. Orchid Digest 31: 39-40.
 LUER, C. A., 1974. The native orchids of Florida. New York Botanical Garden.
 ———, 1978. *Restrepiopsis*, a new genus in the Pleurothallidinae. Selbyana 2: 199-204.
 ———, 1986. Icones Pleurothallidarum I. Systematics of the Pleurothallidinae. Monogr. Syst. Bot. Missouri Bot. Gard. 15: 52.

SYSTEMATICS OF THE GENUS *RESTREPIOPSIS* (ORCHIDACEAE)

ABSTRACT

A history of *Restrepiopsis* Luer is given and the genus is described. A key to the subgenera and species is given. Each species is described and illustrated with a black and white drawing. The specimens cited in the distributions are only a few for the more frequent species from various localities. A distribution map is included for each species.

New taxa:

***Restrepiopsis inaequalis* Luer & Escobar**

***Restrepiopsis lehmannii* Luer**

***Restrepiopsis mulderae* Luer**

***Restrepiopsis pandurata* Luer & Hirtz**

The first species of this genus to be recognized was described in 1855 as *Restrepia ujarrensis* by Professor Reichenbach from a Costa Rican collection by Oersted. The similarity of the lip to those in *Octomeria* R. Br. was noted. This little species is frequent and widely distributed in Central America with a disjunct station in western Ecuador. It was first collected near the community of Ujarrá, misspelled with a single "r" in the original description.

The second species to be recognized is a common, variable, and widely distributed Andean species, described from a collection by Dr. Jameson near Quito, Ecuador, by Professor Lindley in 1859 as *Pleurothallis tubulosa*. A poor collection by Fendler from Venezuela, published as *P. viridula* at the same time, is undoubtedly the same species.

The third species, the most unusual in the genus, was described in 1875 from Costa Rica under A. R. Endres' name as *Restrepia reichenbachiana*.

The species of the genus were recognized as distinct from *Pleurothallis* R. Br. and *Restrepia* H.B.K. when Garay (Garay, 1966) included them along with several other distantly related species in the genus *Restrepiella*. The Central American *Pleurothallis ophiocephala* Lindley, a species not closely related to any of the others, was designated as the type. After the removal of two species to *Dresslerella*, the remaining closely interrelated species were transferred to a new genus, *Restrepiopsis*, in 1978, leaving *Restrepiella* as a monotypic genus. The only similarity between *Restrepiella* and *Restrepiopsis* is the successively single-flowered inflorescence and the number of pollinia, four, criteria also shared by *Barbosella* and *Restrepia*.

The monotypic genus *Restrepiella* is closely allied to subgenus *Acianthera* of *Pleurothallis*, and *Myoxanthus* Poepp. & Endl., differing in the number of pollinia, four instead of two. The ramicaul of *Restrepiella* is stout with a tubular sheath near or below the middle, and a few shorter ones at the base. The sepals and petals are fleshy and pubescent, the lateral sepals connate into a synsepal, and the lip is thick with erect basal angles. The column is stout and winged with a denticulate clinandrium covering a ventral anther.

The genus *Restrepiopsis* is closely allied to *Octomeria*, differing primarily in the smaller petals and the number of pollinia, four instead of eight. The ramicaul of *Restrepiopsis* is mostly enclosed in a series of more or less compressed, imbricating sheaths, reminiscent of *Restrepia*. The sepals and petals are membranous, occasionally fleshy, and glabrous, sometimes cellular-glandular. The petals of *Octomeria* are subequal to the sepals, but those of *Restrepiopsis* are considerably smaller than the sepals. The lateral sepals of *Restrepiopsis* are usually free, but sometimes coherent (connate at least in one species). The lip usually possesses a pair of membranous basal lobes more or less similar to those seen in many species of *Octomeria*. The column is slender without wings, and without teeth at the apex. The anther is largely exposed and subapical.

Vegetatively all the species are basically similar except for *Restrepiopsis reichenbachiana*, which is endemic in Middle America. The latter, segregated here into a monotypic subgenus, *Endresia*, is distinguished by the short ramicauls with pubescent sheaths, and an elongated peduncle. It is not at all closely related to *Barbosella* to which it had also been attributed.

Today, 15 species are recognized from the wet forests of Central America and the Andes of South America from Venezuela to Bolivia. Only the widely distributed *R. microptera* has been identified from Peru, and an endemic species has been discovered in Bolivia. No species has yet been identified from the Antilles, the Guianas, or Brazil. In common with most pleurothallid genera and subgenera, one species (in this case, *R. tubulosa*) is widely distributed, frequent and variable, from which all the others seem to have evolved. Unfortunately, populations or individuals intermediate between the common forms of *R. tubulosa* and some of the closely allied species recognized here are sometimes found.

Restrepiopsis Luer, Selbyana 2: 199, 1978.

Type: *Restrepia ujarrensis* Reichb. f., Bonplandia 3: 225, 1855, as *ujarensis*.

Ety.: Named for the genus *Restrepia* H.B.K. plus the Greek suffix denoting a similarity.

Plants perennial, very small to large in size, epiphytic, rarely lithophytic or terrestrial, shortly repent to densely caespitose, the rhizome abbreviated; roots slender. Ramicauls erect, slender to stout, non-pseudobulbous, shorter, as long as, or longer than the leaf, unifoliate, mostly or completely enclosed by a series of 3-8 more or less imbricating, glabrous, or rarely cellular-glandular sheaths (minutely pubescent in one species), the inflorescence emerging laterally without an annulus from near the apex. **Leaf** erect, coriaceous to thickly coriaceous, smooth, green or dark green, sometimes suffused with purple, suborbicular, ovate, elliptical, to narrowly elliptical or linear, the apex acute to obtuse, shallowly notched with a mucro in the sinus, the base cuneate into a short petiole, or sessile. **Inflorescence** a succession of single flowers borne in a fascicle by slender peduncles, usually much shorter than the leaf, emerging laterally in a fascicle from the ramicaul below the apex; floral bracts thin, tubular; pedicels slender, longer or shorter than the floral bract, with a distinct filament; ovary smooth, trilocular; **sepals** conspicuous, membranous, glabrous or at most cellular-glandular, usually light green or yellow or white, more or less suffused or veined in purple, tailless, the dorsal sepal ovate, free from the lateral sepals, the lateral sepals free or coherent, rarely connate; **petals** small, membranous, the margins commonly cellular-erose, about as long as the column, more or less, ovate to elliptical, acute to obtuse or rounded; **lip** membranous, trilobed, more or less oblong with basal lobes, the disc with a callus adjacent to the lateral lobes, the base delicately hinged to the column-foot; **column** slender, semiterete, non-winged, the clinandrium smooth, non-hooded, the anther subapical, the rostellum retrorse, the pollinia 4 in 2 equal pairs, yellow, obovoid to discoid, flattened, usually connected to a viscidium by a short caudicle, the stigma ventral, the base of the column developed into a column-foot with the apex of the ovary and sometimes extended a short distance beyond the ovary.

Restrepiopsis subgen. Endresia Luer, *Icones Pleurothallidarum I. Syst. of the Pleurothallidinae*, Monogr. Syst. Bot. Missouri Bot. Gard. 15. 1986.

Type: *Restrepia reichenbachiana* Endres ex Reichb. f., Gard. Chron. 2: 356, 1875.

Ety.: Named in honor of A. R. Endres of Costa Rica who discovered and described the species upon which the subgenus is based.

Syn.: *Restrepia* section *Pleurothalliformes* Endres ex Reichb. f., Gard. Chron. 2: 356, 1875.

Ety.: Named for the similarity of the plant to a *Pleurothallis*.

This subgenus contains one vegetatively distinct species found in Costa Rica and Nicaragua. The short ramicauls are enclosed by two to three pubescent sheaths. They are neither ribbed nor margined as typical lepanthiform sheaths. The elongated peduncle exceeds the leaf in length. The floral parts are typical for *Restrepiopsis* except that the lateral sepals are totally connate. The four pollinia are discoid without caudicles. Possibly the elongated peduncle led some observers to place this species in *Barbosella* to which it is not closely related.

Restrepiopsis subgen. Restrepiopsis

Type: *Restrepia ujarrensis* Reichb. f., *Bonplandia* 3: 225, 1855, as *ujarensis*.

This subgenus contains all the rest of the species of the genus. The ramicauls are as long as or longer than the leaf, and enclosed by glabrous or at most cellular-glandular, sheaths. The peduncles and pedicels are shorter than the leaf.

LIST OF ILLUSTRATIONS AND
EPITHETS IN *RESTREPIOPSIS*

<i>Restrepiopsis bicallosa</i> Luer & Escobar = <i>Restrepiopsis norae</i>	Plate 1.
<i>Restrepiopsis carnosa</i> Luer & Vásquez	Plate 2.
<i>Restrepiopsis clausa</i> Luer & Escobar	
<i>Restrepiopsis grandiflora</i> (Garay) Luer = <i>Restrepiopsis microptera</i>	Plate 3.
<i>Restrepiopsis inaequalis</i> Luer & Escobar	Plate 4.
<i>Restrepiopsis insons</i> Luer & Escobar	Plate 5.
<i>Restrepiopsis lehmannii</i> Luer	Plate 6.
<i>Restrepiopsis microptera</i> (Schltr.) Luer	Plate 7.
<i>Restrepiopsis monetalis</i> (Luer) Luer	Plate 8.
<i>Restrepiopsis mulderae</i> Luer	Plate 9.
<i>Restrepiopsis norae</i> (Garay & Dunsterv.) Luer	Plate 10.
<i>Restrepiopsis pandurata</i> Luer & Hirtz	Plate 11.
<i>Restrepiopsis powersii</i> Luer	
<i>Restrepiopsis pulchella</i> Luer = <i>Restrepiopsis monetalis</i>	Plate 12.
<i>Restrepiopsis reichenbachiana</i> (Endres ex Reichb. f.) Luer	Plate 13.
<i>Restrepiopsis striata</i> Luer & Escobar	
<i>Restrepiopsis trilobata</i> (Pabst) Luer = <i>Barbosella trilobata</i> Pabst	Plate 14.
<i>Restrepiopsis tubulosa</i> (Lindley) Luer	Plate 15.
<i>Restrepiopsis ujarrensis</i> (Reichb. f.) Luer	
<i>Restrepiopsis viridula</i> (Lindley) Luer = <i>Restrepiopsis tubulosa</i>	

KEY TO THE SUBGENERA AND SPECIES OF *RESTREPIOPSIS*Subgenus *Endresia*

- 1 Sheaths of the ramicauls pubescent;
peduncle longer than the leaf *R. reichenbachiana*

Subgenus *Restrepiopsis*

- 1' Sheaths of the ramicauls glabrous, or at most, microscopically
scabrous; peduncle much shorter than the leaf 2
- 2 Flowers cleistogamous 3
- 2' Flowers not cleistogamous 5
- 3 Mature ramicauls more than 3 cm long *R. clausa*
- 3' Mature ramicauls less than 2 cm long 4
- 4 Leaf 3-4 mm wide; lip ovate with basal lobes *R. insons*
- 4' Leaf 1 mm wide; lip suborbicular *R. lehmannii*
- 5 Mature plant small, not more than 4 cm tall;
lip obtusely ovate with obscure basal lobes *R. ujarrensis*
- 5' Mature plant more than 4 cm tall; lip with
well-developed basal lobes 6
- 6 Leaf thickly coriaceous, broadly ovate to orbicular *R. monetalis*
- 6' Leaf coriaceous, ovate, narrowly ovate to linear 7
- 7 Lateral sepals lightly coherent or connate into a synsepal 8
- 7' Lateral sepals more or less free, at least above the middle 11
- 8 Leaf ovate; sepals fleshy *R. carnosa*
- 8' Leaf narrowly elliptical to linear; sepals membranous 9
- 9 Synsepal concave; lip oblong with obtuse basal lobes *R. mulderae*
- 9' Synsepal flat; lip not oblong, with acute basal lobes 10
- 10 Lip pandurate, the margin fringed below the middle *R. pandurata*
- 10' Lip obovate, the margin not fringed *R. striata*
- 11 Leaf narrowly elliptical; flowers small, the sepals
connate below the middle and less than 5 mm long *R. norae*
- 11' Leaf elliptical-ovate; sepals essentially free,
more than 6 mm long 12
- 12 Flower medium-sized, the lateral sepals 6-10 mm long *R. tubulosa*
- 12' Flower large, the lateral sepals more than 10 mm long 13
- 13 Dorsal sepal 7-veined; lip markedly sinuate *R. powersii*
- 13' Dorsal sepal 3-veined; lip not markedly sinuate 14
- 14 Dorsal sepal more or less acuminate, about as long as
the lateral sepals, the lateral sepals widest below the
middle; basal lobes of the lip obtuse *R. microptera*
- 14' Dorsal sepal ovate, 2-3 mm shorter than the lateral sepals,
the lateral sepals widest above the middle;
basal lobes of the lip acute *R. inaequalis*

***Restrepiopsis carnosa* Luer & Vásquez, *Phytologia* 54: 389, 1983.**

Ety.: From the Latin *carnosus*, "fleshy," in reference to the substance of the flowers.

Plant medium-sized to large for the genus, epiphytic, caespitose; roots coarse. Ramicauls erect, stout, 7-8.5 cm long, enclosed by 6-7 laterally compressed, imbricating, ribbed, tubular sheaths. **Leaf** erect, thinly coriaceous, elliptical, subacute, 6-7.5 cm long, 2.5-3 cm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 5 mm long from near the apex of the ramicaul; floral bract 5 mm long; pedicel 2.5 mm long, with a filament 3-4 mm long; ovary 4 mm long; **sepals** yellow-orange, fleshy, studded within above the middle by papillary cells, the dorsal sepal elliptical-ovate, concave, acute, 10 mm long, 4.5 mm wide, 3-veined, the lateral sepals adherent to the apex into an elliptical-ovate, obtuse synsepal 9 mm long, 5 mm wide; **petals** translucent yellow, oblong-elliptical, obtuse, 6 mm long, 2 mm wide, 1-veined, the margins cellular; **lip** light green, oblong-trilobed, 4.5 mm long, 2 mm wide, with the margins cellular-denticulate, the apex rounded, shallowly retuse, the disc channeled, broadly at the base between the basal lobes, the basal lobes small, thin, erect, obtuse, oblique, the base hinged to the column-foot; **column** light green, slender, semiterete, 3 mm long, with a thick foot 1 mm long.

BOLIVIA: Dept. of La Paz: Prov. of Nor Yungas, epiphytic in forest west of Coroico, alt. 1820 m, collected Feb. 1983, flowered in cultivation 15 June 1983, C. Luer, J. Luer & R. Vásquez 9083 (Holotype: SEL).

This species, the only one of the genus presently known to occur in Bolivia, is apparently endemic in the Yungas. *Restrepiopsis carnosa* is identified by the relatively large habit; large, orange, fleshy flowers with the lateral sepals coherent; and a longitudinally channeled lip.

***Restrepiopsis clausa* Luer & Escobar, *Selbyana* 2: 202, 1978.**

Ety.: From the Latin *clausus*, "closed," referring to the cleistogamous flowers.

Syn.: *Restrepiella clausa* (Luer & Escobar) Braas & Mohr, *Die Orchidee* 33: 154, 1982.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, 2-6 cm long, enclosed by 6-8 brown, imbricating, ribbed, tubular sheaths. **Leaf** erect, coriaceous, elliptical, subacute to acute, 18-28 mm long, 10-15 mm wide, the base cuneate into a petiole 2-3 mm long. **Inflorescence** a succession of single, cleistogamous flowers produced in a fascicle by peduncles 4-5 mm long from near the apex of the ramicaul; floral bract 3-4 mm long; pedicel 2-3 mm long, with a filament 2 mm long; ovary 2 mm long; **sepals** yellowish green, closed, the dorsal sepal ovate, obtuse to abruptly acute, concave, 4 mm long, 2.5 mm wide, 3-veined, lightly adherent to the lateral sepals, the lateral sepals ovate, oblique, acute, 4.5 mm long, 1.5 mm wide, 2-veined, adherent to each other; **petals** translucent yellow, elliptical, subacute, 3.5 mm long, 1.25 mm wide, 1-veined; **lip** light green, thick, ovate-trilobed, 3.5 mm long, 1.5 mm wide, 3 mm wide across the basal lobes expanded, the anterior lobe ovate, acute, with incurved, serrulate margins, the basal lobes suffused with purple, proportionately large, erect, rounded, the disc concave with a low pair of central carinae, the base broadly hinged to the column-foot; **column** green, slender, semiterete, 2 mm long, with a short foot.

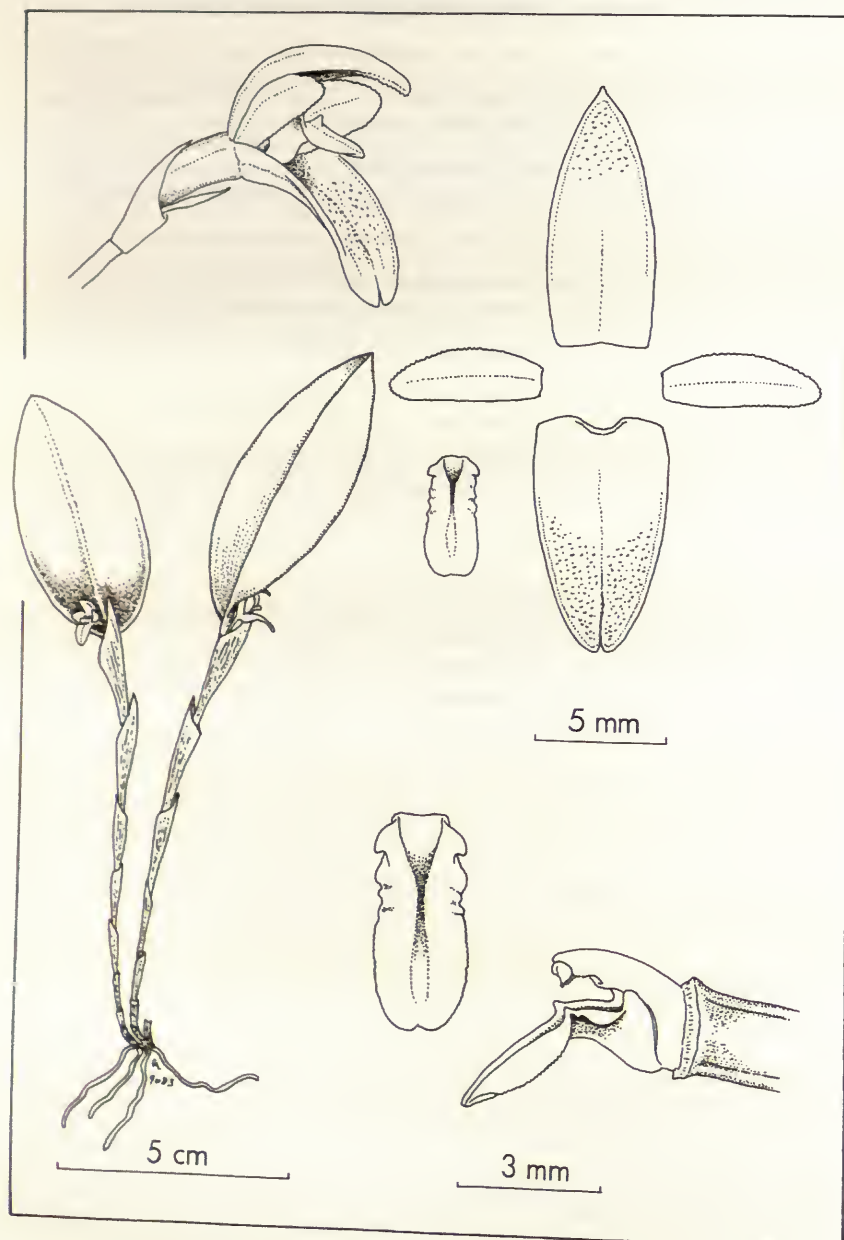


Plate 1. *Restrepiopsis camosa* Luer & Vásquez

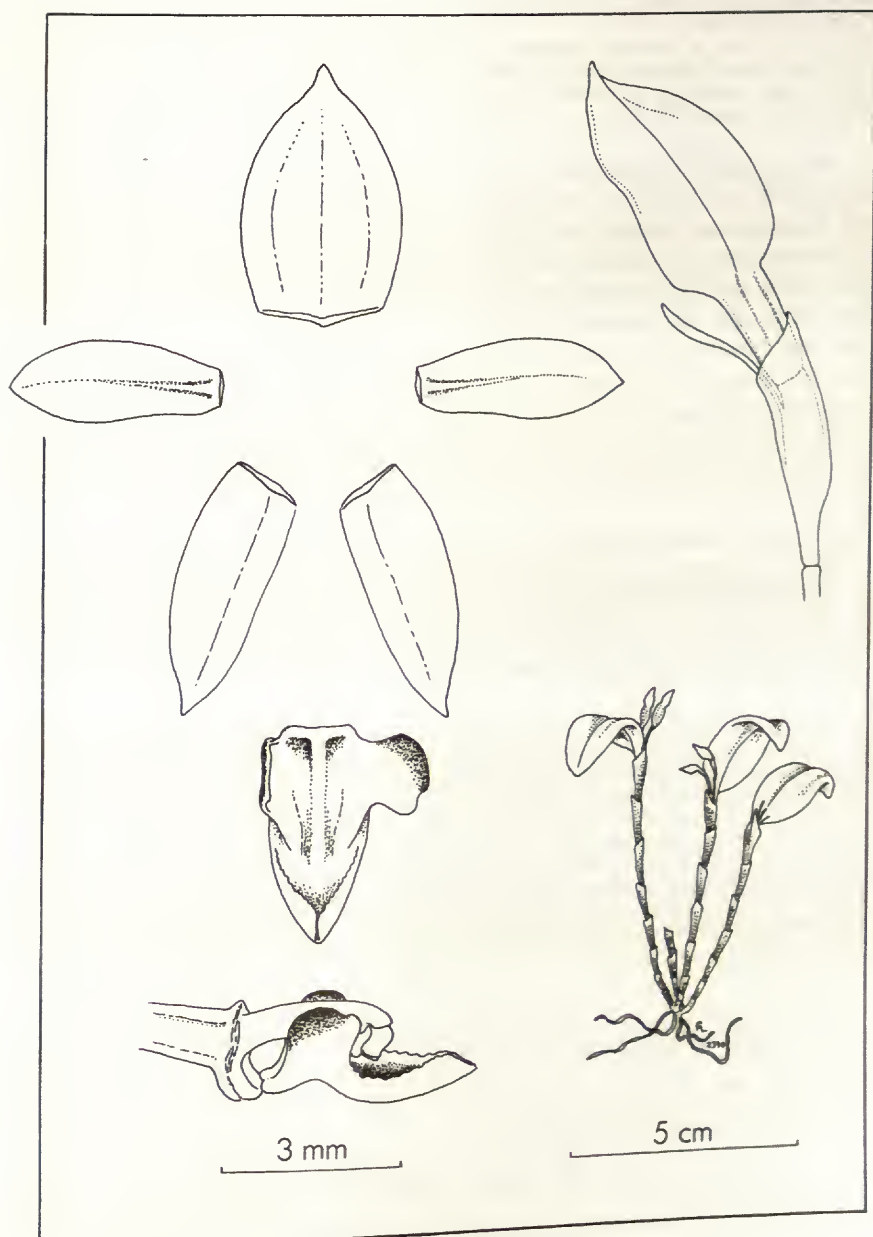
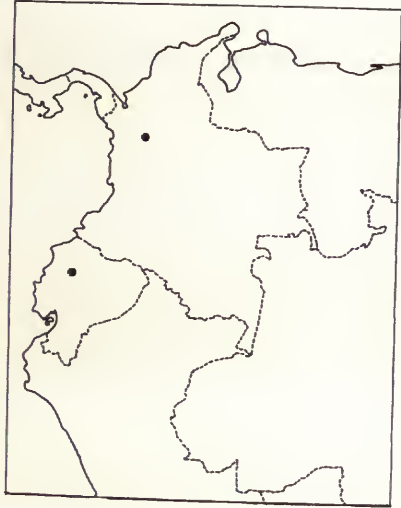


Plate 2. *Restrepiopsis clausa* Luer & Escobar

COLOMBIA: Dept. of Antioquia: without collection data, flowered in cultivation by M. & O. Robledo at La Ceja, 25 Jan. 1978, *C. Luer* 2330 (Holotype: JAUM; Isotype: SEL).

ECUADOR: Prov. of Pichincha: epiphytic in cloud forest above Tandapi, alt. 1700 m, collected by A. Hirtz, flowered in cultivation in Quito, 8 Feb. 1986, *C. Luer* 11700 (MO).

This species is identified by the small habit usually with a few, yellowish, cleistogamous flowers in all stages of development from buds to fruit. The sepals are lightly adherent. The lip is distinctive with an acute anterior lobe with incurved, serrulate margins, and with a large pair of purple, erect, rounded, basal lobes.



***Restrepiopsis inaequalis* Luer & Escobar, sp. nov.**

Ety.: From the Latin *inaequalis*, "unequal," referring to the lateral sepals considerably longer than the dorsal sepal.sepals.

Species haec *R. tubulosae* (Lindley) Luer affinis, sed sepalis valde purpureo striatis, sepalo dorsali non concavo, sepalis lateralibus quam sepalo dorsali longioribus et labelli lobis basalibus uncinatis differt.

Plant medium in size, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 4-13 cm long, enclosed by 5-7 brown, imbricating, ribbed, tubular sheaths. Leaf erect, coriaceous, elliptical, subacute, 3.5-4.5 cm long, 1.5-2 cm wide, cuneate below into a petiole 1-3 mm long below the apex of the ramicaul; floral bract 3-4 mm long; pedicel 4-5 mm long, with a filament 3 mm long; ovary 3 mm long; **sepals** translucent white to light yellow-green, veined in purple-brown, the dorsal sepal ovate, acute, very shallowly concave near the base, 8-10 mm long, 4.5-5 mm wide, 3-veined, the lateral sepals narrowly obovate-oblong, slightly broader above the middle, with the obtuse apex curved outward, 11-12 mm long, 2.5-3 mm wide, 3-veined, free; **petals** translucent white to pale green, with purple stripe, elliptical-obovate, 4-6 mm long, 2 mm wide, 1-veined, the apex subacute to rounded; **lip** pale yellow-green, ovate-trilobed, 4-6 mm long, 2.5 mm wide, the apex obtuse to rounded, the disc with a pair of low, microscopically pubescent calli extending forward from the basal lobes, shallowly concave between, the basal lobes small, erect, thin, antrorse, uncinata, acute, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 3 mm long, with a thick foot 1.5 mm long.

ECUADOR: Prov. of Zamora-Chinchi: epiphytic in forest between Loja and Zamora, alt. 1500 m, collected Nov. 1982 by R. Escobar & C. Luer, flowered in cultivation at Colombrquídeas in Colombia, 17 Apr. 1988, *C. Luer* 13211 (Holotype: MO).

COLOMBIA: Prov. of Santander: Alto de Santa Inés, collector unknown, flowered in cultivation by M. & O. Robledo at La Ceja, 15 Oct. 1977, *C. Luer* 2042 (SEL); Alto del Pozo, alt. 2400 m, collected 5 May 1982 by R. Escobar, J. & C. Luer, flowered in cultivation by M. & O. Robledo at La Ceja, 19 Mar. 1989, *C. Luer* 14266 (MO).



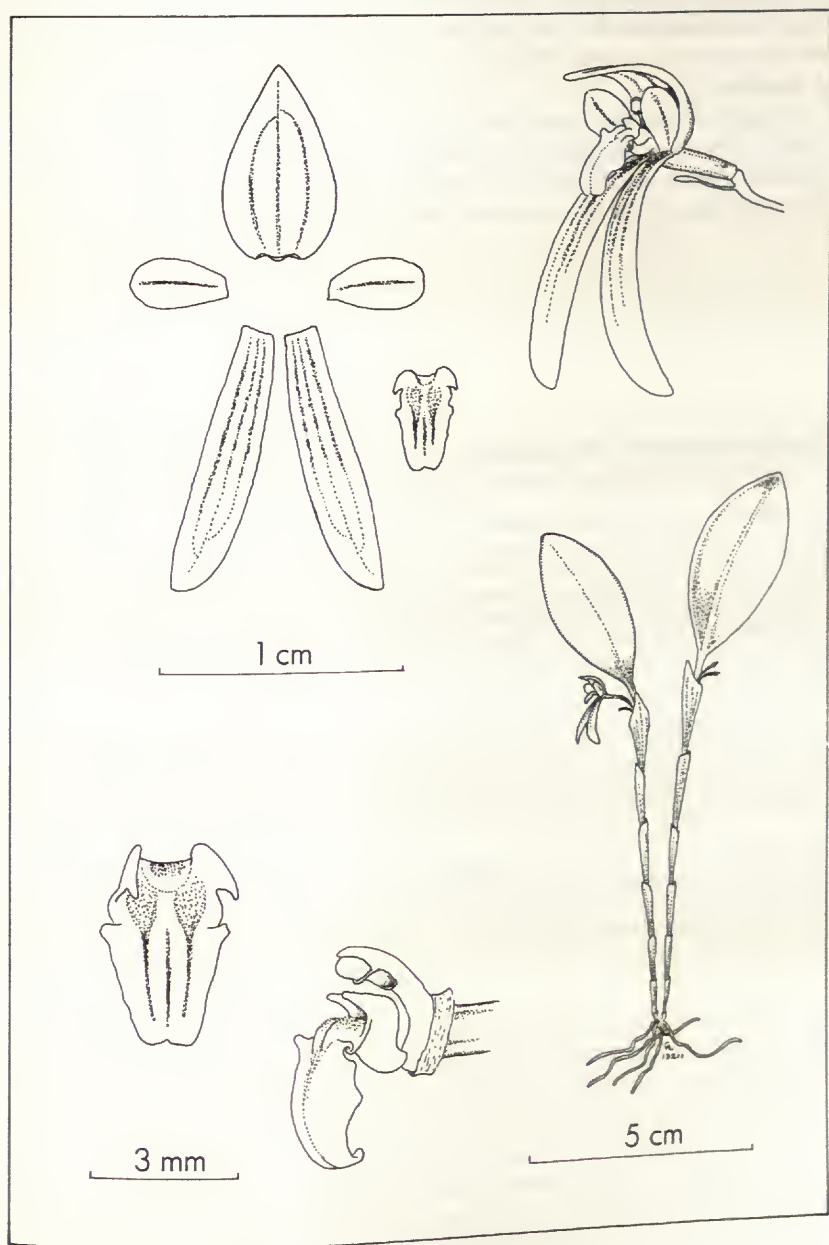


Plate 3. *Restrepiopsis inaequalis* Luer & Escobar

This species is known from three isolated collections, two in the Eastern Cordillera of Colombia and one in southern Ecuador. There are minor differences among them, but they appear to represent the same taxon. They may merely represent extreme forms of the widely distributed concept treated as *R. tubulosa*.

In each of the specimens identified as *R. inaequalis*, the dorsal sepal is ovate, acute and essentially not concave. The lateral sepals are narrowly obovate-oblong, obtuse, and 2 to 3 millimeters longer than the dorsal sepal. The basal lobes of the lip are more or less uncinatate.

***Restrepiopsis insons* Luer & Escobar, Selbyana 7: 77, 1982.**

Ety.: From the Latin *insons*, "innocent," in reference to the cleistogamous flowers.

Plant very small, epiphytic, caespitose; roots slender. **Ramicauls** erect, 3-10 mm long, enclosed by 2-3 imbricating, ribbed, tubular sheaths. **Leaf** erect, thickly coriaceous, suffused with purple, narrowly elliptical, subacute to obtuse, 10-15 mm long, 3-4 mm wide, cuneate below into subpetiolate base. **Inflorescence** a succession of tiny, solitary, cleistogamous flowers produced in a fascicle by peduncles 1-3 mm long from near the apex of the ramicaul; floral bract 1-2 mm long; pedicel 2-3 mm long, with a filament 1.5 mm long; ovary 2-3 mm long, increasing in size with the age of the bud; **sepals** light green, suffused with purple apically and along the veins, lightly adherent to the apices, the dorsal sepal ovate, acute, concave, 2.75 mm long, 1.25 mm wide, 3-veined, the lateral sepals adherent into an ovate, acute synsepal, 3 mm long, 1.5 mm wide, 4-veined; **petals** translucent white, elliptical-oblong, subacute, 2 mm long, 0.6 mm wide, 1-veined; **lip** white, thick, ovate-trilobed, 1.75 mm long, 1.5 mm wide, the middle lobe subacute, the disc with a pair of low calli extending forward from the basal lobes, the basal lobes erect, oblong, oblique, antrorse, subacute, the base hinged to the column-foot; **column** white, stout, semiterete, 1.5 mm long, with a thick foot 0.5 mm long.

COLOMBIA: Dept. of Norte de Santander: epiphytic near the river between Abrego and Sardinata, alt. ca. 2000 m, collected 12 Nov. 1981 by R. Escobar, D. Portillo J. & C. Luer, flowered in cultivation, 4 Apr. 1982, C. Luer 7437 (Holotype: SEL).

This tiny species, one of the most insignificant of the subtribe, is known from only one collection. It is distinguished by the minute habit with ramicauls shorter or as long as the thick, narrowly elliptical leaves. The tiny, successive, budlike flowers never open as the ovaries swell. The lip is minute with a subacute middle lobe and short, oblique basal lobes. It is little more than a dwarf, cleistogamous form of *R. norae*.



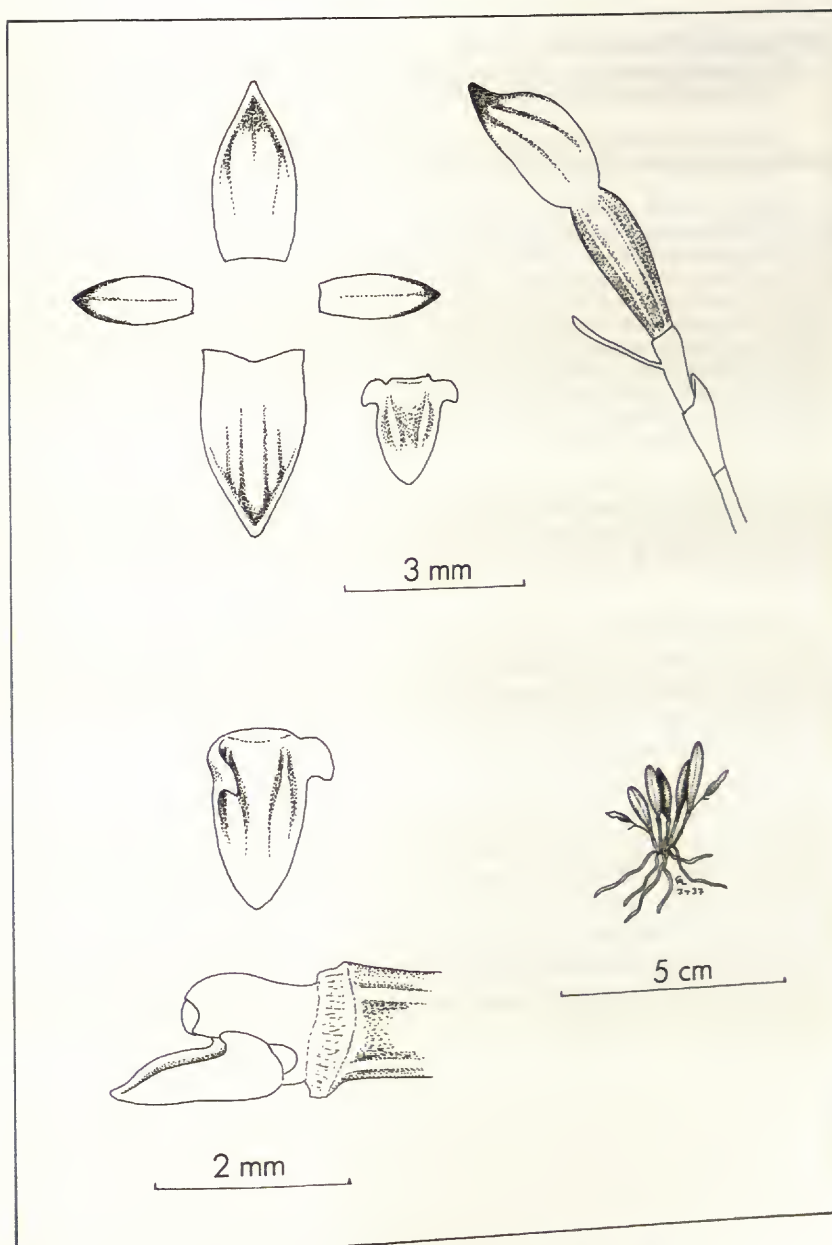


Plate 4. *Restrepiopsis insons* Luer & Escobar

***Restrepiopsis lehmannii* Luer, sp. nov.**

Ety.: Named in honor of F. C. Lehmann, German Consul, mining engineer, and prominent orchid specialist who discovered this species.

Planta perparva caespitosa, ramicaulibus foliis acicularibus leviter brevioribus floribus minutissimis cleistogamis, sepalis petalis ovatis, labello suborbiculato concavo.

Plant very small, epiphytic, caespitose; roots comparatively coarse. Ramicauls erect, slender, 10-18 mm long, enclosed by 2-3 imbricating, ribbed, tubular sheaths. **Leaf** erect, narrowly linear, semiterete, acute, 20-27 mm long, 0.5 mm wide in the dried state. **Inflorescence** a succession of tiny, solitary, cleistogamous, red-brown flowers produced in a fascicle by peduncles less than 0.5 mm long from near the apex of the ramicaul; floral bract less than 1 mm long; pedicel 1.5 mm long; ovary 1-2 mm long, increasing in size with the age of the flower; **sepals** not widely spread, elliptical-ovate, obtuse, concave, the dorsal sepal 1 mm long, 0.6 mm wide, 3-veined, the lateral sepals 1 mm long, 0.75 mm wide, 1-veined; **petals** elliptical, obtuse, 0.8 mm long, 0.5 mm wide, 1-veined; **lip** suborbicular, concave, 0.6 mm long, 0.6 mm wide, the disc featureless, the base hinged to the column-foot; **column** stout, semiterete, 0.5 mm long, with an obsolescent foot, the anther large.

COLOMBIA: Dept. of Valle del Cauca: epiphytic in humid forest on the coast near Buenaventura, flowers in Nov. and Dec., *F. C. Lehmann s.n.* (Holotype: K, H.K. 377), *C. Luer* illustr. 14708.

This tiny species was collected by Consul Lehmann in a humid forest along the coast near Buenaventura, Colombia. It was among Lehmann's collections purchased by Kew in 1906.

Restrepiopsis lehmannii is distinguished by the minute habit, needle-like leaves a little longer than the ramicauls, and a fascicle of minute flowers, most of which develop capsules. The flower parts are simple including the concave, suborbicular lip. The anther is exceptionally large for the column and it contains a row of four pollinia.



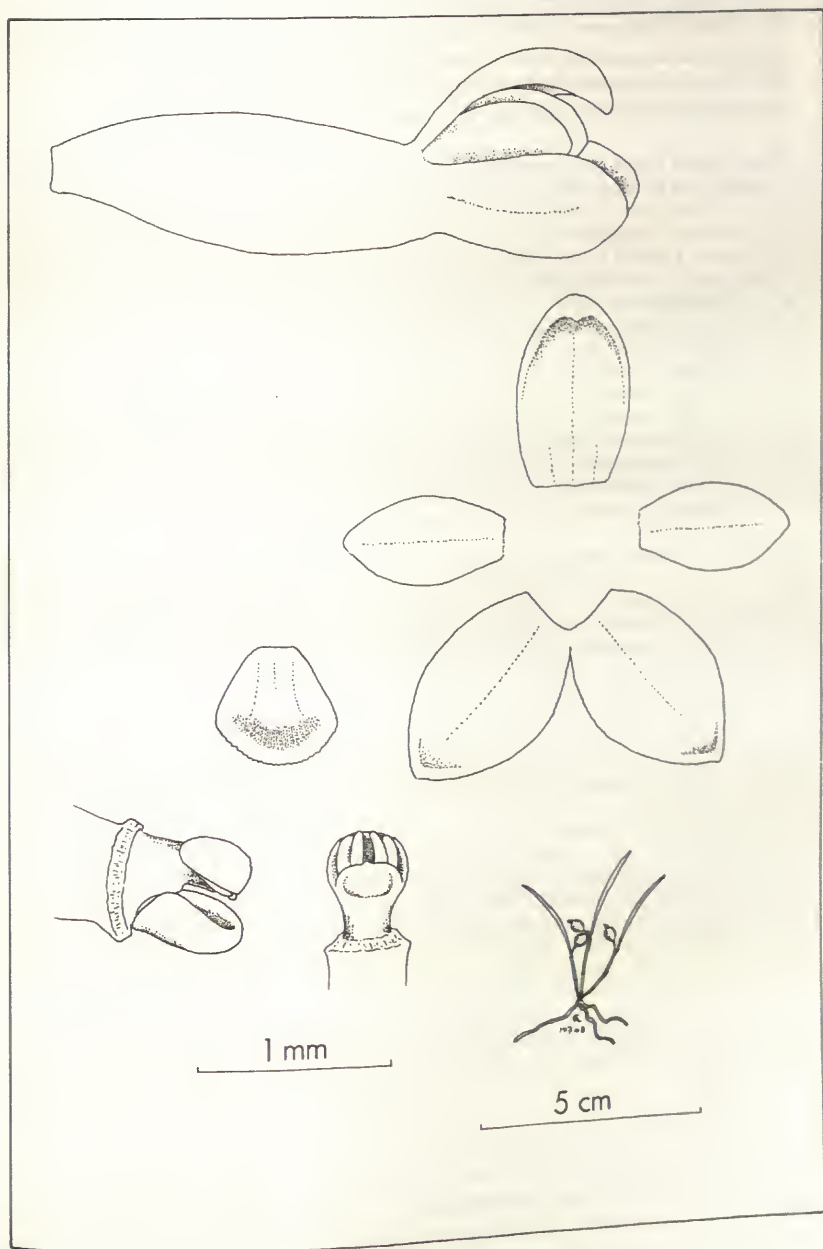


Plate 5. *Restrepiopsis lehmannii* Luer

***Restrepiopsis microptera* (Schltr.) Luer, Selbyana 2: 200, 1978.**

Bas.: *Pleurothallis microptera* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 108, 1920.

Ety.: From the Greek *micropteron*, "a small wing," referring to the basal lobes of the lip.

Syn.: *Restrepiella microptera* (Schltr.), Garay & Dunsterv., Venez. Orchids III. 4: 266, 1966.

Syn.: *Restrepiella grandiflora* Garay, Orchid Digest 31: 39, 1967.

Ety.: From the Latin *grandiflorus*, "with a large flower," referring to inflorescence.

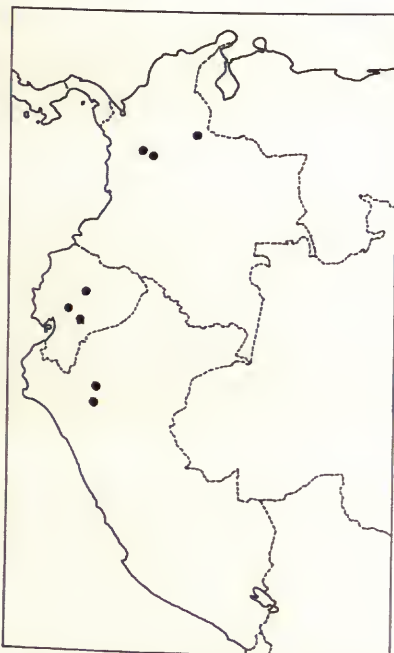
Syn.: *Restrepiopsis grandiflora* (Garay) Luer, Selbyana 2: 200, 1978.

Plant medium in size to large, epiphytic to terrestrial, caespitose; roots coarse. Ramicauls erect, stout, 10-24 cm long, enclosed by 7-11 brown, imbricating, ribbed, tubular sheaths, frequently shed. Leaf erect, thickly coriaceous, elliptical, subacute, 5-10 cm long, 2-4 cm wide, cuneate below into a subpetiolate base ca. 1 mm long. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 2-3 mm long from 5-8 mm below the apex of the ramicaul; floral bract 3-7 mm long; pedicel 3-10 mm long, with a filament 2-3 mm long; ovary 3-4 mm long; sepals light green to yellow or tan, sometimes veined in brown, thickened toward the apex, the dorsal sepal narrowly ovate, acute, concave below the middle, 11-13 mm long, 3.5-4 mm wide, 3-veined, the lateral sepals narrowly oblong-triangular, oblique, acute, 11-14 mm long, 2 mm wide, 1-veined to faintly 3-veined, free; petals translucent pale green, elliptical, acute, 5 mm long, 2 mm wide, 1-veined, the margins cellular erose; lip pale green, oblong-trilobed, 4.5-5 mm long, 2.5 mm wide, minutely erose, the apex rounded, more or less lightly retuse, the disc with a pair of low calli extending forward from the basal lobes, shallowly concave between, the basal lobes small, erect, thin, oblong, oblique, obtuse, the distance across the lateral lobes about equal to the width of the middle lobe, the base hinged to the column-foot; column greenish white, slender, semiterete, 3 mm long, with a thick foot 1.5 mm long.

COLOMBIA: Dept. of Antioquia: epiphytic in forests around Abejorral and La Ceja, alt. 1700-2200 m, Mar.-Apr. 1889, F. C. Lehmann 6922 (Holotype: ?); same area, F. C. Lehmann 6928 (K); near La Ceja, flowered in cultivation by M. & O. Robledo at La Ceja, 6 Oct. 1977, C. Luer 1934 (SEL); terrestrial on the road-cut near Mesopotamia, alt. 2400 m, 8 Apr. 1988, C. Luer, J. Luer, R. Escobar 13065 (MO). Dept. of Norte de Santander: Alto de Mefue, alt. 2500 m, 12 May 1984, C. Luer, J. Luer, R. Escobar & E. Valencia 10289 (MO).

ECUADOR: Prov. of Chimborazo: Monte Cajabamba, J. Strobel s.n. (AMES, type of *R. grandiflora*). Prov. of Morona-Santiago: Dodson 372 (MO, SEL). Prov. of Napo: epiphytic in the Guacamayo Range, alt. 1800 m, 18 Nov. 1984, A. Hirtz 2106 (MO), C. Luer illustr. 13736.

PERU: Dept. of Amazonas: Chachapoyas, Río Ventilla, alt. 2350-2400 m, 23 July 1962, J. J. Wurdock 1477 (AMES); Bongará north of Pomacochas, alt. 2150-2200 m, 2 June 1986, S. Knapp, P. Alcorn, J. Mallet & H. Esley 7531 (MO).



This robust species, relatively frequent in all three cordilleras of Colombia, is often found colonizing steep road-embankments. In Ecuador and Peru it is less frequent. It was first collected by Consul Lehmann in the mountains above Medellín around La Ceja where it is still frequent today.

The relatively large flowers are yellowish to greenish, often veined in red or purple. A red-striped form from Ecuador was described as *R. grandiflora*. The basal lobes of the lip of the latter are slightly larger, but considering the degree of variation which must be allowed in *R. tubulosa*, these differences are insignificant.

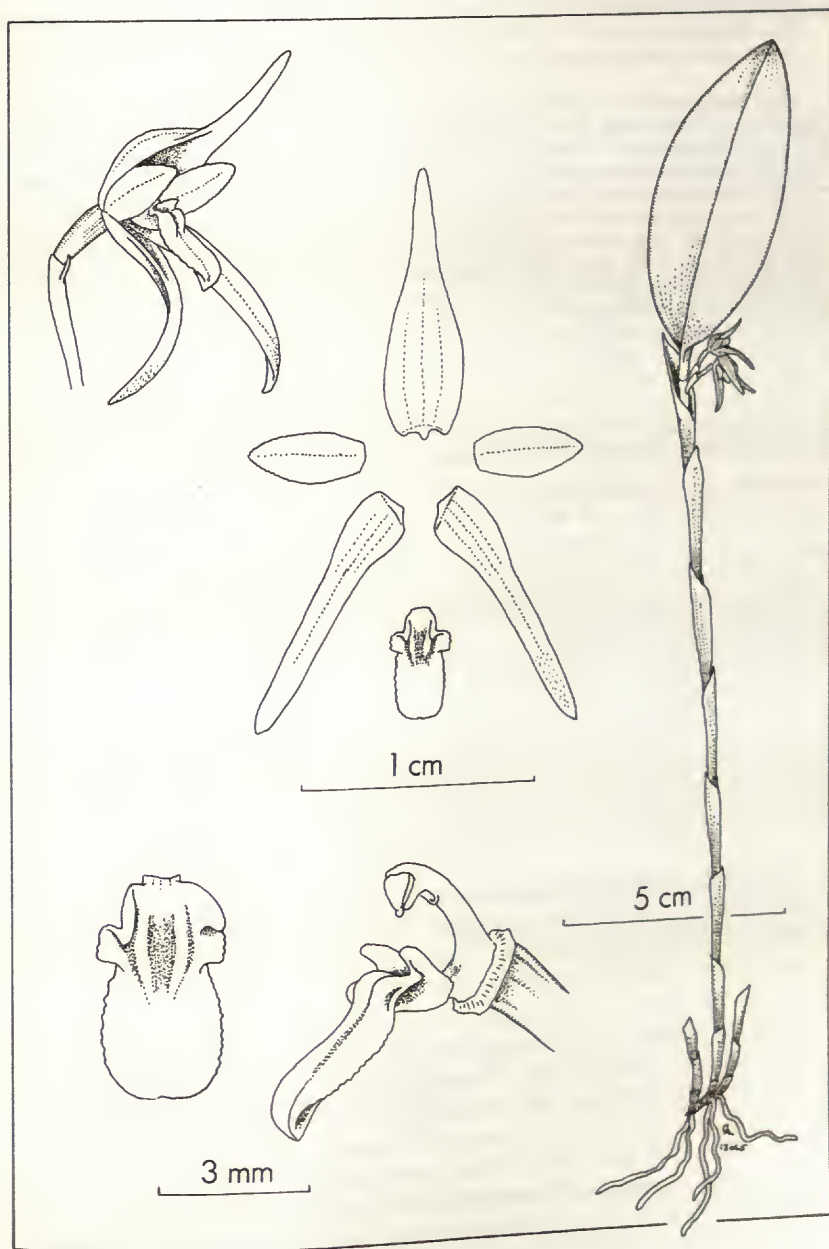


Plate 6. *Restrepiopsis microptera* (Schltr.) Luer

Restrepiopsis monetalis (Luer) Luer, Selbyana 7: 128, 1982.

Bas.: *Octomeria monetalis* Luer, Phytologia 46: 353, 1980.

Ety.: From the Latin *monetalis*, "like a coin," referring to the shape of the leaves.

Syn.: *Restrepiopsis pulchella* Luer, Phytologia 54: 389, 1983.

Ety.: From the Latin *pulchellus*, "pretty," referring to qualities of the plant.

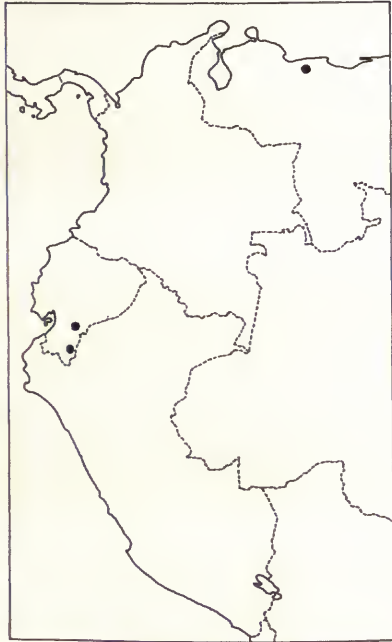
Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-4 cm long, enclosed by 3-4 imbricating, ribbed, tubular sheaths. **Leaf** erect, thickly coriaceous, suffused with purple, broadly ovate to suborbicular, the apex obtuse to rounded, 2-3.3 cm long, 1.2-2.7 mm wide, the rounded base contracted into a more or less twisted petiole 1.5-3 mm long. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 3-7 mm long from near the apex of the ramicaul; floral bract 3-4 mm long; pedicel 4-5 mm long, with a small filament; ovary 3 mm long; **sepals** fleshy, yellow-green, suffused or dotted with purple especially along the veins the dorsal sepal ovate, obtuse, concave, 7.5-12 mm long, 5-6 mm wide, 3-veined, the lateral sepals ovate to obovate, oblique, subacute, 7-11 mm long, 2.5-4.5 mm wide, 3-veined; **petals** yellow-green, suffused or veined in purple, elliptical-oblong, subacute to obtuse, 5-8 mm long, 2.5-3 mm wide, 1-veined, the margins cellular erose; **lip** yellow-green, suffused with purple, pandurate-trilobed, 4-7 mm long, 3.25-5.5 mm wide above the middle, the apex broadly rounded or lightly retuse, the disc with a pair of low calli extending forward from the basal lobes, concave between, the basal lobes erect, thin, broad, oblique, subacute, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 3.5-4 mm long, with a thick foot 1 mm long; pollinia normally 4, often with 1 or 2 extra pairs.

ECUADOR: Prov. of Zamora-Chinipe: cloud forest above Valladolid, alt. ca. 2000 m, collected by W. Teague and L. Figueroa, flowered in cultivation in San Francisco, California, USA, 21 Apr. 1979, *C. Luer* 3646 (Holotype: SEL); between Loja and Zamora, alt. 1800 m, 11 June 1958, *C. H. Dodson* 222 (MO, SEL).

VENEZUELA: without locality, obtained by B. Würstle from Hubein, flowered in cultivation at Spielberg, West Germany, 13 Sept. 1982, *C. Luer* 8143 (SEL, holotype of *R. pulchella*); without locality, obtained by R. Determann, flowered in cultivation Dec. 1981, *C. Luer* 6802 (SEL); without locality, collected by T. Mulder, cultivated in Wageningen, Holland, 3 Sept. 1984, *C. Luer* 10439 (MO).

The leaves of this pretty species are broadly ovate to suborbicular and generously suffused with purple. The sepals of the relatively large flower are more or less fleshy. The blade, or middle lobe of the lip, varies somewhat in the plants examined, but all are widest above the middle. The typical form of this species occurs in southern Ecuador, while forms with smaller flowers differing in minor details occur in Venezuela.

Normally, specimens of *R. monetalis* have four pollinia. An additional four smaller pollinia had been produced by the Ecuadorian plant originally described which led to the decision to place the species in *Octomeria*. Subsequently, "normal" plants with only four pollinia, and a plant with the four pollinia plus only two additional, smaller pollinia has been seen.



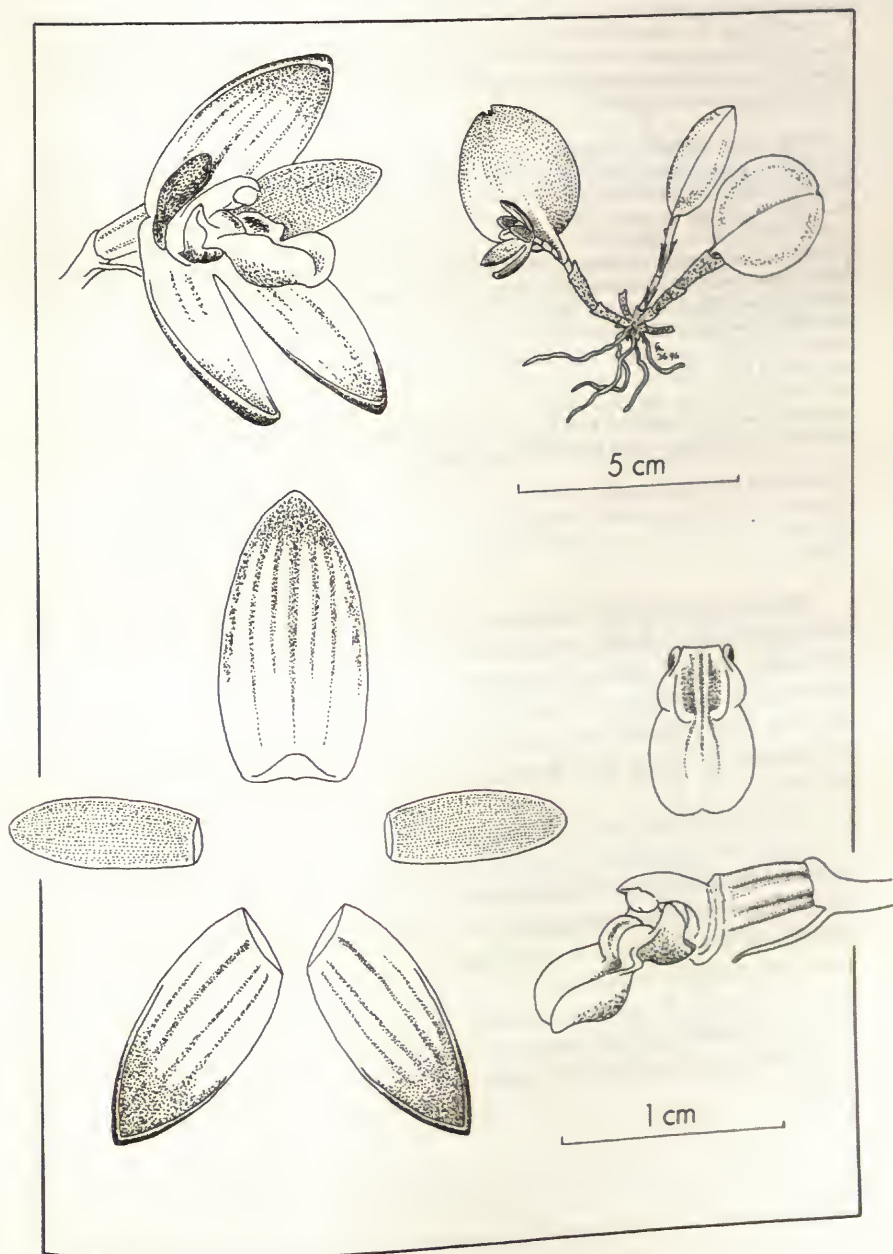


Plate 7. *Restrepiopsis monetalis* (Luer) Luer

***Restrepiopsis mulderae* Luer, sp. nov.**

Ety.: Named in honor of Tineke Mulder who discovered and cultivates this species.

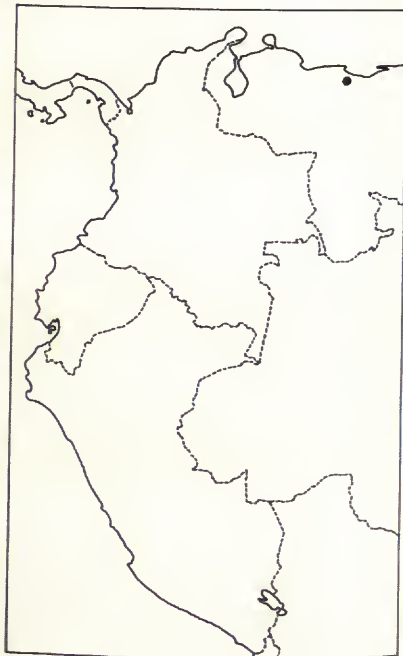
Species haec *R. tubulosae* (Lindley) Luer affinis, sed foliis carnosis angustis, sepalis acutis minutissime ciliatis, petalis orbiculatis minute erosis, labello canaliculato trisegmentato, segmento basali cum marginibus humilibus, segmento medio cum marginibus revolutis, segmento antico expanso orbiculato differt.

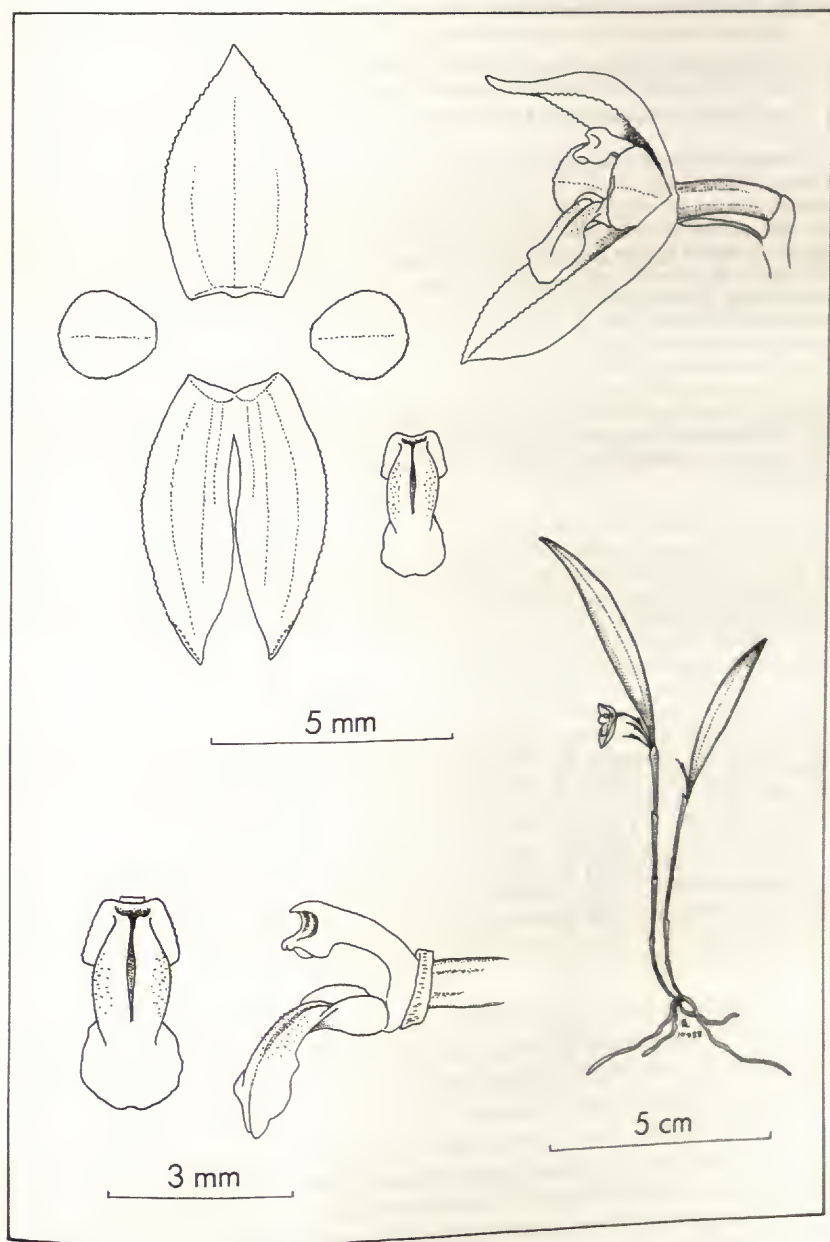
Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-4.5 cm long, enclosed by 3-4 imbricating, ribbed, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly elliptical, acute, 3.5-4.5 cm long, 0.5-0.6 cm wide, narrowed below into a subpetiolate base. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 5 mm long below the apex of the ramicaul; floral bract 4 mm long; pedicel 5 mm long, with a filament 2.5 mm long; ovary 3 mm long; **sepals** translucent yellow veined in brown, the margins cellular-glandular, the dorsal sepal ovate, acute, shallowly concave, 5.5 mm long, 3.25 mm wide, 3-veined, the lateral sepals narrowly elliptical, acute, 6 mm long, 2 mm wide, 1-veined, or faintly 3-veined, free above the base, approximate in the natural position; **petals** translucent yellow with the midvein brown, orbicular, cellular-erose, 2 mm long, 2 mm wide, 1-veined; **lip** yellow, oblong-panduriform, 3.25 mm long, 1.5 mm wide, the apical segment suborbicular, the middle segment cellular-verrucose with revolute margins, the basal segment with low, erect, cellular margins, the disc channeled between a pair of low calli, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 2 mm long, with a thick foot 1 mm long.

VENEZUELA: without locality, collected by T. Mulder, flowered in cultivation in Wageningen, Holland, 3 Sept. 1984, *C. Luer* 10438 (Holotype: MO).

This little species was collected in Venezuela by Mrs. Tineke Mulder and cultivated by her in Holland. Although vegetatively similar to *R. striata* with narrow, fleshy leaves, the lip of *R. mulderae* is one of the most distinct in the genus.

The lip is more or less pandurate in shape in three segments. The usual basal lobes of the basal segment are reduced to broad but low margins, the margins of the narrowed middle segment are revolute, and the apical segment is expanded and suborbicular. The longitudinal calli on the disc are broad and separated by a midline sulcus.



Plate 8. *Restrepiopsis mulderae* Luer

***Restrepiopsis norae* (Garay & Dunsterv.) Luer, Selbyana 2: 200, 1978.**

Bas.: *Restrepiella norae* Garay & Dunsterv., Venez. Orchids Ill., 6: 388, 1976.

Ety.: Named in honor of Nora Dunsterville, wife and companion to G. C. K. Dunsterville, the two of whom collected orchids extensively in their years in Venezuela.

Syn.: *Restrepiopsis bicallosa* Luer & Escobar, Selbyana 2: 201, 1978.

Ety.: From the Latin *bicallosus*, "with two calli," referring to the calli on the lip.

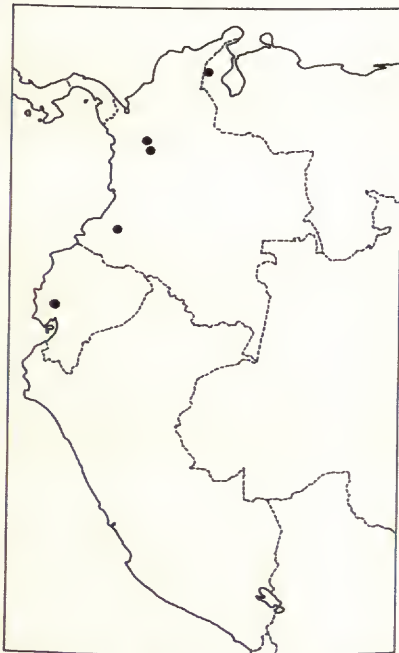
Syn.: *Restrepiella bicallosa* (Luer & Escobar) Braas & Mohr, Die Orchidee 33: 154, 1982.

Plant small to very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 1-3.5 cm long, enclosed by 2-4 imbricating, ribbed, tubular sheaths. **Leaf** more or less suffused with purple, erect, thickly coriaceous, elliptical, subacute, 10-25 cm long, 4-6 mm wide, the base cuneate into the subpetiolate base. **Inflorescence** a succession of single flowers produced in a fascicle by erect peduncles 3-11 mm long from the apex of the ramicaul; floral bract 1.5-3 mm long; pedicel 2-4 mm long, with a filament as long as the ovary; ovary 1.5-2 mm long; **sepals** fleshy, greenish white to translucent with rose suffusion along the midveins, the dorsal sepal ovate, subacute to obtuse, concave, 3-3.5 mm long, 2-2.5 mm wide, 3-veined, the lateral sepals ovate, oblique, subacute to obtuse, 2.75-3.5 mm long, 1.4 mm wide, lightly adherent to about half their length, 2-veined; **petals** translucent, elliptical-oblong, obtuse, 3-2.5 mm long, 1 mm wide, 1-veined, the margins microscopically cellular-denticulate; **lip** yellow-green, ovate-trilobed, 2-3 mm long, 1.25-2 mm wide, the apex obtuse to subtruncate, the disc with a low, pair of rounded calli near the middle, the basal lobes small, obtuse, oblique, erect, the base hinged to the column-foot; **column** greenish white, stout, semiterete, 1-1.5 mm long, with a thick foot 1 mm long.

VENEZUELA: Edo. Zulia: Sierra de Perijá, trail from Pishicacao to Socorpa, July 1972, G. C. K. Dunsterville 1232 (Holotype: AMES); same area, alt. 1400 m, Aug. 1976, G. C. K. Dunsterville s.n. (VEN).

COLOMBIA: Dept. of Antioquia: Munic. of Santa Rosa, Represa de la Garcia, alt. 2300-2600 m, collected by S. Restrepo, flowered in cultivation at El Retoro, 26 Jan. 1978, C. Luer 2332 (JAUM, type of *R. bicallosa*, SEL). Munic. of Abriaquí: Río Herradura, alt. 1960 m, collected by R. Escobar, flowered in cultivation at Colomborquideas, 6 Apr. 1988, C. Luer 13047 (MO), 5 Mar. 1989, C. Luer 14091 (MO). Dept. of Cauca: above Popayán, alt. 1700-2000 m, 1885, F. C. Lehmann 5510 (K).

ECUADOR: Without locality, obtained by M. Behar at a Guayaquil orchid show, flowered in cultivation by H. Ibañez in Cobán, Guatemala, 3 Dec. 1990, C. Luer 14872 (MO).



This small species is locally distributed in Venezuela, Colombia and Ecuador. It was first collected by Consul Lehmann above Popayán in southern Colombia. It is distinguished by small ramicauls and equally long, elliptical leaves. The very small, solitary flowers are borne in a fascicle of erect peduncles up to a centimeter long.

The populations vary somewhat vegetatively and in the size of the calli and the size and shape of the basal lobes of the lip. The calli of the plant described as *R. bicallosa* are noticeably larger than those seen in other populations, but degrees in between have subsequently been seen.

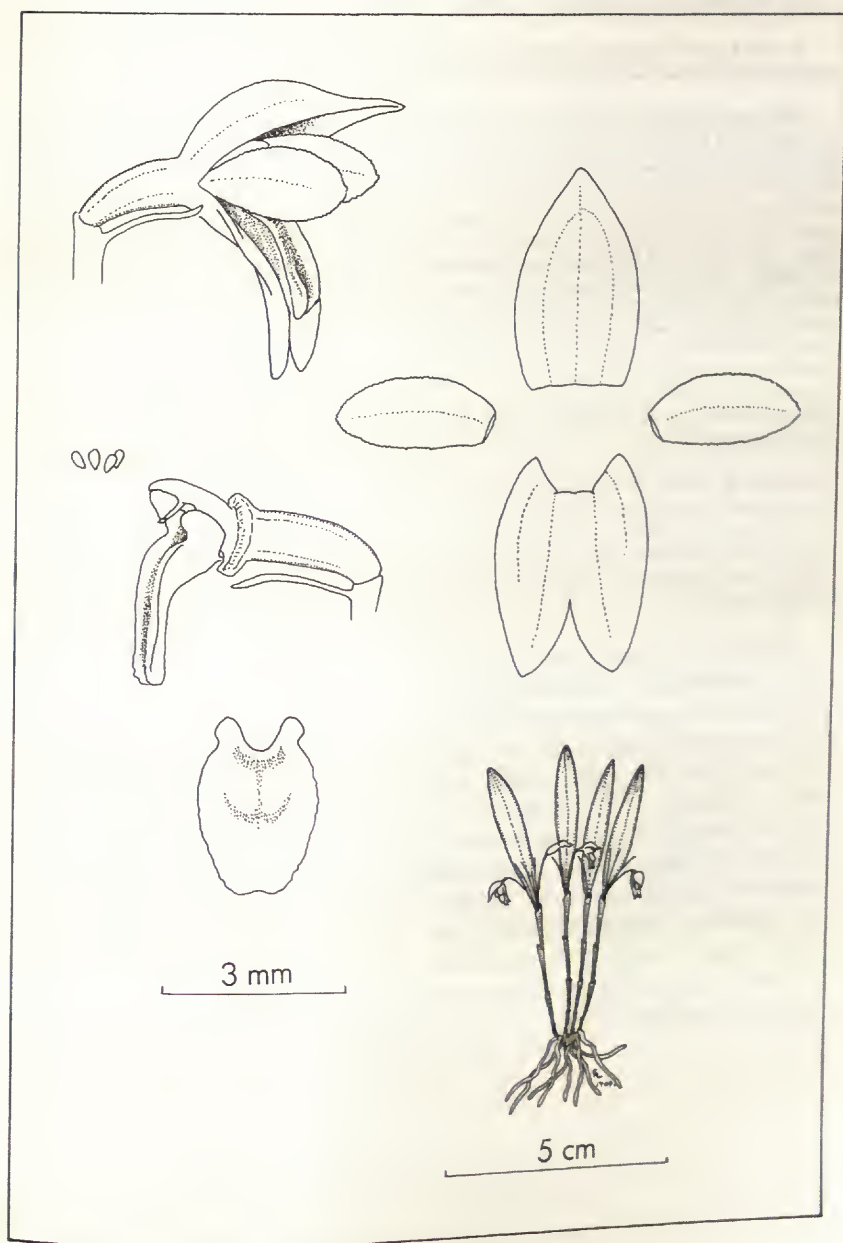


Plate 9. *Restrepiopsis norae* (Garay & Dunsterv.) Luer

***Restrepiopsis pandurata* Luer, sp. nov.**

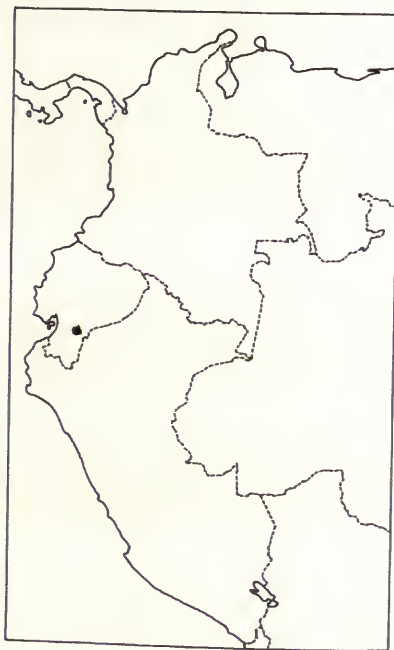
Ety.: From the Latin *panduratus*, "pandurate," referring to the shape of the lip.

Species haec *R. tubulosae* (Lindley) Luer affinis, sed habitu minore et labello pandurato infra medium fimbriato basi lobato cum lobis acutis antrorsis differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-4 cm long, enclosed by 3-4 imbricating, ribbed, tubular sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 2-4 cm long, 0.7-1 cm wide, narrowed below into a subpetiolate base. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 3-4 mm long near the apex of the ramicaul; floral bract 3 mm long; pedicel 2.5-3.5 mm long, with a filament 3 mm long; ovary 2.5 mm long; **sepals** translucent light yellow-green or pale tan, veined in purple or brown, the dorsal sepal ovate, acute, concave, 7.5-8.5 mm long, 5 mm wide, 3-veined, the lateral sepals narrowly elliptical, oblique, acute, 8-9 mm long, 2-2.5 mm wide, 2-veined, lightly adherent or approximate in the natural position; **petals** translucent with the midvein purple or brown, elliptical, cellular-erose, 5 mm long, 2.5-3 mm wide, 1-veined; **lip** light green to white, suffused purple or brown, panduriform, 6.5-7 mm long, 4 mm wide, the apical portion broadly ovate, obtuse, shortly apiculate, fimbriate below the middle in the constricted portion, bilobed at the base, the lobes erect, acute, antrorse, the disc with a pair of low calli extending forward from the basal lobes, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 3 mm long, with a thick foot 1 mm long.

ECUADOR: Prov. of Zamora-Chinipe: epiphytic in forest between Loja and Zamora, alt. 1500 m, 3 Feb. 1987, C. Luer, J. Luer & A. Hirtz 12596 (Holotype: MO); Cordillera del Condor, above Nambija, alt. 1000 m, Feb. 1987, A. Hirtz 3319 (MO).

This small species is similar to the widely distributed *R. tubulosa*, but it is distinguished in part by the small habit. The sepals and petals of the two species are about the same in size and shape, but those of *R. pandurata* are prominently veined in purple or brown. The lip of *R. pandurata* is constricted below the middle where the margins are fimbriate. Instead of obtuse, the basal lobes of the lip of *R. pandurata* are acute and pointed forward as they are in *R. inaequalis*.



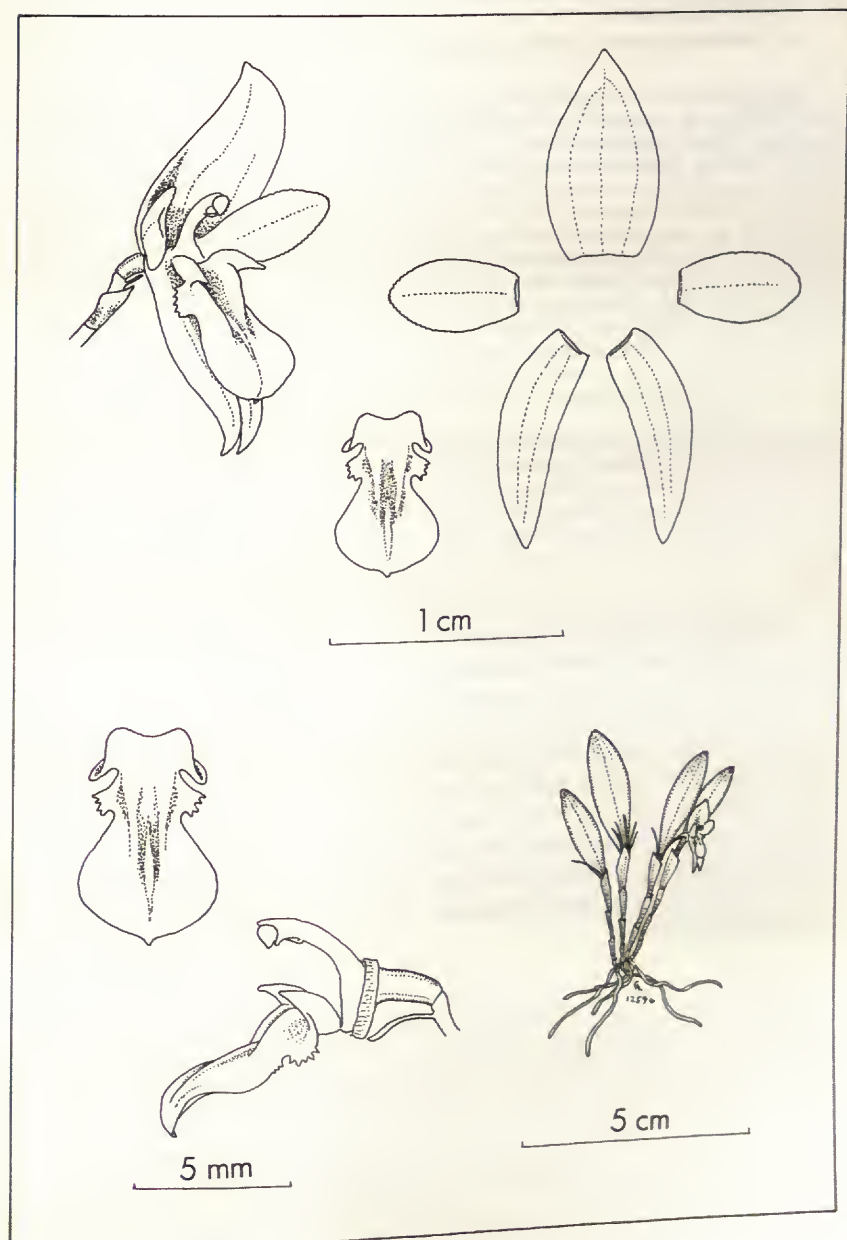


Plate 10. *Restrepiopsis pandurata* Luer & Hirtz

***Restrepiopsis powersii* Luer, Selbyana 2: 204, 1978.**

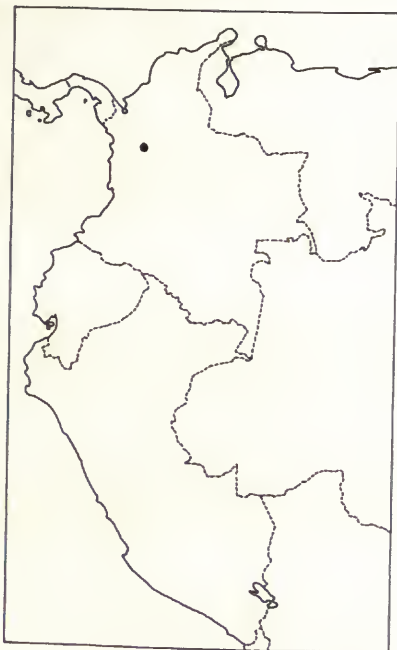
Ety.: Named in honor of the late Maurice E. Powers of Olympia, Washington, who first discovered this species.

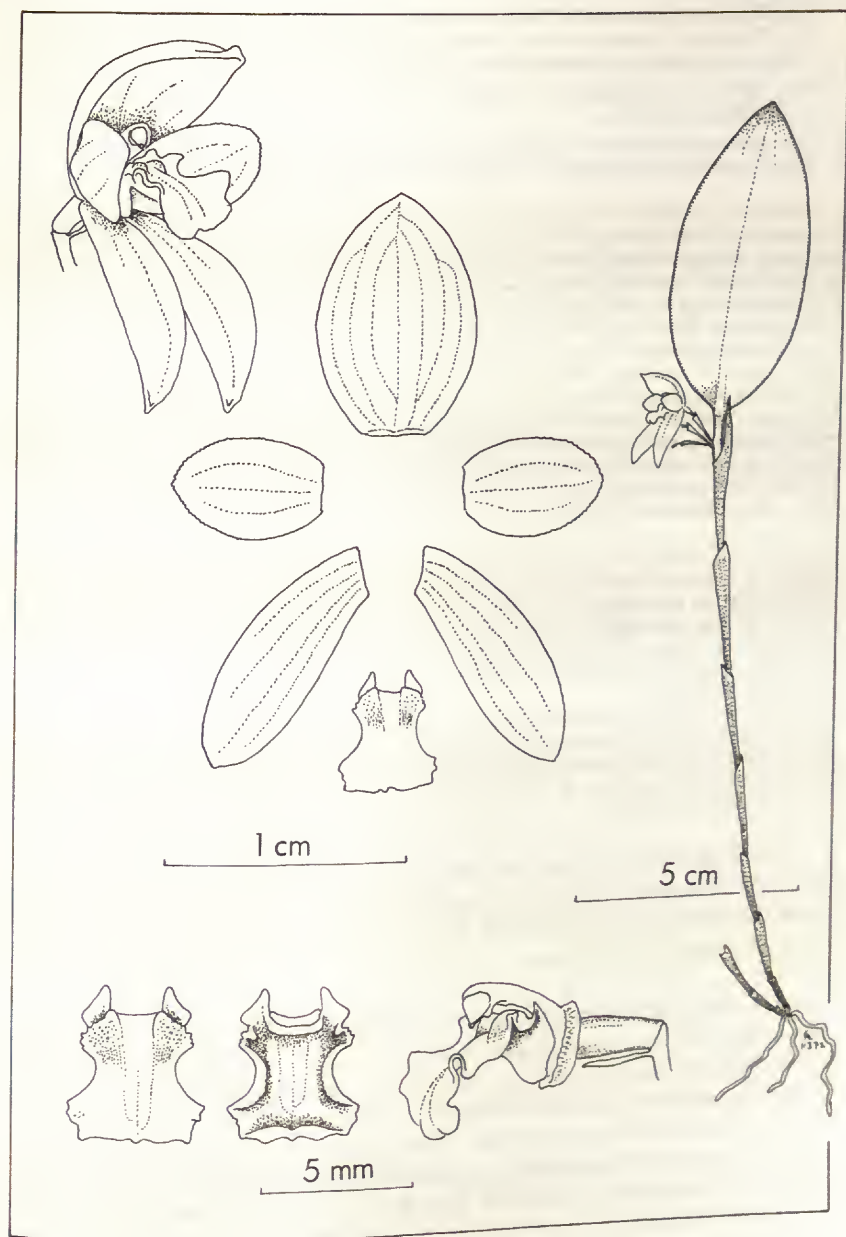
Syn.: *Restrepiella powersii* (Luer) Braas & Mohr, Die Orchidee 33: 154, 1982.

Plant medium in size to large for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, 7-15 cm long, enclosed by 4-7 brown, imbricating, ribbed, tubular sheaths. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 5-7 cm long, 2.5-3.5 cm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 3-10 mm long from near the apex of the ramicaul; floral bract 3-4 mm long; pedicel 5-9 mm long, with a filament 2-3 mm long; ovary 3 mm long; **sepals** yellow, with or without suffusion of brown along the veins, the dorsal sepal elliptical, concave, obtuse, 11-13 mm long, 8 mm wide expanded, 5- (7-)veined, the lateral sepals oblong, oblique, subacute to obtuse, 12 mm long, 4.5 mm wide, 3- to 4-veined, lightly adherent to free; **petals** yellow, flecked with red, elliptical, obtuse, 7-8 mm long, 4-5 mm wide, 3-veined; **lip** yellow to red-purple with yellow margins, oblong-trilobed, 5.5-7 mm long, 4.5-5 mm wide, with sinuate, recurved margins, the apex broadly truncate, the disc with a pair of low calli extending forward from the basal lobes, the basal lobes erect, thin, oblique, acute, 1.5 mm wide and long, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 3-4 mm long, with a thick foot 2 mm long.

COLOMBIA: Dept. of Antioquia: near Medellín, Apr. 1972, flowered in cultivation 16 June 1977, *M. E. Powers s.n.* (Holotype: SEL), *C. Luer* illustr. 2782; epiphytic in forest above the Miraflores dam, alt. 2050 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia* 11372 (MO).

The flowers of this species, apparently endemic in the Central Cordillera of Colombia, are the largest known in the genus. The broad dorsal sepal contains 5 major veins and a pair of lesser veins. The middle lobe, or the blade of the lip widest at the broadly truncate apex, is remarkable for the deeply wavy margin that is revolute near the middle. The basal lobes are proportionately small.



Plate 11. *Restrepiopsis powersii* Luer

Restrepiopsis reichenbachiana (Endres ex Reichb. f.) Luer, Selbyana 5: 387, 1981.

Bas.: *Restrepia reichenbachiana* Endres ex Reichb. f., Gard. Chron. 2: 356, 1875.

Ety.: Named for Professor Heinrich Gustav Reichenbach of the Hamburg Botanic Garden, foremost contemporary authority of the Orchidaceae.

Syn.: *Barbosella reichenbachiana* (Endres ex Reichb. f.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 26, 1923.

Syn.: *Pleurothallis cruciformis* Ames, Hubbard & Schweinf., Bot. Mus. Leaflet 3: 39, 1934.

Ety.: From the Latin *cruciformis*, "cross-shaped," referring to the shape of the flower.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 5-10 mm long, enclosed by 2-3 loose, tubular, ribbed sheaths, ciliate on the margins and ribs. **Leaf** erect, thickly coriaceous, elliptical-obovate, obtuse to rounded, 13-20 mm long, 9-14 mm wide, the base cuneate into a petiole 1 mm long. **Inflorescence** a succession of single flowers produced in a fascicle, sometimes 2 at once, by peduncles 5-8 cm long, with a bract near the middle, from near the apex of the ramicaul; floral bract 3.5 mm long; pedicel 2.5 mm long, with a filament 2.5 mm long; ovary 2.5 mm long; **sepals** translucent light green, glabrous, the dorsal sepal narrowly ovate, acute, concave, 10 mm long, 4 mm wide expanded, 5-veined, the lateral sepals completely connate into a linear-oblong, obtuse synsepal 11 mm long, 2.5 mm wide, 4-veined, with a purple-brown spot at the apex; **petals** translucent light green, narrowly ovate, acute, 7 mm long, 2 mm wide, 3-veined; **lip** green, ovate-trilobed, obtuse, 4 mm long, 2 mm wide, with cellular-erose margins, the basal lobes suffused with purple, oblong-uncinate, erect, the disc with a pair of low, minutely verrucose calli above the base, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 2 mm long, with a foot 1 mm long.

COSTA RICA: without locality, alt. 4000 ft., 1868, *A. R. Endres 46* (Holotype: W; Isotype: AMES). Prov. of Puntarenas: Coto Brus, near San Vito de Java, flowered in cultivation by Sra. Clara de Moya in San José, 18 Mar. 1988, *C. Luer 12080* (MO). Prov. ?, El Poró, alt. 900 m, *M. Valerio 2573* (AMES).

NICARAGUA: Prov. of Zelaya: between Siuna and Rosita, alt. 500 m, *A. Heller 4620* (AMES, SEL); Comarca del Cabo, between Waspan and Puerto Cabezas, Francia Sirpi, alt. below 100 m, *J. Atwood 48104* (MO, SEL).



This little species, found in Costa Rica and Nicaragua, differs the most from the criteria that distinguish the other members of the genus. The ramicauls, enclosed by pubescent sheaths, are shorter than the leaves; the peduncles are much longer than the leaves; the lateral sepals are connate into a synsepal; and the four pollinia are discoid without caudicles. With some of the above characters this species superficially resembles a *Barbosella*, but the details of the lip and column immediately separate it from *Barbosella*. It is treated here in a monotypic subgenus.

As if a target for the pollinator, a darkly pigmented spot is present at the apex of the narrow, protruding synsepal. Otherwise, the sepals are translucent and greenish white.

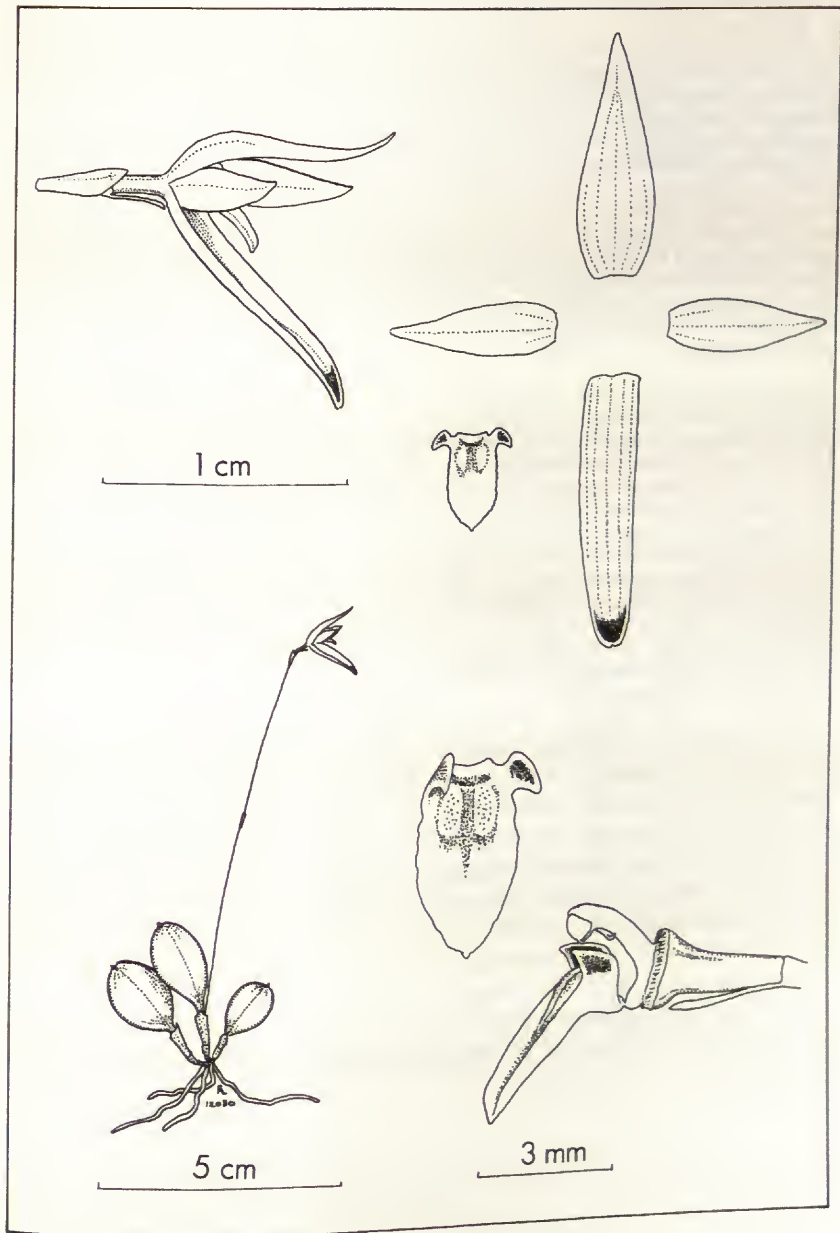


Plate 12. *Restrepiopsis reichenbachiana* (Endres) Luer

***Restrepiopsis striata* Luer & Escobar, Orquideología 16(1): 43, 1983.**

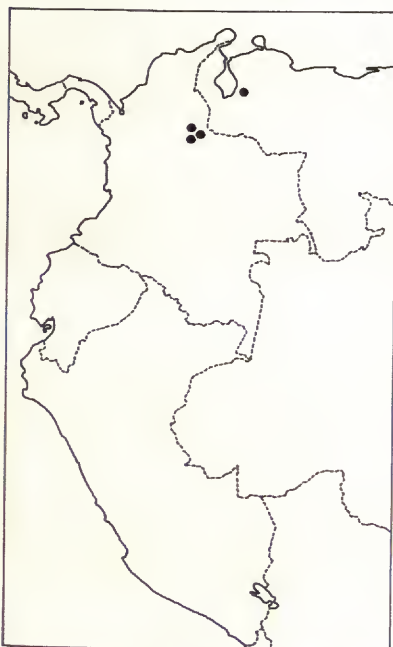
Ety.: From the Latin *striatus*, "striped," in reference to the purple-striped flowers.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-7 cm long, enclosed by 4-5 imbricating, ribbed, tubular sheaths. **Leaf** erect, thickly coriaceous, narrowly linear-elliptical, acute, 4-7.5 cm long, 0.5-0.7 cm wide, gradually narrowed below into the base. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 5 mm long from near the apex of the ramicaul; floral bract 3 mm long; pedicel 3 mm long, with an equally long filament; ovary 2 mm long; **sepals** translucent yellow-green with prominent purple veins, glabrous, the dorsal sepal ovate, concave, acute, 10 mm long, 5 mm wide, 3-veined, the lateral sepals lightly adherent to free, the elliptical, oblique, acute, 10.5 mm long, 2.5 mm wide, 2-veined; **petals** translucent yellow-green with a purple central vein, elliptical, obtuse, 5.5 mm long, 2.5 mm wide, 1-veined, the margins cellular; **lip** yellow, veined and suffused with purple, obovate-trilobed, 5.5 mm long, 4 mm wide, the margins minutely erose near the basal lobes, the apex rounded to shallowly retuse, the disc with a pair of low calli near the bases of the lobes, the basal lobes erect, thin, ovate, oblique, with the antrorse apex shortly acuminate, the base truncate, hinged to the column-foot; **column** green, slender, semiterete, 3 mm long, with a thick foot 1 mm long.

COLOMBIA: Dept. of Norte de Santander: epiphytic in scrub cloud forest, Alto de Pozo, north of Villacaro, alt. 2400 m, 5 May 1982, C. Luer, J. Luer, R. Escobar & D. Portillo 7734 (Holotype: SEL); epiphytic in subparamo cloud forest below Paramo de Jurisdicciones, alt. 2750 m, 30 Apr. 1982, C. Luer, J. Luer, R. Escobar & D. Portillo 7669 (SEL); western side of Culagá Valley above Tapatá, north of Toledo, alt. 2300 m, 5 Mar. 1927, E. P. Killip & A. C. Smith 20291 (AMES).

VENEZUELA: Estado Trujillo: rain forest between Boconó and Guaramacal, alt. ca. 6000 ft., May 1962, G. C. K. Dunsterville 694.

This species is apparently confined to the Eastern Cordillera of Colombia and adjacent Venezuela. It is characterized by the relatively small habit; the thick, narrowly linear leaves as long as or longer than the ramicaul; greenish flower-parts prominently striped with purple; and acuminate or falcate basal lobes of the lip. Dunsterville's drawing of this species with long, linear leaves was identified as *Restrepiella tubulosa* in Venezuelan Orchids Illustrated.



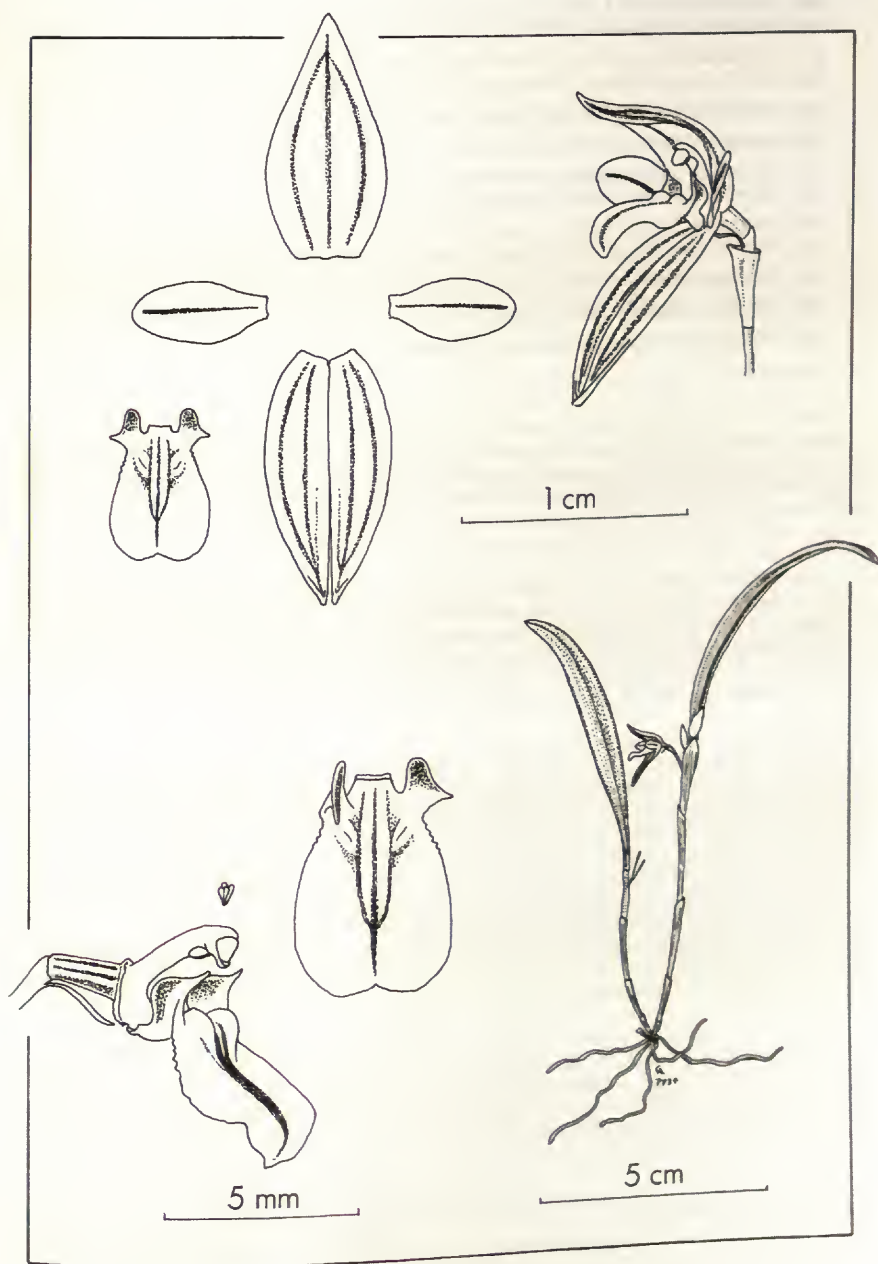


Plate 13. *Restrepiopsis striata* Luer & Escobar

***Restrepiopsis tubulosa* (Lindley) Luer, Selbyana 2: 200, 1978.**

Bas.: *Pleurothallis tubulosa* Lindley, Folia Orchid. *Pleuroth.* 107, 19, 1859.

Ety.: From the Latin *tubulosus*, "tubular," apparently in reference to the spathe.

Syn.: *Pleurothallis viridula* Lindley, Folia Orchid. *Pleuroth.* 103, 19, 1859.

Ety.: From the Latin *viridulus*, "a little green," referring to the color of the flower.

Syn.: *Humboldtia tubulosa* (Lindley) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Humboldtia viridula* (Lindley) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis caliensis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 102, 1920.

Ety.: Named for the city of Cali, near the locality of the collection.

Syn.: *Pleurothallis flavescens* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 188, 1923.

Ety.: From the Latin *flavescens*, "yellowish," referring to the color of the flower.

Syn.: *Restrepiella tubulosa* (Lindley) Garay & Dunsterv., Venez. Orchids Ill. 4: 266, 1966.

Syn.: *Restrepiella viridula* (Lindley) Garay & Dunsterv., Venez. Orchids Ill. 4: 268, 1966.

Syn.: *Restrepiopsis viridula* (Lindley) Luer, Selbyana 2: 200, 1978.

Plant small to medium in size, epiphytic to lithophytic, caespitose; roots slender. Ramicauls erect, 2-12 cm long, enclosed by 4-8 brown, imbricating, ribbed, tubular sheaths. Leaf erect, coriaceous, ovate, acute, subacute to obtuse, 2-6 cm long, 1-3 cm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a succession of single flowers produced in a fascicle by peduncles 3-6 mm long from near the apex of the ramicaul; floral bract 3-5 mm long; pedicel 3-6 mm long, with a filament 2-3 mm long; ovary 3-4 mm long; sepals white, greenish white to green, with or without suffusion or veining in brown or purple, the dorsal sepal ovate, concave, acute to subacute, 6-8 mm long, 3-5 mm wide expanded, 3-veined, the lateral sepals oblong, oblique, subacute to obtuse, 5.5-8 mm long, 1.75-2 mm wide, 1(3)-veined, lightly adherent to free; petals translucent white to green, elliptical, obtuse, microscopically erose, 3-5 mm long, 1-2.5 mm wide, 1-veined; lip light green, with or without suffusion with brown or purple, oblong-trilobed, 4-7 mm long, 2-4 mm wide, with minutely erose margins, the apex obtuse to rounded, sometimes minutely apiculate, the disc with a pair of calli extending forward from the basal lobes, the basal lobes erect, thin, oblique, obtuse to truncate, the base hinged to the column-foot; column greenish white, slender, semiterete, 2.5-3.5 mm long, with a thick foot 1 mm long.

ECUADOR: Prov. of Pichincha: Valley of Lloa, on trees, forests at 12,000 ft., 1857, *Jameson s.n.* (Holotype: K); cloud forest between Calacali and La Liberia, alt. 2200 m, 7 Apr. 1984, *C. Luer, S. Dalström, T. Höjjer & A. Hirtz* 9999 (MO). Prov. of Azuay: epiphytic and lithophytic in scrub forest above Lago Zoroguchio, alt. 3200 m, 15 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree* 11787 (MO); same area, 7 Feb. 1978, *C. Luer, J. Luer & A. Andreetta* 2475 (SEL). Prov. of Loja: terrestrial at the spring of Río de Chuquiribamba, alt. 10,000 ft., 26 Aug. 1878, *F. C. Lehmann s.n.* (W). Prov. of Tungurahua: Volcán Tungurahua, alt. 10,000 ft., Jan. 1859, *Jameson s.n.* (K); Volcán Tungurahua, alt. 10,000 ft., 1859, *Spruce* 5899 (AMES, K, W); same area, alt. 3000 m, 18 Nov. 1984, *A. Hirtz* 2124 (MO); Río Blanco, alt. 2600 m, May 1984, *A. Hirtz* 1753 (MO). Prov. of Zamora-Chinchipe: cloud forest between Loja and Zamora, alt. 1500 m, 3 Feb. 1987, *C. Luer, J. Luer & A. Hirtz* 12596 (MO).

COLOMBIA: Dept. of Antioquia: Munic. of La Ceja, near Yuzá, alt. 1700-2300 m, *F. C. Lehmann* 6932 (G); Munic. of Urrao, flowered in cultivation 12 Mar. 1989, *C. Luer* 14133 (MO). Dept. of Caldas: old Quindio trail between Salento and Laguneta, alt. 2500-2800 m, 1 Aug. 1922, *E. P. Killip & T. E. Hazen* 11992 (AMES). Dept. of Cauca: Paisbamba, alt. 2400-2600 m, *F. C. Lehmann* 6287 (K); Forest of Bernescos, Pasto, alt. 1600-2000 m, *F. C. Lehmann* 6371 (G); San Antonio, San José, alt. 2400-2700 m, 28 June 1922, *E. P. Killip & T. E. Hazen* 7302 (AMES); between Paisbamba and Chaga, alt. 2300 m, 16 Nov. 1982, *C. Luer & R. Escobar* 8457 (SEL). Dept. of Valle del Cauca: Las Juntas del Dagua west of Cali, *F. C. Lehmann* 8226 (K, type of *P. caliensis*). Dept. of Tolima: San Juan, old Quindio trail, alt. 2000-2500 m, 3 Aug. 1922, *E. P. Killip & T. E. Hazen* 9558 (AMES).



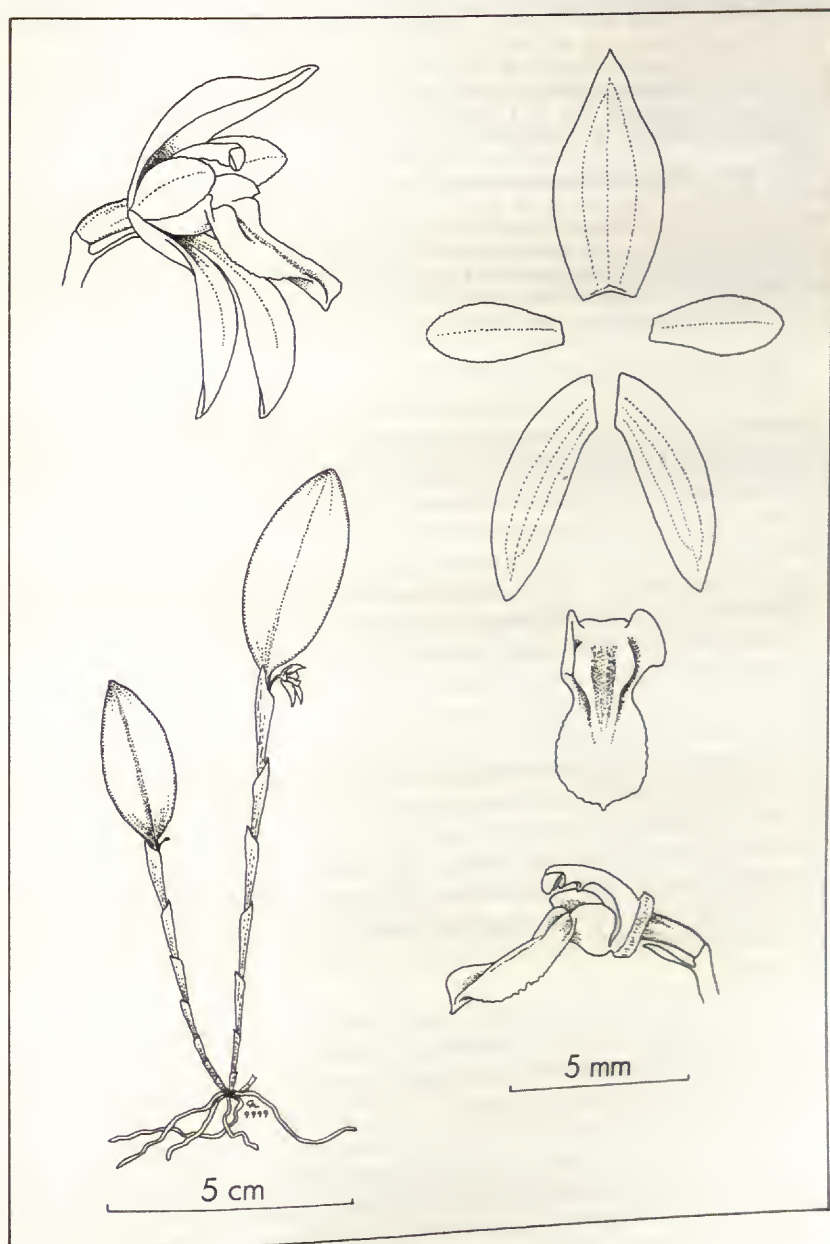


Plate 14. *Restrepiopsis tubulosa* (Lindley) Luer

VENEZUELA: without locality, 1854, *Fendler 1486* (K, type of *P. viridula*). Dist. Fed.: between Junquito and Colonia Tovar, alt. 2200 m, 31 July 1966, *J. A. Steyermark & M. Rabe 95979* (VEN); Las Aguaditas, alt. 2000 m, 6 Oct. 1980, *J. A. Steyermark & F. Delascio 123514* (VEN); Miranda, Silla de Caracas, alt. 1800 m, 17 Oct. 1971, *G. Morillo & B. Manara 1651* (VEN). Edo. Aragua: rain forest near Colonia Tovar, alt. 7000 ft, Sept. 1960, *G. C. K. Dunsterville 573*. Edo. Mérida: between La Carbonera and Agulita, alt. 1800 m, flowered in cultivation July 1982, *G. C. K. Dunsterville 1429* (SEL). C. Luer illustr. 8104. Edo. Tachira: Páramo de Tamá, alt. 2500 m, 18 May 1967, *J. A. Steyermark & G. C. K. Dunsterville 98491* (VEN). Edo. Zulia: Dist. Perijá, Campamento Frontera V, alt. 2700-3300 m, 20 July 1974, *C. W. Wood & P. E. Berry 77* (MO, VEN).

COSTA RICA: Without locality, *A. Endres 6* (W). Prov. of Alajuela: epiphytic above San Ramón, alt. 1025 m, Nov. 1925, *A. M. Brenes 185* (CR, type of *P. flavescens* presumably destroyed at B). Prov. of Cartago: Catie, east of Turrialba, Canyon of Río Reventazón, alt. 525-600 m, 9 Mar. 1983, *R. Liesner et al. 15290* (MO); San Carlos, Aguas Zarcas, Apr. 1923, *O. Jiménez & C. H. Lankester 2003* (AMES); Pejivalle, *C. H. Lankester 1160* (AMES).

PANAMA: Prov. of Chiriquí: Cerro Colorado, alt. 1350 m, 17 Apr. 1986, *G. McPherson 8993* (MO). Prov. of Veraguas, alt. ca. 1000 m, 5 Sept. 1976, *C. Luer & R. L. Dressler 1248* (SEL).

This species, the most widely distributed and most frequent species in the genus, was described as *Pleurothallis tubulosa* by Professor Lindley from collections near Lloa just outside Quito, Ecuador, by Dr. Jameson in 1857. Simultaneously, Lindley published a collection from Venezuela without collection data made by Fendler in 1854 as *P. viridula*. I have chosen to place Fendler's older collection in the synonymy of *R. tubulosa* because the morphology of *R. tubulosa* is clearly documented, and the plant is still to be found at the original locality. Also, Lindley was unsure about his description of *R. viridula*, declaring that it "requires further examination."

As defined here this concept includes several forms, all of which seem to represent one variable species because too many intermediate forms occur. *Restrepiopsis tubulosa* seems to be the "mother" species from which all the other species of the genus have evolved (except *R. reichenbachiana*). The extensive range of *R. tubulosa* includes that of all the other species.

Vegetatively *R. tubulosa* is variable in size, and florally, in details of the flower. The plants vary from very small to as large as some plants of *R. microptera*, depending upon the habitat. The flowers also seem to intergrade between the two, so that it is sometimes difficult to decide upon an identification. Plants from Central America known as *Pleurothallis flavescens* are vegetatively small. The leaves of *R. tubulosa* are ovate and shorter than the ramicals.

Around 1867 Endres sent Reichenbach excellent drawings and herbarium material of this species from Costa Rica. Endres recognized that it was different from Reichenbach's *Restrepia ujarrensis* with which he compared it. He proposed the name *Restrepia dubia*.

The color of the flower varies from white or greenish white to green, with or without suffusion, flecks, or veining in brown or purple. Considerable variation in the shape of the lip must be allowed. A drawing of floral parts on one of the two herbarium sheets of Jameson's collections at Kew shows acute, falcate basal lobes of the lip. The drawing on the other sheet shows low, broad basal lobes of the lip. Recent collections from the same areas, as well as from other areas of Ecuador, Colombia, Venezuela and Central America show both and intermediate forms. The much larger anterior lobe of the lip is also subject to variations in shape. Combinations of these variations occur.

Dunsterville's drawing in Venezuelan Orchids Illustrated identified as *Restrepiella viridula* is *Restrepiopsis tubulosa*. His drawing of *Restrepiopsis striata* is identified as *Restrepiella tubulosa*.

***Restrepiopsis ujarrensis* (Reichb. f.) Luer, Selbyana 2: 200, 1978, as *ujarensis*.**

Bas.: *Restrepia ujarrensis* Reichb. f., Bonplandia 3: 225, 1855, as *ujarensis*.

Ety.: Named for the community of Ujarrás, Costa Rica, near the locality where the species was discovered. The double "r" was not noted.

Syn.: *Pleurothallis ujarrensis* (Reichb. f.) Lindley, Folia Orchid. *Pleuroth.* 19, 1859.

Syn.: *Humboldtia ujarrensis* (Reichb. f.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Restrepiella ujarrensis* (Reichb. f.) Garay & Dunsterv., Venez. Orchids III. 4: 266, 1966.

Syn.: *Restrepiella lenkenhoffii* Braas & Mohr, Die Orchidee 33: 154, 1982.

Ety.: Named in honor of Erwin Lenkenhoff who also collected this species.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, 0.5-2.5 cm long, enclosed by 3-5 brown, imbricating, ribbed, tubular sheaths. **Leaf** erect, thickly coriaceous, elliptical, subacute, 10-18 mm long, 4-8 mm wide, the base cuneate into the sessile base. **Inflorescence** a succession of single flowers produced in a fascicle, sometimes 2 at once, by peduncles up to 1 mm long from near the apex of the ramicaul; floral bract 2-2.5 mm long; pedicel 2-4 mm long, with a filament 2-3 mm long; ovary 1-1.5 mm long; **sepals** translucent light green, glabrous, the dorsal sepal ovate, obtuse, concave, 3.5 mm long, 2.5-3 mm wide expanded, 3-veined, the lateral sepals oblong, oblique, subacute, 3 mm long, 1 mm wide, 1-veined, lightly coherent to the apex in the natural position; **petals** translucent light green, elliptical-oblong, 2.25 mm long, 1 mm wide, 1-veined, the margins cellular erose, the apex subtruncate or rounded; **lip** light green, thick, ovate-trilobed, obtuse, 2 mm long, 2 mm wide, with cellular-erose margins, the basal angles broadly rounded, erect, the disc minutely verrucose with a pair of low, minutely verrucose calli, the base hinged to the column-foot; **column** greenish white, slender, semiterete, 1 mm long, with a thick foot less than 1 mm long.

COSTA RICA: Prov. of Cartago: Ujarrás, A. S. Oersted s.n. (Holotype W); without locality, *Wendland* 609 (W); *Carpintera*, alt. 6000 ft., 3 Apr. 1929, H. E. Stork 1390 (AMES); same area, alt. 5200 ft., June 1924, C. H. Lankester 777 (AMES); same area, alt. 1500 m, Feb. 1924, P. C. Standley 34230 (AMES). Prov. of Guanacaste: Quebrada Serena southeast of Tilarán, alt. 700 m, 27 Jan. 1926, P. C. Standley & J. Valero 46322, 46343 (AMES). Prov. of Heredia: Volcán Poás, La Ventolera, alt. 1700 m, 17 Feb. 1924, P. C. Standley 34570 (AMES); Río Porros above San José de la Montana, alt. 1700 m, C. K. Horich s.n. (JEPS, K); Volcán Barba, San José de la Montana, alt. 1820 m, 20 Mar. 1986, C. Luer, J. Luer, T. Linder & W. Rhodehamel 12118 (MO); La Palma, Río Blanco near San Luis, alt. 1400 m, C. Horich s.n. (AMES, MO); Río Porros, alt. 1700 m, flowered in cultivation at JEPS, 22 Mar. 1960, C. Horich s.n. (AMES). Without locality: alt. 4000 ft., 1868, A. Endres 376 (W).

GUATEMALA: Prov. of Alta Verapaz: epiphytic in forest above Senahu, alt. 1140 m, 1 Mar. 1981, C. Luer, J. Luer, M. Dix & M. Dix 5963 (SEL).

NICARAGUA: Prov. of Matagalpa: Finca Bavaria, alt. 1200 m, A. Heller 1358 (SEL).

PANAMA: Prov. of Chiriquí: Cerro Hornito, alt. ca. 1000 m, Sept. 1976, C. Luer & H. Butcher 1364 (SEL); Quijada del Diablo, March 1985, A. Maduro 8-M (MO).

ECUADOR: Prov. of Esmeraldas: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, flowered in cultivation by P. Jesup in Bristol, CT, 1989, C. Luer s.n. (MO).



This species, the first of the genus to be described, is relatively common and widely distributed in Central America. It has recently been discovered in lowland northwestern Ecuador. It is one of the smallest species vegetatively with some of the smallest flowers in the genus. The sepals are translucent light green with the dorsal broadly concave. The laterals are oblong and light-green with the dorsal broadly concave. The laterals are oblong and lightly adherent their entire length. The petals are obtuse and membranous. The lip is ovate and obtuse with erect, rounded basal lobes.

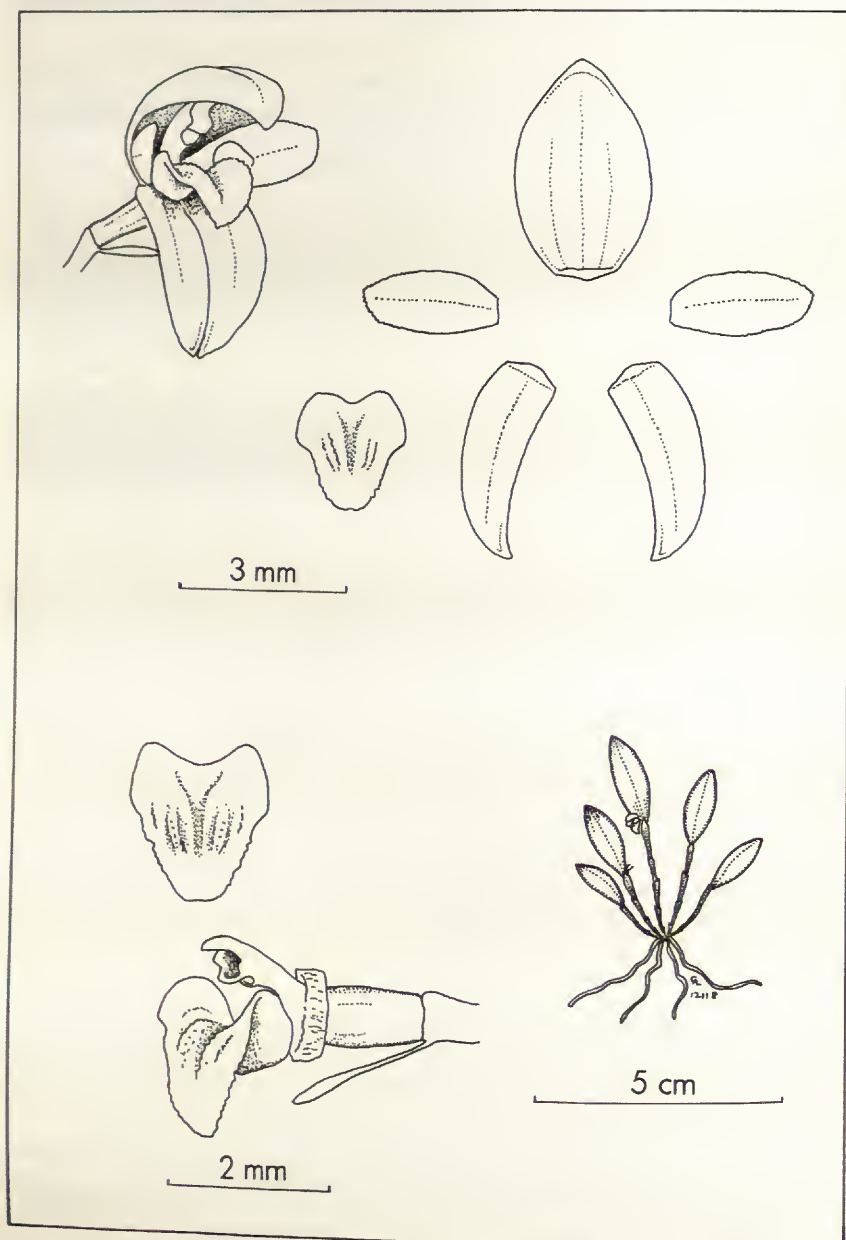


Plate 15. *Restrepiopsis ujarrensis* (Reichb. f.) Luer

ACKNOWLEDGMENTS

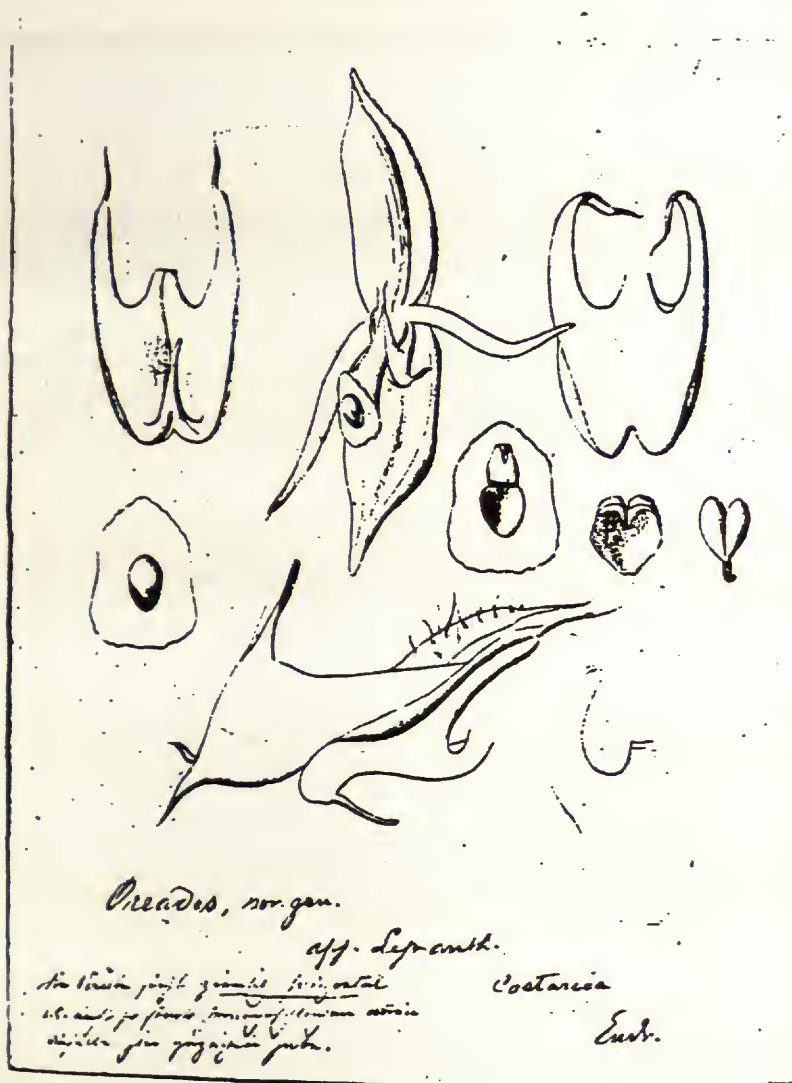
I am grateful to Dr. Robert L. Dressler and H. Phillips Jesup for their criticisms and suggestions.

REFERENCES

- BRAAS, L. A., G. J. BRAEM & H. MOHR, 1982. Beiträge zur subtribus Pleurothallidinae. Die Orchidee 33: 147-156.
 DRESSLER, R. L., 1981. The orchids: natural history and classification. Harvard University Press, Cambridge.
 GARAY, L. A., 1967. The Genus *Restrepiella*. Orchid Digest 31: 39-40.
 LUER, C. A., 1978. *Restrepiopsis*, a new genus in the Pleurothallidinae. Selbyana 2: 199-204.
 ———— 1986. Icones Pleurothallidarum I. Systematics of the Pleurothallidinae. Monogr. Syst. Bot. Missouri Bot. Gard. 15: 55.
 REICHENBACH, H. G., 1900. Xenia Orchidacea 3: 7, t. 206, II.

INDEX OF SCIENTIFIC NAMES

- | | |
|--------------------------------|--|
| Barbosella 88, 89, 112 | Restrepiella grandiflora 100 |
| Barbosella reichenbachiana 112 | norae 106 |
| trilobata 89 | powersii 110 |
| Dresslerella 87 | tubulosa 116, 118 |
| Humboldtiana tubulosa 116 | ujarensis 119 |
| ujarensis 119 | viridula 116, 118 |
| viridula 116 | Restrepiopsis 87, 88, 89 |
| Myoxanthus 87 | subgen. Endresia 88, 89, 90 |
| Octomeria 87, 88, 102 | subgen. Restrepiopsis 89, 90 |
| Octomeria monetalis 102 | Restrepiopsis bicallosa 89, 106 |
| Pleurothallis 87, 89 | carnosa 89, 90, 91, Plate 1. |
| subgen. Acianthera 87 | clausa 89, 90, 91, Plate 2. |
| Pleurothallis caliensis 116 | grandiflora 89, 100 |
| cruciformis 112 | inaequalis 87, 89, 90, 94, Plate 3., 108 |
| flavescens 116, 118 | insons 89, 90, 96, Plate 4. |
| lenkenhoffii 119 | lechmannii 87, 89, 90, 98, Plate 5. |
| microptera 100 | microptera 88, 89, 90, 100, Plate 6., 118 |
| ophioccephala 87 | monetalis 89, 90, 102, Plate 7. |
| tubulosa 87, 116 | mulderae 87, 89, 90, 104, Plate 8. |
| ujarensis 119 | norae 89, 90, 96, 106, Plate 9. |
| viridula 87, 116 | pandurata 87, 89, 90, 108, Plate 10. |
| Restrepia 87, 88 | powersii 89, 90, 110, Plate 11. |
| sect. Pleurothalliformes 89 | pulchella 89, 102 |
| Restrepia dubia 118 | reichenbachiana 88, 89, 90, 112, Plate 12., 118 |
| reichenbachiana 87, 89, 112 | striata 89, 90, 104, 114, Plate 13., 118 |
| ujarensis 87, 88, 89, 118, 119 | trilobata 89 |
| Restrepiella 87 | tubulosa 88, 89, 90, 100, 104, 108, 114, 116, Plate 14., 118 |
| bicallosa 106 | ujarensis 89, 90, 119, Plate 15. |
| microptera 100 | viridula 89, 116, 118 |



Salpistele brunnea Dressler. Photocopy of drawings by A. R. Endres of *Endres 54*, 1868, in the Reichenbach Herbarium at the Naturhistorisches Museum in Vienna.
Oreades gen. nov. is proposed.

SYSTEMATICS OF THE GENUS *SALPISTELE* (ORCHIDACEAE)

ABSTRACT

A history of *Salpistele* Dressler is given and the genus is described. A key to the species is given. Each species is described and illustrated with a black and white drawing. A distribution map is included for each species.

New taxa:

Salpistele subgen. *Andinia* Luer, subgen. nov.

Salpistele subgen. *Salpistele*

Salpistele dressleri Luer, sp. nov.

Salpistele parvula Luer & Dressler, sp. nov.

This genus was first recognized by A. R. Endres, collector and illustrator of innumerable species of orchids from Costa Rica in the last century. In 1868, he sent to Reichenbach numerous herbarium specimens, superb illustrations and detailed descriptions of what is known today as *Salpistele brunnea* with the proposed name *Oreades* for a presumed new genus. Judging by the copious amount of fine material in Reichenbach's herbarium, Endres must certainly have been very interested in this taxon. For unknown reasons, Reichenbach failed to recognize the species in any genus.

Finally in 1975, the genus was recognized independently by Dr. Robert L. Dressler when he became acquainted with several populations of two species of this genus in the adjacent province of Chiriquí in western Panama. He published the genus as *Salpistele*, characterized by the trumpet-shaped column, with the two species in 1979.

Two more or less related Andean species have been included in *Salpistele* (Luer 1986). Similarly, these two species also had been first collected in the last century, one by Dr. William Jameson and the other by Consul F. C. Lehmann, both collections lying unidentified in the herbarium at Kew. Specimens of both species were recollected in the earlier part of this century by Mille, Diels, and Penland and Summers and published in the genus *Lepanthes* by Schlechter, Mansfeld, and L. O. Williams respectively. Today six species are known: four from Panama and Costa Rica, and the two from Ecuador.

Vegetatively the four Central American species are very similar to some species of *Pleurothallis* subgenus *Specklinia* section *Muscariae* with creeping, elongating, successively flowered racemes. The short ramicaul is enclosed by thin, glabrous sheaths. Vegetatively the Andean species are repent forming elongated rhizomes that resemble some species of *Brachionidium*.

Florally the genus *Salpistele* resembles *Lepanthes*. The sepals and petals are membranous, the lateral sepals of the Central American species completely connate into a synsepal. The petals are linear. The lip is three-lobed with the basal lobes embracing the column, and with a variously formed midlobe. The lip is attached to the base of a cylindrical and footless column. The apex of the column is more or less dilated and flattened on the end to form a collar

around the apical anther, rostellum and stigma. The two pollinia are associated with a tiny viscidium.

The genus is divided into two subgenera, the two Andean species being repent with echinate ovaries, lateral sepals free above the middle, abbreviated petals, and auriculate lateral lobes of a lip with a central callus; the four Central American species being caespitose with smooth ovaries, lateral sepals connate into a synsepal, elongate petals, and slender lateral lobes of a lip without a callus. Although the two subgenera have similar floral structures, it is possible that these resemblances are parallelisms.

Salpistele Dressler, Orquideología 14: 6, 1979.

Type: *Salpistele brunnea* Dressler, Orquideología 14: 6, 1979.

Ety.: From the Greek *salpinx*, "a trumpet," and *stèle*, "a column," hence a trumpetlike column, referring to the morphology of the column.

Plants perennial, very small to medium in size, epiphytic, rarely terrestrial in moss, caespitose to long-repent, erect, or pendent in one species, the rhizome abbreviated or elongated; roots slender to coarse. Ramicauls erect, or descending in one species, slender, non-pseudobulbous, shorter than the leaf, unifoliate, mostly or completely enclosed by 2 more or less imbricating, ribbed, glabrous sheaths, the inflorescence emerging laterally with an annulus from near the apex. Leaf erect to suberect in relation to the ramicaul, coriaceous to thickly coriaceous, smooth, green, ovate to elliptical, the apex acute to subacute, shallowly notched with a mucro in the sinus, the base cuneate into a short petiole. Inflorescence a successively several-flowered raceme, sometimes 2-3 flowers open simultaneously, the flowers resupinate, variously colored, borne by a slender peduncle that emerges laterally from the ramicaul with an annulus below the apex; floral bracts thin, tubular, acute; pedicels slender, longer or shorter than the floral bract; ovary smooth to densely spiculate, trivalvate; sepals conspicuous, membranous, glabrous, sometimes minutely ciliate, variously colored, the apices often contracted into short tails, the dorsal sepal ovate, free from the lateral sepals, the lateral sepals partially to wholly connate; petals entire or ciliate, narrowly linear; lip membranous, trilobed, with basal lobes embracing the column, and with a variously formed midlobe, the base with a claw attached to the base of the column; column terete, non-winged, the apex dilated and flattened around the clinandrium, forming a collarlike margin around the apical anther, rostellum and stigma, the pollinia 2, obovoid, with a microscopic viscidium, the base of the column footless.

Salpistele subgen. Andinia Luer, subgen. nov.

Type: *Lepanthes dielsii* Mansf. = *Salpistele dielsii* (Mansf.) Luer

Ety.: Named for the Andean Mountains where the species of this subgenus are found.

Plantae repentes. Ovarium echinatum. Sepala laterales semiliberibus. Petala abbreviata. Labelli lobi laterales auriculati.

This subgenus is characterized by the repent habit; echinate ovaries; lateral sepals free above the middle; abbreviated petals; large, auriculate lateral lobes of the lip; and a callus on the disc of the lip. The subgenus includes two Andean species.

Salpistele subgen. Salpistele

Type: *Salpistele brunnea* Dressler, Orquideología 14: 6, 1979.

This subgenus is characterized by a caespitose habit; glabrous ovaries; lateral sepals connate into a synsepal; elongated petals; slender lateral lobes of the lip; and the absence of a callus on the disc of the lip. This subgenus includes four Central American species.

LIST OF ILLUSTRATIONS

Subgenus *Salpistele*

<i>Salpistele brunnea</i> Dressler.....	Plate 1.
<i>Salpistele dressleri</i> Luer	Plate 2.
<i>Salpistele lutea</i> Dressler.....	Plate 3.
<i>Salpistele parvula</i> Luer & Dressler.....	Plate 4.

Subgenus *Andinia*

<i>Salpistele dielsii</i> (Mansf.) Luer.....	Plate 5.
<i>Salpistele pensilis</i> (Schltr.) Luer.....	Plate 6.

KEY TO THE SPECIES AND SUBGENERA OF SALPISTELE

- 1 Habit repent; ovaries echinate; lateral sepals free above the middle 2
- 1' Habit caespitose; ovaries glabrous; lateral sepals connate to the apex 3

Subgenus *Andinia*

- 2 Habit ascending with an ascending inflorescence; apex of the lip abruptly contracted into a small, concave, apical lobule *S. dielsii*
- 2' Habit pendent with an ascending inflorescence; apex of the lip subacute to obtuse *S. pensilis*

Subgenus *Salpistele*

- 3 Dorsal sepal and synsepal ovate, at least 2 mm wide; lip about as long as the column 4
- 3' Sepals narrowly ovate, about 1.5 mm wide; lip much smaller than the column; apex of the column ovate 5
- 4 Sepals brown, more or less marked with yellow; apex of the column expanded, triangular *S. brunnea*
- 4' Sepals yellow, spotted with brown; apex of the column not expanded, ovate to suborbicular *S. lutea*
- 5 Sepals about 5 mm long; lip half as long as the column *S. dressleri*
- 5' Sepals about 3 mm long; lip nearly as long as the column *S. parvula*

Salpistele brunnea Dressler, *Orquideología* 14: 6, 1979.

Ety.: From the Latin *brunneus*, "brown," referring to the color of the flower.

Plant small, epiphytic to terrestrial in moss, caespitose; roots slender. Ramicauls slender, erect, 3-15 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, faintly subverrucose on the dorsum, elliptical, petiolate, subacute to obtuse, 8-20 mm long (rarely 45 mm long) including a petiole 2-5 mm long (up to 15 mm long), 4-9 mm wide, the base cuneate into the petiole. **Inflorescence** a successively several-flowered, flexuous raceme up to 6.5 cm long including the peduncle 5-15 mm long, from high on the ramicaul, more or less creeping, the flower resupinate; floral bract oblique, acute, 1.5 mm long; pedicel 1 mm long; ovary 0.5 mm long; **sepals** red-brown or chocolate brown, sometimes with yellow markings and margins, the dorsal sepal ovate, acute, shortly acuminate, concave, 4.5-6.5 mm long, 2.5-3.5 mm wide expanded, 3-veined, the lateral sepals totally connate into an ovate, acute, synsepal, 4.5-6 mm long, 2-3 mm wide expanded, bicarinate; **petals** brown, green toward the apex, minutely ciliate, narrowly linear, acute, 4-6 mm long, 0.4-0.7 mm wide, 1-veined; **lip** brown, long-pubescent, 3-lobed, "U-shaped," 2 mm long, 1.5 mm wide expanded, the lateral lobes narrowly uncinat, surrounding the column, the apex rounded, recurved, abruptly contracted into a slender, reflexed tail, 0.5-1 mm long, the base unguiculate, attached to the base of the column; **column** red, stout, terete, 2-2.5 mm long, dilated at the apex to form a flat, triangular surface 1.5 mm long, 1 mm wide, surrounding the apical anther and stigma.

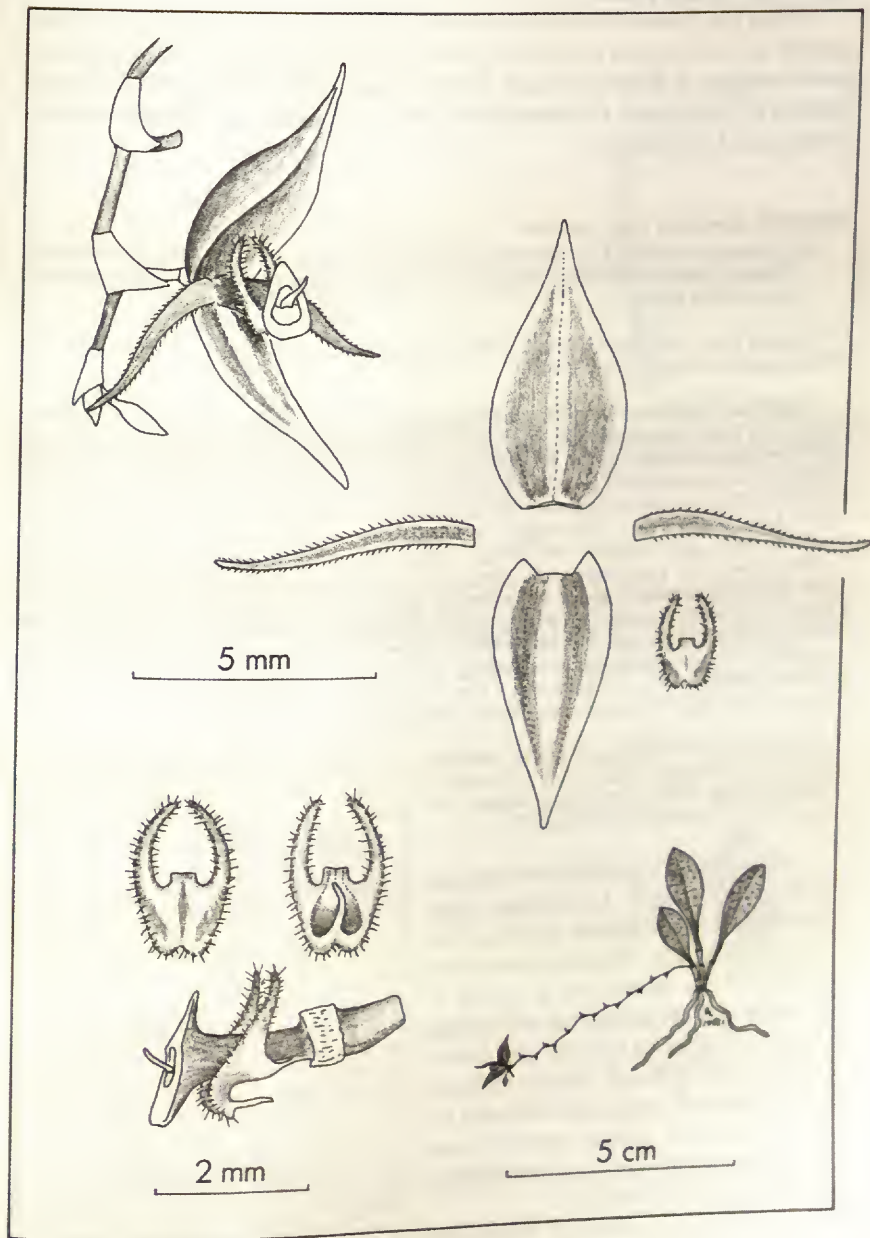
PANAMA: Prov. of Chiriquí: Cerro Colorado, about 50 Km north of San Felix, alt. ca. 1300 m, 19 Aug. 1975, R. L. Dressler 5124 (Holotype: US; Isotype: PMA), flowered in cultivation, C. Luer illustr. 14551; same locality, alt. 1300-1450 m, 15-16 February 1977, R. L. Dressler 5617 (MO, SEL); San Ramón, headwaters of Río Caldera, alt. 2000 m, 22 Oct. 1967, R. L. Dressler 3123 (MO; FLAS); near the pass over Cerro Fortuna, alt. ca. 1400 m, 16 Aug. 1976, R. L. Dressler 5423 (PMA); Fortuna, March 1985, A. Maduro 14-M (MO), C. Luer illustr. 14554. Prov. of Coclé: near Aserradero El Copé, alt. 800-900 m, 10 Apr. 1977, R. L. Dressler 5645 (PMA, SEL). Prov. of Veraguas: "Buenos Aires," east of Cerro Tute, northwest of Santa Fe, alt. ca. 950 m, 24 Dec. 1976, R. L. Dressler 5544 (PMA, SEL).

COSTA RICA: Prov. of Alajuela: above San Ramón, 1868, A. R. Endres 54 (MO, W).



More than a century ago, Endres sent Reichenbach long, detailed, handwritten descriptions of this species from Costa Rica, as well as 13 different sets of beautiful, minutely detailed and accurate illustrations of the habit, frontal and oblique views of the flower, and numerous views of the floral parts including the column, anther, pollinia and stigma. A very serviceable microscope must have been at Endres' disposal. Twenty-nine generous herbarium specimens collected by Endres now mounted on seven sheets were discovered without identification among the unidentified collections of *Pleurothallis* at W (Vienna). Why Reichenbach failed to publish this species is a mystery.

This species was eventually described by R. L. Dressler from a collection he made on Cerro Colorado in western Panama. He had first found plants in 1967. Subsequently *S. brunnea* has been found to be local but relatively frequent in all the mountains of western Panama. It grows among deep moss, often in mats low on the trunks of large trees in wet, virgin forests. The moss

Plate 1. *Salpistele brunnea* Dressler

obscures the creeping inflorescence that bears the flower some distance from the little, caespitose plant.

Among the Central American species of the genus, *S. brunnea* is distinguished by brown sepals sometimes marked with yellow-green or with yellow-green margins; a deeply concave dorsal sepal; a slender, acutely reflexed midlobe of the lip; and a comparatively large or expanded, triangular surface of the apex of the column.

***Salpistele dressleri* Luer, sp. nov.**

Ety.: Named in honor of Dr. Robert L. Dressler, formerly of the Smithsonian Tropical Research Institute, Balboa, Canal Zone, Panama, who described the genus, and who collected this species.

Species haec *S. brunneae* Dressler affinis, sed sepalis angustioribus, labello minore, et columna graciliore longioreque differt.

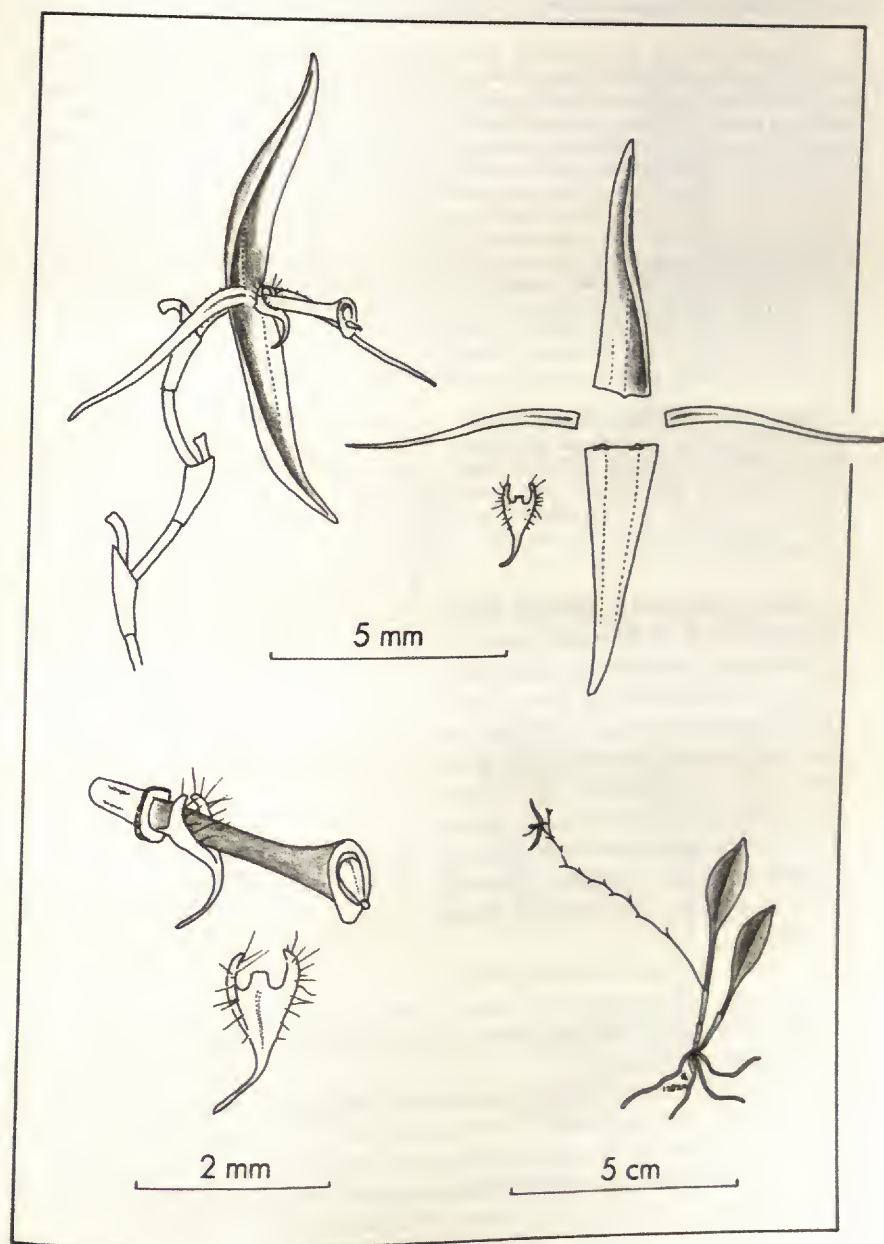
Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-15 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, elliptical, petiolate, acute to subacute, 20-28 mm long including a petiole 5-7 mm long, 6-8 mm wide, the base cuneate into the petiole. **Inflorescence** a successively several-flowered, flexuous raceme up to 6 cm long including the peduncle 1.5 cm long, from high on the ramicaul, more or less creeping; floral bract oblique, acute, 2 mm long; pedicel 2-3 mm long; ovary 0.5 mm long; **sepals** yellow-brown, the dorsal sepal narrowly ovate, acute, concave, 5 mm long, 1.5 mm wide expanded, 3-veined, the lateral sepals totally connate into a narrowly ovate-triangular, acute, concave synsepal, 5 mm long, 1.5 mm wide expanded, bicarinate; **petals** yellow-brown, sparsely ciliate, narrowly linear, acute, 5 mm long, 0.4 mm wide, 1-veined; **lip** yellow, sparsely long-pubescent, 3-lobed, 1.5 mm long, 1 mm wide expanded, "Y-shaped," the lateral lobes narrowly uncinat, surrounding the column, the middle lobe slender, descending, 0.5 mm long, the base unguiculate, attached to the base of the column; **column** yellow, slender, terete, 3 mm long, dilated at the apex to form a flat, elliptical surface 1 mm long, 0.5 mm wide, surrounding the apical anther and stigma.

PANAMA: Prov. of Chiriquí: Fortuna, collected by R. L. Dressler, sent to J & L Orchids, Easton, CT, ca. 1979, flowered in cultivation, 25 Apr. 1987, *C. Luer* 12820 (Holotype: MO).

About 1979, a plant of this species was collected by R. L. Dressler near Fortuna in the Chiriquí province of western Panama. Because it was not in flower, he dispatched it to J & L Orchids in Connecticut for cultivation. Today it continues to grow and flower well. A photograph of this species, identified as *S. lutea*, was included on page 15 in the article in which the genus *Salpistele* was described (*Orquideologia*, vol. 14, No. 1).

Among the Central American species of the genus, *S. dressleri* is distinguished by narrow, yellow-brown sepals; a slender but deeply concave or boat-shaped dorsal sepal and synsepal; slender, linear petals; a much smaller lip with slender, sparsely long-ciliate lateral lobes and descending midlobe; and a comparatively small, elliptical surface of the apex of the column.



Plate 2. *Salpistele dressleri* Luer

Salpistele lutea Dressler, *Orquideología* 14: 8, 1979.

Ety.: From the Latin *luteus*, "yellow," referring to the color of the flower.

Plant small, epiphytic to terrestrial in moss, caespitose; roots slender. Ramicauls slender, erect, 5-10 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, faintly subverrucose on the dorsum, elliptical, petiolate, subacute to acute, slightly acuminate, 8-20 mm long including a petiole 2 mm long, 4-6 mm wide, the base cuneate into the petiole. **Inflorescence** a successively several-flowered, flexuous raceme up to 4 cm long including the peduncle 5-10 mm long, from high on the ramicaul, more or less creeping; floral bract oblique, acute, 1.5-2 mm long; pedicel 2 mm long; ovary 1 mm long; **sepals** yellow with a few, brown spots, the dorsal sepal narrowly ovate, acute, shortly acuminate, slightly concave, 5-8 mm long, 2-3 mm wide, 3-veined, the lateral sepals totally connate into a narrowly ovate, acute, synsepal, 5-8 mm long, 2-2.5 mm wide, bicarinate; **petals** yellow marked with brown, sparsely ciliate, narrowly linear, acute, 4-8 mm long, 0.25 mm wide, 1-veined; **lip** brown, long-pubescent, 3-lobed, 3 mm long, 1.5 mm wide expanded, "U-shaped," the lateral lobes broadly ovate, oblique, with narrowly uncinuate processes surrounding the column, the apex shortly acuminate, antrorse, the base unguiculate, attached to the base of the column; **column** red, stout, terete, 3 mm long, dilated at the apex to form a narrow margin surrounding the apical anther and stigma.

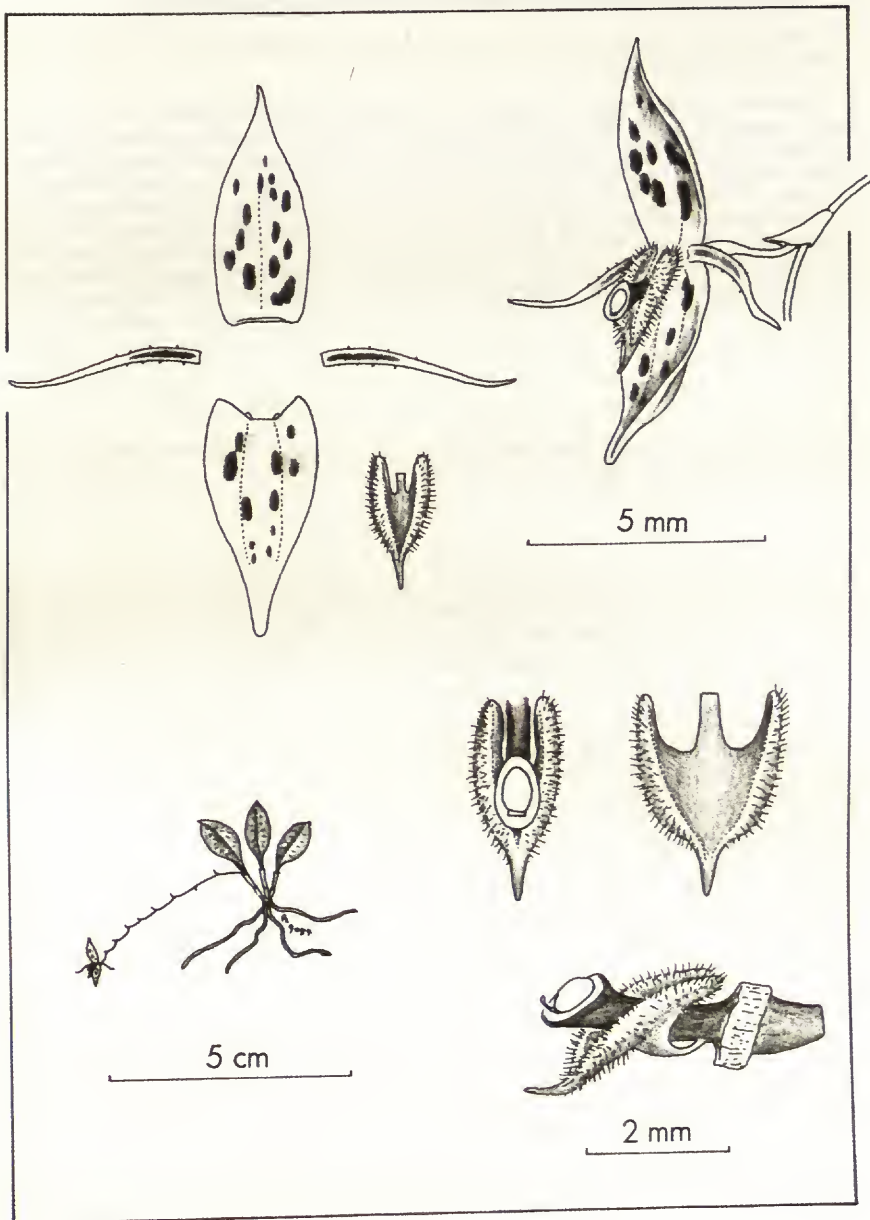
PANAMA: Prov. of Chiriquí: Cerro Colorado, about 50 Km north of San Felix, alt. ca. 1300 m, 19 Aug. 1975, R. L. Dressler 5125 (Holotype: US), flowered in cultivation, C. Luer illustr. 14552. Prov. of Coclé: El Copé, collected by N. Williams, flowered in cultivation 2 July 1983, C. Luer 9084 (SEL).

This species and *S. brunnea* were described by R. L. Dressler from simultaneous collections he made from moss on the same tree on Cerro Colorado in western Panama. The trees at the type-locality subsequently have been cut, so that neither species can any longer be found there. *Salpistele lutea* is apparently much less frequent than *S. brunnea*. It is known from only one subsequent collection by Norris Williams.

Like *S. brunnea*, *S. lutea* grows in deep moss, often low on the trunks of large trees in wet, virgin forests. The moss obscures the creeping inflorescence that bears the flower a short distance from the plant.

Among the Central American species of the genus, *S. lutea* is distinguished by yellow-green sepals with a few brown spots; a shallowly concave dorsal sepal; a midlobe of the lip that may or may not be retrorse; and a comparatively small, ovate or suborbicular surface of the apex of the column. A photograph in color graces the cover of *Orquideología* Vol. 14, No. 1.



Plate 3. *Salpistele lutea* Dressler

Salpistele parvula Luer & Dressler, sp. nov.

Ety.: From the Latin *parvulus*, "very small," referring to the habit and flowers.

Species haec *S. brunneae* Dressler affinis, sed habitu floribusque minoribus et labello longivilloso anguste sagittato differt.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-4 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 8-12 mm long including a petiole 1-1.5 mm long, 3-5 mm wide, the base cuneate into the petiole. **Inflorescence** a creeping, successively several-flowered, flexuous raceme up to 3 cm long including the peduncle 4-5 mm long, from the ramicaul; floral bract inflated, oblique, 1.25 mm long; pedicel 1.5 mm long; ovary 0.75 mm long; **sepals** red-brown with yellow streaks and margins, the dorsal sepal narrowly elliptical, acute, lightly short-acuminate, concave, 3.75 mm long, 1.75 mm wide expanded, 3-veined, the lateral sepals totally connate into a bicarinate, narrowly ovate-triangular, cymbiform, acute synsepal, 4 mm long, 1 mm wide; **petals** ciliate-denticulate, narrowly linear, acute, 3.25 mm long, 0.25 mm wide, 1-veined; **lip** long-villous-pubescent, sagittate, 3-lobed, 1.75 mm long, 0.5 mm wide, "Y-shaped," the basal lobes narrowly uncinat, surrounding the column, the middle lobe slender, narrowly acute, descending, the base unguiculate, attached to the base of the column; **column** slender, terete, 1.8 mm long, dilated at the apex to form a flat, ovate-triangular surface, 0.4 mm wide, surrounding the apical anther and stigma.

PANAMA: Prov. of Coclé: hills north of El Valle de Antón, alt. ca. 900 m, 3 Dec. 1978, R. L. Dressler 5832 (Holotype: MO; Isotype: FLAS).

Although the size of the plants of the other Central American species of *Salpistele* varies considerably, none produces plants as small as those of this species collected by Dressler in the hills above El Valle de Antón. Here this species grows abundantly on the trunks of large trees, but it has not yet been found elsewhere.

Salpistele parvula is distinguished by the tiny, caespitose habit. The successively flowered racemes creep amid the surrounding vegetative debris as is seen in the related, larger species. The resupinate, gaping flowers are very small, the sepals measuring less than four millimeters in length. The petals are very slender and ciliate. The tiny lip is sagittate and long-villous. Although similar in size and shape to that of *S. dressleri*, the lip is nearly as long as the cylindrical column. The lip of *S. dressleri* is much smaller than the column.



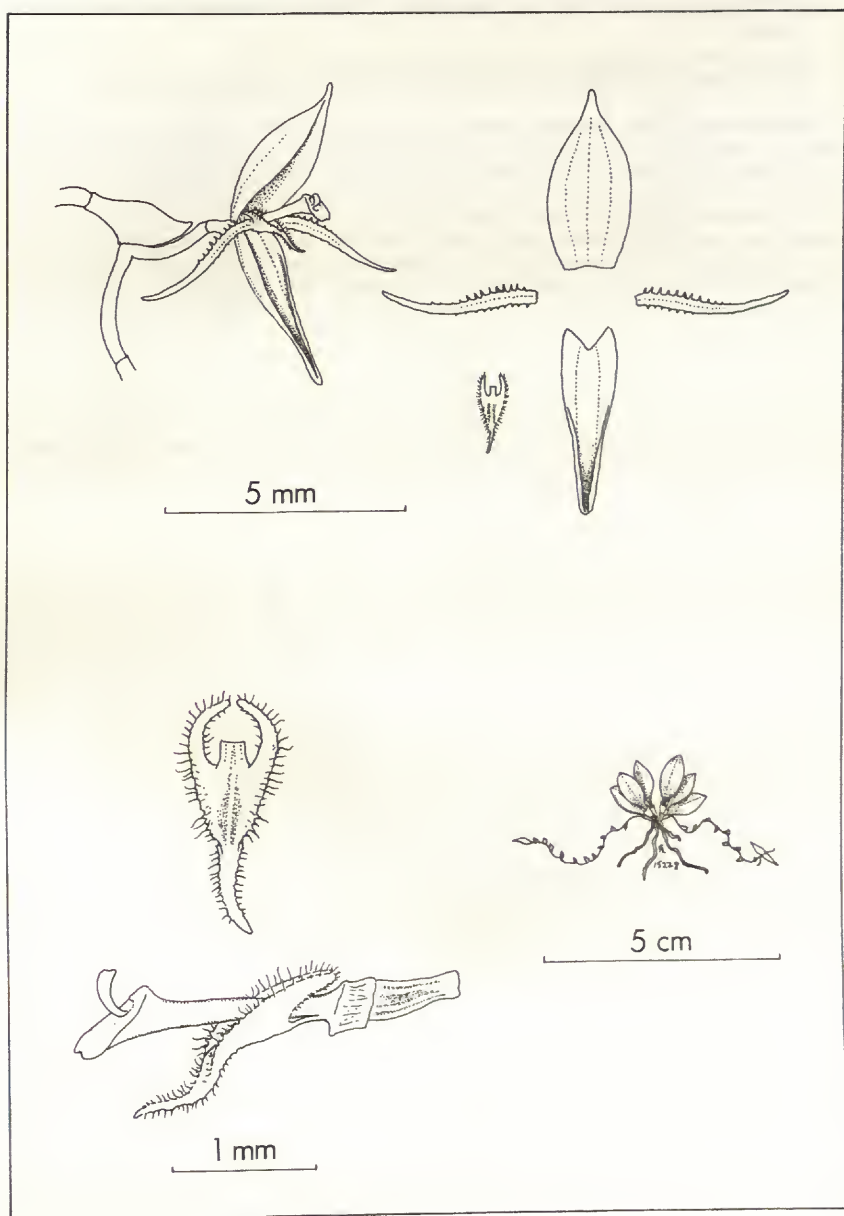


Plate 4. *Salpistele parvula* Luer & Dressler

Salpistele dielsii (Mansf.) Luer, Monogr. Syst. Bot. 15: 57, 1986.

Bas.: *Lepanthes dielsii* Mansf., Biblioth. Bot. 29(116): 72, 1937.

Ety.: Named in honor of Prof. Dr. Ludwig Diels of Stuttgart, Germany, who collected this species.

Syn.: *Lepanthes echinocarpa* L. O. Wms., Bot. Mus. Leaf. 9: 1, 1940.

Ety.: From the Greek *echinocarpus*, "spiny fruit," referring to the echinate capsules.

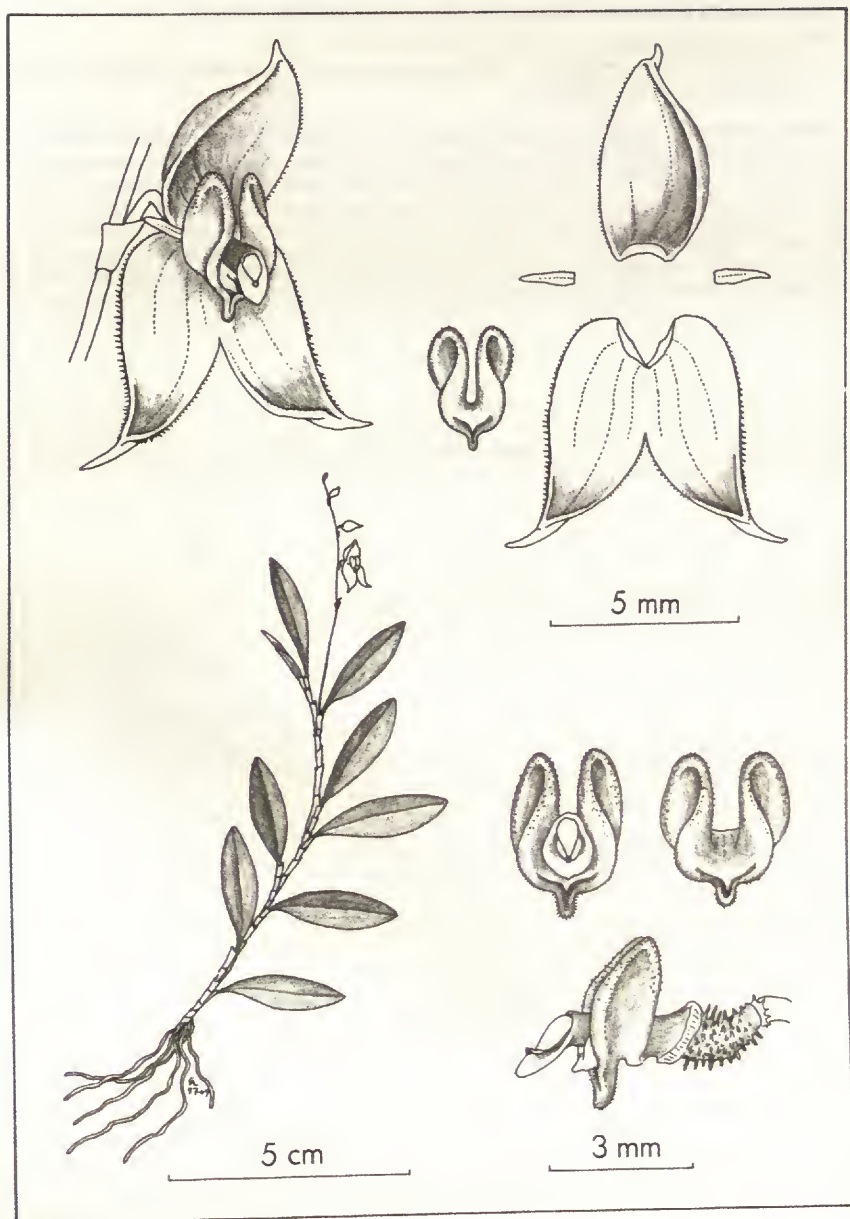
Plant medium in size, epiphytic, repent, to 20 cm long or longer; rhizome ascending, 5-20 mm long between ramicauls, enclosed by 2-3 tubular, ribbed sheaths, occasionally branching; roots slender, mostly arising near the base of the rhizome. Ramicauls slender, erect, 5-12 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** erect, coriaceous, elliptical, shortly petiolate, acute to subacute, 10-30 mm long including a petiole 1-2 mm long, 5-10 mm wide, the base cuneate into the petiole. **Inflorescence** a loose, successively several-flowered, suberect raceme up to 7 cm long including the peduncle 2-3 cm long, from high on the ramicaul, floral bract oblique, acute, 2-2.5 mm long; pedicel 2-3 mm long; ovary 1 mm long, spiculate; **sepals** yellow, orange, red-brown to dark purple, with minutely ciliate margins, carinate, apiculate, the dorsal sepal ovate, acute, concave, 4-6 mm long, 2.5-3 mm wide expanded, 3-veined, the lateral sepals connate about 1 mm at the base, ovate, oblique, concave, 4-6 mm long, 2.5 mm wide; **petals** colored as the sepals, narrowly linear, acute, 1-1.25 mm long, 0.4 mm wide, 1-veined; **lip** colored as the sepals, cellular-glandular, 3-lobed, 3 mm long, 3 mm wide expanded, the lateral lobes auricular-ovate, surrounding the column, the middle lobe broadly rounded, contracted into a small, concave lobule, the disc with a triangular callus in the center, the base attached to the base of the column; **column** terete, 2 mm long, dilated at the apex to form a flat, elliptical surface 1-1.5 mm long, 1 mm wide, surrounding the apical anther and stigma.

ECUADOR: Prov. of Chimborazo: epiphytic in forest of interandean highlands, Tipococha, 13 Aug. 1933, *L. Diels* 554 (Holotype presumably destroyed at B); Prov. of Azuay: cloud forest remnant north of Cuenca, alt. 2900 m, 8 Feb. 1987, *C. Luer, J. Luer & A. Hirtz* 12732 (K, MO). Prov. of Bolívar: Hda. Talahua, alt. 2600 m, 2 May 1939, *C. W. Penland & R. H. Summers* 611 (AMES, holotype of *Lepanthes echinocarpa*); epiphytic in cloud forest north of Guaranda toward Facundo Vela, alt. 2800 m, 24 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz* 9678, 9687 (MO); pass north of Chillanes, alt. 2650 m, 25 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz* 9707, 9709, 9711, 9736, 9745 various sizes and colors (MO); La Palma, alt. 3400 m, Mar. 1984, *A. Hirtz* 1626 (MO). Prov. of Loja: pass north of Loja, alt. 3100 m, 20 Sept. 1980, *C. Luer, J. Luer & A. Hirtz* 5514 (SEL); above Yangana north of the pass, alt. 2400 m, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores* 10891 (MO). Without locality or date, *W. Jameson* s.n. (K).



This species was first collected in the last century by Dr. Jameson, probably somewhere near Quito, Ecuador, but the specimen lay unidentified at Kew. It was collected again by Ludwig Diels in 1933 and described in *Lepanthes* by Mansfeld.

Salpistele dielsii is recognized by the ascending, repent habit with a short, successively flowered raceme. The color of the flowers varies through all shades and combinations of yellow, orange, red, brown and purple. The sepals are carinate, concave, apiculate and minutely ciliate. The petals are vestigial. The auriculate lateral lobes of the lip embrace the footless column, and the apex is contracted into a small, concave lobule. Above, and below the column, is a small, protruding, triangular callus that is variously developed.

Plate 5. *Salpistele dielsii* (Mansf.) Luer

Salpistele pensilis (Schltr.) Luer, Monogr. Syst. Bot. 15: 57, 1986.

Bas.: *Lepanthes pensilis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 55, 1921.

Ety.: From the Latin *pensilis*, "hanging, pendent," referring to the habit.

Syn.: *Lepanthes lancipetala* L. O. Wms., Bot. Mus. Leaf. 9: 1, 1940.

Ety.: From the Latin *lancipetalus*, "with lance-shaped petal," referring to the entire petal, unusual for the genus *Lepanthes*.

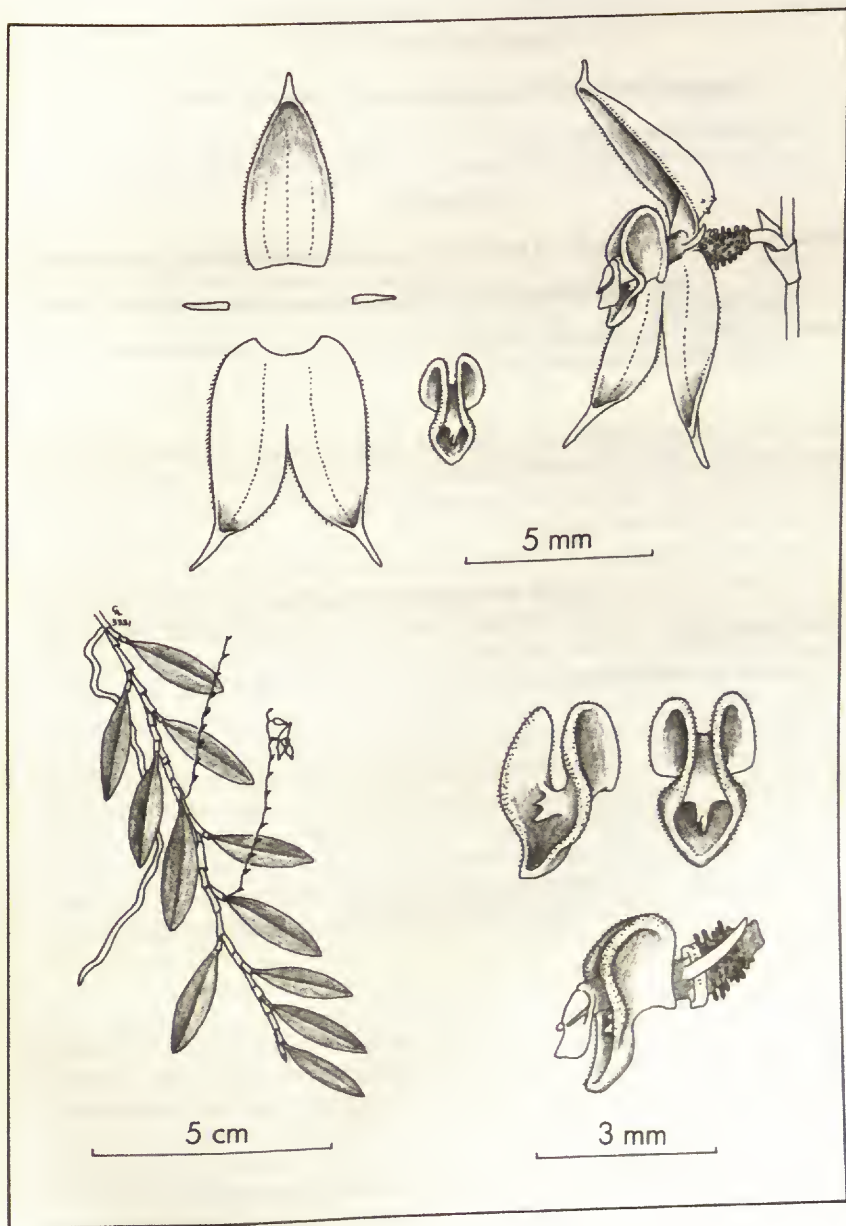
Plant medium in size, epiphytic, repent, pendent, to 40 cm long or longer; rhizome descending, 5-15 mm long between ramicauls, enclosed by 2-3 tubular, ribbed sheaths, occasionally branching; roots coarse, from nodes along the rhizome. Ramicauls slender, descending, 2-7 mm long, enclosed by 2 thin, tubular sheaths. **Leaf** descending, coriaceous, elliptical, shortly petiolate, acute, 10-35 mm long including a petiole 1-2 mm long, 5-10 mm wide, the base cuneate into the petiole. **Inflorescence** a loose, successively several-flowered, ascending raceme up to 7 cm long including the peduncle 1-2 cm long, from high on the ramicaul, floral bract oblique, acute, 2-2.5 mm long; pedicel 2 mm long; ovary 1 mm long, spiculate; **sepals** yellow to red, with minutely ciliate margins, carinate, apiculate, the dorsal sepal ovate, acute, concave, 4-5 mm long, 2.5 mm wide expanded, 3-veined, the lateral sepals connate about 1 mm at the base, ovate, oblique, concave, 4-6 mm long, 2 mm wide; **petals** colored as the sepals, narrowly linear, acute, 1 mm long, 0.2 mm wide, 1-veined; **lip** colored as the sepals, cellular-glandular, 3-lobed, 3 mm long, 3 mm wide expanded, the lateral lobes auricular-ovate, surrounding the column, the middle lobe broadly ovate, subacute, concave, the disc with a small, 2-pronged callus in the center, the base attached to the base of the column; **column** terete, 2 mm long, dilated at the apex to form a flat, elliptical surface 1 mm long, 0.75 mm wide, surrounding the apical anther and stigma.

ECUADOR: Prov. of Chimborazo: in mountains above Riobamba, *A. Mille s.n.* (Holotype: B?). Prov. of Imbabura: Lake Cuicocha, alt. 3300 m, 2 June 1939, *C. W. Penland & R. H. Summers 835* (AMES, holotype of *Lepanthes lancipetala*); margin of paramo between Atuntaqui and Hda. Pinon, alt. 11,300 ft., 20 June 1944, *I. L. Wiggins 10327* (US); wet rainforest, Cerro Muenala, above Río Asabi, alt. 9500 ft., 3 Dec. 1943, *W. B. Drew E-46* (AMES); west of Otavalo, alt. 2800 m, 24 Aug. 1978, *C. Luer, J. Luer & A. Hirtz 3331, 3332* (SEL); Mojanda, alt. 3000 m, Nov. 1983, *A. Hirtz 1354* (MO); Mojanda, alt. 3400 m, Apr. 1984, *A. Hirtz 1683, 1684* (MO); Mojanda, alt. 3400 m, 29 Sept. 1984, *A. Hirtz 1935* (MO); Selva Alegre, alt. 3000 m, 29 Sept. 1984, *A. Hirtz 1928* (MO). Without locality or date, *F. C. Lehmann B.T. 1316* (K).



This species was first collected by Consul Lehmann, probably in the latter part of the last century, but the specimen lay at Kew undescribed. It was collected again in this century about 1913 by Father Mille and described as a *Lepanthes* by Schlechter.

It is recognized by the long-pendent habit with only the racemes ascending. The color of the flowers varies from yellow to red. The sepals are carinate, concave, apiculate and minutely ciliate, and the petals are vestigial, all very similar to those of *S. dielsii*. The auriculate lateral lobes of the lip also embrace the footless column. The apex, however, is simply obtuse. Above is a two-pointed callus, one point above the other. This callus varies in size and distinctness. Sometimes the upper point is barely present or even absent.

Plate 6. *Salpistele pensilis* (Schltr.) Luer

ACKNOWLEDGMENT

I appreciate the criticisms and suggestions of Dr. Robert L. Dressler.

REFERENCES

- DRESSLER, R. L., 1979. *Salpistele*, un genero nuevo de las Pleurothallidinae. Orquideología 14: 3-17.
- _____. 1981. The orchids: natural history and classification. Harvard University Press, Cambridge.
- LUER, C. A., 1986. Icones Pleurothallidarum I. Systematics of the Pleurothallidinae. Monogr. Syst. Bot. Missouri Bot. Gard. 15: 57.

INDEX OF SCIENTIFIC NAMES

- Brachionidium 123
- Lepanthes 123, 134
- Lepanthes dielsii 124, 134, 136
- echinocarpa 134
- lancipetala 136
- pensilis 136
- Oreades 122, 123
- Pleurothallis 126
- subgen. Specklinia sect. Muscaria 123
- Salpistele 123, 124, 128, 132
- subgen. Andinia 123, 124, 125
- subgen. Salpistele 123, 124, 125
- Salpistele brunnea 123, 124, 125, 126, Plate 1., 128, 130, 132
- dielsii 124, 125, 134, Plate 5., 136
- dressleri 123, 125, 128, Plate 2., 132
- lutea 125, 128, 130, Plate 3.
- parvula 123, 125, 132, Plate 4.
- pensilis 125, 136, Plate 6.

SYSTEMATICS OF THE GENUS *TEAGUEIA* (ORCHIDACEAE)

ABSTRACT

The genus *Teagueia* (Luer) Luer is described. Only the two previously undescribed species are described and illustrated with a black and white drawing and a distribution map.

New combinations and taxa:

Teagueia (Luer) Luer, gen. nov.

Teagueia lehmannii Luer, sp. nov.

Teagueia phasmida (Luer & Escobar) Luer, comb. nov.

Teagueia rex (Luer & Escobar) Luer, comb. nov.

Teagueia teaguei (Luer) Luer, comb. nov.

Teagueia tentaculata Luer & Hirtz, sp. nov.

Teagueia zeus (Luer & Hirtz) Luer, comb. nov.

This taxon was first recognized as a subgenus of *Platystele* in *Icones Pleurothallidarum* I, *Systematics of the Pleurothallidinae*) in 1986, and four species were treated in *Icones Pleurothallidarum* VII in 1990. The first species of this genus known to have been collected is *Teagueia lehmannii*, discovered in Colombia in the previous century by Consul F. C. Lehmann. This specimen lay undescribed among the indeterminates of *Pleurothallis* in the herbarium of the Royal Botanic Gardens at Kew, England. The first four species to be described were attributed to the genus *Platystele* between 1979 and 1990. The first species collected by Lehmann and one more are added herewith.

In which genus to treat these closely related species has been a problem. The short, broad, footless, "Stelis-like" column with an apical anther and rostellum, and a transverse, bilobed stigma is similar to that of *Lepanthopsis*, *Platystele*, *Pleurothallis* section *Macrophyllae-Fasciculatae*, and most species of *Stelis*. The species form a distinct unit without intermediate species yet known. Florally they seem most related to *Lepanthopsis* and *Platystele*. However, the short ramicauls without lepanthiform sheaths (ribbed, tubular sheaths with dilated ostia with more or less ciliate margins and ribs) exclude the species from *Lepanthopsis*.

Platystele seemed the only choice short of proposing a new genus. In *Systematics of the Pleurothallidinae* (Luer, 1986) the subgenus *Teagueia* was erected to accommodate the three aberrant species known at that time. In *Platystele*, however, there are problems. In all species of *Platystele sensu stricto* the sepals are single-veined. In *Teagueia*, not only are the flowers much larger with well-developed sepaline tails, but the dorsal sepal is three-veined and the laterals are two- or three-veined. The lips of all six species are basically similar, differing considerably from those of *Platystele*. The lips are thick and longitudinally channeled with involute margins and deeply concave at the apex.

The species of *Teagueia* are epiphytic in isolated, endemic populations in moist forests at moderate to high altitudes (between 2200 and 3000 meters above sea level) in the Andes of central and southern Colombia and northern Ecuador where they are rare.

Teagueia (Luer) Luer, gen. nov.

Type: *Platystele teagueia* Luer, *Selbyana* 5: 157, 1979.

Ety.: Named in honor of Walter Teague of San Francisco, California, who first discovered the type species.

Bas.: *Platystele* subgenus *Teagueia* Luer, *Systematics of the Pleurothallidinae*, Monogr. Syst. Bot. Missouri Bot. Gard. 15: 45, 1986.

Plants perennial, small to medium in size, epiphytic, rarely terrestrial in moss, caespitose to shortly repent, erect to ascending, the rhizome abbreviated or elongated; roots slender to comparatively coarse. Ramicauls erect, or ascending, slender, non-pseudobulbous, shorter than the leaf, unifoliate, mostly or completely enclosed by 2 or 3 more or less imbricating, glabrous sheaths, the inflorescence emerging laterally with an annulus from near the apex. **Leaf** erect, coriaceous to thickly coriaceous, smooth, green, ovate to elliptical, petiolate, the apex acute to obtuse or rounded, shallowly notched with a mucro in the sinus, the base cuneate into the petiole. **Inflorescence** a more or less simultaneously several-flowered raceme, (successively flowered in one species), with the flowers resupinate, variously colored, borne by a slender peduncle that emerges laterally from the ramicaul with an annulus below the apex; floral bracts thin, tubular, acute; pedicels slender, longer or shorter than the floral bract; ovary more or less costate, trivalvate; **sepals** conspicuous, membranous, usually pubescent or ciliate, variously colored, the apices acuminate into long tails, the dorsal sepal ovate, free from the lateral sepals, 3-veined, the lateral sepals variously connate, 2-veined; **petals** small, acute to obtuse; lip thick, fleshy, cordate, with basal lobes embracing the column, the disc cleft or concave at the apex, the base attached to the base of the column; **column** short, broad, footless, non-winged, the anther, rostellum and the transversely bilobed stigma apical, with a pair of pollinia attached to a small viscidium.

Among the Pleurothallidinae the genus *Teagueia* is identified by the medium-sized habit with smooth-sheathed ramicauls shorter than petiolate leaves, and a successively or simultaneously flowered raceme of showy, medium-sized flowers. Sometimes the flowers are arranged in opposite-facing ranks as seen in *Lepanthopsis*. The sepals are long-tailed, and the dorsal sepal is three-veined. The petals are small and inconspicuous. The lips are ovoid to suborbicular with cordate bases, the basal lobes embracing the column. The disc is deeply cleft with involute margins and concave at the apex. The base is inflexibly attached to the base of the column. The column is short, broad and footless with an apical anther, rostellum and transverse stigma. Two pollinia are present.

LIST OF ILLUSTRATIONS

(Plates published in *Icones Pleurothallidinarum* VII are renumbered)

<i>Teagueia lehmannii</i> Luer	Plate 1.
<i>Teagueia phasmida</i> (Luer & Escobar) Luer	Plate 2. (I.P.VII Plate 49.)
<i>Teagueia rex</i> (Luer & Escobar) Luer	Plate 3. (I.P.VII Plate 59.)
<i>Teagueia teaguei</i> (Luer) Luer.....	Plate 4. (I.P.VII Plate 69.)
<i>Teagueia tentaculata</i> Luer & Hirtz.....	Plate 5.
<i>Teagueia zeus</i> (Luer & Hirtz) Luer.....	Plate 6. (I.P.VII Plate 73.)

KEY TO THE SPECIES OF *TEAGUEIA*

- 1 Habit ascending, repent; leaves acute 2
- 1' Habit caespitose; leaves obtuse to rounded 3
- 2 Sepals pubescent, up to 20 mm long *T. rex*
- 2' Sepals ciliate, up to 30 mm long *T. tentaculata*
- 3 Flowers cleistogamous *T. lehmannii*
- 3' Flowers not cleistogamous 4
- 4 Raceme successively flowered; lateral sepals deeply connate
to above the middle *T. zeus*
- 4' Raceme with a few simultaneous flowers; lateral sepals connate
below the middle 5
- 5 Sepals pubescent, about 20 mm long *T. phasmida*
- 5' Sepals ciliate, about 10 mm long *T. teaguei*

***Teagueia lehmannii* Luer, sp. nov.**

Ety.: Named in honor of F. C. Lehmann, mining engineer, orchidologist and German Consul at Popayán, Colombia, who discovered this species as well as numerous others.

Inter species generis *Teagueia*, species haec floribus longipedicellatis longicaudatis cleistogamis, petalis parvis triangularibus et labello ovoideo minutissime papilloso profunde canaliculato-concavo, intus verruculoso, ad basim auriculato distinguitur.

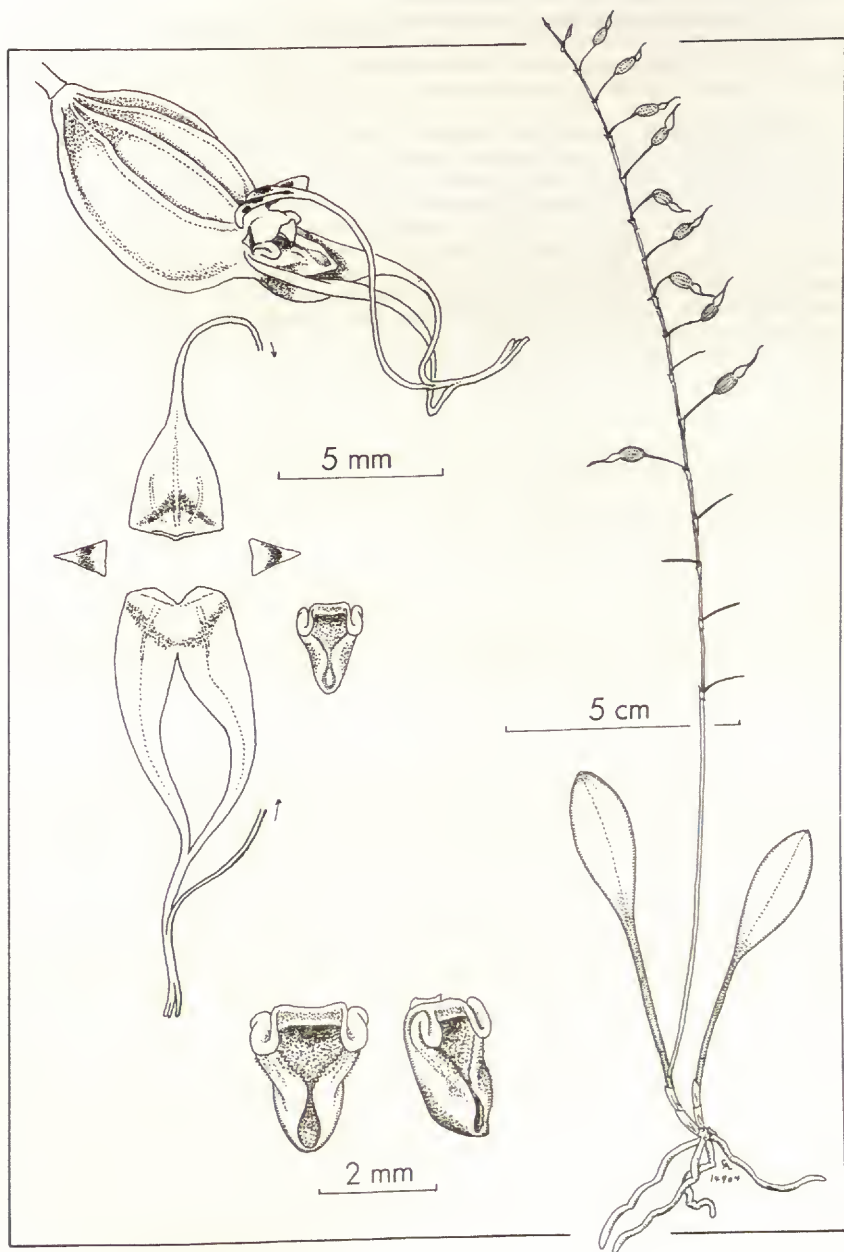
Plant average in size for the genus, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 1.5-2.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 5-6 cm long including a petiole 2-2.5 cm long, the blade elliptical, obtuse, 1.2-1.4 cm wide, cuneate below into the slender petiole. **Inflorescence** an erect, loose, more or less secund, simultaneously several-flowered raceme up to 30 cm long, including the peduncle ca. 10 cm long, emerging laterally from the ramicaul; floral bracts thin, 3 mm long; pedicels 8-11 mm long; maturing ovaries 4-6 mm long; **sepals** glabrous, ovate, thickened along the midveins, ovate, acute, acuminate, long-caudate, the tails adherent, 13-14 mm long, the dorsal sepal 2.5 mm wide, 3-veined, the laterals 1.5 mm wide, 2-veined; **petals** triangular, acute, 1.5 mm long, 1 mm wide; **lip** thick, cellular-glandular, ovoid, subacute, 2.5 mm long, 2 mm wide, the sides incurved to form a deeply channeled, concave interior, with a verrucose callus within above the base, the base truncate with a pair of inflexed, rounded, earlike lobes, attached to the column-foot; **column** cucullate, 1 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Cauca: epiphytic in thick, moist forest near La Conga on the west slopes of the Andes west of Popayán, F. C. *Lehmann s.n.* (Holotype: K, H.K. 136), C. Luer illustr. 14909.

This species seems to have been collected but once, probably about a century ago by Consul Lehmann in a moist forest on the slopes of the Andes west of Popayán. The specimen has lain unidentified at Kew since it was obtained in 1906. Unusual for Lehmann's collections, no date, altitude or collection number are given. The color of the flowers also was not stated, but they appear to have been a light color suffused with a darker color in a transverse band across the lower thirds of the sepals. The lip appears to have been darkly colored.

Teagueia lehmannii is distinguished by the cleistogamous flowers. A swollen ovary is present with every flower that has remained on the inflorescence. The long tails of the three sepals appear never to have parted. The petals are minute and pointed. The lip is ovoid with incurved sides to produce a deep channel or cavity with a verrucose callus within above the base. Externally is a pair of unspread, basal auricles.



Plate 1. *Teagueia lehmannii* Luer

***Teagueia tentaculata* Luer & Hirtz, sp. nov.**

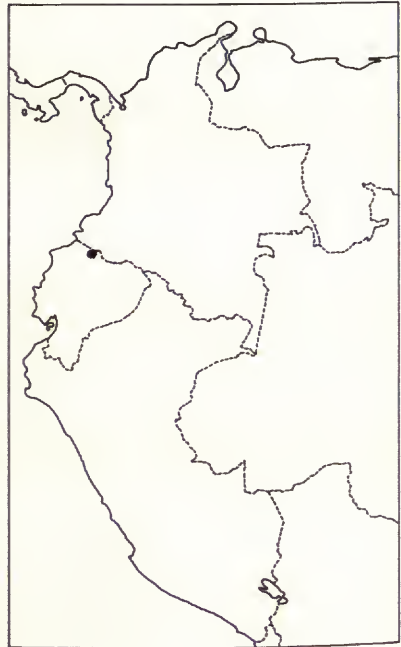
Ety.: From the Latin *tentaculatus*, "with tentacles," in allusion to the long tails of the sepals.

Species haec *Platysteleis regis* Luer & Escobar persimilis, sed sepalis pallide flavis glabris sed ciliatis cum caudis longioribus et labello obovoideo sine callo grandi basali differt.

Plant average in size for the genus, epiphytic, shortly repent, the rhizome 0.5-1 cm long between ramicauls; roots coarse. Ramicauls ascending, slender, 2-4 cm long, enclosed by 2-3 imbricating sheaths. **Leaf** erect, thinly coriaceous, petiolate, 8-13 cm long including a petiole 3-4 cm long, the blade elliptical, acute, lightly acuminate, 2-3 cm wide, the base acuminate into the petiole. **Inflorescence** a suberect, subdense, distichous, simultaneously several-flowered raceme, up to 11 cm long including the slender peduncle 3-5 cm long, from near the middle of the ramicaul; floral bracts thin, 3 mm long; pedicels 3 mm long; ovary 2.5 mm long; **sepals** light yellow, glabrous but ciliate, with the sides revolute, the dorsal sepal ovate at the base, 33 mm long, 3.5 mm wide, 3-veined, the apex acute, long-acuminate into a filiform tail, the lateral sepals narrowly ovate, oblique, with the sides revolute, 33 mm long, 3 mm wide, 2-veined, connate 4 mm, the apices acute, acuminate into filiform tails; **petals** light yellow, cellular-glandular, ovate, acute, 2 mm long, 1.25 mm wide, acutely reflexed; **lip** yellow, ovoid, 3.5 mm long, 2.5 mm wide, the apex rounded and concave with involute margins toward the center of the disc, the disc with a small, flat, cellular-pubescent callus at the base, with obtuse basal lobes, incurved, embracing the column, the base fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

EDUADOR: Prov. of Napo: epiphytic in cloud forest between El Carmelo and Bonita, alt. 2400 m, Aug. 1990, A. Hirtz, X. Hirtz, J. del Hierro & F. Sarmiento 4968 (Holotype: MO), C. Luer illustr. 15273.

This species is very similar to *Teagueia rex* from neighboring Colombia. Vegetatively the two species are inseparable: a creeping rhizome with fleshy roots, and large, thin, acute, petiolate leaves. Both species produce a double-rowed raceme with the two rows of flowers facing opposite directions, in a manner commonly seen in the genus *Lepanthopsis*. *Teagueia tentaculata* is distinguished from *T. rex* by the pale yellow, instead of bright rose, flowers; considerably longer sepaline tails; and an ovoid lip lacking the prominent basal callus.



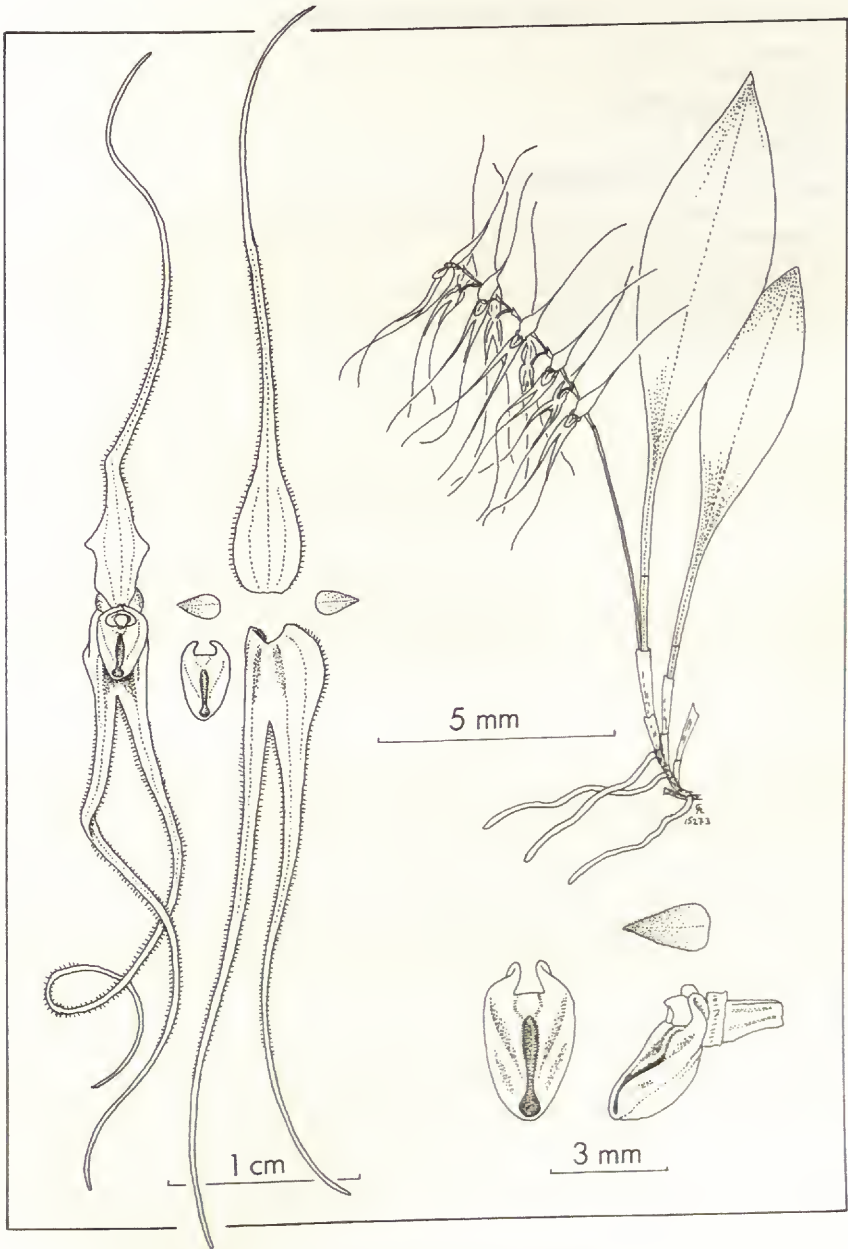


Plate 5. *Teagueia tentaculata* Luer & Hirtz

INDEX OF SCIENTIFIC NAMES

- Lepanthopsis 139, 140, 144
Platystele 139
 subgen. Teagucia 139, 140
Platystele teaguci 140
Pleurothallis 139
 sect. Macrophyllae-Fasciculatae 139
Stelis 139
Teagucia 139, 140, 141
Teagucia lehmannii 139, 140, 141, 142, Plate 1.
 phasmida 139, 140, 141, I.P.92, Plate 49 (2).
 rex 139, 140, 141, 144, I.P.108, Plate 59 (3).
 teaguci 139, 140, 141, I.P.125, Plate 69 (4).
tentaculata 139, 140, 141, 144, Plate 5.
zeus 139, 140, 141, I.P.131, Plate 73 (6).

ADDENDA TO PLATYSTELE, PORROGLOSSUM AND SCAPHOSEPALUM

ABSTRACT

The following new species of *Platystele* and *Scaphosepalum* are the first to be described since the systematics of each was published in *Icones Pleurothallidarum* VII and V respectively. The new species of *Porroglossum* follow other late additions to the systematics in *Icones Pleurothallidarum* V and VI. The plates are numbered as continuations of their respective publications in *Icones Pleurothallidarum*.

New combinations and taxa:

Platystele delhierroi Luer & Hirtz, sp. nov.

Platystele scopulifera Luer & Dodson, sp. nov.

Platystele ximenesae Luer & Hirtz, sp. nov.

Porroglossum actrix Luer & Escobar, sp. nov.

Porroglossum dreisei Luer & Andreetta, sp. nov.

Porroglossum teretilabia Luer & Teague, sp. nov.

Scaphosepalum delhierroi Luer & Hirtz, sp. nov.

Scaphosepalum digitale Luer & Hirtz, sp. nov.

***Platystele delhierroi* Luer & Hirtz, sp. nov.**

Ety.: Named in honor of Juan del Hierro of Quito, Ecuador, who discovered this species.

Species haec *P. hirtzii* Luer affinis, sed floribus aurantiacis minoribus differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-5 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 15-20 mm long including a petiole 4-6 mm long, the blade elliptical, subacute to obtuse, 4-5 mm wide, narrowly cuneate below into the slender petiole. **Inflorescence** an erect, loose, flexuous, distichous, successively several-flowered raceme up to 4 cm long or longer, borne by a slender peduncle ca. 6 cm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 6-7 mm long; ovary 1 mm long; **sepals** and petals yellow-orange, glabrous, the dorsal sepal narrowly ovate, acute, acuminate, 7 mm long, 1.75 mm wide, connate 1.5 mm at the base, the sides more or less revolute with the apices crossed in the natural position; **petals** very narrowly ovate, acute, acuminate, 4.5 mm long, 0.6 mm wide at the base, capillary above; **lip** orange, ovate, acute, 3 mm long, 1.75 mm wide, cellular-glandular, the disc featureless, the base rounded with a cellular-glandular genion; **column** cucullate, 1 mm long and broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Carchi: epiphytic in forest between Tulcán and Maldonado, alt. 2300 m, 17 Mar. 1991, C. Luer, J. Luer, J. del Hierro, A. Hirtz & X. Hirtz 15151 (Holotype: MO).

This species is closely allied to *P. hirtzii* with which it grows, but *P. delhierroi* is distinguished by the smaller habit and flower parts half the dimensions to make the flowers four times smaller. Instead of translucent, pale rose sepals and petals with a deep purple lip, the sepals and petals of *P. delhierroi* are yellow-orange and the lip is orange.

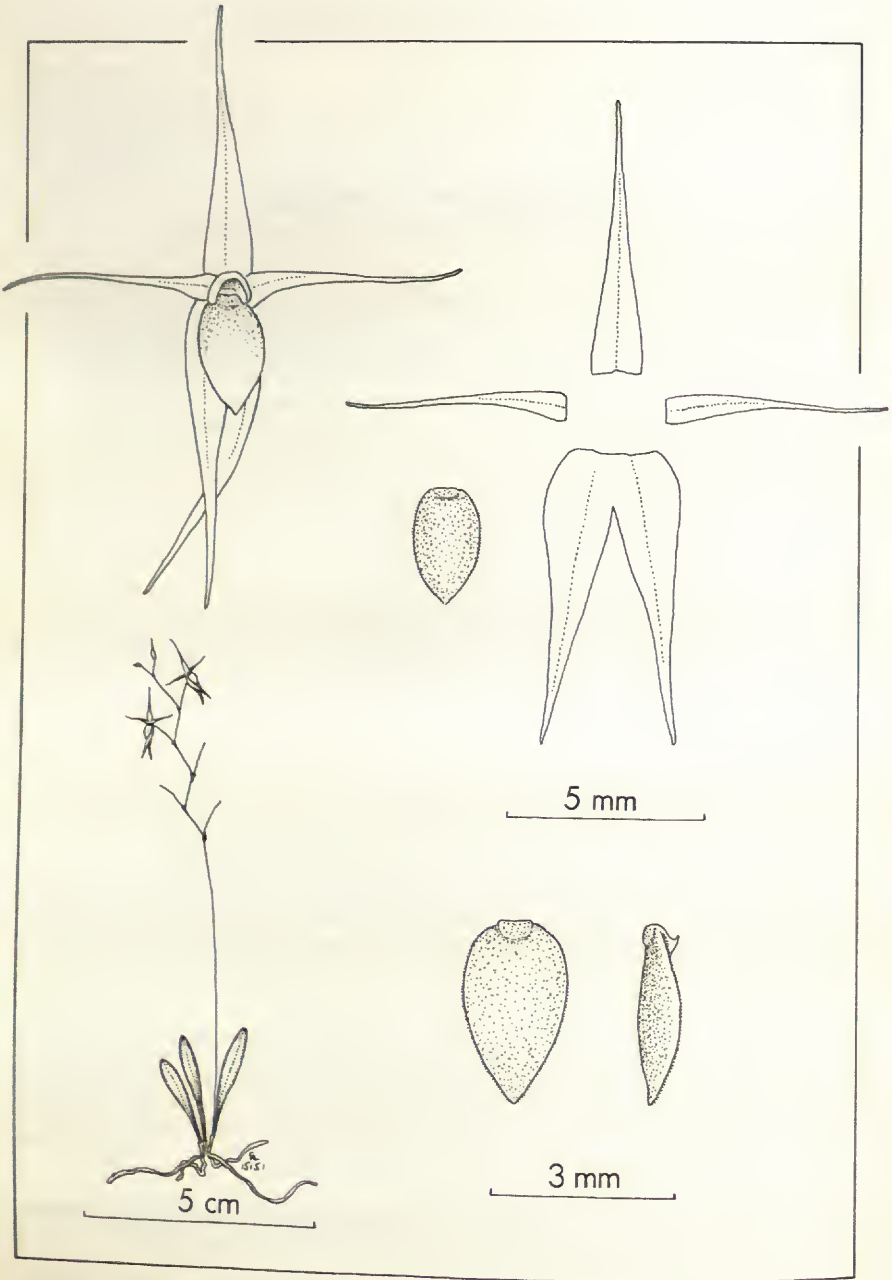


Plate 74. *Platystele delhierroi* Luer & Hirtz

Platystele scopulifera Luer & Dodson, sp. nov.

Ety.: From the Latin *scopulifer*, "brush bearing," referring to the callus of the lip.

Species haec *P. pubescenti* Luer affinis, sed sepalis ciliatis non-pubescentibus et labelli callo dense papillifero differt.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-4 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 10-16 mm long including a petiole 3-6 mm long, the blade elliptical, subacute to obtuse, 5-6 mm wide, cuneate below into the slender petiole. **Inflorescence** a weak, erect, loose, flexuous, distichous, successively few-flowered raceme up to 5 mm long or longer, borne by a filiform peduncle 10 mm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 1-1.25 mm long; ovary 0.5 mm long; **sepals** and petals wine red with white margins, shortly ciliate, the dorsal sepal obovate, obtuse, shortly acuminate, 2.5 mm long, 1.75 mm wide, the lateral sepals broadly ovate, oblique, 2 mm long, 1.5 mm wide, connate only at the base, the apices obtuse, shortly acuminate; **petals** elliptical, oblique, acute, 2 mm long, 0.75 mm wide; **lip** dark red, thick, trans-acuminate; **disc** with a transverse, versely cordate, obtuse, 0.5 mm long, 0.9 mm wide, cellular-glandular, the disc with a transverse, markedly and densely cellular-glandular callus, the base concave, fixed to the column-foot; **column** cucullate, 0.9 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Esmeraldas: epiphytic in pasture trees northwest of Cristal, northwest of Lita, alt. 1450 m, 29 Dec. 1990, C. H. Dodson, T. Neudecker & H. Volles 18620 (Holotype: MO), C. Luer illustr. 15270.

This tiny species most closely resembles *P. pubescens*, but *P. scopulifera* is distinguished by the sepals and petals that are only shortly ciliate instead of long-ciliate and long-pubescent, and a similar, transversely cordate lip, but with a broad, densely long-glandular-pubescent, brushlike callus covering much of the surface.

Platystele ximena Luer & Hirtz, sp. nov.

Ety.: Named in honor of Ximena de Hirtz, co-discoverer of this species.

Species haec *P. pubescenti* Luer affinis, sed habitu majore cum foliis latis petiolatis, sepalis breviter ciliatis breviter pubescentibusque et labello cordato cum lobis basalibus columnam amplectentibus differt.

Plant comparatively large for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-8 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 2-4 cm long including a petiole 0.5-1.5 mm long, the blade elliptical, subacute to obtuse, 1-1.4 cm wide, cuneate below into the slender petiole. **Inflorescence** an, erect, loose, flexuous, distichous, successively several-flowered raceme up to 7 cm long or longer, borne by a slender peduncle 2.5-4 cm long, emerging laterally from the ramicaul; floral bracts thin, 1-1.5 mm long; pedicels 4-5 mm long; ovary 0.5 mm long; **sepals** and petals yellow, suffused with rose below the middle, shortly ciliate and shortly pubescent, the dorsal sepal elliptical, obtuse, shortly acuminate, 3 mm long, 2 mm wide, the lateral sepals broadly ovate, oblique, obtuse, shortly acuminate, 2.5 mm long, 1.6 mm wide, connate at the base for 0.5 mm; **petals** elliptical, oblique, acute, 2.6 mm long, 1 mm wide; **lip** brown, transversely cordate, obtuse, 1.25 mm long, 1.4 mm wide, cellular-glandular, the basal lobes incurved and embracing the column, disc with a transverse, bilobed, cellular-glandular callus, the base concave, fixed to the column-foot; **column** cucullate, 1 mm long and broad, the stigma bilobed with reflexed margins, the foot rudimentary.

ECUADOR: Prov. of Bolívar: epiphytic in wet forest west of La Palma west of Guaranda, alt. 1250 m, 10 Mar. 1991, C. Luer, J. Luer, A. Hirtz, X. Hirtz, J. del Hierro, M. & F. Navarro & M. Evans 14976 (Holotype: MO; Isotypes: K, QCNE).

This species, relatively robust for the genus, is characterized by the broad, petiolate leaves surpassed by a loose, flexuous, successively flowered raceme. Although larger, the flowers resemble those of *P. pubescens*, but the pubescence is short, and the basal lobes of the cordate lip surround the column. Superficially, this species resembles a *Stelis*.

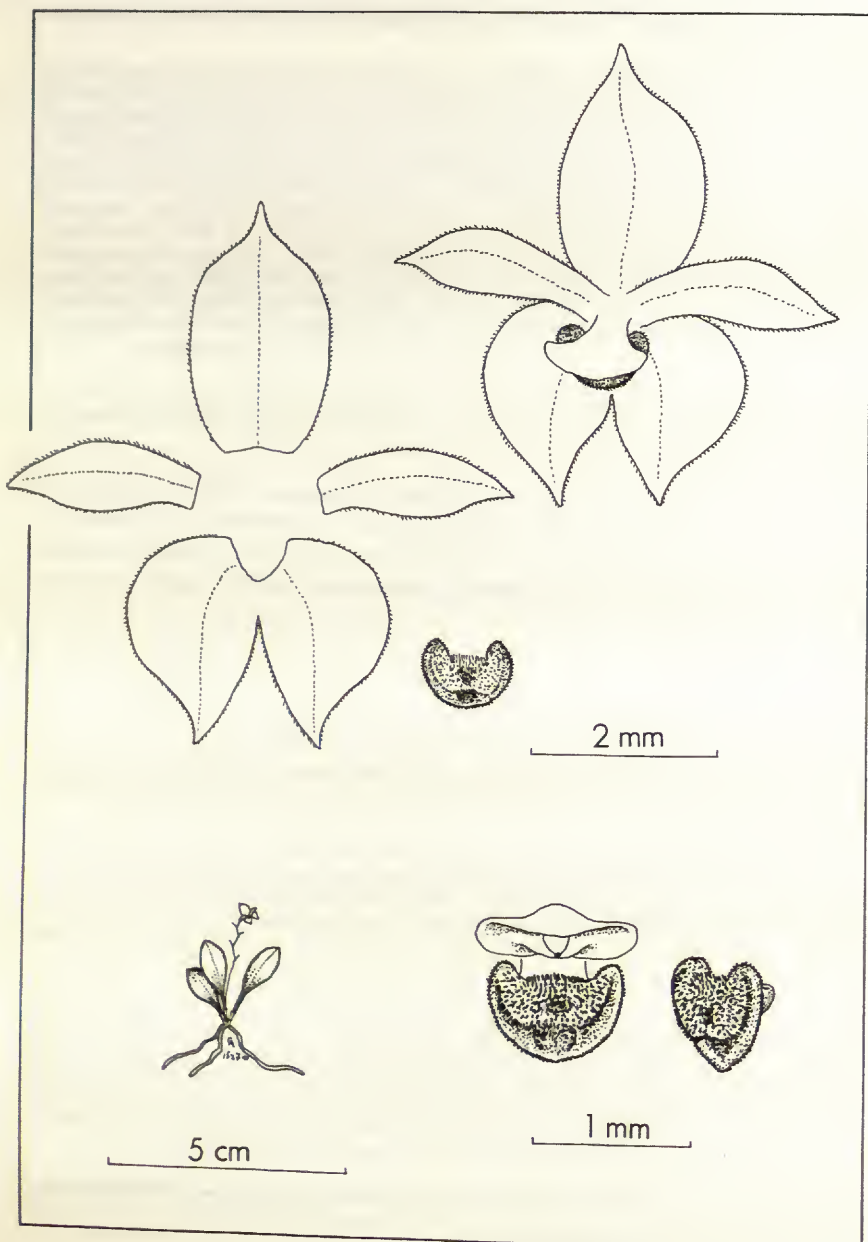
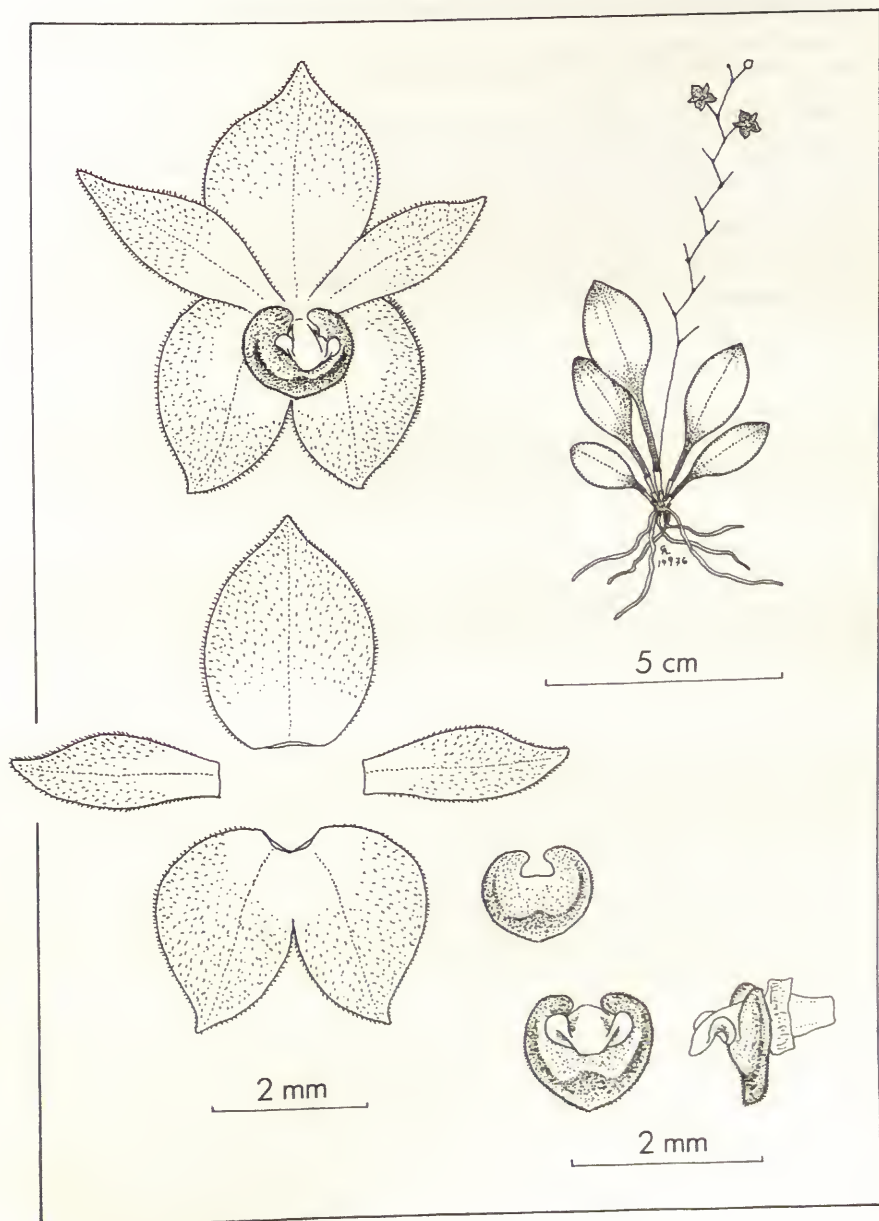


Plate 75. *Platystele scopulifera* Luer & Dodson

Plate 76. *Platystele ximenae* Luer & Hirtz

***Porroglossum actrix* Luer & Escobar, sp. nov.**

ETY.: From the Latin *actrix*, "a performer," in allusion to a walker of the high wire.

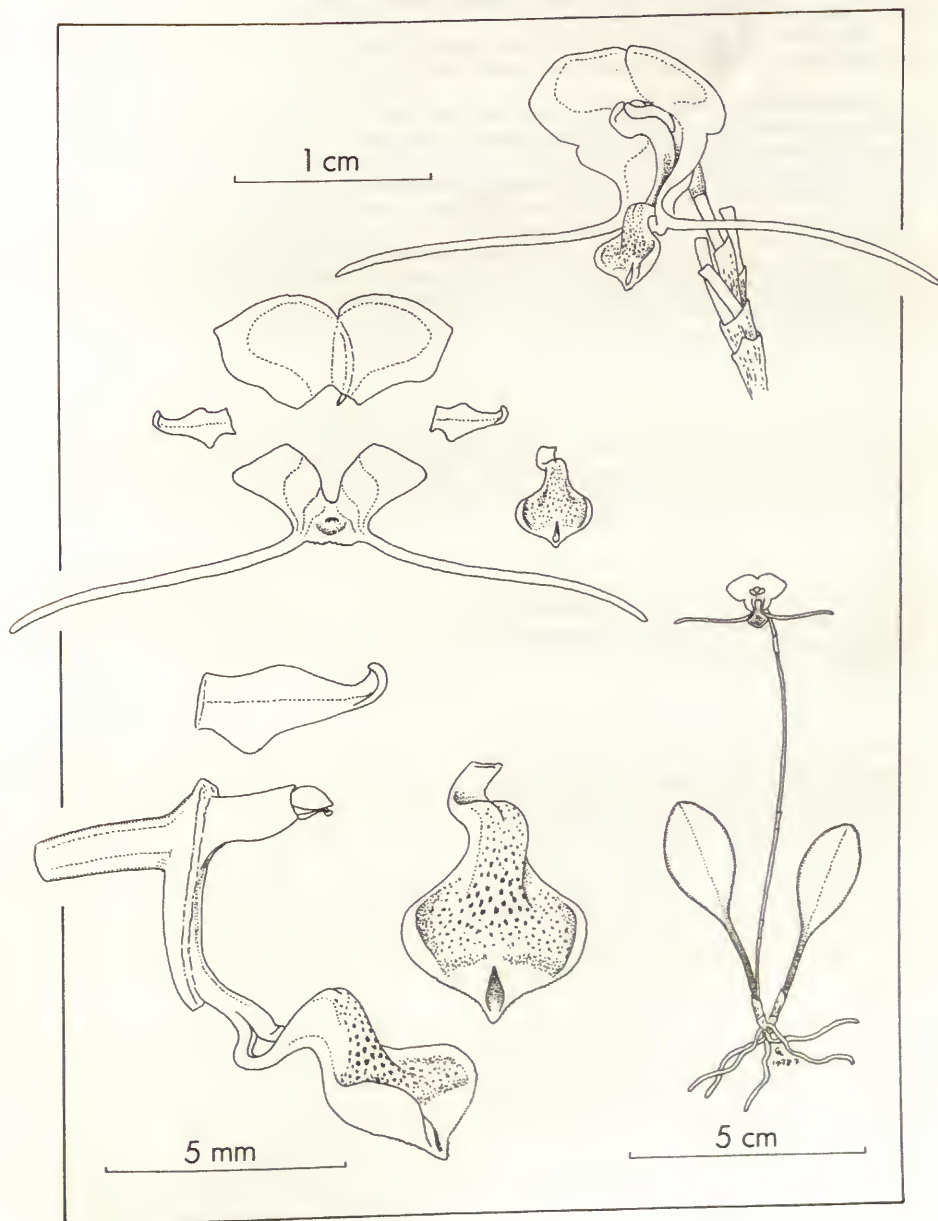
Species haec *P. amethystino* (Reichb. f.) Garay affinis, sed foliis spathulatis, pedunculo breviori, sepalo dorsali latissimo et labelli callo crassiore differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-10 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, 4-4.5 cm long including a petiole 1.5-2 cm long, the blade elliptical, obtuse, 1.2-1.5 mm wide, the base cuneate into the slender petiole. **Inflorescence** a congested, successively few-flowered raceme, with the flowers resupinate, borne by an erect, smooth, slender peduncle 4-7.5 cm long, with 2-3 closely applied, distant bracts, from low on the ramicaul; floral bracts imbricating, 3-5 mm long; pedicel 8 mm long; ovary 2.5 mm long; **sepals** glabrous, the dorsal sepal orange-brown, transversely oblong-ovate, 6 mm long, 12 mm wide expanded, connate to the lateral sepals for 3 mm, the apex abruptly contracted into an acutely reflexed, slender tail 5 mm long, the lateral sepals lemon yellow, transversely oblong, the blade 3 mm long, 5.5 mm wide, connate to each other 2 mm behind the free apex of the column-foot, the apices broadly obtuse, abruptly contracted slender, horizontal, yellow tails 15 mm long; **petals** orange-brown, ovate-oblong, 4.5 mm long, 1.5 mm wide, with the narrowly obtuse apex recurved, obtusely angled above the base on the labellar margin; **lip** pink with orange-brown flecks, glabrous, the blade thick, obovate, obtuse, 4.5 mm long, 4 mm wide, the lateral angles rounded, incurved, the apex microscopically ciliate with a short, concave apiculum, the base with a tall callus, deflexed below into a straplike claw bent with tension around the free apex of the column-foot; **column** stout, semiterete, 2 mm long, the foot 5 mm long.

COLOMBIA: Intend. of Putumayo: above Villa Garzón, alt. ca. 2000 m, collected by Julio Cesar Miranda, Jr., May 1989, flowered in cultivation at Colomborquídeas, Mar. 1990, *R. Escobar 4050* (Holotype: MO; Isotype: JAUM), C. Luer illustr. 14787.

This pretty species of section *Porroglossum* is apparently endemic on the eastern slope of the Andes of southern Colombia. It is identified by the extremely broad, orange-brown dorsal sepal with an acutely reflexed, short tail. The lemon yellow lateral sepals are much narrower with a straight pair of slender tails extended outward from each side like a miniature balancing pole of an aerialist on a high wire. The callus on the base of the blade of the lip above the strap is thick.



Plate 33. *Porroglossum actrix* Luer & Escobar

***Porroglossum dreisei* Luer & Andreetta, sp. nov.**

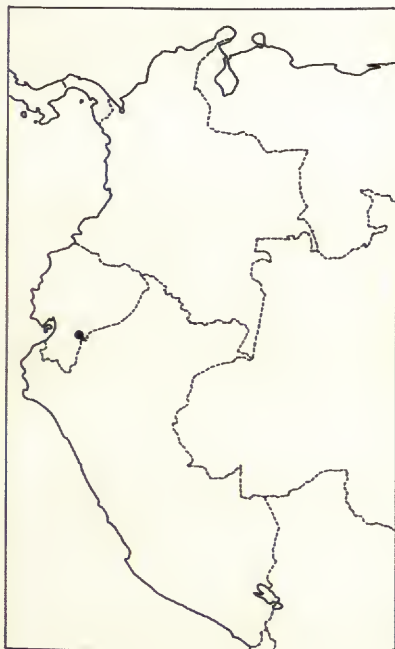
Ety.: Named in honor of Egon Dreise of Laval, Quebec, Canada, co-discoverer of this species.

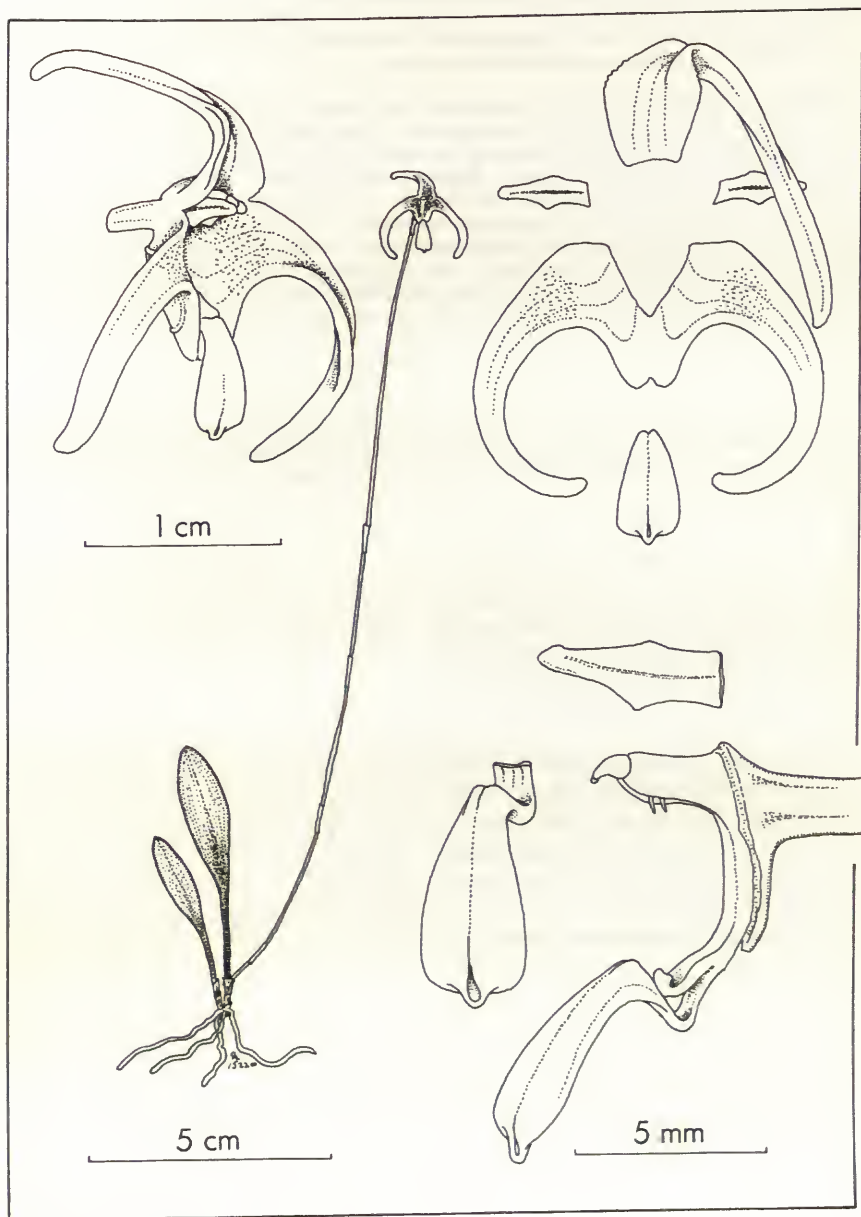
Species haec *P. andreetae* Luer affinis, sed pedunculo multilongiore, flore majore, et sepalorum lateralium caudis longis crassis latis incurvatis loriformibus differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, slender, erect, 6-8 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thickly coriaceous, lightly verrucose, 3.5-5 cm long including a petiole 1-2 cm long, the blade elliptical-obovate, obtuse, 9-12 mm wide, the base cuneate into the slender petiole. **Inflorescence** a congested, successively few-flowered raceme, with the flowers resupinate, borne by an erect, smooth, slender peduncle 16-18 cm long, with 3 closely applied, distant bracts, from low on the ramicaul; floral bracts tubular, imbricating, 5 mm long; pedicel 6 mm long; ovary dark purple, 4.5 mm long; **sepals** fleshy, light tan with darker veins, minutely pubescent within, the hairs red, the dorsal sepal ovate, more or less conduplicate, the blade subquadrate, 6-7 mm long, 5 mm wide expanded, with minutely erose margins, connate to the lateral sepals for 3 mm, the apex contracted into a broad, thick, recurved, greenish brown tail about 14 mm long, the lateral sepals transversely oblong, the blades 3.5 mm long, 8.5 mm wide, connate to each other 3 mm behind the free apex of the column-foot, the apices broadly obtuse, gradually contracted into thick, curved, decurved tails 12 mm long, 2 mm broad; **petals** light brown with the midvein dark brown, ovate-oblong, 4.5 mm long, 1-2 mm wide, obtusely angled on both margins in the middle third; **lip** lowermost, light brown flecked in red, glabrous, the blade thick, obovate, subtruncate, 6 mm long, 3 mm wide, the lateral angles rounded, the apex with a short, rounded, concave apiculum, the base with a low, thickening, deflexed below into a straplike claw bent with tension around the free apex of the column-foot; **column** stout, semiterete, 2.5 mm long, the foot 4 mm long.

ECUADOR: Prov. of Morona-Santiago: Cordillera del Condor, epiphytic near Río Tuntuncime, alt. 1700 m, collected by A. Andreetta, M. Portilla & E. Dreise, flowered in cultivation by A. Andreetta at Paute, 22 Mar. 1991, C. Luer 15220 (Holotype: MO).

This species of section *Porroglossum* was first discovered by Padre Andreetta and Mario Portilla, and later with Egon Dreise in the Cordillera del Condor. *Porroglossum dreisei* is distinguished by the large, resupinate flower with prominent, broad, curved, straplike sepaline tails. The petals are obtusely angled and the glabrous lip is narrowly cuneate with a sulcate apex. The ovary is not twisted. The flowers attain their resupinate position by a backward bending of the pedicel.



Plate 34. *Porroglossum dreisei* Luer & Andreetta

Porroglossum teretilabia Luer & Teague, sp. nov.

Ety.: From the Latin *teretilabius*, "with a cylindrical lip," referring to the shape of the lip.

Species haec *P. procul* Luer & Vásquez similis, sed sepalorum lateralium caudis brevioribus crassioribusque et labelli lamina teretiformi distinguitur.

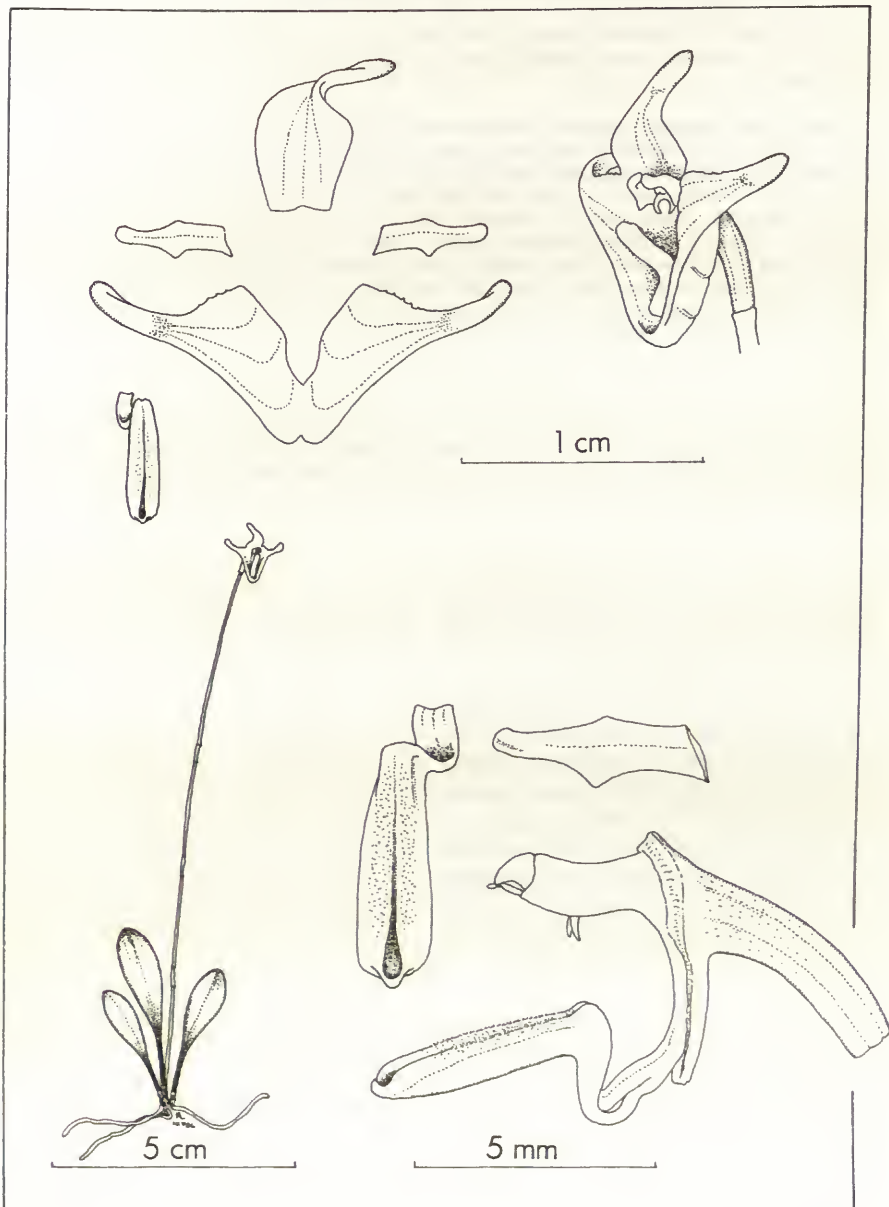
Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls blackish, slender, erect, 6-10 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, petiolate, 2.5-3.5 cm long including the petiole 0.5-1.2 cm long, the blade elliptical-obovate, obtuse, 6-8 mm wide, the base cuneate into the slender petiole. **Inflorescence** a congested, successively few-flowered raceme with resupinate flowers, borne by a smooth, slender peduncle 9-10 cm long, with 2-3 closely applied, distant bracts, from low on the ramicaul; floral bracts imbricating, 5 mm long; pedicel 4 mm long; ovary 5 mm long; **sepals** membranous, yellow-green, glabrous, the blade of the dorsal sepal oblong-ovate, 5 mm long, 4 mm wide, connate to the lateral sepals for 3 mm, the apex obtuse, contracted into a thick, reflexed tail 3 mm long, the lateral sepals transversely oblong, oblique, the blades 4 mm long, 7 mm wide, connate to each other 2 mm behind the free apex of the column-foot, the transverse apices contracted into a thick tail 4 mm long; **petals** yellow-white, oblong, 4.5 mm long, 1-1.5 mm wide, rounded at the apex, obtusely angled on both margins in the middle third; **lip** lowermost, yellowish, glabrous except for a microscopic pubescence of the disc below the middle, the blade thick, oblong, semiterete, obtuse, 5 mm long, 1.5 mm wide, the the disc longitudinally channeled from a cavity at the apex, the base slightly thickened, deflexed below into a straplike claw bent with tension around the free apex of the column-foot; **column** stout, semiterete, 2.5 mm long, the foot 4 mm long, the stigma with a pair of acute processes.

ECUADOR: Prov. of Morona-Santiago: epiphytic above San Juan Bosco, alt. 1500 m, Mar. 1988, collected by Walter Teague, flowered in cultivation in San Francisco, CA, Mar. 1990, *C. Luer 14786* (Holotype: MO); Cordillera del Condor, epiphytic near Río Tunteime, alt. 1700 m, collected by A. Andreetta, M. Portilla & E. Dreise, flowered in cultivation in Laval, Quebec, May 1991, by *E. Dreise s.n.* (MO).

This little species of section *Porroglossum* was discovered out of flower by Walter Teague, and cultivated by him in San Francisco. It has subsequently been found in the nearby Cordillera del Condor.

Porroglossum teretilabia seems most similar to *P. procul* from Bolivia. From the latter it is distinguished by the shorter, thicker sepaline tails and a narrowly oblong, thick, more or less semiterete blade of the lip. The last feature distinguishes this species from all the others in the genus.



Plate 35. *Porroglossum teretilabia* Luer & Teague

Scaphosepalum delhierroi Luer & Hirtz, sp. nov.

Ety.: Named in honor of Juan del Hierro of Quito, Ecuador, co-discoverer of this species.

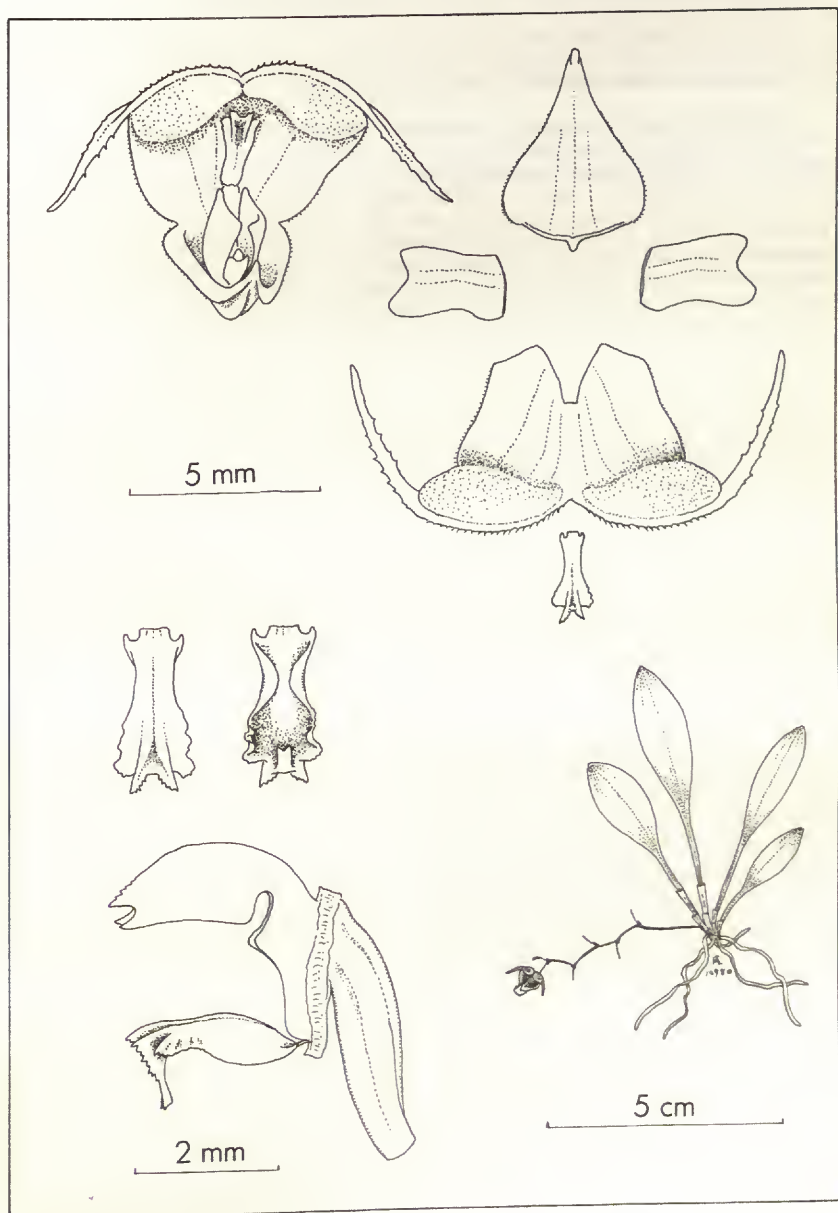
Planta parva, foliis petiolatis, racemo laevi debili, floribus pulcherrimis pictis caudis brevibus, petalis oblongis late retusis, labello bicristato apice oblongo retuso deflexo, et columnae pede bialato.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-1.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, petiolate, 2.5-5 cm long including the 1-2 cm long petiole, the blade elliptical, subacute to acute, 9-11 mm wide, cuneate below into the slender petiole. **Inflorescence** a loose, flexuous, successively several-flowered raceme 5-7 cm long including the slender, smooth, horizontal to descending peduncle, from low on the ramicaul; floral bracts 2-2.5 mm long; pedicels slender, 2-4 mm long; ovary smooth, 2.5-3.5 mm long; **middle sepal** purple, minutely ciliate, carinate, ovate, concave, acute, tailless, lightly acuminate with revolute margins, 5 mm long, 4 mm wide expanded, connate to the lateral sepals for 1.5 mm, the **lateral sepals** translucent yellow with purple spots, with minutely ciliate margins, connate 2.5 mm into a transversely obovate, concave, carinate lamina, 5 mm long, 7 mm wide expanded, the apical portion of each lateral sepal occupied by a thick, orange, cellular-glandular, transverse, ovoid cushion, 3.5 mm long, 1.5 mm wide, the obtuse apices contracted into slender, greenish white tails, 4.5 mm long, sparsely minutely spiculate; **petals** pink, oblong, 3 mm long, 2 mm wide, the apex broadly retuse or bilobed; **lip** red, oblong-trilobed, with the sides and apical lobe reflexed, 2 mm long, 1 mm wide, with a pair of denticulate lamellae at the junction of the apical lobe and the blade, the apical lobe oblong, truncate-retuse, the base truncate, bilobulate; **column** semiterete, broadly winged, bidentate, 2.5 mm long, with a pair of obtuse wings on the thick foot 1.5 mm long.

ECUADOR: Prov. of Bolívar: epiphytic in wet forest, west of La Palma, west of Guaranda, alt. 1250 m, 10 Mar. 1982, C. Luer, J. Luer, A. Hirtz, X. Hirtz, J. del Hierro, M. & F. Navarro 14980 (Holotype: MO; Isotypes: K, QCNE).

This little species is distinguished by the petiolate leaves and a weak, successively flowered raceme of pretty, colorful flowers. The tailless middle sepal is purple; the lateral sepals are yellow with purple spots and greenish white tails; the cushions are orange; the distinctive, retuse petals are pink; and the lip with a deflexed apical lobe is red.



Plate 45. *Scaphosepalum delhierroi* Luer & Hirtz

Scaphosepalum digitale Luer & Hirtz, sp. nov.

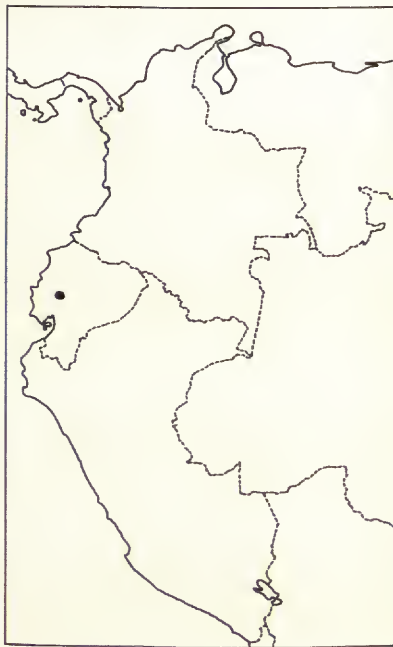
Ety.: From the Latin *digitalis*, "with a finger," referring to the apical lobe of the lip.

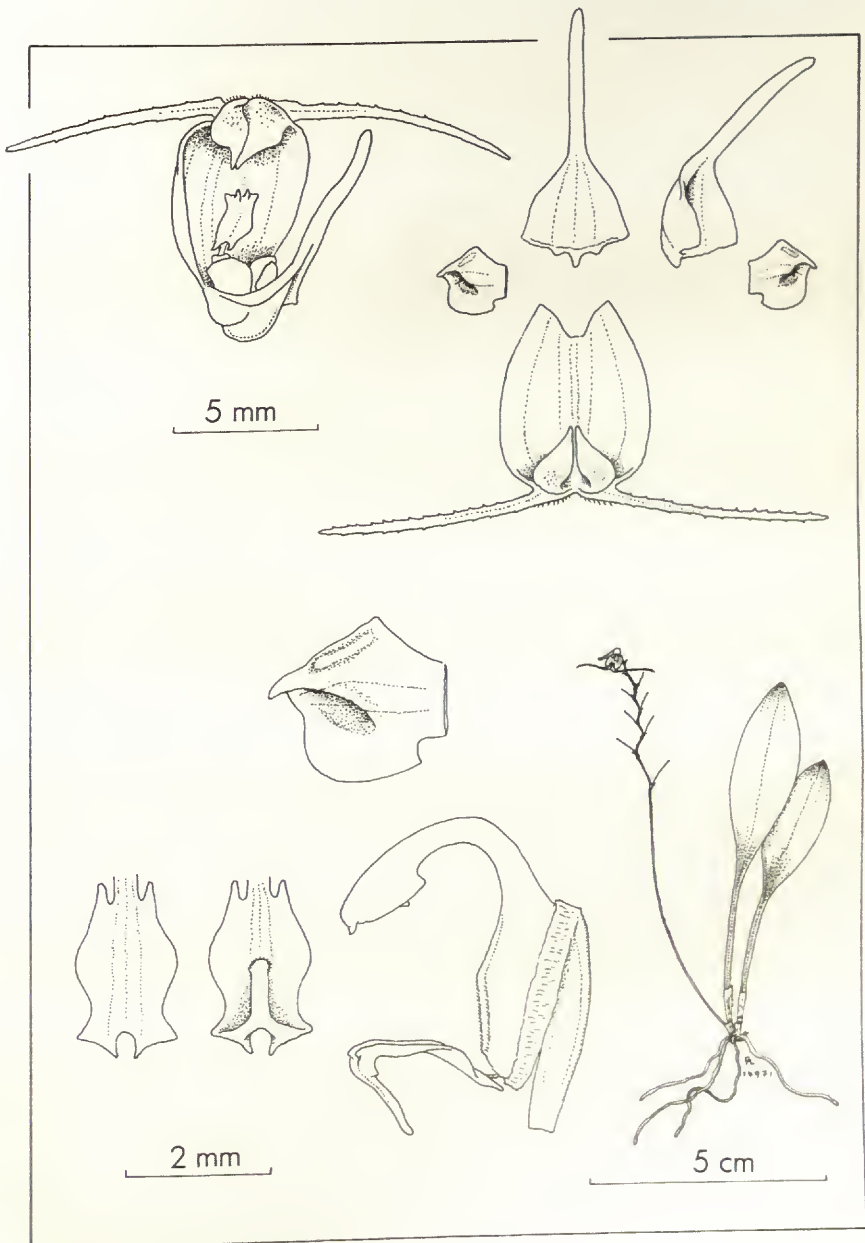
Planta parva, foliis petiolatis, racemo laevi erecto, floribus pulcherrimis rubro striatis caudis sepalis longioribus, petalis multangulis apiculatis margine superiore carinata, labello bicornuto lobo antico anguste elongato deflexo, et columna elongata arcuata.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-2 cm long, enclosed by 2-3 tubular sheaths. Leaf erect, coriaceous, petiolate, 5-6 cm long including the 2 cm long petiole, the blade elliptical, subacute to acute, 1-1.6 cm wide, cuneate below into the slender petiole. Inflorescence a loose to subdense, flexuous, successively several-flowered raceme up to 9 cm long or longer, including the slender, smooth, suberect peduncle, from low on the ramicaul; floral bracts 2.5 mm long; pedicels slender, 4-9 mm long; ovary smooth, 3 mm long; sepals translucent with red stripes, glabrous, carinate, the dorsal sepal broadly ovate, concave, with revolute margins, 4 mm long, 4 mm wide expanded, connate to the lateral sepals for 1.5 mm, the apex acute, contracted into a rose, cylindrical tail 5 mm long, the lateral sepals connate 5.5 mm into an obovate, concave, carinate lamina, 6.5 mm long, 6.5 mm wide expanded, the apical portion of each lateral sepal occupied by a triangular cushion, 2 mm long, 1.5 mm wide, orange with rose dots, the obtuse apices contracted into slender, greenish white tails, 9 mm long, sparsely minutely spiculate; petals yellow, multangular, 2.5 mm long, 2.5 mm wide, the apex obtuse with a short, thick apiculum, the labellar margin broadly rounded with a obtuse angle above the base, the opposite margin with an obtuse angle near the middle, the margin from the angle to the apex with a longitudinal callus, the center of the petal with a concavity below another callus extending back from the apiculum; lip rose, oblong-trilobed, with the apical lobe reflexed, the blade 2.4 mm long, 1.5 mm wide, with a pair of acute, hornlike calli at the junction of the apical lobe and the blade, the apical lobe narrowly oblong, 1 mm long, with the apex rounded, minutely denticulate, the base truncate, bilobulate; column semiterete, arcuate, winged above the middle, 4 mm long, the thick foot 3 mm long.

ECUADOR: Prov. of Bolívar: epiphytic in wet forest, west of La Palma, west of Guaranda, alt. 1250 m, 10 Mar. 1982, C. Luer, J. Luer, A. Hirtz, X. Hirtz, J. del Hierro, M. & F. Navarro 14971 (Holotype: MO).

This little species is distinguished by the petiolate leaves and a more or less erect, successively flowered raceme of pretty, colorful flowers. The sepals are translucent with red stripes and greenish white tails; the cushions are orange with rose dots; the many-angled, apiculate petals are yellow; and the lip with a deflexed fingerlike apical lobe is rose red.



Plate 46. *Scaphosepalum digitale* Luer & Hirtz

Missouri Botanical Garden Library



3 1753 00204 3039

