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ICONES PLEUROTHALLIDINARUM

III

SYSTEMATICS

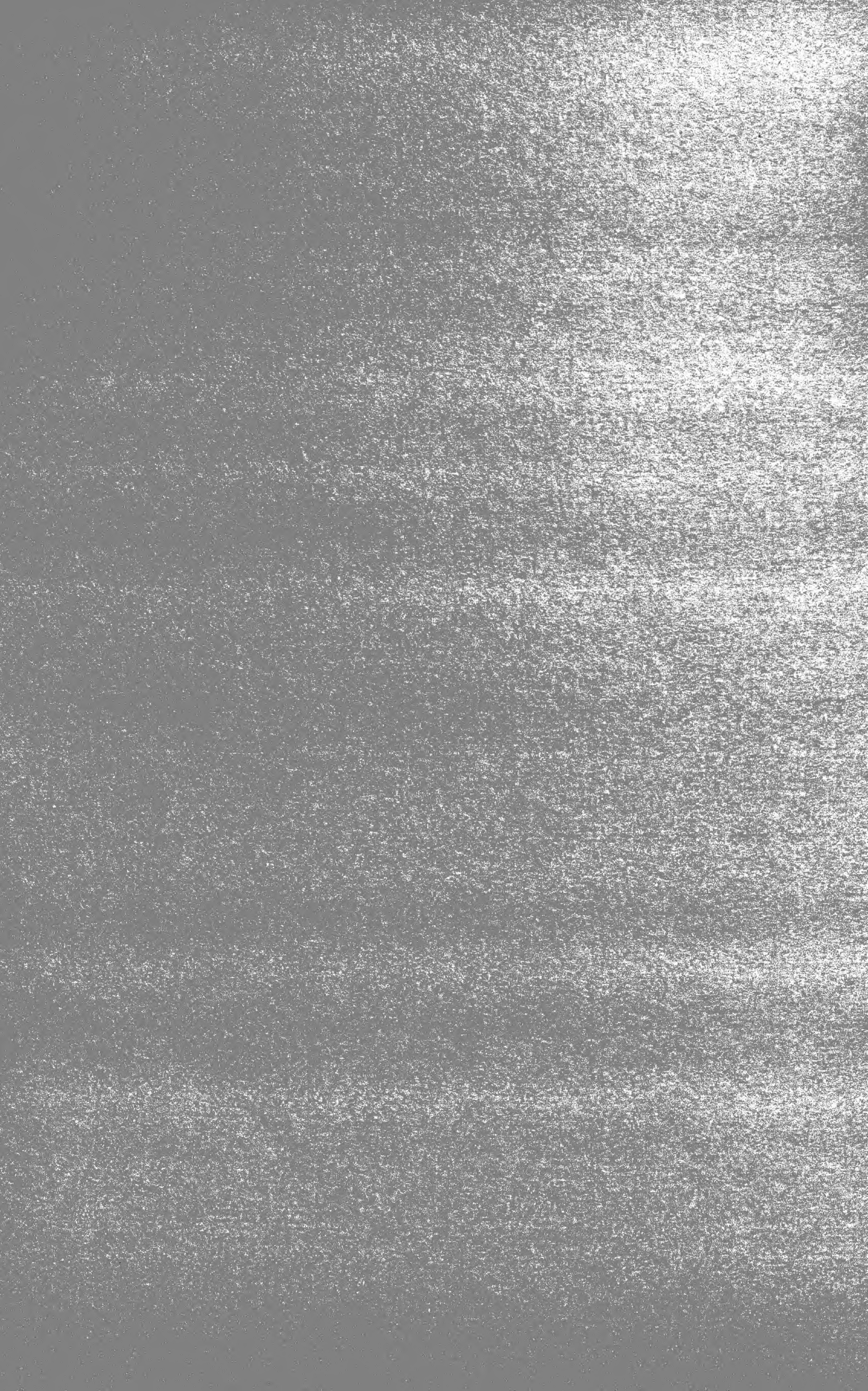
OF

PLEUROTHALLIS

(ORCHIDACEAE)



Missouri Botanical Garden vol. 20



Publication of MSB-17, MSB-18, and MSB-19 has been delayed. We are, however, releasing MSB-20, "Systematics of Pleurothallis (Orchidaceae)," at this time. If you have a standing order, you will receive notification immediately upon publication of the three previous numbers.

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ICONES PLEUROTHALLIDINARUM

III

**SYSTEMATICS
OF
PLEUROTHALLIS**

CARLYLE A. LUER



Missouri Botanical Garden

MONOGRAPHS IN SYSTEMATIC BOTANY
from the Missouri Botanical Garden
Volume 20, November 1986.
ISSN 06161-1542

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Printed in the United States of America by
Arcade Lithographing Corp., Bradenton, FL
Typesetting by the Graphics Design Center, Inc.

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Pleurothallis lamprochlamys Schltr.
Province of Pichincha, Ecuador, alt. 2700 meters above sea level, 10 Mar. 1976.

SYSTEMATICS OF THE GENUS PLEUROTHALLIS (ORCHIDACEAE)

Carlyle A. Luer

ABSTRACT

The genus *Pleurothallis* is described and a key to the subgenera is given. The subgeneric taxa are described, each with keys to the sections and subsections where applicable, and with lists of representative species. A black and white illustration of a representative species of each subgenus, section and subsection is included.

New taxa and combinations:

- Pleurothallis** subgen. **Acianthera** (Scheidw.) Luer, stat. nov.
 subgen. **Acianthera** sect. **Cryptophoranthae** Luer, nom. nov.
 subgen. **Acianthera** sect. **Phloeophilae** Luer, nom. nov.
 subgen. **Acianthera** sect. **Sicariae** subsect. **Pectinatae** Luer subsect. nov.
 subgen. **Acianthera** sect. **Sicariae** subsect. **Sicariae** (Lindl.) Luer, stat. nov.
 subgen. **Acianthera** sect. **Tomentosae** Luer, sect. nov.
 subgen. **Acianthera** sect. **Tricarinatae** Luer, sect. nov.
 subgen. **Aenigma** Luer, subgen. nov.
 subgen. **Aenigma** sect. **Aenigmata** Luer, sect. nov.
 subgen. **Aenigma** sect. **Vestigipetalae** Luer, sect. nov.
 subgen. **Ancipitia** Luer, subgen. nov.
 subgen. **Andreettaea** (Luer) Luer, stat. nov.
 subgen. **Apoda-Prorepenia** Luer, nom. nov.
 subgen. **Arthrosia** Luer, subgen. nov.
 subgen. **Crocodeilanthe** (Rchb. f. & Warsc.) Luer, stat. nov.
 subgen. **Dracontia** Luer, subgen. nov.
 subgen. **Dresslera** Luer, subgen. nov.
 subgen. **Elongatia** Luer, nom. nov.
 subgen. **Empusella** Luer, subgen. nov.
 subgen. **Kraenzlinella** (Kuntze) Luer, stat. nov.
 subgen. **Masdevalliantha** Luer, subgen. nov.
 subgen. **Mirabilia** Luer, subgen. nov.
 subgen. **Mirandia** Luer, subgen. nov.
 subgen. **Mystax** Luer, subgen. nov.
 subgen. **Physosiphon** (Lindl.) Luer, stat. nov.
 subgen. **Physothallis** (Garay) Luer, stat. nov.
 subgen. **Pleurobotryum** (Barb. Rodr.) Luer, stat. nov.
 subgen. **Pleurothallis** sect. **Abortivae** Luer, sect. nov.
 subgen. **Pleurothallis** sect. **Pleurothallis** subsect. **Acroniae** Luer, nom. nov.
 subgen. **Pleurothallis** sect. **Pleurothallis** subsect. **Macrophyllae-Racemosae** (Lindl.) Luer, stat. nov.
 subgen. **Pleurothallis** sect. **Truncatae** Luer, sect. nov.
 subgen. **Pseudoctomeria** (Krzl.) Luer, stat. nov.
 subgen. **Restrepioidia** Luer, nom. nov.
 subgen. **Rhynchopera** (Kl.) Luer, stat. nov.
 subgen. **Rubellia** Luer, subgen. nov.
 subgen. **Sarracenella** (Luer) Luer, stat. nov.
 subgen. **Scopula** Luer, nom. nov.
 subgen. **Specklinia** sect. **Cucumeres** Luer, sect. nov.
 subgen. **Specklinia** sect. **Hymenodanthae** subsect. **Apodae-Caesпитosae** (Lindl.) Luer, stat. nov.
 subgen. **Specklinia** sect. **Hymenodanthae** subsect. **Longicaulae** (Barb. Rodr.) Luer, stat. nov.

- subgen. **Specklinia** sect. **Mentosae** Luer, sect. nov.
 subgen. **Specklinia** sect. **Muscariae** Luer, sect. nov.
 subgen. **Specklinia** sect. **Tribuloides** Luer, sect. nov.
 subgen. **Specklinia** sect. **Tripteranthae** Luer, sect. nov.
 subgen. **Specklinia** sect. **Unciferae** Luer, sect. nov.
 subgen. **Talpinaria** (Karst.) Luer, stat. nov.
 subgen. **Xenion** Luer, subgen. nov.
- Pleurothallis asaroides** (Krzl.) Luer, comb. nov.
Pleurothallis cylindrica (Luer) Luer, comb. nov.
Pleurothallis minimifolia Luer, nom. nov.
Pleurothallis neobradei Luer, nom. nov.
Pleurothallis neoharlingii Luer, nom. nov.
Pleurothallis neojordanensis Luer, nom. nov.
Pleurothallis nejuergensii Luer, nom. nov.
Pleurothallis ocellus (Luer) Luer, comb. nov.
Pleurothallis paulensis (Hoehne & Schltr.) Luer, comb. nov.
Pleurothallis punctatiflora Luer, nom. nov.
Pleurothallis sarracenia Luer, nom. nov.
Pleurothallis sieberi Luer, nom. nov.
Pleurothallis similis (Schltr.) Luer, comb. nov.
Pleurothallis spicata (Dutra) Luer, comb. nov.
Trichosalpinx spathuliglossa (Hoehne) Luer, comb. nov.

Robert Brown described this genus as monotypic in 1811 when he removed Jacquin's *Pleurothallis ruscifolia* from *Epidendrum*, or *Dendrobium* to which it had been transferred. Over 2000 epithets encompassing dozens of various alliances or affinities have been added since that time. The genus *Pleurothallis* is the largest and most complex of the 29 genera in the subtribe Pleurothallidinae. The Pleurothallidinae are distinguished by their single-leaved, non-pseudobulbous stems (ramicauls), and a deciduous ovary articulated with the pedicel. In Dressler's classification of the Orchidaceae (1981) the Pleurothallidinae are one of ten subtribes in the tribe Epidendreae, and the Epidendreae are one of nine tribes in the subfamily Epidendroideae.

Lindley (1836) pioneered the earliest subgeneric classification over a century ago, followed by works by Reichenbach (1852, 1861), Barbosa Rodrigues (1877, 1882) and Cogniaux (1896, 1910). Early attempts were made to dismember *Pleurothallis*, but most of the proposed genera were soon doomed to synonymy because of insufficient supporting information. In 1859, Lindley wrote:

"For the present, I think it necessary to preserve this great and difficult genus without dismemberment. Not that I regard it as a really single aggregation of species, but because, in the present state of our information, and working exclusively upon dried specimens, I am of opinion that the materials on which to construct other genera do not exist in Europe; or, if they do exist, are not to be found in books or any single herbarium. All that a very long and careful study enables me to do is to cast the species in a rather artificial mould, so grouping them that they can be easily studied and identified. Beyond that I dare not proceed."

Lindley was correct, but today, more than a century later after extensive field work and study of far more specimens including fresh and pickled material, we are in a much better position to evaluate the genus. I now believe that the genus *Pleurothallis* is indeed capable of being divided, but because of the various interrelationships, most divisions at the subgeneric and sectional levels seem more practical. Several genera, however, have been segregated (i.e. *Chamelophyton* Garay, *Fronitaria*

Luer, *Myoxanthus* Poepp. & Endl., *Platystele* Schltr., *Restrepiella* Garay, and *Trichosalpinx* Luer). Conversely, some authors have proposed to reduce other genera (i.e. *Barbosella* Schltr. and *Restrepia* H.B.K.) to *Pleurothallis*.

A generalized description of the morphology of the genus is almost meaningless, all conceivable forms being represented. It is essentially that of the subtribe. A *Pleurothallis* might be described as any pleurothalid that does not fit into any of the other genera. A description of each subgeneric division is more feasible. At the present time 29 loosely inter-related subgenera and 22 sections may be counted. In some cases similarly appearing species, which may prove to be not closely related, will be brought together.

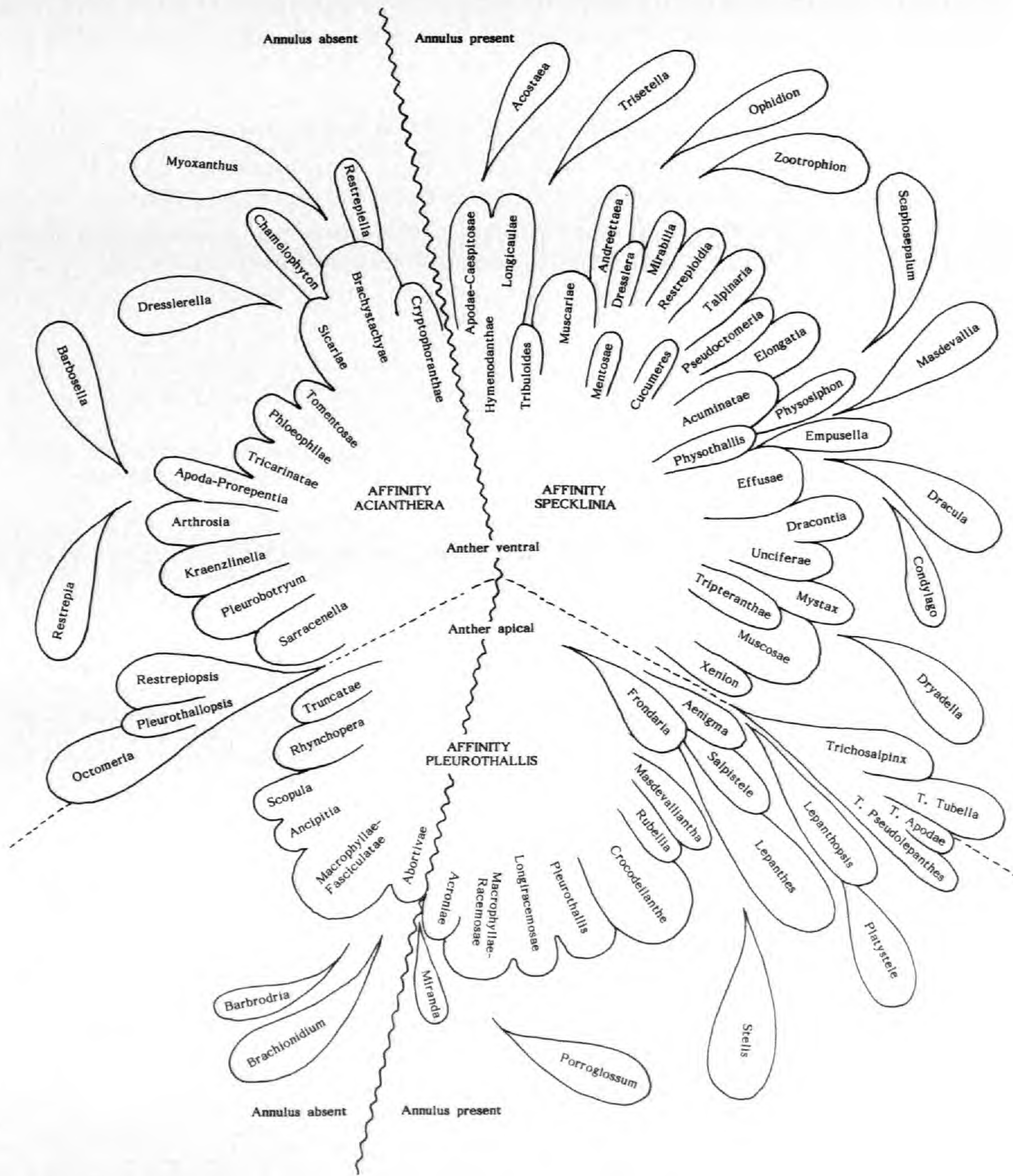


Figure 1. A diagrammatic presentation of some possible relationships of the taxa of the Pleurothallidinae.

After the description of each taxon, representative species are listed, but some of the lists are far from complete. Many old as well as recent descriptions and even illustrations are inadequate for determination of relationships. They often fail to give the critical, diagnostic criteria necessary for classification. It is not the scope of this paper to classify every species of *Pleurothallis*. Many species of the larger subgeneric taxa are not included in the lists, but from an acquaintance with the species given, similar species can be classified. Much work needs to be done. This is only a beginning.

The subgenera of *Pleurothallis* and all the genera of the Pleurothallidinae may be loosely grouped into three affinities. First, those with a short (but sometimes elongate) column with an apical anther and stigma, often connate lateral sepals, and an inflorescence that emerges from the ramicaul with or without a visible annulus (aff. *Pleurothallis*). Second, those with an elongate (but sometimes short) column with a ventral anther and stigma, more or less covered by a toothed, winged or hooded apex, free or variously connate sepals, and an inflorescence that emerges from the ramicaul with an annulus (aff. *Specklinia*). Third, those with a column resembling the last, sepals connate in varying degrees, and an inflorescence that emerges without an annulus (aff. *Acianthera*). Figure 1. is a diagrammatic presentation of some possible relationships of the pleurothallid genera to the subgeneric divisions in the three "affinities."

AFFINITIES OF THE SUBGENERA OF *PLEUROTHALLIS* AND
GENERA OF THE PLEUROTHALLIDINAE

"Affinity" <i>Acianthera</i>	"Affinity" <i>Pleurothallis</i>	"Affinity" <i>Specklinia</i>
The subgenera of <i>Pleurothallis</i> :		
<i>Acianthera</i>	<i>Aenigma</i>	<i>Andreetaea</i>
<i>Apoda-Prorepentia</i>	<i>Ancipitia</i>	<i>Dracontia</i>
<i>Arthrosia</i>	<i>Crocodelanthe</i>	<i>Dresslera</i>
<i>Kraenzlinella</i>	<i>Masdevalliantha</i>	<i>Elongatia</i>
<i>Pleurobotryum</i>	<i>Miranda</i>	<i>Empusella</i>
<i>Sarracenella</i>	<i>Pleurothallis</i>	<i>Mirabilia</i>
	<i>Rhynchopera</i>	<i>Mystax</i>
	<i>Rubellia</i>	<i>Physosiphon</i>
	<i>Scopula</i>	<i>Physothallis</i>
		<i>Pseudoctomeria</i>
		<i>Restrepioidia</i>
		<i>Specklinia</i>
		<i>Talpinaria</i>
		<i>Xenion</i>
The genera of the Pleurothallidinae:		
<i>Barbosella</i>	<i>Barbrodria</i>	<i>Acostaea</i>
<i>Chamelophyton</i>	<i>Brachionidium</i>	<i>Condylago</i>
<i>Dresslerella</i>	<i>Fronitaria</i>	<i>Dracula</i>
<i>Myoxanthus</i>	<i>Lepanthes</i>	<i>Dryadella</i>
<i>Octomeria</i>	<i>Lepanthopsis</i>	<i>Masdevallia</i>
<i>Pleurothallis</i>	<i>Platystele</i>	<i>Ophidion</i>
<i>Pleurothallopsis</i>	<i>Pleurothallis</i>	<i>Pleurothallis</i>
<i>Restrepia</i>	<i>Porroglossum</i>	<i>Scaphosepalum</i>
<i>Restrepiella</i>	<i>Salpistele</i>	<i>Trichosalpinx</i>
<i>Restrepiopsis</i>	<i>Stelis</i>	subgen. <i>Trichosalpinx</i>
	<i>Trichosalpinx</i>	sect. <i>Tubella</i>
	sect. <i>Apodae</i>	<i>Trisetella</i>
	sect. <i>Pseudolepanthes</i>	<i>Zootrophion</i>

KEY TO THE SUBGENERA OF *PLEUROTHALLIS*

- 1 Plants not caespitose, the rhizome distinctly repent or ascending, or the ramicauls prolific (ramicauls produced from the apices of other ramicauls) 2
 1' Plants caespitose, or the rhizome so shortly repent that clumped ramicauls are produced, the ramicauls not normally prolific 22
 2 Ramicauls prolific or scandent, produced from the apices of other ramicauls 3
 2' Ramicauls distant, the rhizome distinctly repent or ascending 5

Ramicauls prolific

- 3 Lateral sepals partially or wholly connate; column short, the anther and stigma more or less apical 4
 3' Lateral sepals free; column elongate, the anther and stigma more or less ventral *Specklinia (Acuminatae)*
 4 Lip concave at the base, usually articulated with the bulbous apex of the column-foot *Crocodelanthe*
 4' Lip hinged to the thick apex of the column-foot *Pleurothallis*
 * * *
 5 Ramicauls distinctly shorter than the leaf 6
 5' Ramicauls about as long as or longer than the leaf 17

Habit repent, ramicauls short

- 6 Leaves more or less prostrate 7
 6' Leaves erect 10
 7 Ramicauls with an annulus 8
 7' Ramicauls without an annulus 9
 8 Lip with an erect, verrucose callus at the base *Dresslera*
 8' Lip without an erect, verrucose callus at the base *Specklinia*
 9 Plant pendent with overlapping leaves; spathe usually conspicuous *Apoda-Prorepentia*
 9' Plant not pendent; spathe not conspicuous *Acianthera*
 10 Ramicauls without an annulus 11
 10' Ramicauls with an annulus 13
 11 Lip with a long, well-developed claw *Pleurobotryum*
 11' Lip not long-unguiculate 12
 12 Sepals deeply connate into a curved tube *Sarracenella*
 12' Sepals not deeply connate into a curved tube *Acianthera*
 13 Dorsal sepal deeply connate to the lateral sepals *Physothallis*
 13' Dorsal sepal free from the lateral sepals 14
 14 Column short with an apical anther and stigma 15
 14' Column elongate with a ventral anther and stigma 16
 15 Concave base of the lip articulated with a free apex of the column-foot *Masdevalliantha*
 15' Lip attached to a rudimentary column foot or a footless column *Aenigma*
 16 Lip connate to the column-foot *Xenion*
 16' Lip hinged to the column-foot *Specklinia*

Plant repent, ramicauls long

- 17 Ramicauls without an annulus 18
 17' Ramicauls with an annulus 20
- 18 Column short with an apical anther and stigma *Pleurothallis*
 18' Column elongate with a ventral anther and stigma 19
- 19 Lip hinged to the apex of the column-foot *Acianthera*
 19' Lip with a basal transverse callus articulated with the
 apex of the column-foot *Arthrosia*
- 20 Dorsal sepal deeply connate to the lateral sepals *Physothallis*
 20' Dorsal sepal free from the lateral sepals 21
- 21 Lip concave at the base, articulated with the bulbous apex
 of the column-foot *Crocodelanthe*
 21' Lip hinged to the apex of the column-foot *Specklinia*
- * * *
- 22 Ramicaul distinctly shorter than the leaf 23
 22' Ramicaul about as long as or longer than the leaf 33

Habit caespitose, ramicauls short

- 23 Inflorescence borne above the base of the leaf 24
 23' Inflorescence borne from the base of the leaf or lower on the ramicaul 25
- 24 Inflorescence a fascicle of single flowers near the apex of the leaf *Scopula*
 24' Inflorescence racemose above the base of the leaf, the
 margins of the leaf decurrent on the stem *Acianthera (Sicariae)*
- 25 Ramicauls without an annulus 26
 25' Ramicauls with an annulus 27
- 26 Petals lobed at the base; lip with a short claw *Kraenzlinella*
 26' Petals not lobed at the base; lip not with a distinct, short claw *Acianthera*
- 27 Peduncle laterally compressed *Empusella*
 27' Peduncle not laterally compressed 28
- 28 Dorsal sepal deeply connate to the lateral sepals 29
 28' Dorsal sepal not deeply connate to the lateral sepals 31
- 29 All three sepals connate into a constricted tube *Physosiphon*
 29' Lateral sepals incompletely connate to each other 30
- 30 Lateral sepals free to the middle or below *Physothallis*
 30' Lateral sepals free in the middle to form a window *Andreettaea*
- 31 Column short with an apical anther and stigma 32
 31' Column elongate with a ventral anther and stigma *Specklinia*
- 32 Base of the lip articulated with the free apex of the
 column-foot *Masdevalliantha*
 32' Lip adnate to the stout column-foot *Rubellia*

Habit caespitose, ramicauls long

- 33 Ramicauls laterally compressed, not round in cross-section 34
 33' Ramicauls round in transection 36
- 34 Inflorescence a fascicle of single flowers at the base of the leaf *Ancipitia*
 34' Inflorescence racemose 35

- 35 Lip with a transverse basal callus articulated with the apex of the column-foot *Arthroisia*
- 35' Lip hinged to the apex of the column-foot *Acianthera (Sicariae)*
- 36 Inflorescence 1-flowered 37
- 36' Inflorescence racemose 42
- 37 Column short with an apical anther and stigma 38
- 37' Column short or long, with a ventral anther and stigma 39
- 38 Petals calyptrate; lip acutely reflexed upon itself *Mirandia*
- 38' Petals not calyptrate; lip not acutely reflexed *Pleurothallis*
- 39 Sepals verrucose and connate to near the middle *Pseudoctomeria*
- 39' Sepals not verrucose and connate to near the middle 40
- 40 Sepals fleshy, more or less pubescent *Acianthera*
- 40' Sepals membranous, glabrous 41
- 41 Column short and stout; lip more or less adnate to the column-foot *Restrepioidia*
- 41' Column elongate; lip hinged to the column-foot *Talpinaria*
- 42 Dorsal sepal deeply connate to the lateral sepals 43
- 42' Dorsal sepal not deeply connate to the lateral sepals 44
- 43 Lateral sepals free to near the middle *Physothallis*
- 43' All three sepals connate into a constricted tube *Physosiphon*
- 44 Lip inflexibly adnate to the base of the column or the column-foot 45
- 44' Lip hinged to the column-foot 49
- 45 Lip long-unguiculate in a deep spur formed by the bases of the sepals and an elongated column-foot *Mirabilia*
- 45' Lip not unguiculate; column-foot not elongated 46
- 46 Inflorescence without a prominent spathe 47
- 46' Inflorescence with a prominent spathe 48
- 47 Flowers small, globose; anther apical *Pleurothallis (Truncatae)*
- 47' Flowers large, spreading; anther ventral *Elongatia*
- 48 Lip more or less slender, the truncate base connate to the pedestal-like column-foot *Rhynchopera*
- 48' Lip more or less broad, the concave base more or less connate to the apex of the column-foot *Crocodeilanthe*
- 49 Column short with an apical anther and stigma 50
- 49' Column with a ventral anther and stigma 52
- 50 Lateral sepals widely divergent above the middle; lip long-unguiculate *Mystax*
- 50' Lateral sepals not divergent; lip not unguiculate 51
- 51 Lip concave at the base, usually articulated with the bulbous apex of the column-foot *Crocodeilanthe*
- 51' Lip hinged to the thick apex of the column-foot *Pleurothallis*
- 52 Petals long-attenuate, neither callous nor verrucose *Restrepioidia*
- 52' Petals not long-attenuate and smooth, if long-attenuate, verrucose externally 53
- 53 Lip with erect, thin, basal lobes; column short and stout *Dracontia*
- 53' Lip without erect, thin, basal lobes; column elongate 54
- 54 Annulus absent; sepals more or less fleshy, often pubescent externally *Acianthera*
- 54' Annulus usually present; sepals membranous, occasionally fleshy, glabrous externally *Specklinia*

LIST OF ILLUSTRATIONS

Subgen. <i>Acianthera</i>		
Sect. <i>Brachystachyae</i>	<i>Pleurothallis pubescens</i> Lindl.	Plate 1.
Sect. <i>Cryptophoranthae</i>	<i>Pleurothallis fenestrata</i>	
	Barb. Rodr.	Plate 2.
Sect. <i>Phloeophilae</i>	<i>Pleurothallis peperomioides</i>	
	Ames	Plate 3.
Sect. <i>Sicariae</i>		
Subsect. <i>Pectinatae</i>	<i>Pleurothallis prolifera</i>	
	Herb. ex Lindl.	Plate 4.
Subsect. <i>Sicariae</i>	<i>Pleurothallis alpina</i> Ames	Plate 5.
Sect. <i>Tomentosae</i>	<i>Pleurothallis aurantiolateritia</i>	
	Speg.	Plate 6.
Sect. <i>Tricarinatae</i>	<i>Pleurothallis boliviana</i>	
	Rchb. f.	Plate 7.
Subgen. <i>Aenigma</i>		
Sect. <i>Aenigmata</i>	<i>Pleurothallis ibex</i> Luer	Plate 8.
Sect. <i>Vestigipetalae</i>	<i>Pleurothallis vestigipetala</i>	
	Luer	Plate 9.
Subgen. <i>Ancipitia</i>		
	<i>Pleurothallis vorator</i>	
	Luer & Vásquez	Plate 10.
Subgen. <i>Andreettaea</i>		
	<i>Pleurothallis ocellus</i>	
	(Luer) Luer	Plate 11.
Subgen. <i>Apoda-Prorepentia</i>		
	<i>Pleurothallis calypso</i> Luer	Plate 12.
Subgen. <i>Arthrosia</i>		
	<i>Pleurothallis auriculata</i> Lindl.	Plate 13.
Subgen. <i>Crocodeilanthe</i>		
	<i>Pleurothallis expansa</i> Lindl.	Plate 14.
Subgen. <i>Dracontia</i>		
	<i>Pleurothallis dracontea</i> Luer	Plate 15.
Subgen. <i>Dresslera</i>		
	<i>Pleurothallis dressleri</i> Luer	Plate 16.
Subgen. <i>Elongatia</i>		
	<i>Pleurothallis janetiae</i> Luer	Plate 17.
Subgen. <i>Empusella</i>		
	<i>Pleurothallis endotrachys</i>	
	Rchb. f.	Plate 18.
Subgen. <i>Kraenzlinella</i>		
	<i>Pleurothallis erinacea</i> Rchb. f.	Plate 19.
Subgen. <i>Masdevalliantha</i>		
	<i>Pleurothallis masdevalliopsis</i>	
	Luer	Plate 20.
Subgen. <i>Mirabilia</i>		
	<i>Pleurothallis mirabilis</i> Schltr.	Plate 21.
Subgen. <i>Mirandia</i>		
	<i>Pleurothallis miranda</i> Luer	Plate 22.
Subgen. <i>Mystax</i>		
	<i>Pleurothallis mystax</i> Luer	Plate 23.
Subgen. <i>Physosiphon</i>		
	<i>Pleurothallis tubata</i>	
	(Lodd.) Steud.	Plate 24.
Subgen. <i>Physothallis</i>		
	<i>Pleurothallis neoharlingii</i> Luer	Plate 25.
Subgen. <i>Pleurobotryum</i>		
	<i>Pleurothallis crepiniana</i> Cogn.	Plate 26.

- Subgen. *Pleurothallis*
 Sect. *Abortivae* *Pleurothallis wigginsii*
 C. Schweinf. Plate 27.
- Sect. *Macrophyllae-Fasciculatae*
Pleurothallis fornix
 Luer & Escobar Plate 28.
- Sect. *Pleurothallis*
 Subsect. *Acroniae* *Pleurothallis stricta* Luer Plate 29.
- Subsect. *Macrophyllae-Racemosae*
Pleurothallis magnifica
 Luer & Escobar Plate 30.
- Subsect. *Pleurothallis*
 Series *Longiracemosae*
Pleurothallis hippocrepica
 Luer & Escobar Plate 31.
- Series *Pleurothallis* *Pleurothallis ruscifolia*
 (Jacq.) R. Br. Plate 32.
- Sect. *Truncatae* *Pleurothallis truncata* Lindl. Plate 33.
- Subgen. *Pseudoctomeria* *Pleurothallis lentiginosa*
 Lehm. & Krzl. Plate 34.
- Subgen. *Restrepioidia* *Pleurothallis hemirhoda* Lindl. Plate 35.
- Subgen. *Rhynchopera* *Pleurothallis fastidiosa* Luer Plate 36.
- Subgen. *Rubellia* *Pleurothallis rubella* Luer Plate 37.
- Subgen. *Sarracenella* *Pleurothallis sarracenia* Luer Plate 38.
- Subgen. *Scopula* *Pleurothallis penicillata* Luer Plate 39.
- Subgen. *Specklinia*
 Sect. *Acuminatae* *Pleurothallis regalis* Luer Plate 40.
 Sect. *Cucumeres* *Pleurothallis cucumeris* Luer Plate 41.
 Sect. *Effusae* *Pleurothallis trichostoma* Luer Plate 42.
- Sect. *Hymenodanthae*
 Subsect. *Apodae-Caespitosae*
Pleurothallis areldii Luer Plate 43.
- Subsect. *Longicaulae* *Pleurothallis grobyi*
 Batem. ex Lindl. Plate 44.
- Sect. *Mentosae* *Pleurothallis determannii* Luer Plate 45.
- Sect. *Muscariiae* *Pleurothallis hastata* Ames Plate 46.
- Sect. *Muscosae* *Pleurothallis pachyphyta* Luer Plate 47.
- Sect. *Tribuloides* *Pleurothallis tribuloides*
 (Sw.) Lindl. Plate 48.
- Sect. *Tripteranthae* *Pleurothallis tripterantha*
 Rchb. f. Plate 49.
- Sect. *Unciferae* *Pleurothallis pompalis* Ames Plate 50.
- Subgen. *Talpinaria* *Pleurothallis talpinaria*
 (Karst.) Rchb. f. Plate 51.
- Subgen. *Xenion* *Pleurothallis xenion*
 Luer & Escobar Plate 52.

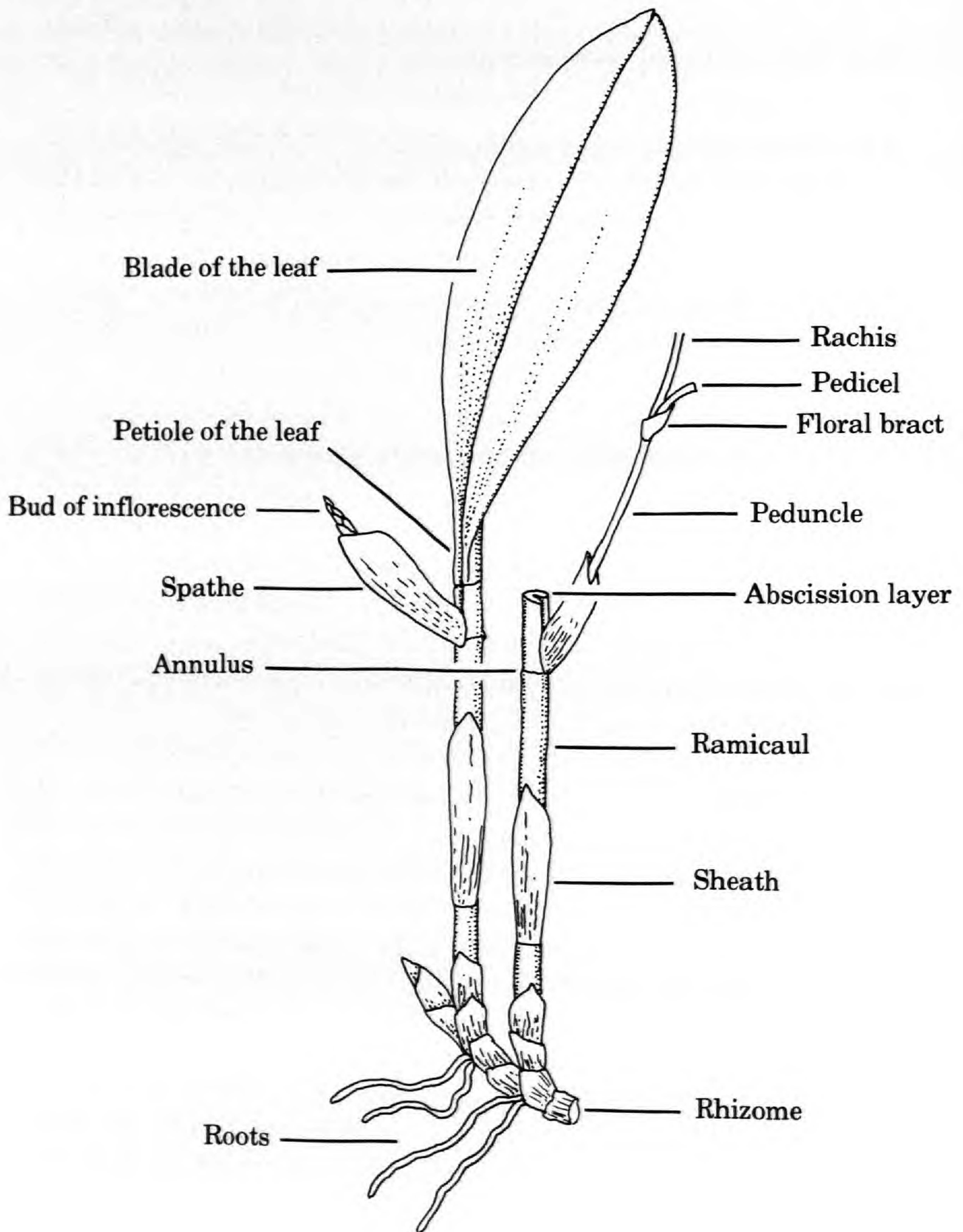


Figure 2. A generalized sketch of a *Pleurothallis*.

TAXONOMY OF THE GENUS *PLEUROTHALLIS*

Pleurothallis R. Br. in Aiton, Hort. Kew. ed. 2, 5:211, 1813.

Type: *Epidendrum ruscifolium* Jacq., Enum. Pl. Carib. 29, 1760. [*P. ruscifolia* (Jacq.) R. Br. in Aiton, Hort. Kew. ed. 2, 5:211, 1813]

Ety.: From the Greek *pleurothallos*, "riblike branches," referring to the caespitose, slender ramicauls seen in *P. ruscifolia* and in much of the rest of the Pleurothallidinae.

Plants perennial, very small to large, weak to robust, epiphytic, lithophytic to terrestrial, the rhizome very short to elongate between aerial stems (ramicauls); roots few to many, slender to coarse or fleshy. Ramicauls ascending to erect, rarely descending, prolific or non-prolific, non-pseudobulbous, shorter to longer than the leaf, slender to stout, round to laterally compressed or winged, unifoliate, partially or completely enclosed by tubular sheaths, the sheaths sometimes with trichomes, the inflorescence emerging laterally with or without an annular ring (annulus) below or at the apex of the ramicaul (the leaf-stem abscission layer), or from the apex of the ramicaul without an annulus; leaf erect in relation to the ramicaul to spreading, thinly to thickly coriaceous, to terete or laterally compressed, glabrous, sometimes glaucous, light green to dark green, rarely purplish, linear to orbicular, ovate or cordate to obovate, the apex acute, obtuse to rounded, notched with a mucro in the sinus, the base petiolate or epetiolate, cuneate, rounded or cordate, or decurrent upon the ramicaul, the petiole sometimes twisted. Inflorescence a solitary flower, single or fascicled, or racemose, single or fascicled, the flowers simultaneously or successive, the inflorescence longer or shorter than the leaf, the peduncle slender to stout, short or long, round to laterally compressed, with few to many bracts; floral bracts short or long, tubular to cucullate; pedicels slender to stout, long or short, sometimes verrucose; ovary trivalvate, deciduous, smooth, carinate to crested, verrucose, papillose to spiculate; sepals membranous to thickly fleshy, smooth, verrucose, or pubescent, broad to narrow, acute, acuminate to obtuse, free to variously connate; petals membranous to thickly fleshy, smooth, verrucose, papillose, pubescent, ciliate or fringed, broad to narrow, 1- to 3-lobed, acute, acuminate to obtuse; lip membranous to thickly fleshy, smooth, callous, papillose, pubescent, ciliate or fringed, narrow to transverse, 1- to 5-lobed, acute, acuminate to obtuse, the base variously articulated with the base of the column or apex of the column-foot, sometimes inflexibly adnate; column semiterete, long or short, slender or stout, winged or wingless, toothed or without teeth, the anther apical to ventral, hooded or exposed, the pollinia 2, pyriform to sphaerical, naked or with caudicles, with or without a detachable viscidium, the stigma apical to ventral, 1-lobed or 2-lobed, the base of the column developed or not developed into a column-foot with the apex of the ovary, the tip of the foot sometimes elongated beyond the ovary.

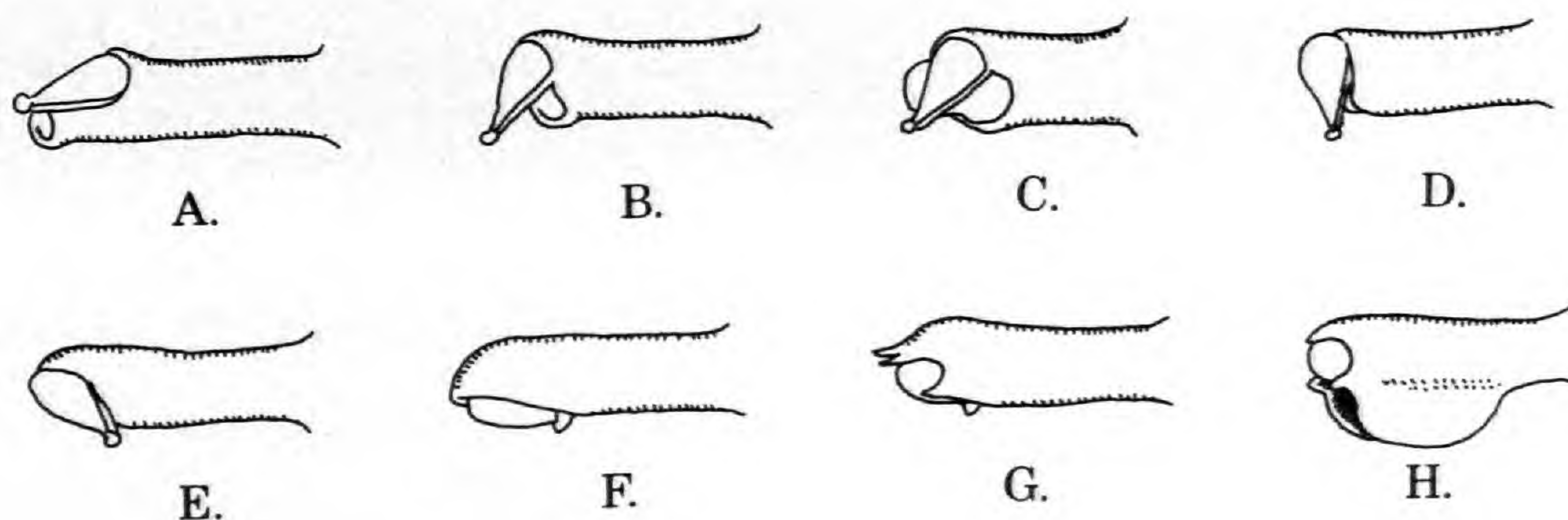


Figure 3. Diagrammatic sketches of some forms of the column.

- A. Anther apical (dorsal); stigma apical.
- B. Anther apical; stigma apical.
- C. Anther apical; stigma apical, bilobed.
- D. Anther apical (subapical); stigma ventral.
- E. Anther ventral, non hooded; stigma ventral.
- F. Anther ventral, hooded; stigma ventral.
- G. Anther ventral, the clinandrium toothed; stigma ventral.
- H. Anther ventral; stigma ventral; column winged.

Pleurothallis subgen. **Acianthera** (Scheidw.) Luer, stat. nov.

Type: *Acianthera punctata* Scheidw., Allg. Gartenzeitung 10:292, 1842 [by neotypif. = *Pleurothallis recurva* Lindl., Edwards' Bot. Reg. 27(Misc.):1, 1841].

Ety.: From the Greek *acianthera*, "a pointed anther," a feature not seen in the species answering the description of the plant.

Bas.: *Acianthera* Scheidw., Allg. Gartenzeitung 10:292, 1842.

Type: *Acianthera punctata* Scheidw. [by neotypif. = *Pleurothallis recurva* Lindl.].

Syn.: *Centranthera* Scheidw., Allg. Gartenzeitung 10:293, 1842, non R. Br. 1810.

Type: *Centranthera punctata* Scheidw., Allg. Gartenzeitung 10:293, 1842 [by neotypif. = *Pleurothallis recurva* Lindl., Edwards' Bot. Reg. 27(Misc.):1, 1841].

Ety.: From the Greek *centranthera*, "a pointed anther," synonymous with the above.

* * *

Acianthera punctata Scheidw., Allg. Gartenzeitung 10:292, 1842.

Neotype here designated: *Pleurothallis recurva* Lindl., Edwards' Bot. Reg. 27(Misc.):1, 1841.

Centranthera punctata Scheidw., Allg. Gartenzeitung 10:293, 1842.

Neotype here designated: *Pleurothallis recurva* Lindl., Edwards' Bot. Reg. 27(Misc.):1, 1841.

A detailed description of this taxon was given by Scheidweiler when he published *A. punctata* and *C. punctata*. Since the two simultaneous presentations are essentially identical, even to the specific names, I wonder if Scheidweiler did not realize tardily that the name *Centranthera* was occupied, and that he tried to substitute *Acianthera*. This may have resulted in some confusion with the printer, possibly explaining the two nearly identical descriptions side by side. The deposition of a type is unknown, but the description applies very well to the common Brazilian *P. recurva* Lindl. published the preceding year.

The numerous species related to *P. recurva* constitute a large polymorphic taxon treated here in *Acianthera* as a subgenus of *Pleurothallis*. In this subgenus the habit is caespitose or repent with ramicauls that vary from very short to elongated, and from terete to winged. The inflorescence is usually racemose, and it emerges apically or laterally from the ramicaul, or from the rhizome in one species (*P. johnsonii* Ames), without an annulus.

The sepals are fleshy and frequently pubescent externally, and the lateral sepals are connate at least to the middle. The petals are short and variable. The lip is thickened and lingulate. The apex of the elongated column is shortly hooded and more or less toothed, partially covering the ventral anther. The rostellum and stigma are ventral; the column-foot is short and stout.

Six sections and two subsections are included in the following key.

KEY TO THE SECTIONS AND SUBSECTIONS OF SUBGENUS *ACIANTHERA*

- 1 Ramicaul sharply compressed (*A. sect. Sicariae*) 2
 1' Ramicaul round in cross-section or lightly compressed 3
- 2 Ramicaul 2-edged subsect. *Pectinatae*
 2' Ramicaul 3-edged subsect. *Sicariae*
- 3 Sheaths of the ramicaul pubescent *A. sect. Tomentosae*
 3' Sheaths of the ramicaul glabrous 4
- 4 Sepals tall-carinate *A. sect. Tricarinatae*
 4' Sepals not tall-carinate 5
- 5 Sepals connate basally and more or less connate or coherent
 at the apex *A. sect. Cryptophoranthae*
 5' Dorsal sepal free, at least above the middle 6
- 6 Inflorescence 1-flowered; dorsal sepal connate to the
 synsepal at least to the middle *A. sect. Phloeophilae*
 6' Inflorescence racemose, occasionally 1-flowered; dorsal sepal
 connate to the lateral sepals only near the base *A. sect. Brachystachyae*

Pleurothallis subgen. **Acianthera** sect. **Brachystachyae** Lindl.,
 Folia Orchid. *Pleuroth.* 21, 1859.

Lectotype here designated: *Pleurothallis recurva* Lindl., Edwards' Bot. Reg. 27(Misc.):1, 1841. This species, the type of the subgenus, is chosen from 39 species included by Lindley in sect. *Brachystachyae*.

Ety.: From the Greek *brachystachys*, "short spike," referring to the short inflorescence.

Syn.: *Pleurothallis* sect. *Sarcodanthae* Barb. Rodr. Gen. Sp. Orch. Nov. 2:10, 1882.

Lectotype here designated: *Pleurothallis lilacina* Barb. Rodr., Gen. Sp. Orch. Nov. 1:18, 1877. This species, very closely allied if not synonymous with *P. recurva*, the lectotype of section *Brachystachyae*, is chosen from 24 species listed by Rodrigues.

Ety.: From the Greek *sarcodanthos*, "a fleshy flower," referring to the quality of the flowers.

Syn.: *Lepanthes* sect. *Brevicaulae* Barb. Rodr., Gen. Sp. Orch. Nov. 2:41, 1882.

Lectotype here designated: *Pleurothallis crinita* Barb. Rodr., Gen. Sp. Orch. Nov. 1:16, 1877. This species, related to *P. recurva* and typical for the section, is chosen from 8 species included by Rodrigues in sect. *Brevicaulae*.

Ety.: From the Latin *brevicaulis*, "short-stemmed," referring to the short ramicauls.

Syn.: *Brenesia* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:200, 1923.

Type: *Brenesia costaricensis* Schltr. Repert. Spec. Nov. Regni Veg. Beih. 19:200, Nov. 1923. (*P. johnsonii* Ames, Sched. Orchid. 2:21, Jan. 1923)

Ety.: Named in honor of A. M. Brenes, collector of Costa Rican orchids, who discovered this species.

Syn.: *Pleurothallis* sect. *Leptotifolia* Pabst, Orch. Bras. 1:156, 1975, as *leptotefolia*.

Type: *Pleurothallis leptotifolia* Barb. Rodr., Gen. Sp. Orch. Nov. 1:15, 1877 as *leptotefolia*.

Ety.: From the genus *Leptotes* Lindl., and the Latin *-folius*, referring to the similarity of the leaves to those of *Leptotes*, a genus of the subtribe Laeliinae.

[Syn.: *Pleurothallis* sect. *Subsessiles* Pabst, Orch. Bras. 1:157, 1975, nom. invalid.]

[Syn.: *Pleurothallis* sect. *Brachystachyae-Longicaules* Pabst, Orch. Bras. 1:158, 1975, nom. invalid.]

[Syn.: *Pleurothallis* sect. *Brachystachyae-Brevicaules* Pabst, Orch. Bras. 1:159, 1975, nom. invalid.]

[Syn.: *Pleurothallis* sect. *Longiracemosae* Pabst, Orch. Bras. 1:160, 1975, nom. invalid.]

[Syn.: *Pleurothallis* sect. *Cespitosae* Pabst, Orch. Bras. 1:165, 1975, nom. invalid.]

Although vegetatively variable, the plants of this large section produce basically similar flowers. Plants may be caespitose, long-repent or pendent. The ramicauls may be abbreviated or elongated, but not normally prolific. Similar species with sharply compressed ramicauls are treated in sect. *Sicariae*. The abbreviated ramicauls of some of the repent species bear leaves more or less prostrate.

The leaves are sessile, and the margins are sometimes decurrent on the ramicaul. The usually short, fleshy, racemose inflorescence emerges from the apex of the ramicaul without an annulus, but sometimes from the rhizome in *P. johnsonii*. The raceme, occasionally reduced to a single flower, may be long or short. The sepals are fleshy and often pubescent with the laterals connate. The thick lip is ligulate, usually with a pair of calli on the disc extending to more or less erect marginal angles or lateral lobes near or below the middle. Below these angles or lobes the lip is more or less broadly unguiculate, and often minutely bilobulate at the delicately hinged base.

The numerous species are found in suitable habitats throughout the Neotropics.

Representative species:

- | | |
|---|---|
| <i>P. agathophylla</i> Rchb. f. | <i>P. macropoda</i> Barb. Rodr. |
| <i>P. alligatorifera</i> Rchb. f. | <i>P. micrantha</i> Barb. Rodr. |
| <i>P. angustisepala</i> Ames & Correll | <i>P. miqueliana</i> (Focke) Lindl. |
| <i>P. antennata</i> Garay | <i>P. morenoi</i> Luer |
| <i>P. aphthosa</i> Lindl. | <i>P. obscura</i> A. Rich. & Gal. |
| <i>P. bicarinata</i> Lindl. | <i>P. ochreatea</i> Lindl. |
| <i>P. bicornuta</i> (Barb. Rodr.) Cogn. | <i>P. ofella</i> Luer |
| <i>P. bidentula</i> Barb. Rodr. | <i>P. ophiantha</i> Cogn. |
| <i>P. binotii</i> Regel | <i>P. oscitans</i> Ames |
| <i>P. butcheri</i> L. O. Wms. | <i>P. panduripetala</i> Barb. Rodr. |
| <i>P. caerensis</i> Schltr. | <i>P. papillosa</i> Lindl. |
| <i>P. capenemae</i> Barb. Rodr. | <i>P. pardipes</i> Rchb. f. |
| <i>P. chionopa</i> Luer | <i>P. pavimentata</i> Rchb. f. |
| <i>P. chrysantha</i> Lindl. | <i>P. prognatha</i> Luer & Escobar |
| <i>P. citrophila</i> Luer | <i>P. pubescens</i> Lindl. Plate 1. |
| <i>P. consimilis</i> Ames | <i>P. punicea</i> Luer |
| <i>P. cordifolia</i> Dod | <i>P. quadriserrata</i> Luer |
| <i>P. crinita</i> Barb. Rodr. | <i>P. recurva</i> Lindl. |
| <i>P. decipiens</i> Ames & Schweinf. | <i>P. rodriguesii</i> Cogn. |
| <i>P. ellipsophylla</i> L. O. Wms. | <i>P. saundersiana</i> Rchb. f. |
| <i>P. florosa</i> Luer | <i>P. saurocephala</i> Lodd. |
| <i>P. fockei</i> Lindl. | <i>P. serrulatipetala</i> Barb. Rodr. |
| <i>P. geminicaulina</i> Ames | <i>P. sonderana</i> Rchb. f. |
| <i>P. heleconioides</i> Luer & Vásquez | <i>P. strupifolia</i> Lindl. |
| <i>P. heteropetala</i> Luer | <i>P. tikalensis</i> Correll & Schweinf. |
| <i>P. hondurensis</i> Ames | <i>P. tristis</i> Barb. Rodr. |
| <i>P. johannensis</i> Barb. Rodr. | <i>P. verecunda</i> Schltr. |
| <i>P. johnsonii</i> Ames | <i>P. violacea</i> A. Rich. & Gal. |
| <i>P. klotzschiana</i> Rchb. f. | <i>P. wagneriana</i> Kl. |
| <i>P. lanceana</i> Lodd. | <i>P. wilsonii</i> Lindl. |
| <i>P. lepidota</i> L. O. Wms. | <i>P. yauaperyensis</i> Barb. Rodr. |

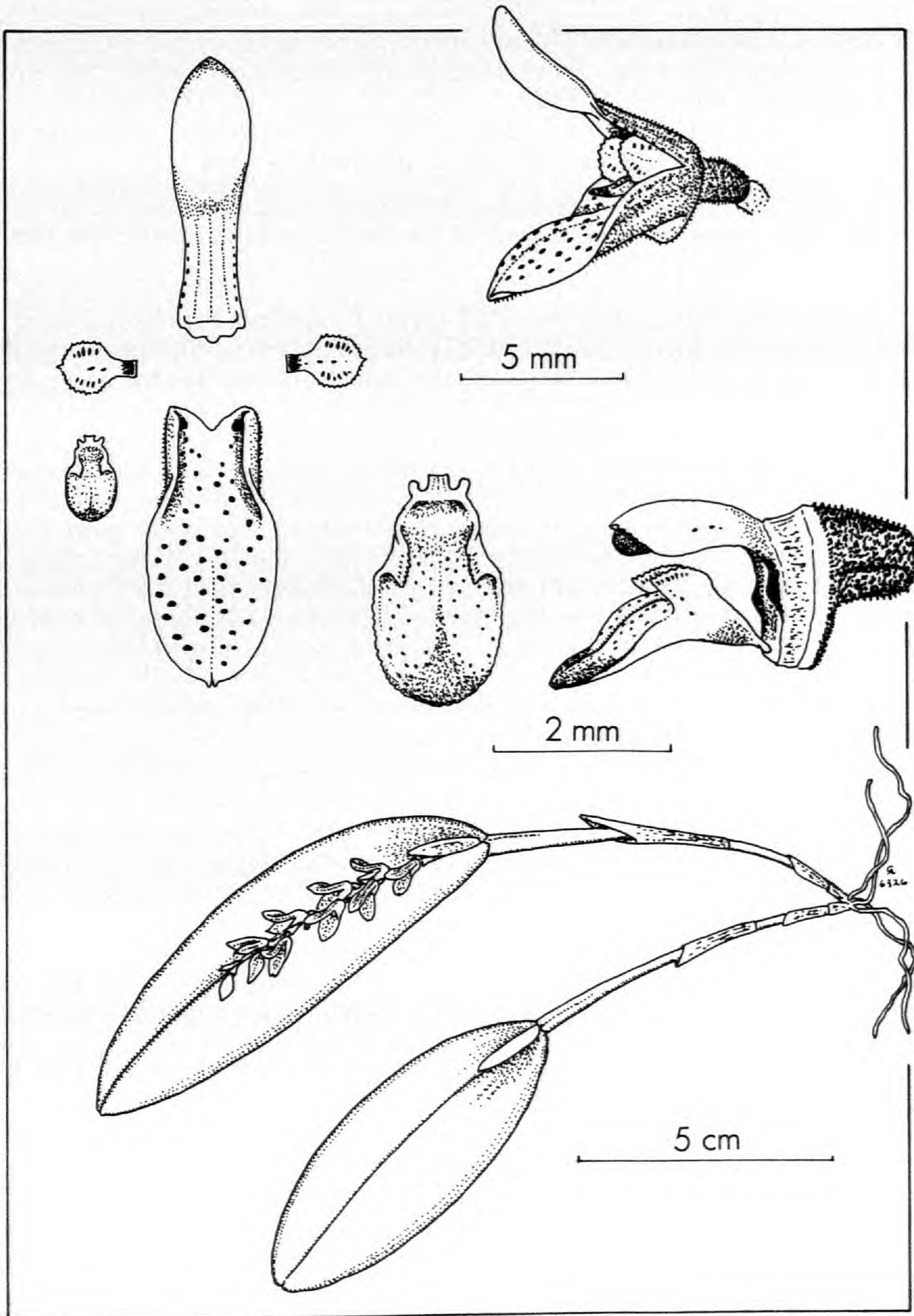


Plate 1. *Pleurothallis pubescens* Lindl.

Pleurothallis subgen. **Acianthera** sect. **Cryptophoranthae** Luer, nom. nov.

Type: *Cryptophoranthus fenestratus* Barb. Rodr., Gen. Sp. Orch. Nov. 2:80, 1882. (*Pleurothallis fenestrata* Barb. Rodr., Gen. Sp. Orch. Nov. 1:12, 1877)

Ety.: From the Greek *cryptophoranthos*, "hidden flower," referring to the short racemes from short ramicauls.

Syn.: *Cryptophoranthus* Barb. Rodr., Gen. Sp. Orch. Nov. 2:79, 1882.

Lectotype: *Cryptophoranthus fenestratus* Barb. Rodr., Gen. Sp. Orch. Nov. 2:80, 1882. (*Pleurothallis fenestrata* Barb. Rodr.) (Acuña, Tel. Bol. 60:115, 1939)

The distinguishing feature of the genus *Cryptophoranthus*, as typified by the Brazilian *C. fenestratus*, is the connation of the dorsal sepal with the synsepal, both at the apex and below the middle so that a pair of lateral windows is created for the entrance of a pollinator into the interior of the flower. Apparently the union is not always solidly connate, but lightly coherent, and the apices are even free in a few species that have been attributed to *Cryptophoranthus*. Similar window-contrivances have developed independently in several other more distantly related species of *Pleurothallis* [*P. alexii* A. H. Heller and *P. tribuloides* (Sw.) Lindl.] and the genera *Ophidion* and *Zootrophion*. *Pleurothallis spathuliglossa* Hoehne is illustrated with lateral windows and connivent apices of the sepals. The latter needs to be transferred to *Trichosalpinx*.*

After the removal from *Cryptophoranthus* of basically different species to *Ophidion* and *Zootrophion*, I do not believe that *Cryptophoranthus* can be maintained at the generic level because of the inconsistency of the connation of the apices of the sepals, and the vegetative and floral similarity of the remaining species to those in *P.* subgen. *Acianthera*.

Vegetatively the plants of this section are caespitose or repent, with abbreviated or elongated ramicauls, petiolate leaves, and a fascicle of solitary flowers or short, congested racemes that emerge laterally from the stem below the apex (the leaf-stem abscission layer) without an annulus, but sometimes with a faint, annular swelling. The flower parts are compatible with *P.* subgen. *Acianthera*.

The species are primarily Brazilian in distribution. The following new names and transfers become necessary:

Pleurothallis minimifolia Luer, nom. nov.

Cryptophoranthus minimus Cogn., Fl. Bras. 3(4):552, 1906, non *P. minima* C. Schweinf. 1925.

Pleurothallis neojordanensis Luer, nom. nov.

Cryptophoranthus jordanensis Brade, Arq. Serv. Florest. 1(1):41, 1939, non *P. jordanensis* Hoehne 1929.

Pleurothallis nejuergensii Luer, nom. nov.

Cryptophoranthus juergensii Schltr., Repert. Beih. 35:46, 1925, non *P. juergensii* Schltr. 1925.

Pleurothallis punctatiflora Luer, nom. nov.

Cryptophoranthus punctatus Barb. Rodr., Rev. Engenh. 3, n. 9, 1881 et Gen. Sp. Orch. Nov. 2:80, 1882, nec *P. punctata* Ker 1823, nec Lindl. 1835, nec Barb. Rodr. 1877, nec (Karst.) Schltr. 1919.

***Trichosalpinx spathuliglossa** (Hoehne) Luer, comb. nov.

Bas.: *Pleurothallis spathuliglossa* Hoehne, Arq. Bot. Estado São Paulo 1:12, 1938.

Pleurothallis spicata (Dutra) Luer, comb. nov.
Cryptophoranthus spicatus Dutra, *Ostenia* 172, 1933.

Additional species: *P. cryptantha* Barb. Rodr.
P. cymbiformis Dod
P. fenestrata Barb. Rodr. Plate 2.
P. langeana Krzl.
P. neibanus Dod

Pleurothallis subgen. **Acianthera** sect. **Phloeophilae** Luer, nom. nov.

Type: *Phloeophila paulensis* Hoehne & Schltr., Arch. Bot. São Paulo 1:201, 1926. [*Pleurothallis paulensis* (Hoehne & Schltr.) Luer]

Ety.: From the Greek *phloiophilos*, "fond of bark," referring to the creeping, prostrate habit of the species.

Syn.: *Phloeophila* Hoehne & Schltr., Arch. Bot. São Paulo 1:199, 1926.

Lectotype: *Phloeophila paulensis* Hoehne & Schltr. (Garay, *Orquideología* 9:103, 1974)

Called "confetti-leaved" by Dunsterville, this small section is characterized by the repent rhizome bearing small, more or less round, prostrate leaves. The solitary flower is borne from the apex of the short ramicaul at the base of the leaf without an annulus. The sepals are connate usually to near the middle. The lips and columns are compatible with the subgenus.

The species are widely distributed in the Neotropics.

The following new name and combinations are necessary:

Pleurothallis neobradei Luer, nom. nov.

Physosiphon bradei Schltr., *Anexos Mem. Inst. Butantan Secc. Bot.* 1(4):39, 1922.

Phloeophila bradei (Schltr.) Garay, *Orquideología* 9:117, 1974, non *Pleurothallis bradei* Schltr. 1922.

Pleurothallis paulensis (Hoehne & Schltr.) Luer, comb. nov.

Phloeophila paulensis Hoehne & Schltr., Arch. Bot. São Paulo 1:201, 1926.

Pleurothallis similis (Schltr.) Luer, comb. nov.

Cryptophoranthus similis Schltr., *Notizbl. Bot. Gart. Berlin-Dahlem* 7:323, 1919.

Phloeophila similis (Schltr.) Garay, *Orquideología* 9:118, 1974.

Additional species: *P. echinata* Barb. Rodr.

P. nummularia Rchb. f.

P. peperomioides Ames Plate 3.

P. raduliglossa Pabst

P. yupanki Luer & Vásquez

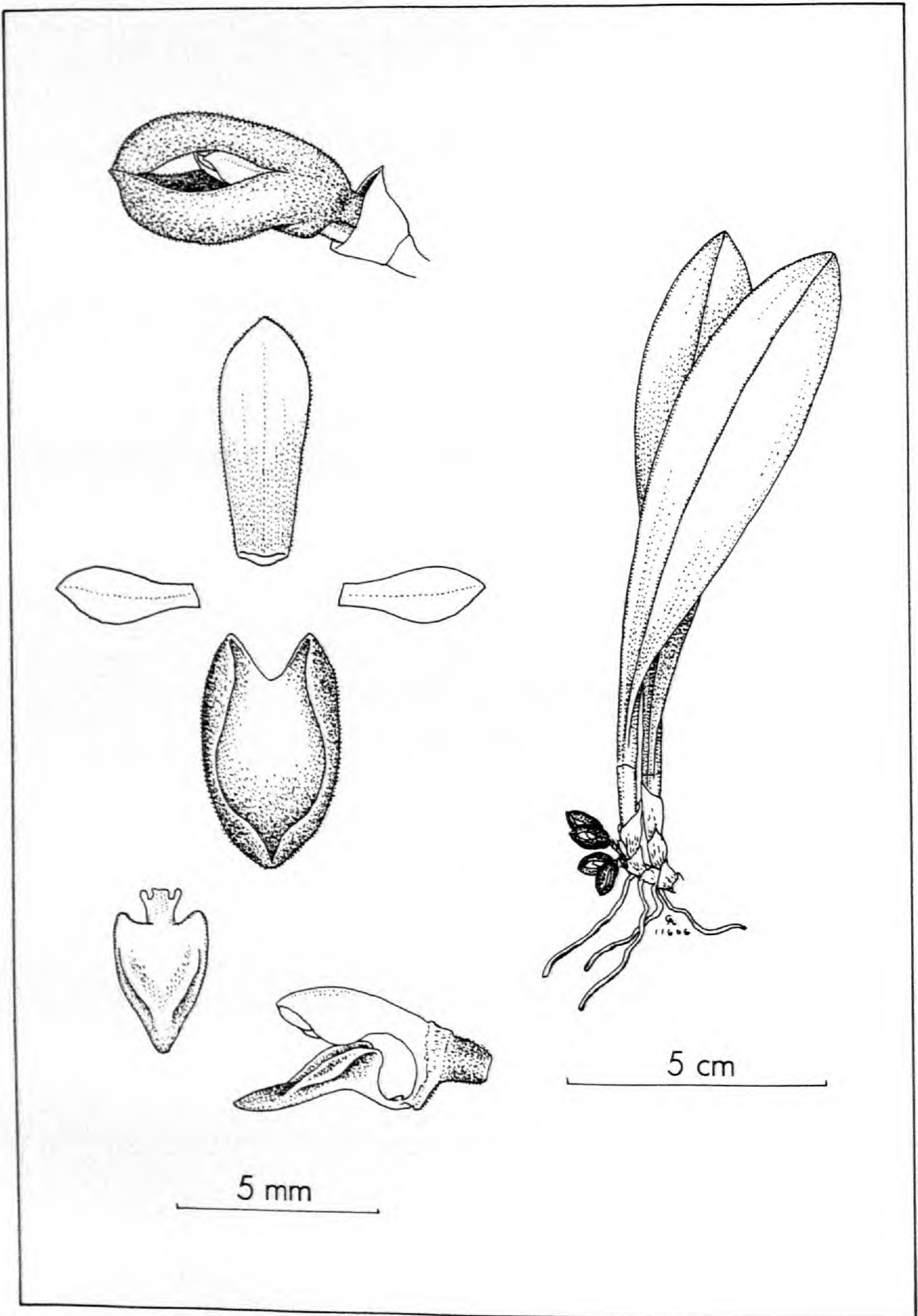


Plate 2. *Pleurothallis fenestrata* Barb. Rodr.

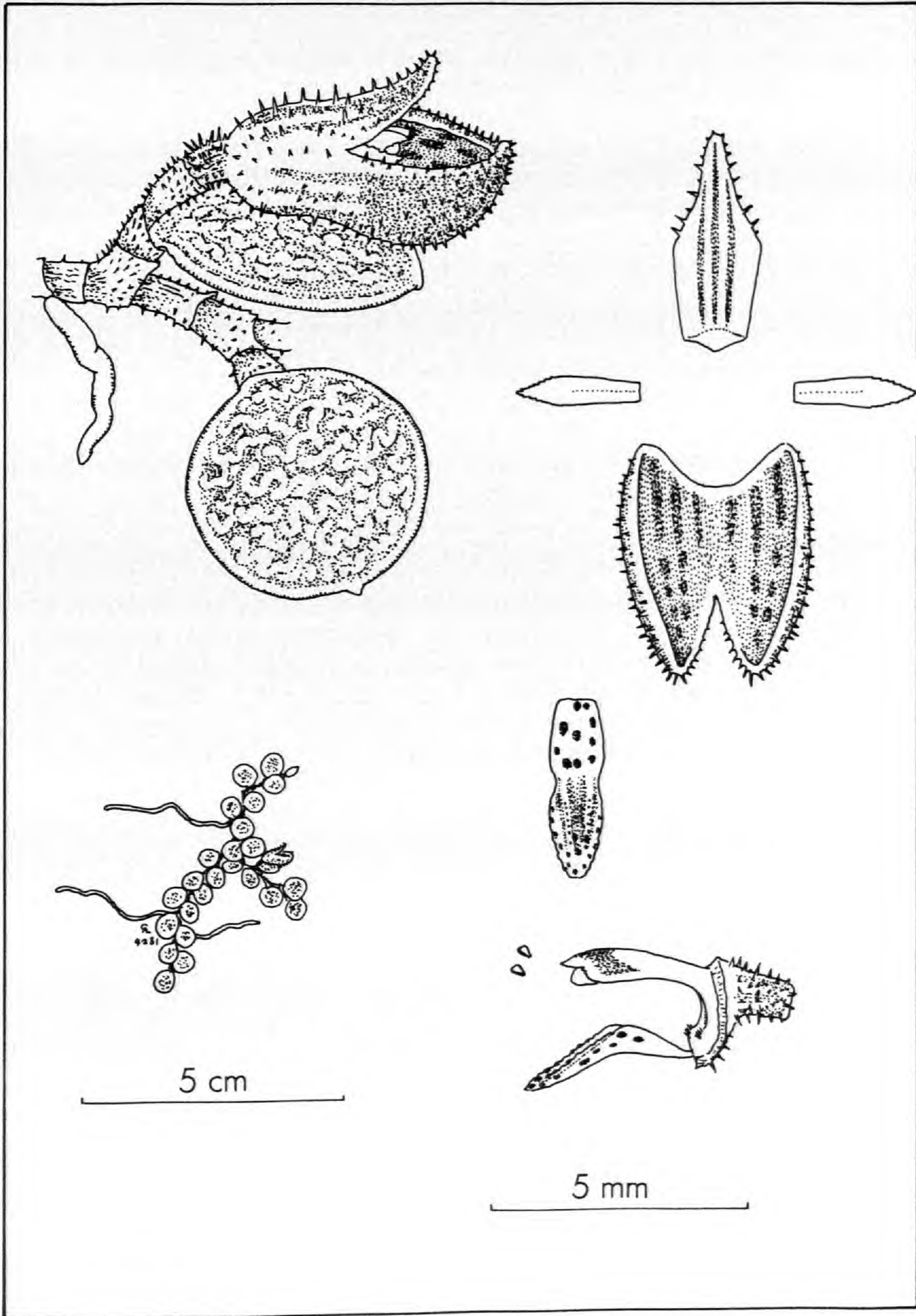


Plate 3. *Pleurothallis peperomioides* Ames

Pleurothallis subgen. **Acianthera** sect. **Sicariae** Lindl., Folia Orchid. *Pleuroth.* 12, 1859.

Type: *Pleurothallis sicaria* Lindl., Edwards' Bot. Reg. 27(Misc.):91, 1841.

Ety.: From the Latin *sicarius*, "a knife-wielding assassin," in reference to the shape of the leaf and stem.

In this section the ramicaul is sharply laterally compressed. Two subsections may be recognized: one with three-winged or three-edged ramicauls, the other with the compression of the ramicaul so extreme that it is essentially two-edged.

The inflorescence is similar to that of sect. *Brachystachyae*.

Subsect. **Pectinatae** Luer, subsect. nov.

Type: *Pleurothallis pectinata* Lindl., Edwards' Bot. Reg. 25(Misc.):1, 1839.

Ety.: From the Latin *pectinatus*, "comblike," referring to the fimbriate margins of the lip.

Ramicaules ancipitii.

This subsection of a few Brazilian species, some of which range as far as Bolivia and Venezuela, is characterized by ramicauls so markedly compressed that they appear two-edged, similar to the compressed ramicauls of the species that compose the subgen. *Ancipitia*. The adaxial margin of the flattened ramicaul is minutely or slightly sulcate below the junction with the leaf.

Representative species:

P. hamosa Barb. Rodr.

P. limae Porto & Brade

P. modestissima Rchb. f. & Warm.

P. pectinata Lindl.

P. prolifera Herb. ex Lindl. Plate 4.

P. wels-windischii Pabst

Subsect. **Sicariae** (Lindl.) Luer, stat. nov.

Type: *Pleurothallis sicaria* Lindl.

Bas.: *Pleurothallis* sect. *Sicariae* Lindl., Folia Orchid. *Pleuroth.* 12, 1859.

This subsection is characterized by triquetrous ramicauls. The wings of the compressed ramicauls are well-developed and sharp, and they are continuous with the margins of the blade of the leaf above. Often the margins of the leaf are decurrent on the ramicaul so that the inflorescence may emerge above the base of the leaf.

The ramicauls of some species in subgen. *Arthrosia* are similarly three-edged, but the articulated lips immediately distinguish this latter subgenus.

The numerous species are distributed widely in suitable habitats in tropical America.

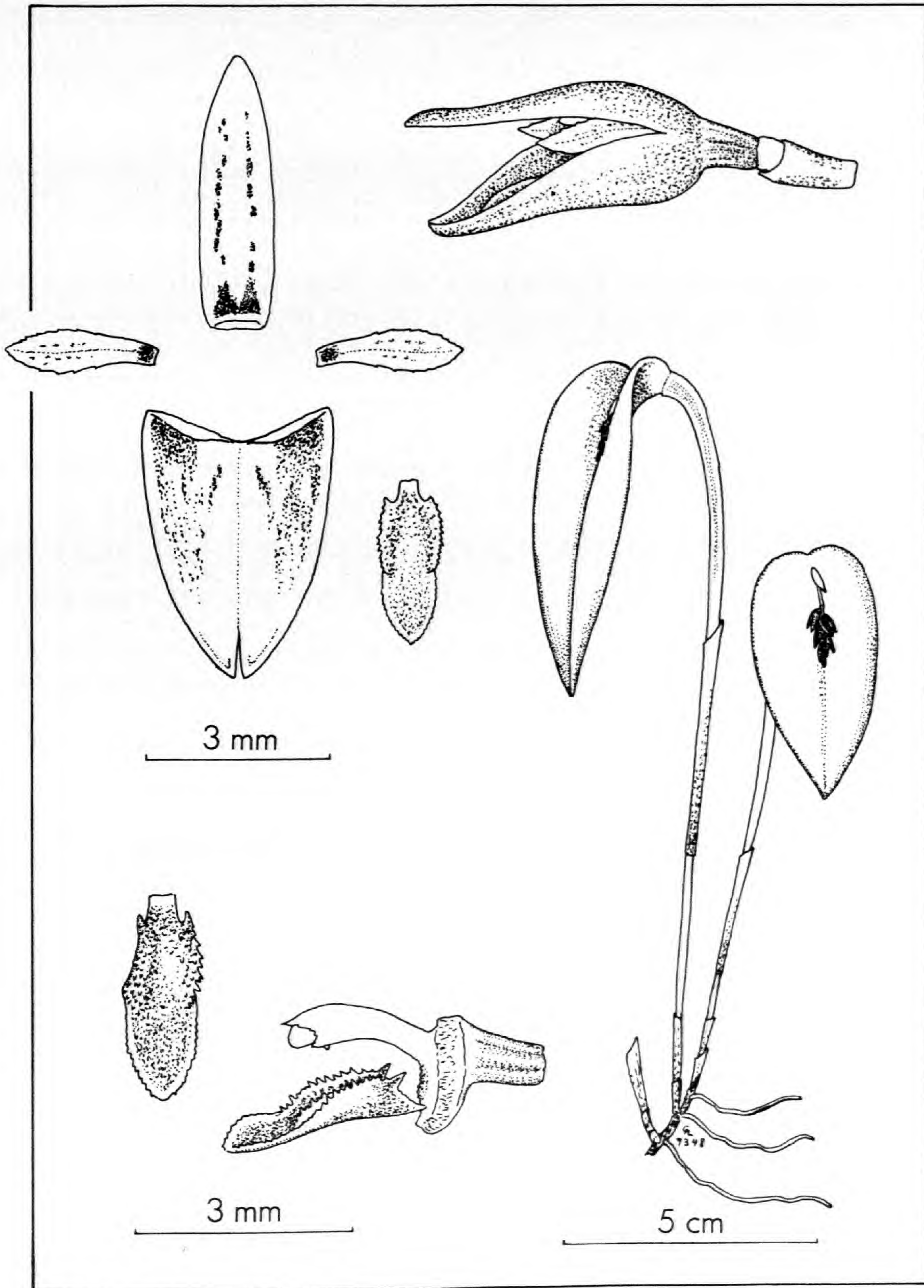


Plate 4. *Pleurothallis prolifera* Herb. ex Lindl.

Representative species:

<i>P. aechme</i> Luer		<i>P. exarticulata</i> Barb. Rodr.
<i>P. alpina</i> Ames Plate 5.	<i>P. lamia</i> Luer
<i>P. casapensis</i> Lindl.		<i>P. luteola</i> Lindl.
<i>P. cerberus</i> Luer & Vásquez		<i>P. madisonii</i> Luer
<i>P. chamensis</i> Lindl.		<i>P. pantasmi</i> Rchb. f.
<i>P. circumplexa</i> Lindl.		<i>P. pantasmoides</i> C. Schweinf.
<i>P. coffeicola</i> Schltr.		<i>P. phyllostachys</i> Schltr.
<i>P. cogniauxiana</i> Schltr.		<i>P. rubroviridis</i> Lindl.
<i>P. compressicaulis</i> Dod		<i>P. scalpricaulis</i> Luer
<i>P. congruens</i> Luer		<i>P. sicaria</i> Lindl.
<i>P. cubensis</i> Lindl.		<i>P. sicariopsis</i> Luer
<i>P. decurrens</i> Poepp. & Endl.		<i>P. wyvern</i> Luer & Escobar

Pleurothallis subgen. **Acianthera** sect. **Tomentosae** Luer, sect. nov.

Type: *Physosiphon herzogii* Schltr., Repert. Spec. Nov. Regni Veg. 12:485, 1913, non *Pleurothallis herzogii* Schltr. (*Pleurothallis aurantiolateritia* Speg., Anales Mus. Nac. Hist. Nat. Buenos Aires 28:132, 1916)

Ety.: From the Latin *tomentosus*, "covered with short hairs," referring to the integument of the cauline sheaths.

Vaginae ramicaulium tomentosae.

This section is composed of repent species with the ramicauls enclosed by hispidulous sheaths. The racemes are usually shorter than the leaf, and emerge from the apex of the ramicaul without an annulus. The flowers, more or less fleshy and pubescent, are compatible with the subgenus.

With a few exceptions this subgenus is primarily Brazilian in distribution.

Species: <i>P. adiri</i> Brade		
<i>P. aurantiolateritia</i> Speg. Plate 6.	<i>P. murexoidea</i> Pabst
<i>P. brachyloba</i> Hoehne		<i>P. muscicola</i> Barb. Rodr.
<i>P. caparaoensis</i> Brade		<i>P. octophrys</i> Rchb. f.
<i>P. hirsutula</i> Fawc. & Rendle		<i>P. violaceomaculata</i> Hoehne

Pleurothallis subgen. **Acianthera** sect. **Tricarinatae** Luer, sect. nov.

Type: *Pleurothallis tricarinata* Poepp. & Endl., Nov. Gen. Sp. 1:49, 1836, non Focke 1853.

Ety.: From the Greek *tricarinatus*, "three-carinate," referring to the three-winged flowers.

A few closely allied species constitute this section. The repent rhizome produces erect ramicauls more or less laterally compressed above near the leaf, more or less laterally compressed peduncles and floral bracts, triquetrous ovaries, and tall-carinate sepals. The lip is ligulate and the column is elongate with a partially covered ventral anther compatible with the subgenus.

Species: <i>P. boliviana</i> Rchb. f. Plate 7.
<i>P. glumacea</i> Lindl.	
<i>P. tricarinata</i> Poepp. & Endl.	

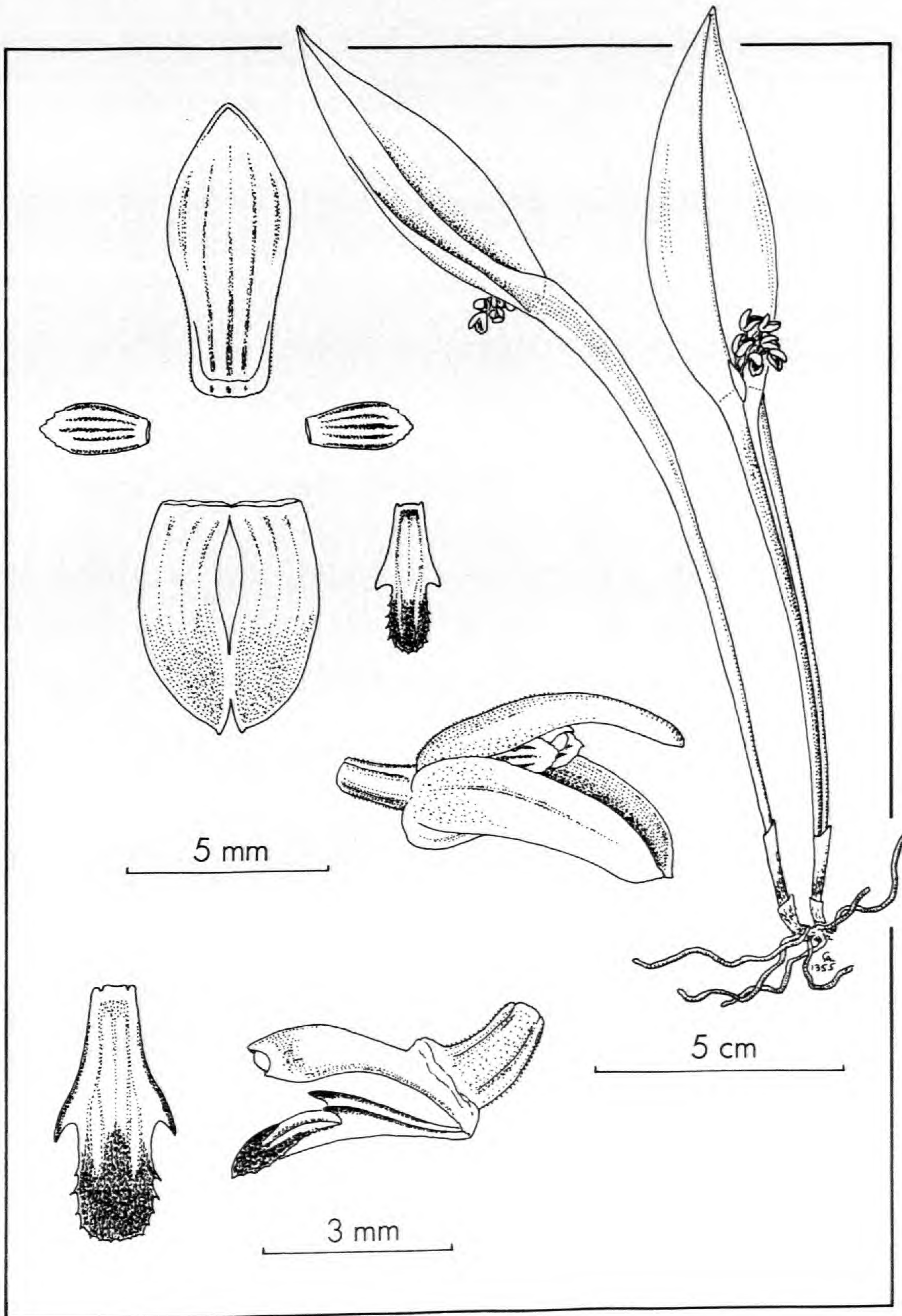


Plate 5. *Pleurothallis alpina* Ames

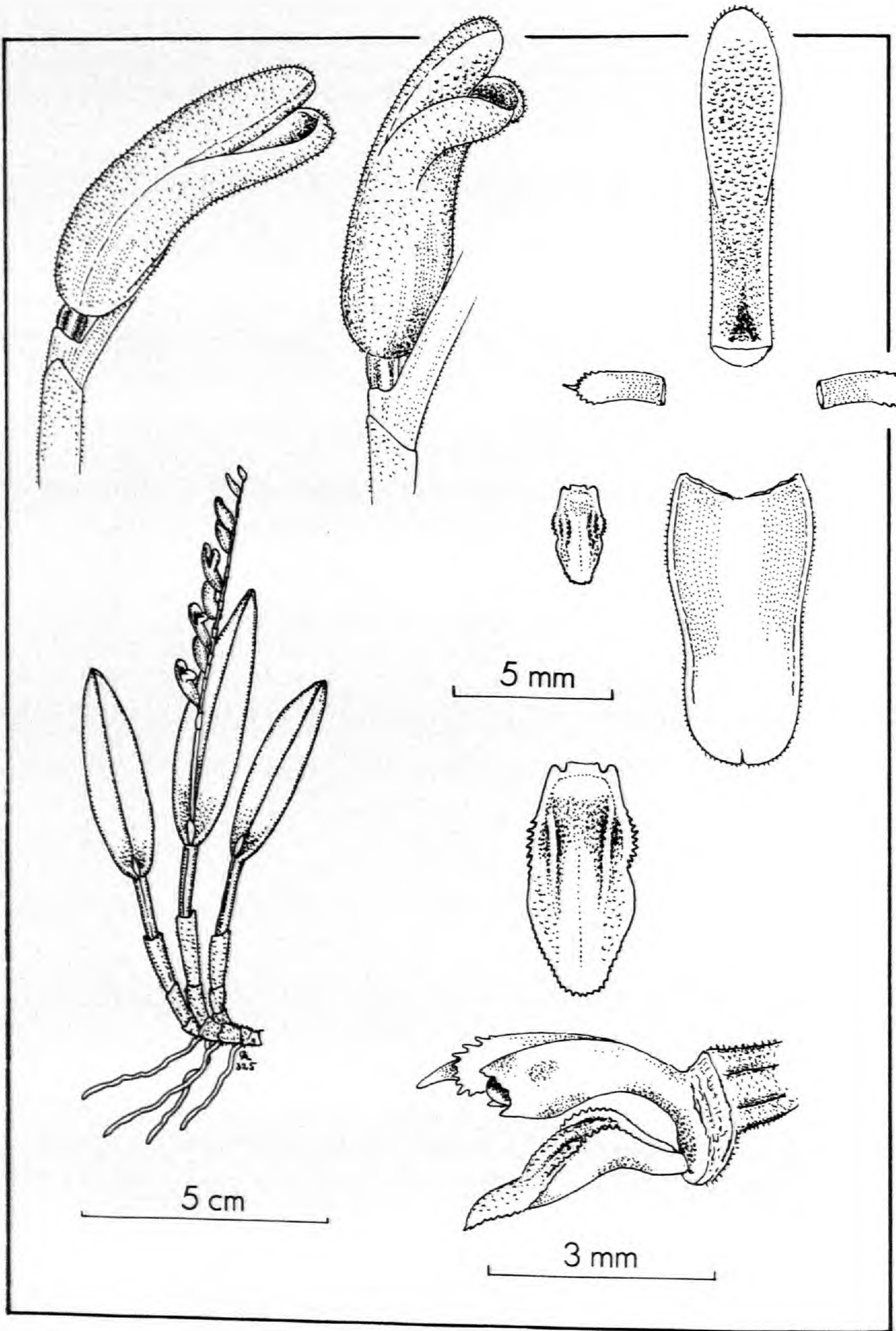


Plate 6. *Pleurothallis aurantiolateritia* Sp.

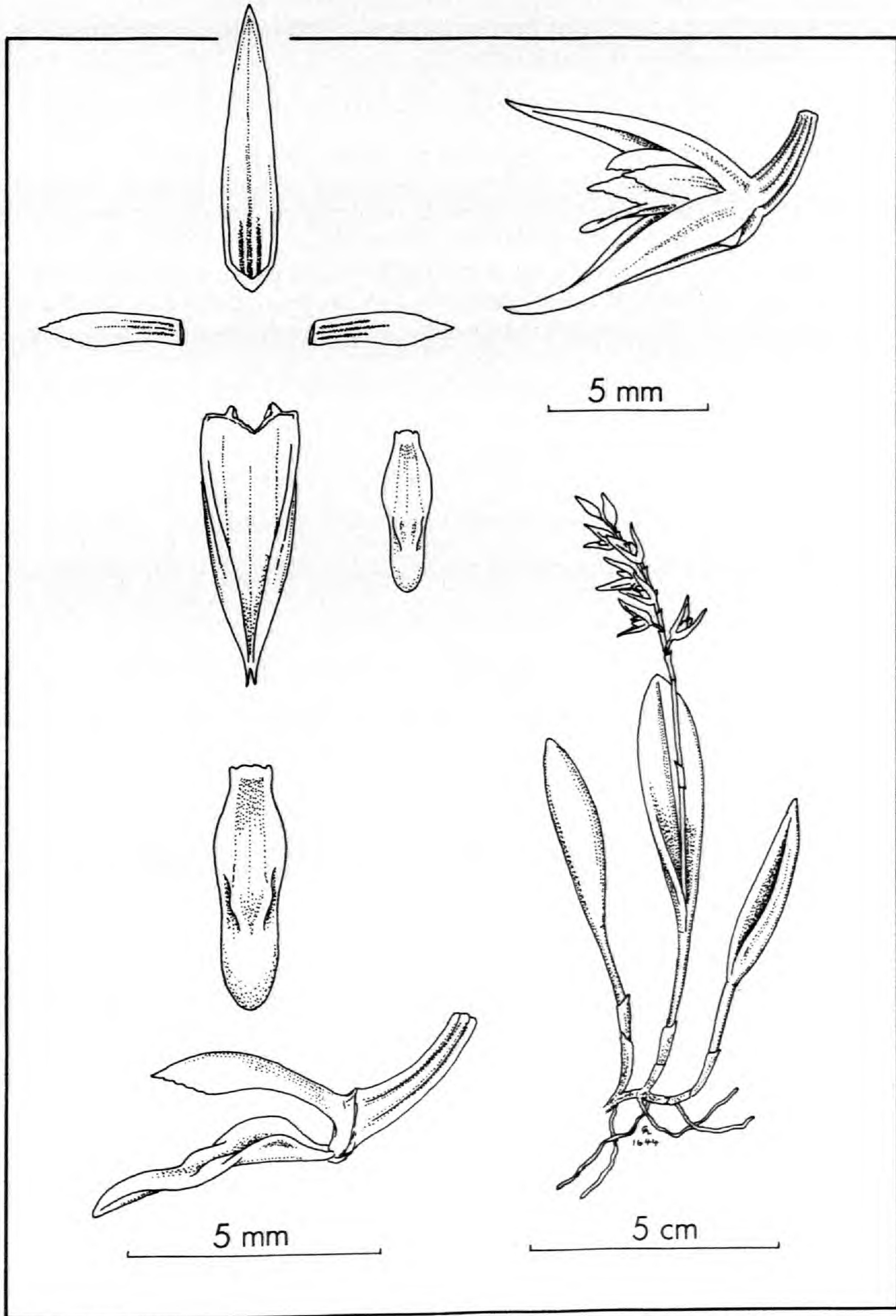


Plate 7. *Pleurothallis boliviana* Rchb. f.

Pleurothallis subgen. **Aenigma** Luer, subgen. nov.Type: *Pleurothallis schizopogon* Luer, Selbyana 5:179, 1979.Ety.: From the Latin *aenigma*, "an enigma," referring to the puzzling relationships of the species.

Plantae parvae rhizomate repenti vel ascendenti ramicaulibus abbreviatis fasciculatis. Racemus successiviflorus. Petala evoluta vel vestigialia. Columna cylindrica subclavata cum anthera et stigmate apicalibus, pede columnae obsolescenti vel nullo.

This subgenus is characterized by the shortly repent, ascending rhizome with more or less fasciculated, abbreviated ramicauls. The successively flowered inflorescence is produced with an annulus. The ovaries are spiculate except in one species. The terete, essentially footless column is more or less swollen at the non-hooded apex where the anther and stigma are apical.

The few species are Andean in origin. Their morphology strongly suggests an ancestor in common with the genus *Lepanthes*.

Two sections may be recognized.

KEY TO THE SECTIONS OF SUBGEN. *AENIGMA*

- 1 Petals simple or vestigial; ovary echinate *A. sect. Aenigmata*
 1' Petals vestigial; ovary glabrous *A. sect. Vestigipetalae*

Pleurothallis subgen. **Aenigma** sect. **Aenigmata** Luer, sect. nov.Type: *Pleurothallis schizopogon* Luer, Selbyana 5:179, 1979.

Ovarium echinatum.

This section of four species is distinguished by the long-spiculate ovary, the semiconnate lateral sepals, and the column shorter than the lip. One species has vestigial petals.

Species: *P. dalstroemii* Luer*P. ibex* Luer Plate 8.*P. schizopogon* Luer*P. trimytera* Luer & Escobar**Pleurothallis** subgen. **Aenigma** sect. **Vestigipetalae** Luer, sect. nov.Type: *Pleurothallis vestigipetala* Luer, Selbyana 3:404, 1977.Ety.: From the Latin *vestigipetalus*, "with vestigial petals," referring to the microscopic petals.

Ovarium glabrum. Petala vestigialia.

In addition to the criteria for the subgenus this monotypic section is characterized by the glabrous ovary, free sepals, vestigial petals, and a terete column longer than the simple lip appressed beneath.

Species: *P. vestigipetala* Luer Plate 9.

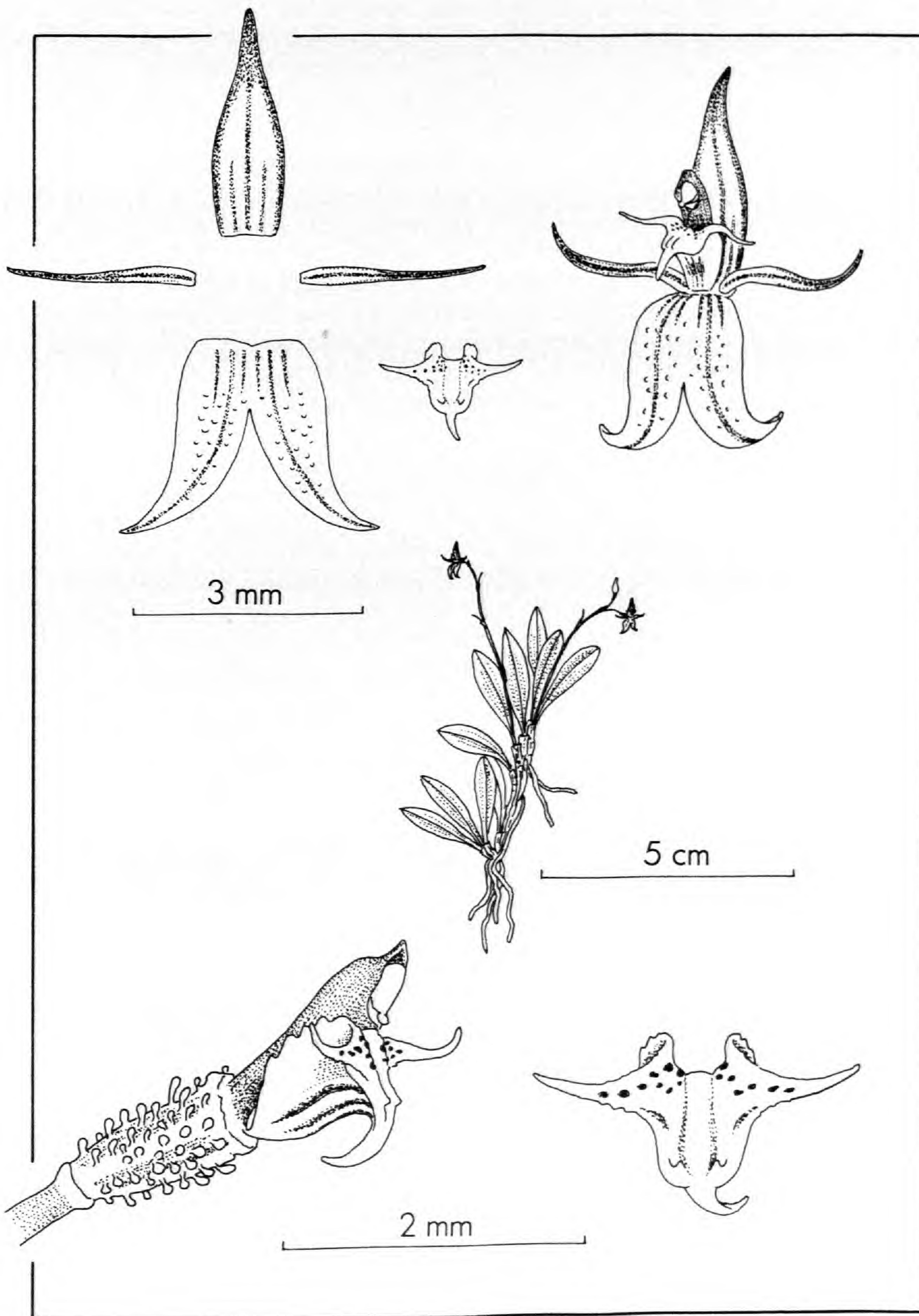


Plate 8. *Pleurothallis ibex* Luer

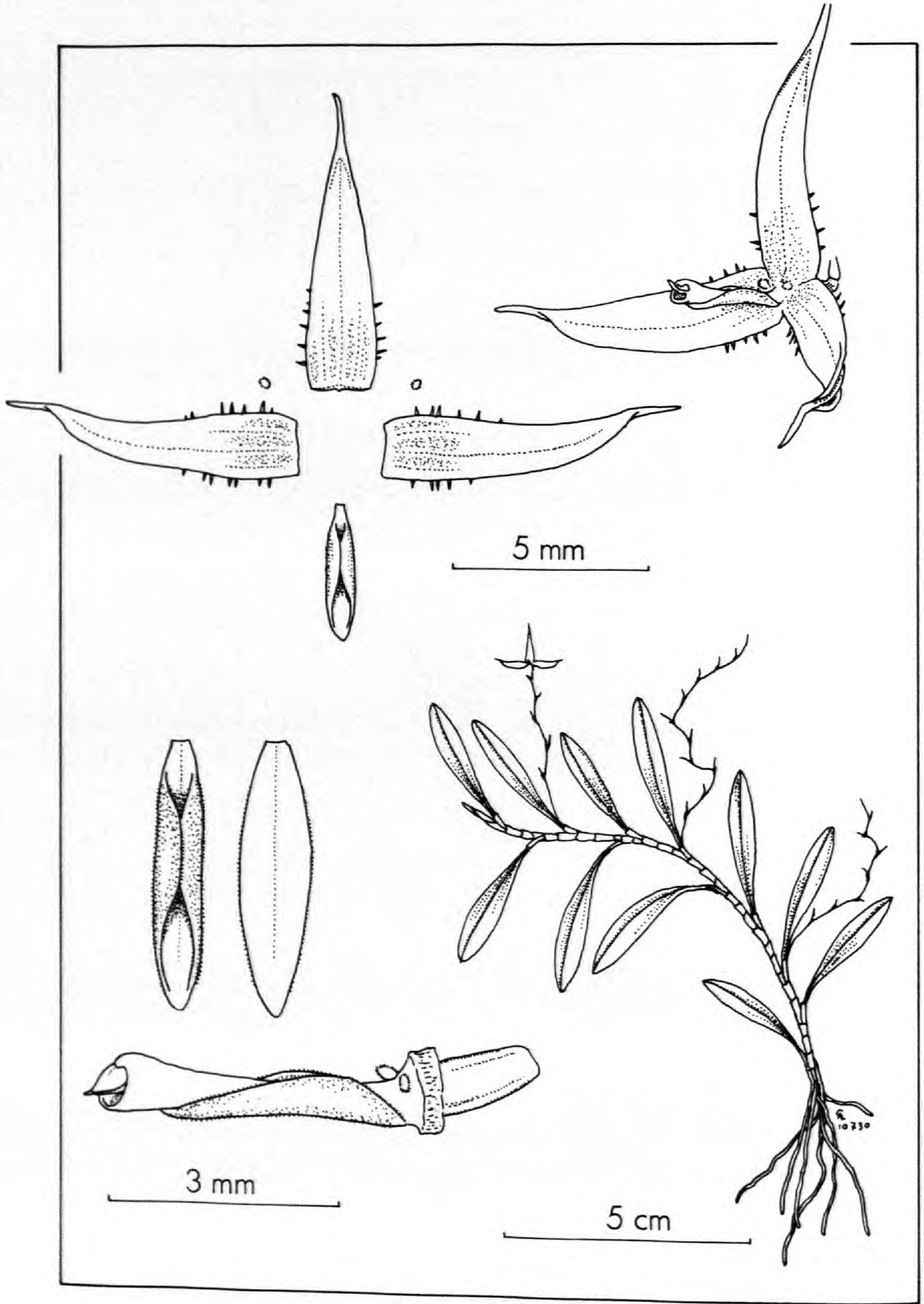


Plate 9. *Pleurothallis vestigipetala* Luer

Pleurothallis subgen. **Ancipitia** Luer, subgen. nov.

Type: *Pleurothallis anceps* Luer, Selbyana 5:159, 1979.

Ety.: From the Latin *anceps*, "two-headed," referring to the laterally compressed ramicaul.

Ramicaules compressi argute ancipites vel tetragoni. Flores solitarii fasciculati longipedunculati. Sepala membranacea cum sepalis lateralibus connata. Petala incrassata. Labella multiformia et columnae multifformes.

This subgenus is characterized by the sharply laterally compressed ramicauls, two-edged except in one species that is four-edged. The leaves are cordate and sessile. The solitary flowers are long-pedicellate and produced in a fascicle at the base of the leaf. No annulus is present.

The sepals are more or less membranous, the laterals connate. The petals are thickened toward the apex, and the lips are diversely modified, often into bizarre shapes resembling insects or the heads of animals with ears or horns. The column may be short or long, stout or slender, sometimes lightly winged or toothed. The anther may be apical or subapical, usually partially exposed. The column-foot may be short and thick or essentially absent. In spite of the extreme variations in the morphology of the lips and column, this group of species is homogeneous in the morphology of the ramicauls, leaves, peduncles, sepals and petals. Perhaps it could be said that the group is homogeneous in the heterogeneousness of the lips and columns. This is an example of how obviously closely allied species can differ so widely in modifications of basic organs.

In subgen. *Acianthera* sect. *Sicaria* subsect. *Pectinatae* the ramicauls are similarly compressed, but the fleshy flowers, typical of the subgen. *Acianthera*, are produced in a raceme. The ramicauls of some species of subgen. *Pleurothallis* sect. *Macrophyllae-Fasciculatae* are lightly compressed, but if so, without two sharp edges.

The species are distributed from Central America through the Andes.

Species:

- P. anceps* Luer
- P. anthrax* Luer & Escobar
- P. arietina* Ames
- P. caniceps* Luer
- P. caprina* Luer & Escobar
- P. crocodeiliceps* Rchb. f.
- P. dunstervillei* Foldats
- P. duplex* Luer & Escobar
- P. eumecocaulon* Schltr.
- P. gratiosa* Rchb. f.
- P. harpago* Luer
- P. instar* Luer
- P. membracidoides* Luer & Vásquez
- P. nelsonii* Ames
- P. niveoglobula* Luer
- P. praecipua* Luer
- P. solium* Luer
- P. tetragona* Luer & Escobar
- P. viduata* Luer
- P. vorator* Luer & Vásquez Plate 10.

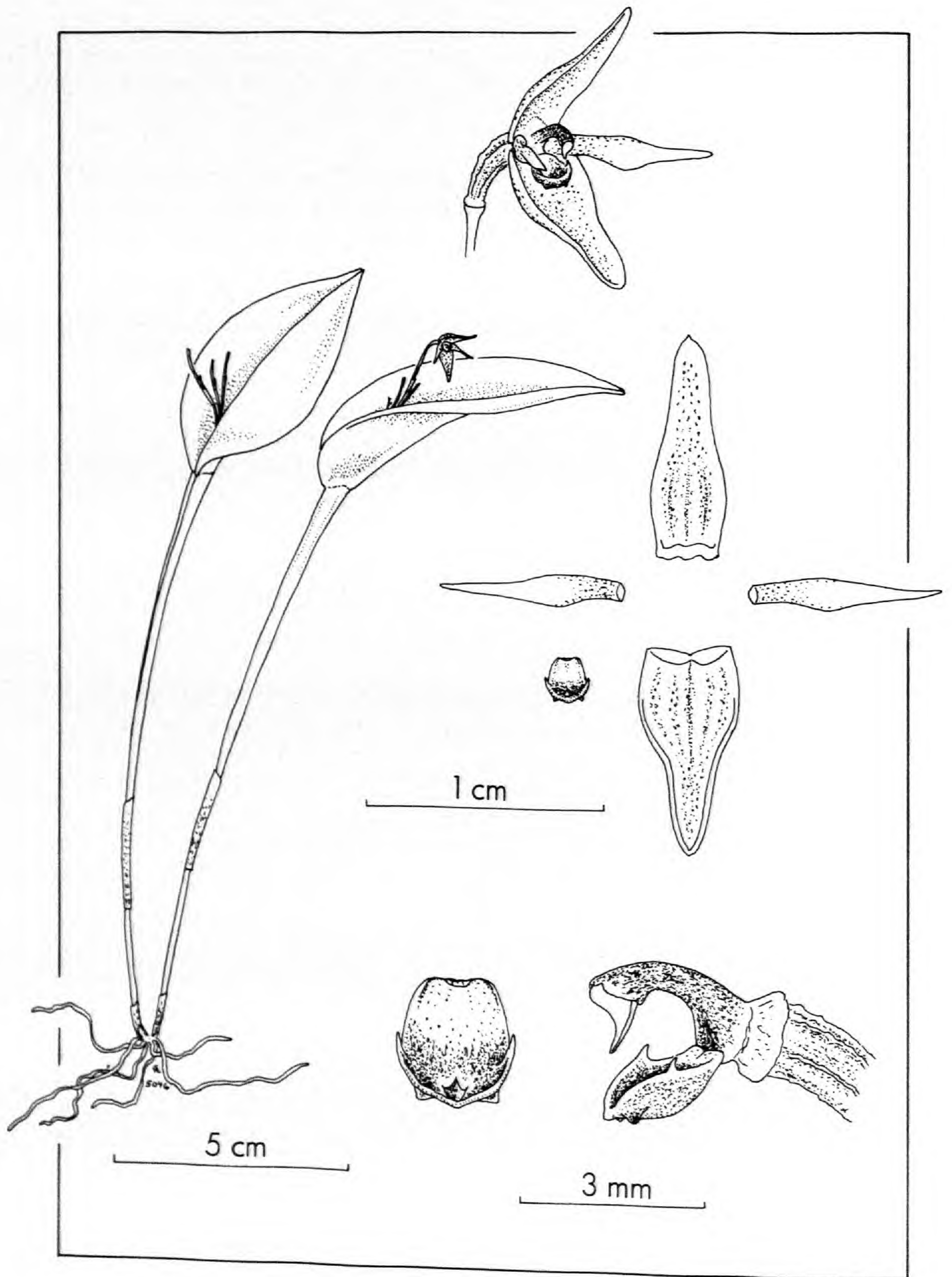


Plate 10. *Pleurothallis vorator* Luer & Vásquez

Pleurothallis subgen. **Andreettaea** (Luer) Luer, stat. nov.Type: *Andreettaea ocellus* Luer, *Selbyana* 2:183, 1978.

Ety.: Named in honor of Padre Angel Andreetta of Cuenca, Ecuador.

Bas.: *Andreettaea* Luer, *Selbyana* 2:183, 1978.Type: *Andreettaea ocellus* Luer

This Ecuadorian species treated here in a monotypic subgenus was first described in a monotypic genus to satisfy the unusual condition of a "window" on the "top" of the flower. Vegetatively the species is similar to many others: small and caespitose with narrowly obovate leaves borne by short ramicauls with an annulus. The non-resupinate flowers are borne successively in a few-flowered raceme about as long as the leaves. The shortly acuminate sepals are connivent to the apex except for the lateral sepals which part in the middle on the dorsum of the flower to form a tiny, elliptical window to the interior. The species seems most closely allied to the species of *P.* subgen. *Specklinia*.

Species: ***Pleurothallis ocellus*** (Luer) Luer, comb. nov. Plate 11.Bas.: *Andreettaea ocellus* Luer, *Selbyana* 2:183, 1978.**Pleurothallis** subgen. **Apoda-Prorepentia** Luer, nom. nov.Type: *Epidendrum testaefolium* Sw., *Prodr.* 122, 1788. [*Pleurothallis testifolia* (Sw.) Lindl., *Ann. Mag. Nat. Hist.* ser 3, 1:328, 1858, as *Pleurothallis testaefolia*]Ety.: From the Greek *apodion*, "footless," and the Latin *prorepens*, "creeping," referring to the habit of the plant.Syn.: *Pleurothallis* sect. *Apodae-Prorepentes* Lindl., *Folio Orchid. Pleuroth.* 42, 1859.Lectotype here designated: *Pleurothallis testifolia* (Sw.) Lindl., *Ann. Mag. Nat. Hist.* ser. 3, 1:328, 1858, as *P. testaefolia*. This species is chosen from ten species listed by Lindley in sect. *Apodae-Prorepentes*. It is the only species typical for the subgenus and not accommodated by *Barbosella*, *Barbrodria*, and four other subgenera of *Pleurothallis*.

This small group of probably not too closely allied species is brought together by the unusual habit. The subgenus is characterized by the long-repent, more or less pendent rhizome with prostrate to pendent, short ramicauls, and comparatively large, overlapping, more or less pendent leaves. The flowers are produced from within a spathe, usually large and inflated, at the base of the leaf without an annulus. The flowers are often hidden within the spathe. The sepals are variously connate. The lips are variable. The column is elongated with a partially hooded anther.

The species are primarily Andean in distribution.

Species: *P. calypso* Luer Plate 12.*P. dodsonii* Luer*P. kateora* (Garay) Luer*P. portilloi* Luer & Escobar*P. testifolia* (Sw.) Lindl.

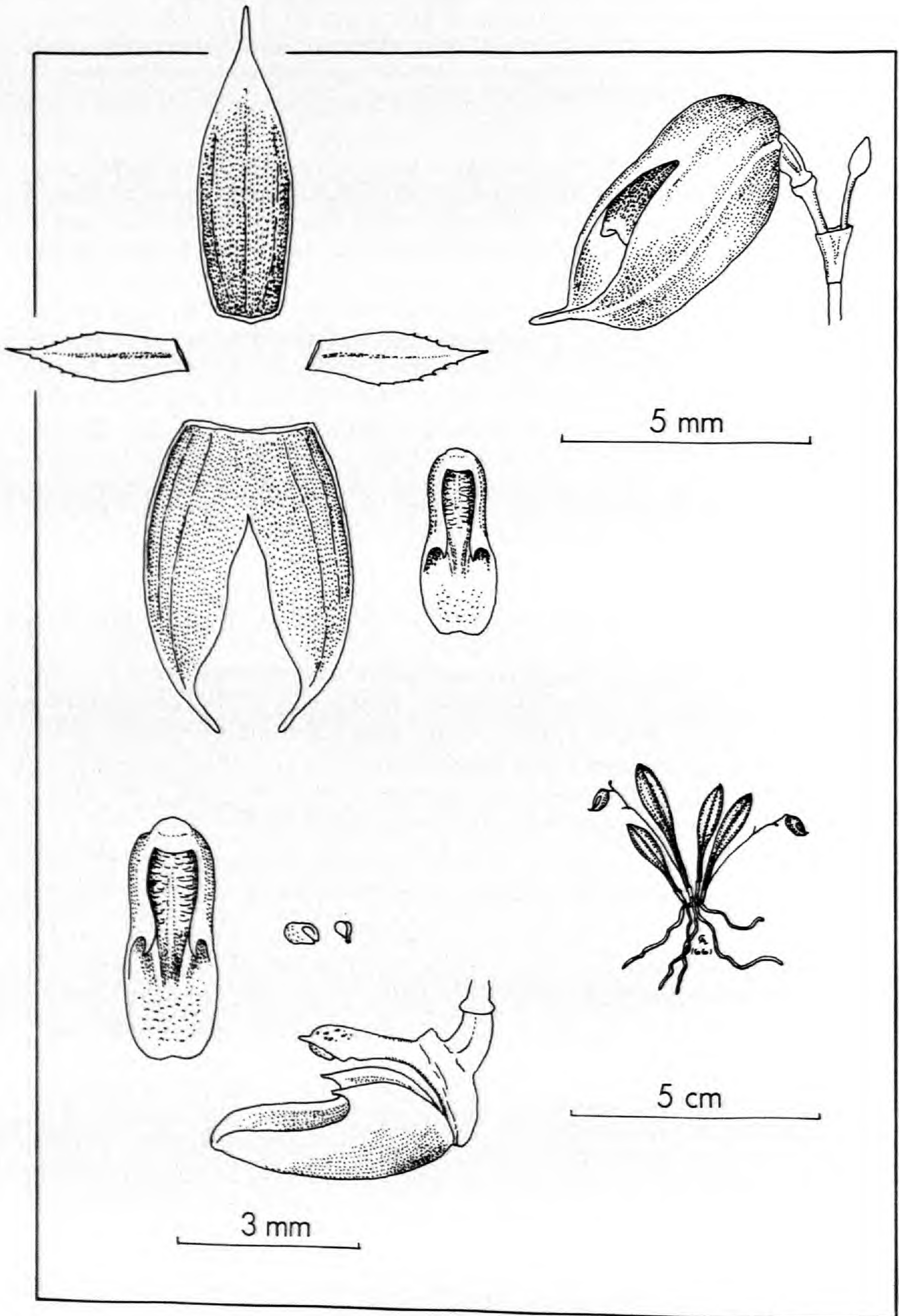


Plate 11. *Pleurothallis ocellus* (Luer) Luer

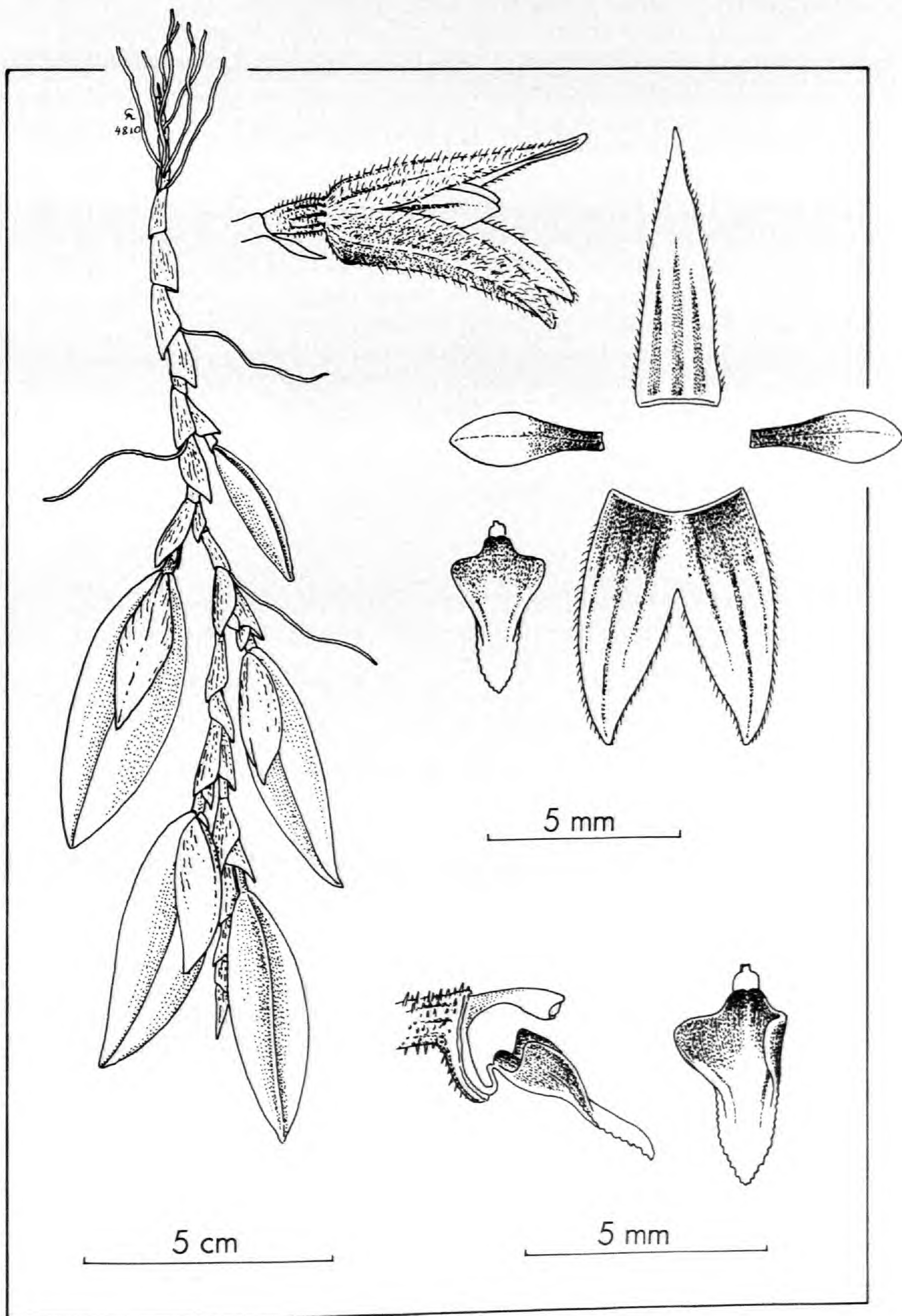


Plate 12. *Pleurothallis calypso* Luer

Pleurothallis subgen. **Arthrosia** Luer, subgen. nov.

Type: *Pleurothallis auriculata* Lindl., Comp. Bot. Mag. 2:356, 1836.

Ety.: From the Greek *arthron*, "a joint," referring to the articulation of the lip and column-foot.

Sepala lateralia connata. Labellum basi callo transversali cum pede columnae articulado.

This subgenus of Brazilian and Bolivian species (one species in the Lesser Antilles) is distinguished from all others of the genus by the transverse callus across the base of the lip that articulates with a transverse cavity across the base of the column-foot. The apex of the column is toothed or lacerate, partially covering the anther.

The ramicauls, caespitose or repent, round to laterally compressed or triquetrous above, bear sessile leaves and racemes without an annulus.

Representative species:

- P. auriculata* Lindl. Plate 13.
P. barbacenensis Barb. Rodr.
P. capillaris Lindl.
P. duartei Hoehne
P. hygrophila Barb. Rodr.
P. longicaulis Lindl.
P. malachantha Rchb. f.
P. muscosa Barb. Rodr.

Pleurothallis sieberi Luer, nom. nov.

Syn.: *Specklinia floribunda* Lindl., Gen. Sp. Orch. Pl. 9, 1830.

Pleurothallis floribunda (Lindl.) Lindl., Edwards' Bot. Reg. 28(Misc.):73, 1842, non Poepp. & Endl. 1836.

Pleurothallis ophioglossoides sensu Garay & Sweet, J. Arnold Arbor. 53:391, 1972, as to Plumier citation, not as to type of *Epidendrum ophioglossoides* Jacq. 1760 = *Stelis ophioglossoides* (Jacq.) Sw., 1799 (see Taxon 32:282, 1983).

Pleurothallis subgen. **Crocodeilantho** (Rchb. f. & Warsc.) Luer, stat. nov.

Type: *Crocodeilantho xiphizusa* Rchb. f. & Warsc., Bonplandia 2:114, 1854. [*P. xiphizusa* (Rchb. f.) Rchb. f., Ann. Bot. Syst. 6:172, 1861]

Ety.: From the Greek *krokodilanthos*, "crocodile-flower," in allusion to the appearance of the comparatively large flowers with gaping mouth.

Bas.: *Crocodeilantho* Rchb. f. & Warsc., Bonplandia 2:114, 1854.

Type: *Crocodeilantho xiphizusa* Rchb. f. & Warsc., Bonplandia 2:114, 1854.

Syn.: *Pleurothallis* sect. *Spathaceae* Lindl., Folia Orchid. *Pleuroth.* 2, 1859.

Lectotype here designated: *Crocodeilantho xiphizusa* Rchb.f. Warsc. This species, the type of the subgenus, is chosen from 11 listed by Lindley in sect. *Spathacea*.

Ety.: From the Latin *spathaceus*, "with a spathe," referring to the prominent spathe subtending the inflorescence.

Syn.: *Stelis* sect. *Tubuliflorae* Barb. Rodr., Gen. Sp. Orch. Nov. 2:83, 1882.

Type: *Stelis deregularis* Barb. Rodr., Gen. Sp. Orch. Nov. 2:94, 1882 [*P. deregularis* (Barb. Rodr.) Luer, Selbyana 2:385, 1978]

Ety.: From the Latin *tubuliflorus*, "with tubular flowers," referring to the shape of the flowers.

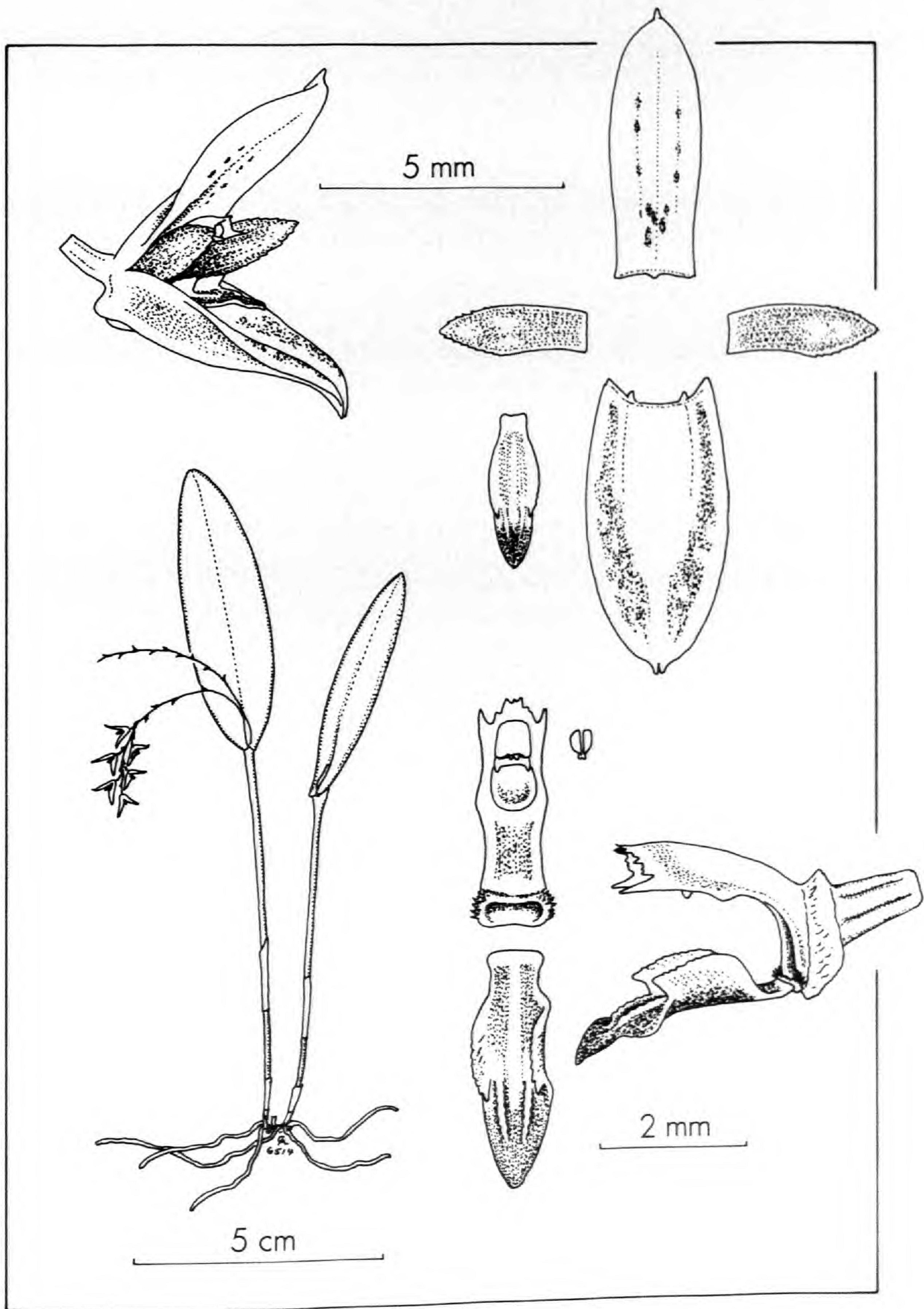


Plate 13. *Pleurothallis auriculata* Lindl.

Syn.: *Pseudostelis* Schltr., Anexos Mem. Inst. Butantan Secc. Bot. 1(4):36, 1922.

Lectotype here designated: *Stelis deregularis* Barb. Rodr. This species, the type of *Stelis* sect. *Tubuliflorae* Barb. Rodr., is chosen from three listed by Schlechter for *Pseudostelis*.

Ety.: From the Greek *pseudo-*, "false," referring to the similarity of the species to those of the genus *Stelis*.

The numerous species of this subgenus, widely distributed in the Neotropics, are usually large and robust. The stout ramicauls (with few exceptions) are densely fasciculate with large, papery, inflated sheaths, the lower sheaths often surrounding several stems. The rhizome of *P. orectopus* is long-repent. The ramicauls of some species are prolific. The leaf is either sessile or petiolate.

One to many racemes emerge laterally with a spathe that is usually conspicuous and foliaceous below or very near the apex of the ramicaul and associated with a distinct annulus. The lateral sepals, commonly pubescent within, are connate or semiconnate. The petals are membranous, short, entire, obtuse to rounded. The lip, whether one-, two- or three-lobed, usually has a pair of calli somewhere near the middle or on the lateral lobes if present. The broad base is more or less concave below a transverse bar, but sometimes this feature is obscure. The column is short with an exposed apical or subapical anther and stigma. The thick, short base of the column is more or less bulbous and articulates with the cavity at the base of the lip, reminiscent of the ball-and-socket articulation seen in the genus *Barbosella*. In some species (e.g. *P. cauliflora* and *P. xiphizusa*) the articulation is "ankylosed," i.e., the parts of the joint more or less adnate and immobile. This isolated feature had been used to distinguish Reichenbach's genus *Croco-deilanthe*. Occasionally the lip seems to be merely broadly hinged to the column-foot.

Representative species:

- | | |
|--|--------------------------------------|
| <i>P. atacasana</i> Luer | <i>P. micklowii</i> Luer & Vásquez |
| <i>P. batillacea</i> Luer | <i>P. moritzii</i> Rchb. f. |
| <i>P. cassidis</i> Lindl. | <i>P. nivalis</i> Luer |
| <i>P. cauliflora</i> Lindl. | <i>P. orectopus</i> Luer |
| <i>P. crassipes</i> Lindl. | <i>P. palmiformis</i> Lindl. |
| <i>P. deregularis</i> (Barb. Rodr.) Luer | <i>P. pichinchae</i> Rchb. f. |
| <i>P. divaricans</i> Schltr. | <i>P. pleiostachys</i> Schltr. |
| <i>P. domingensis</i> Cogn. | <i>P. pristis</i> Lehm. & Krzl. |
| <i>P. expansa</i> Lindl. Plate 14. | <i>P. procera</i> Luer & Vásquez |
| <i>P. floribunda</i> Poepp. & Endl. | <i>P. quadrata</i> C. Schweinf. |
| <i>P. fons-florum</i> Lindl. | <i>P. quinquicallosa</i> Luer |
| <i>P. galeata</i> Lindl. | <i>P. roseopunctata</i> Lindl. |
| <i>P. helleri</i> Hawkes | <i>P. scansor</i> Luer |
| <i>P. hopfiana</i> Schltr. | <i>P. simplicilabia</i> C. Schweinf. |
| <i>P. laevigata</i> Lindl. | <i>P. sodiroi</i> Schltr. |
| <i>P. lamprochlamys</i> Schltr. | <i>P. stelidiopsis</i> Luer |
| <i>P. leopardina</i> Luer | <i>P. tanyrhina</i> Luer & Escobar |
| <i>P. ligulata</i> Lindl. | <i>P. taxis</i> Luer |
| <i>P. magdalenae</i> Rchb. f. | <i>P. tortilis</i> Luer & Escobar |
| <i>P. mandonii</i> Rchb. f. | <i>P. tungurahuae</i> Lehm. & Krzl. |
| <i>P. maxima</i> Luer | <i>P. velaticaulis</i> Rchb. f. |
| <i>P. melanostele</i> Luer & Vásquez | <i>P. xiphizusa</i> Rchb. f. |

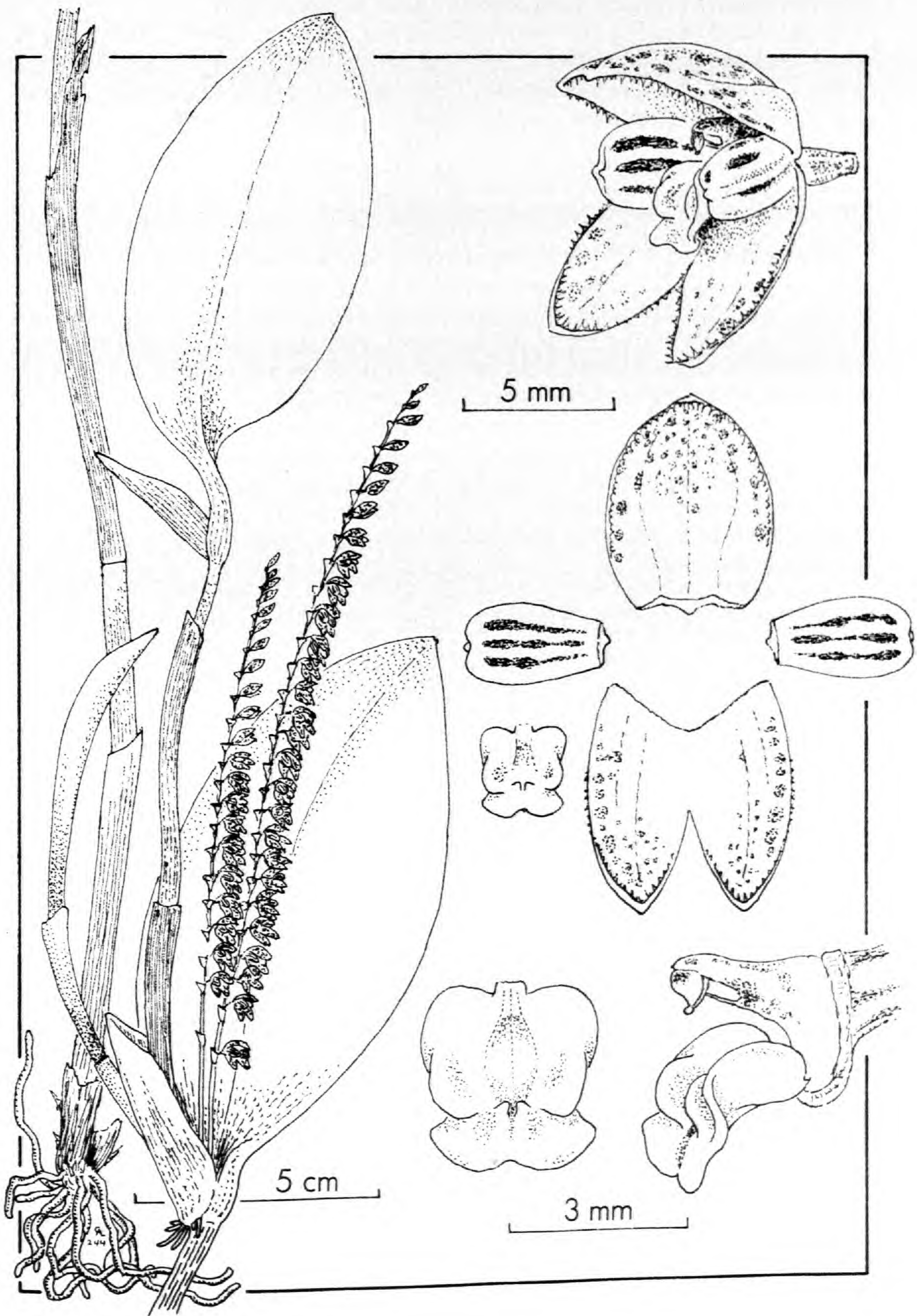


Plate 14. *Pleurothallis expansa* Lindl.

Pleurothallis subgen. **Dracontia** Luer, subgen. nov.

Type: *Pleurothallis tuerckheimii* Schltr., Repert. Spec. Nov. Regni Veg. 10:292, 1912.

Ety.: From the Greek *drakon*, "a dragon," referring to the fierce-looking flowers

Herbae robustae ramicaulibus bene effectis. Inflorescentia racemosa. Sepala lateralia connata. Petala apice rotundata concava extus papillosa. Labellum crassum lobis basalibus tenuibus. Columna brevis dentata apice pedis libero.

This subgenus of Central American and Caribbean species is characterized by the well-developed ramicaul with a tubular sheath near the middle and subtended by two or three others at the base. The raceme, simultaneously or successively flowered, emerges with a spathe from the apex of the ramicaul, but the annulus is sometimes ill-defined or obscured by the abscission layer. The lateral sepals are connate to near the apex. The apex of the petals is usually rounded, more or less concave, and callous or verrucose on the convex external surface. The lip is thick with erect, thin, winglike basal lobes. The column is short with a toothed apex that often projects far beyond the anther cap. The column-foot is thick with the end of the ovary, but the apex projects free from the ovary.

Species: *P. carnosilabia* Heller & Hawkes

P. cobanensis Schltr.

P. convallaria Schltr.

P. dracontea Luer Plate 15.

P. macrantha L.O.Wms.

P. oblongifolia Lindl.

P. pachyglossa Lindl.

P. powellii Schltr.

P. ramonensis Schltr.

P. thymochila Luer

P. tuerckheimii Schltr.

Pleurothallis subgen. **Dresslera** Luer, subgen. nov.

Type: *Pleurothallis dressleri* Luer, Selbyana 3:98, 1976.

Ety.: Named in honor of R. L. Dressler of the Smithsonian Tropical Research Institute, renowned investigator of the Orchidaceae.

Planta repens minutissima. Flos grandis. Labellum suborbiculatum serrulatum callo basali erecto verrucoso. Columna late alata.

This subgenus is composed of one minute, floriferous species without close relatives. The tiny, round, striped, prostrate leaves are produced by a repent, branching rhizome that forms dense mats. The solitary flower is twice to four times as large as the leaf, and the peduncle emerges from the short ramicaul with an annulus. The margin of the suborbicular lip is serrulate; the disc has a pair of serrulate lamellae. At the base is an erect, verrucose callus. The column is broadly winged with a partially hooded, subapical anther.

Species: *P. dressleri* Luer Plate 16.

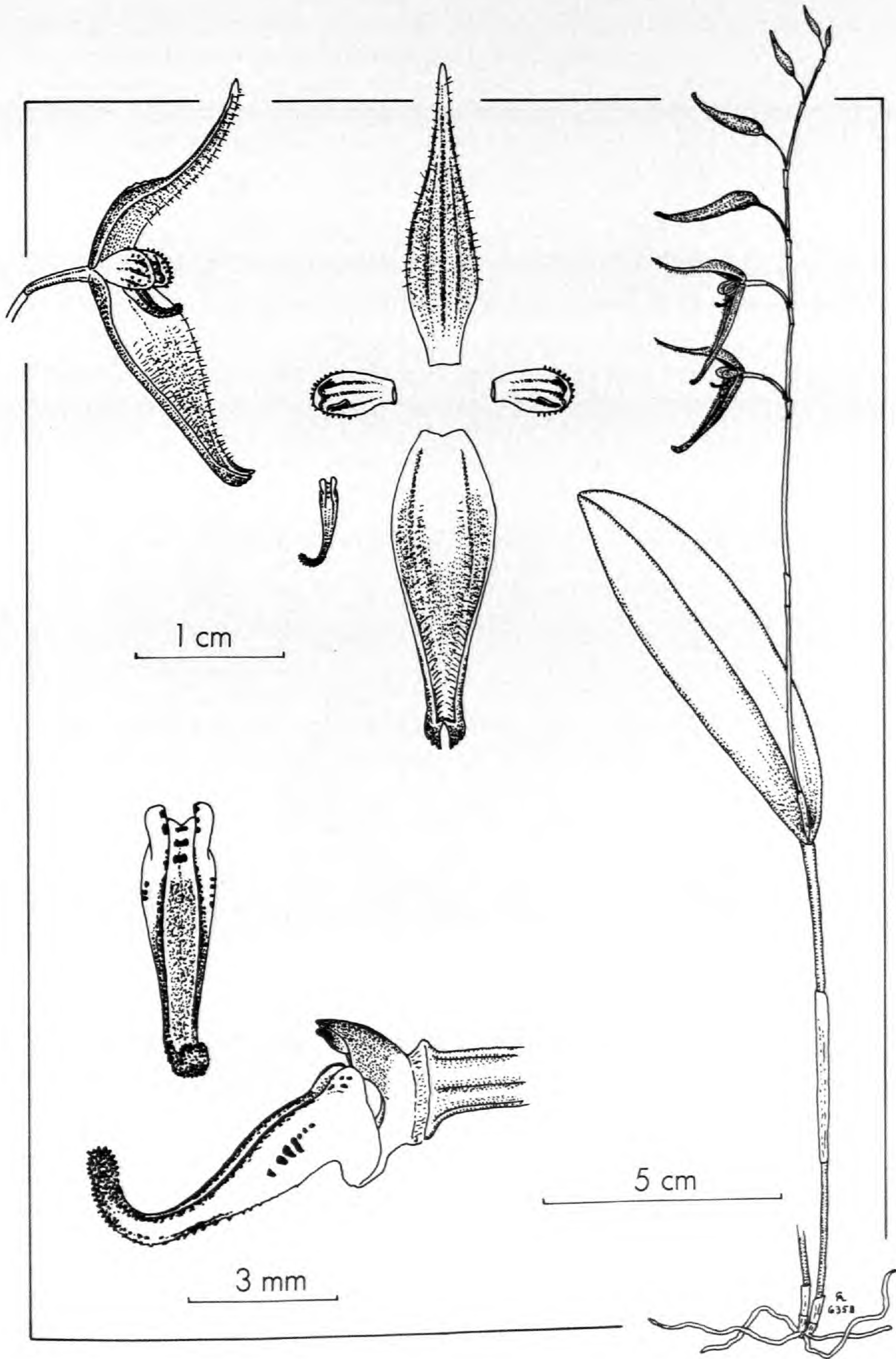


Plate 15. *Pleurothallis dracontea* Luer

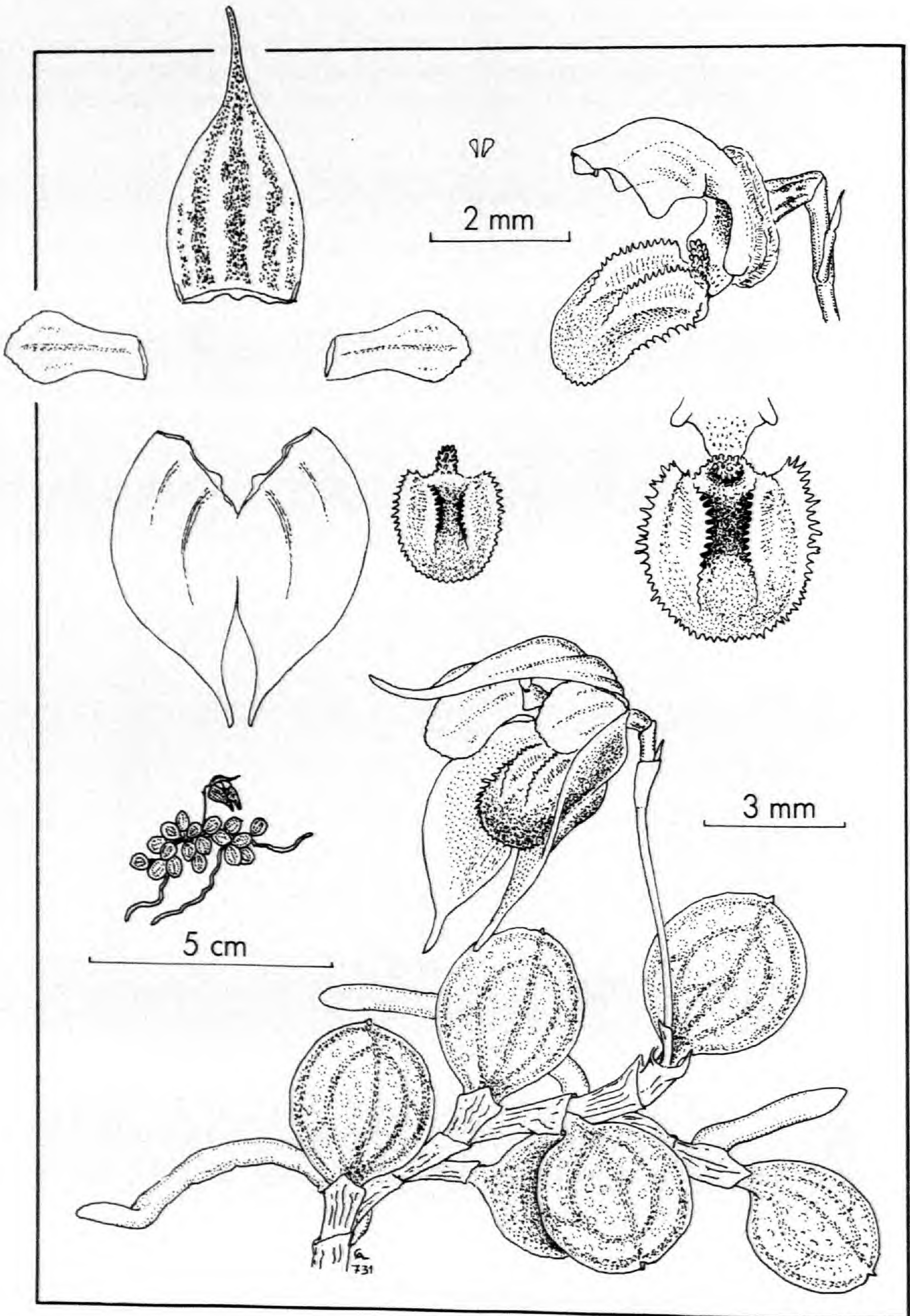


Plate 16. *Pleurothallis dressleri* Luer

Pleurothallis subgen. **Elongatia** Luer, nom. nov.

Type: *Pleurothallis restrepioides* Lindl., Comp. Bot. Mag. 2:356, 1836.

Ety.: From the Latin *elongatus*, "elongated," referring to the long inflorescences.

Syn.: *Pleurothallis* sect. *Elongatae* Lindl., Edwards' Bot. Reg. 28(Misc.):68, 1842.

Lectotype here designated: *Pleurothallis restrepioides* Lindl. This species is chosen from 43 mostly non-allied species included in sect. *Elongatae* by Lindley. This is the only species listed that is referable to this subgenus.

Inflorescentia racemosa. Sepala lateralia connata. Labellum pede ad basin columnae alatae adnatum.

This subgenus is characterized by an elongated inflorescence, successively or simultaneously flowered, the racemes emerging from the ramicaul with an annulus. The lateral sepals are connate into a synsepal. The base of the lip is broadly adnate to the short, thick, pedestal-like column-foot. The column is elongate with usually prominent wings.

Species: *P. carpintera* Schltr.

P. excelsa Garay

P. guttata Luer

P. janetiae Luer Plate 17.

P. restrepioides Lindl.

Pleurothallis subgen. **Empusella** Luer, subgen. nov.

Type: *Pleurothallis endotrachys* Rchb. f., Linnaea 41:95, 1876.

Ety.: From the Latin *empusella*, "a little hobgoblin," referring to the fancied appearance of the flowers.

Habitus *Masdevalliae* Ruiz & Pav. similis. Pedunculus longus ancipitius. Flores carnosissimi, sepalis liberis intus verrucosissimis. Labellum oblongum bicarinatum. Columna alata pede liberi incurvato. Pollinia duo pyriformia.

This bizarre species, treated here as a monotypic subgenus, has been known during the past century by four specific epithets in four genera. It is without close relatives, and it is found from southern Mexico through Central America and Colombia to Venezuela. Vegetatively it is similar to many species of *Masdevallia*: narrowly obovate, coriaceous leaves gradually tapering into a channeled petiole and much longer than the abbreviated ramicaul. The racemose inflorescence emerges with an annulus below the abscission layer. The peduncle and floral bracts are laterally compressed. The raceme gradually lengthens over a long period of time as the large, rigid, fleshy flowers are produced. The sepals are essentially free and markedly verrucose within, varying in color from green or orange to deep red-purple. The oblong, minutely verrucose petals arise from the sides of the broad column-foot. The lip is oblong, arcuate, bicarinate, and hinged to the free, incurved base of the column-foot. The column is winged and denticulate with the ventral anther hooded. Two pyriform pollinia are present.

Species:

Pleurothallis endotrachys Rchb. f., Linnaea 41:95, 1876. Plate 18.

Syn.: *Pleurothallis pfavii* Rchb. f., Flora 69:555, 1886.

Masdevallia platyrachis Rolfe, Gard. Chron. ser. 3, 4:178, 1888.

Pleurothallis platyrachis (Rolfe) Rolfe, J. Bot. 28:136, 1890.

Humboldtia endotrachys (Rchb. f.) Kuntze, Rev. Gen. Pl. 2:667, 1891.

Kraenzlinella platyrachis (Rolfe) Rolfe, Orchid Rev. 23:326, 1915.

Pleurothallis spectabilis Ames & Schweinf., Sched. Orchid. 8:34, 1925.

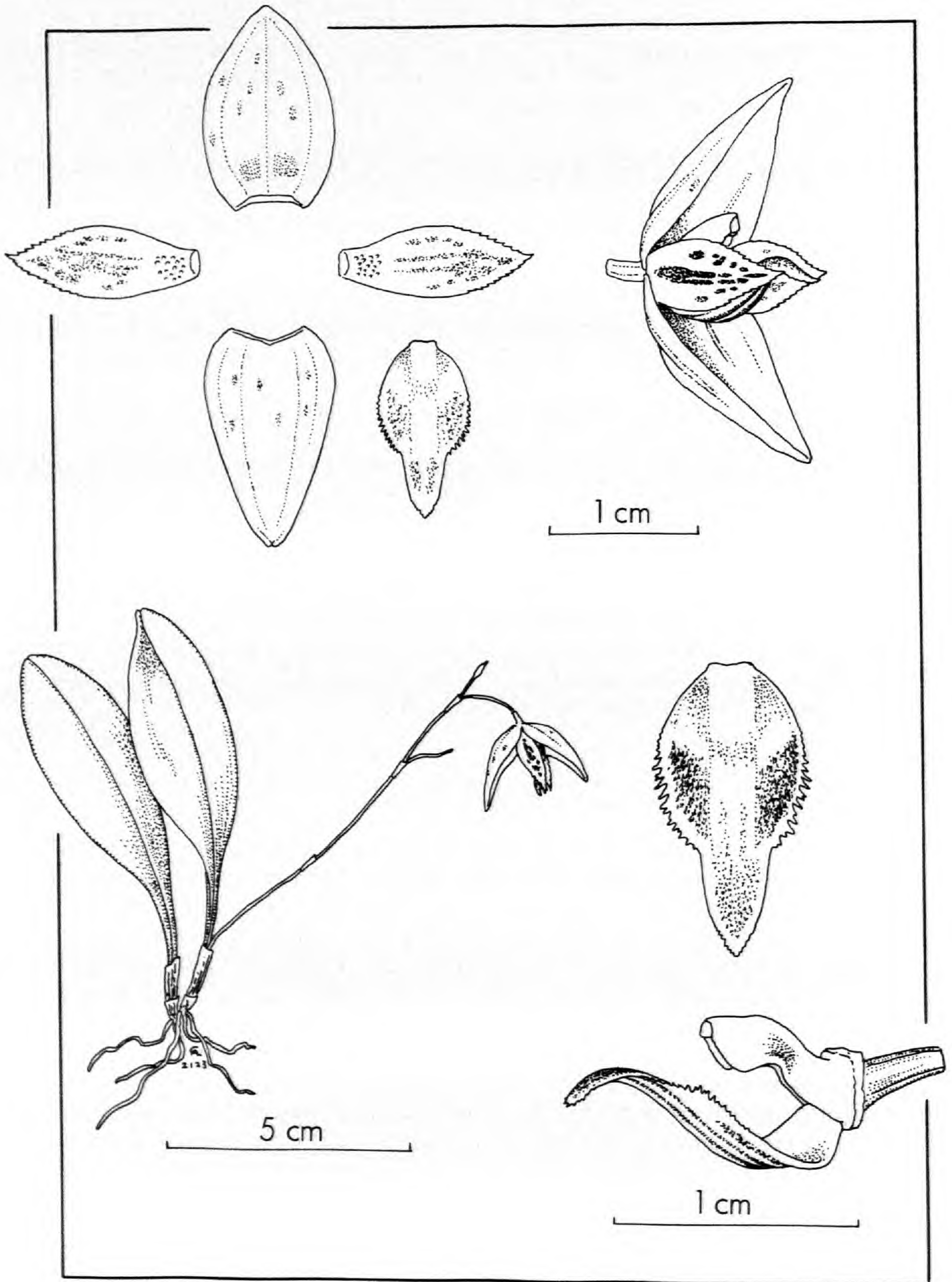


Plate 17. *Pleurothallis janetiae* Luer

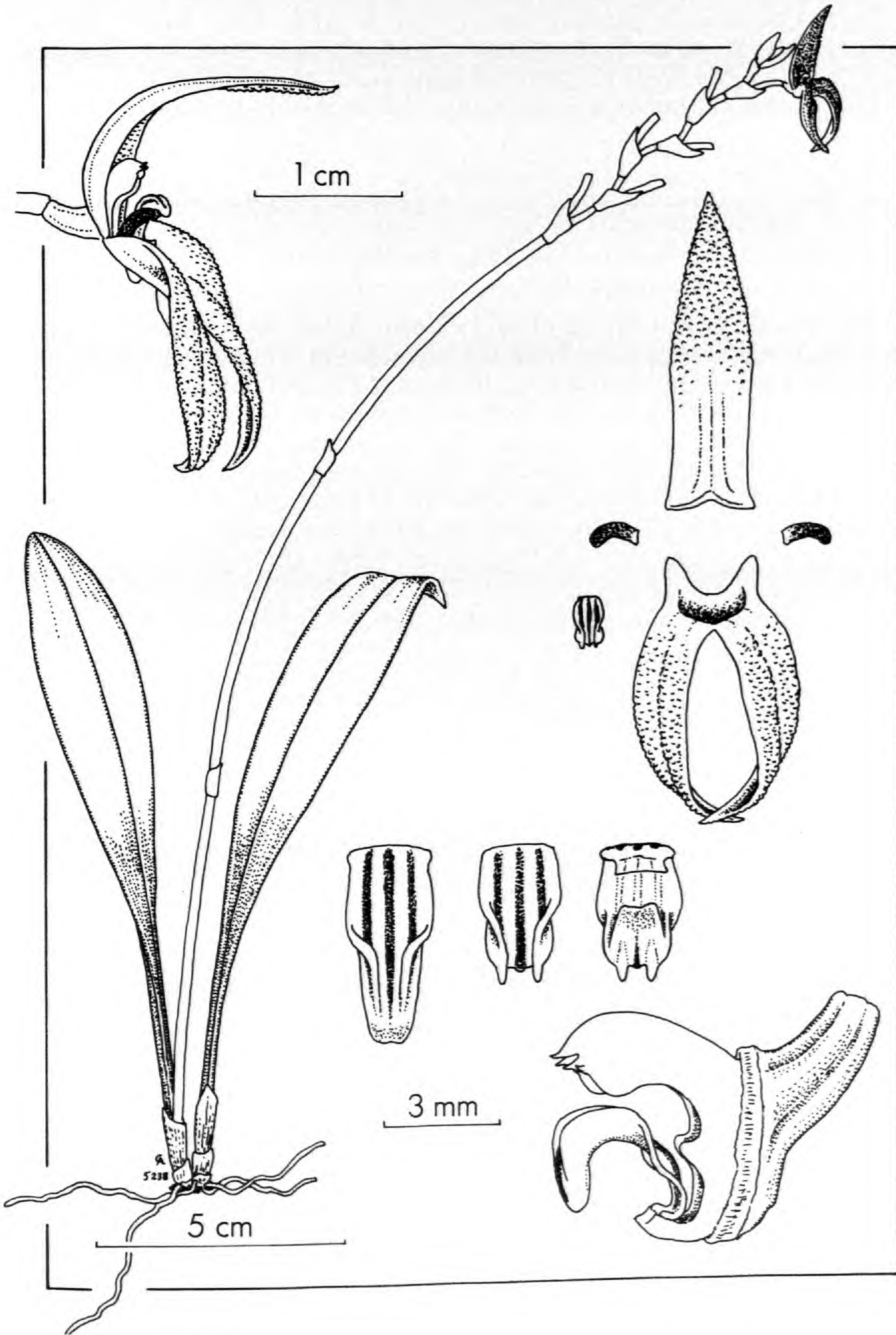


Plate 18. *Pleurothallis endotrachys* Rchb. f.

Pleurothallis subgen. **Kraenzlinella** (Kuntze) Luer, stat. nov.

Type: *Otopetalum tungurahuae* Lehm. & Krzl., Bot. Jahrb. Syst. 26:457, 1899. (*P. otopetalum* Schltr., Repert. Spec. Nov. Regni Veg. 10:292, 1912, not *P. tungurahuae* Lehm. & Krzl.)

Ety.: Named in honor of F. Kränzlin who worked in orchids.

Syn.: *Otopetalum* Lehm. & Krzl., Bot. Jahrb. Syst. 26:257, 1899, non Miquel 1856.

Type: *Otopetalum tungurahuae* Lehm. & Krzl.

Ety.: From the Greek *ous*, *otos*, "an ear," and *petalon*, "a petal," referring to the auricles on the petals.

Bas.: *Kraenzlinella* Kuntze, Lex. Gen. Phan. 310, 1903.

Type: *Otopetalum tungurahuae* Lehm. & Krzl.

This small Central American and Andean subgenus is characterized by a stout ramicaul shorter than the leaf it bears. The raceme is borne from the apex of the ramicaul at the base of the leaf without an annulus. The ovaries are spiculate, echinate, or with scale-like appendages. The flowers are large and fleshy with free sepals. Except for one species, the petals bear basal auricles. The lip is variable. The column is elongated, more or less clavate with the ventral anther hooded. The column-foot is short and thick with the end of the ovary.

Species: *P. erinacea* Rchb. f. Plate 19.
P. gigantea Lindl.
P. hintonii L.O.Wms.
P. lappago Luer
P. otopetalum Schltr.
P. shuarii Luer
P. sigmoidea Ames & Schweinf.

Pleurothallis subgen. **Masdevalliantha** Luer, subgen. nov.

Type: *Pleurothallis masdevalliopsis* Luer, Phytologia 44:170, 1979.

Ety.: From the genus *Masdevallia* and the Greek *anthos*, "flower," referring to the similarity of this species to *Masdevallia*.

Herba parva ramicaulibus abbreviatis. Sepala caudata. Petala membranacea. Labelum verrucosum bicallosum lobatum basi concavum. Columna brevis anthera et stigmatibus apicalibus, pede columnae libero articulato.

Vegetatively and florally the two small species brought together into this subgenus look like a *Masdevallia*. The subgenus is characterized by ramicauls shorter than the leaves, a solitary inflorescence that emerges laterally with an annulus and flowers with long-tailed sepals.

The petals are membranous without a callus. The base of the lip is concave to accommodate the free tip of the column-foot, the articulation occurring on the back surface of the free tip of the column-foot. The column is short with an unhooded apical anther and stigma.

Species: *P. longiserpens* C. Schweinf.

P. masdevalliopsis Luer Plate 20.

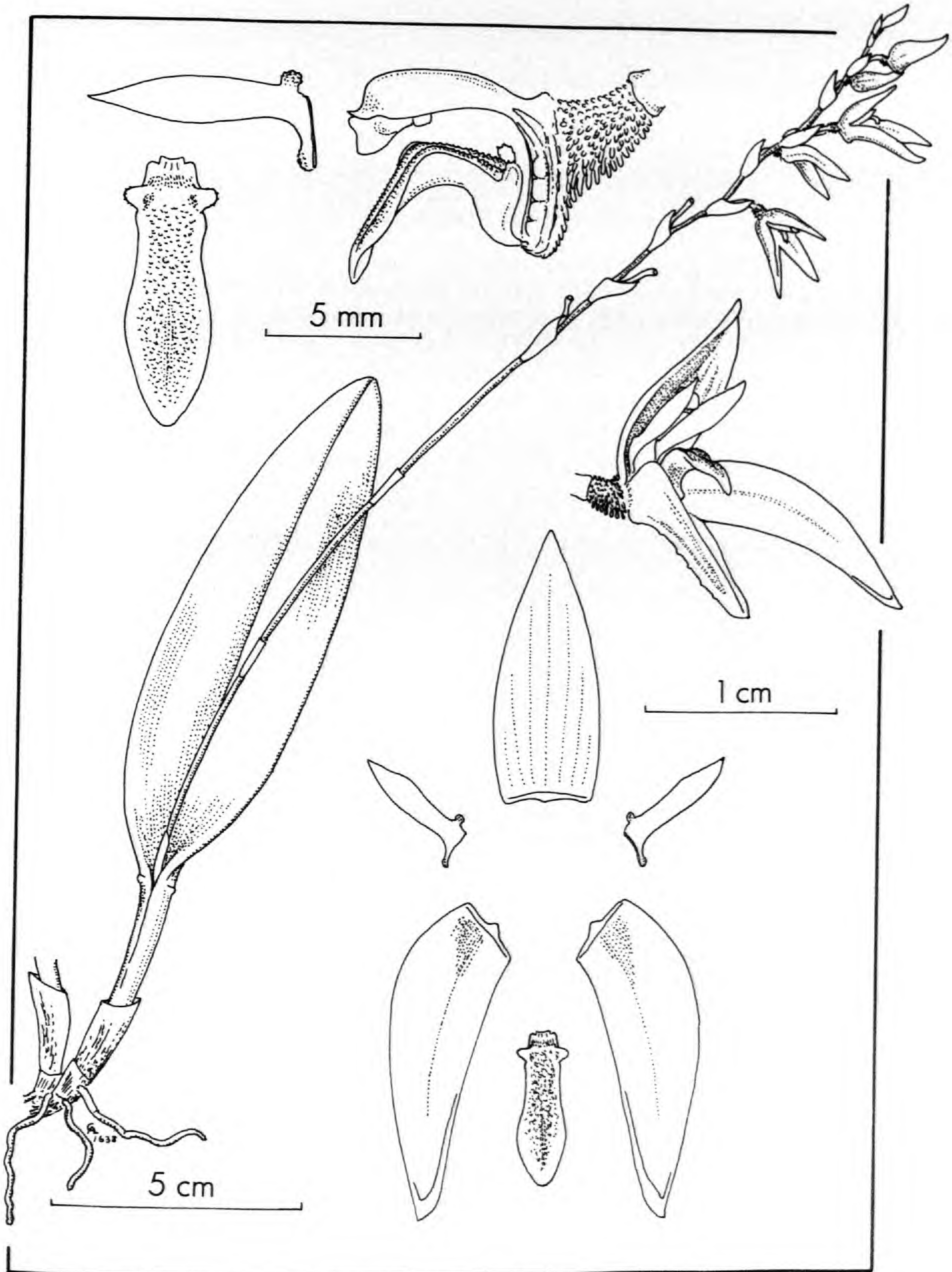


Plate 19. *Pleurothallis erinacea* Rchb. f.

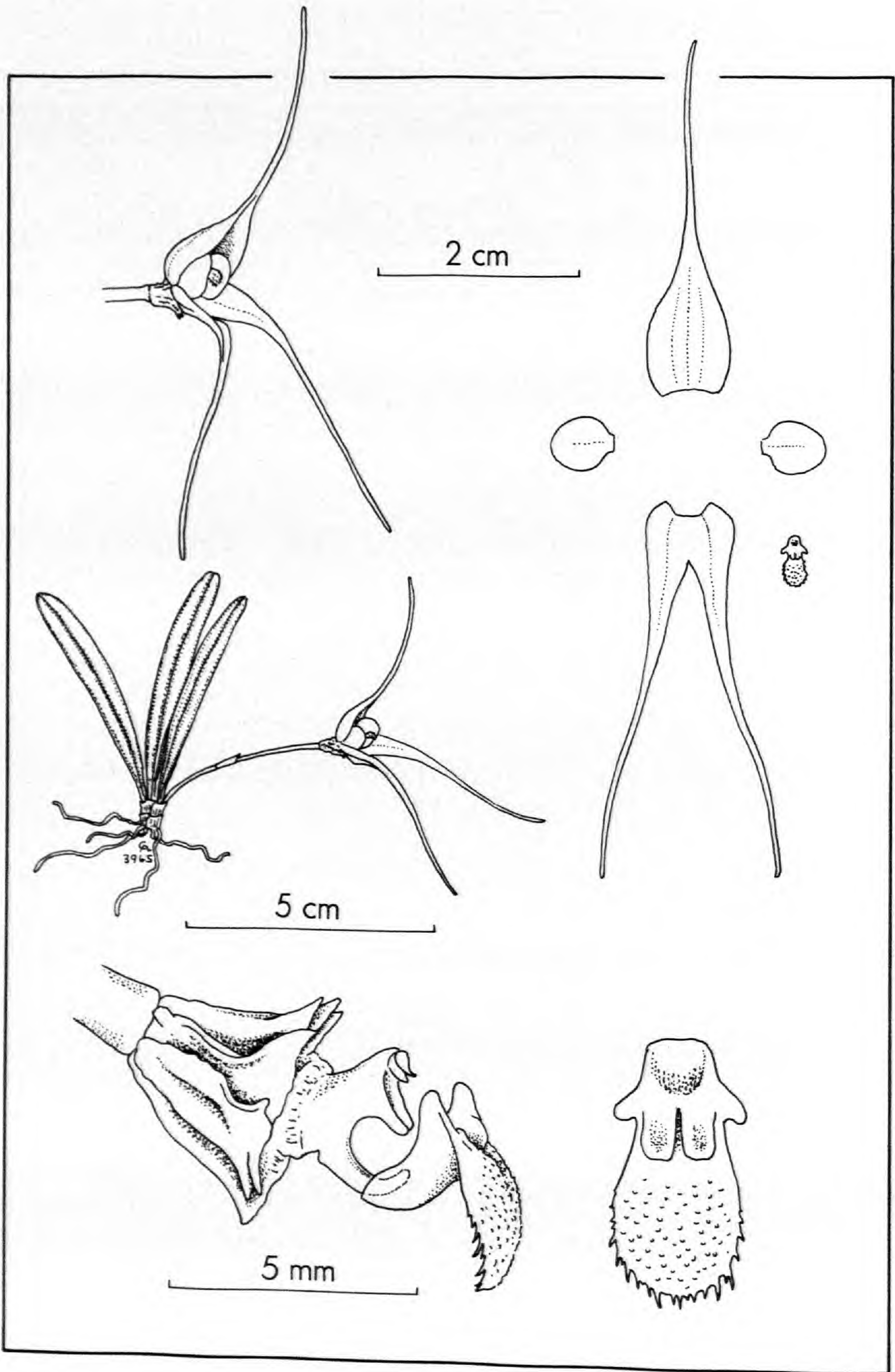


Plate 20. *Pleurothallis masdevalliopsis* Luer

Pleurothallis subgen. **Mirabilia** Luer, subgen. nov.

Type: *Pleurothallis mirabilis* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7:274, 1981.

Ety.: From the Latin *mirabilis*, "wonderful, strange," referring to the most unusual flower.

[Syn.: *Pabstiella* Brieg. & Sengh., Die Orchideen 429, 1975, nomen invalid.]

Sepala cum pede longissimo columnae in mentum profundum formantia. Unguis labelli longissimus ad pedem columnae connatus.

An unusual Brazilian species, distinguished by an exceedingly long column-foot to which an exceedingly long claw of the lip is firmly united, constitutes this subgenus of *Pleurothallis*. The plant is small and caespitose with slender ramicauls. The long, multi-flowered racemes of white, long-chinned flowers are produced from the ramicaul with an annulus. The column is elongate with a ventral anther and stigma. The inflexibly connate claw of the lip to the column-foot sets this species apart from subgen. *Specklinia*.

Species: *P. mirabilis* Schltr. Plate 21.

Pleurothallis subgen. **Mirandia** Luer, subgen. nov.

Type: *Pleurothallis miranda* Luer, Phytologi 46:369, 1980.

Ety.: From the Latin *mirandus*, "strange, causing wonder," alluding to the unusual characters of the species.

Inflorescentia uniflora longipedunculata longispathata. Synsepalum bicallosum. Petala calyptrata. Labellum subquadratum argute deflexum. Columna sine pede.

The unusual species segregated into this monotypic subgenus is characterized by a well-developed ramicaul and an ovate leaf with a long, twisted petiole. The fascicle of single flowers emerges from a conspicuous spathe with an annulus. The sepals are connate into a concave synsepal with a pair of lunate calli in the center. The apices of the petals are remarkably cucullate. The lip is subquadrate and acutely deflexed upon itself and attached to the base of a footless column with an apical anther and stigma.

Species: *P. miranda* Luer Plate 22.

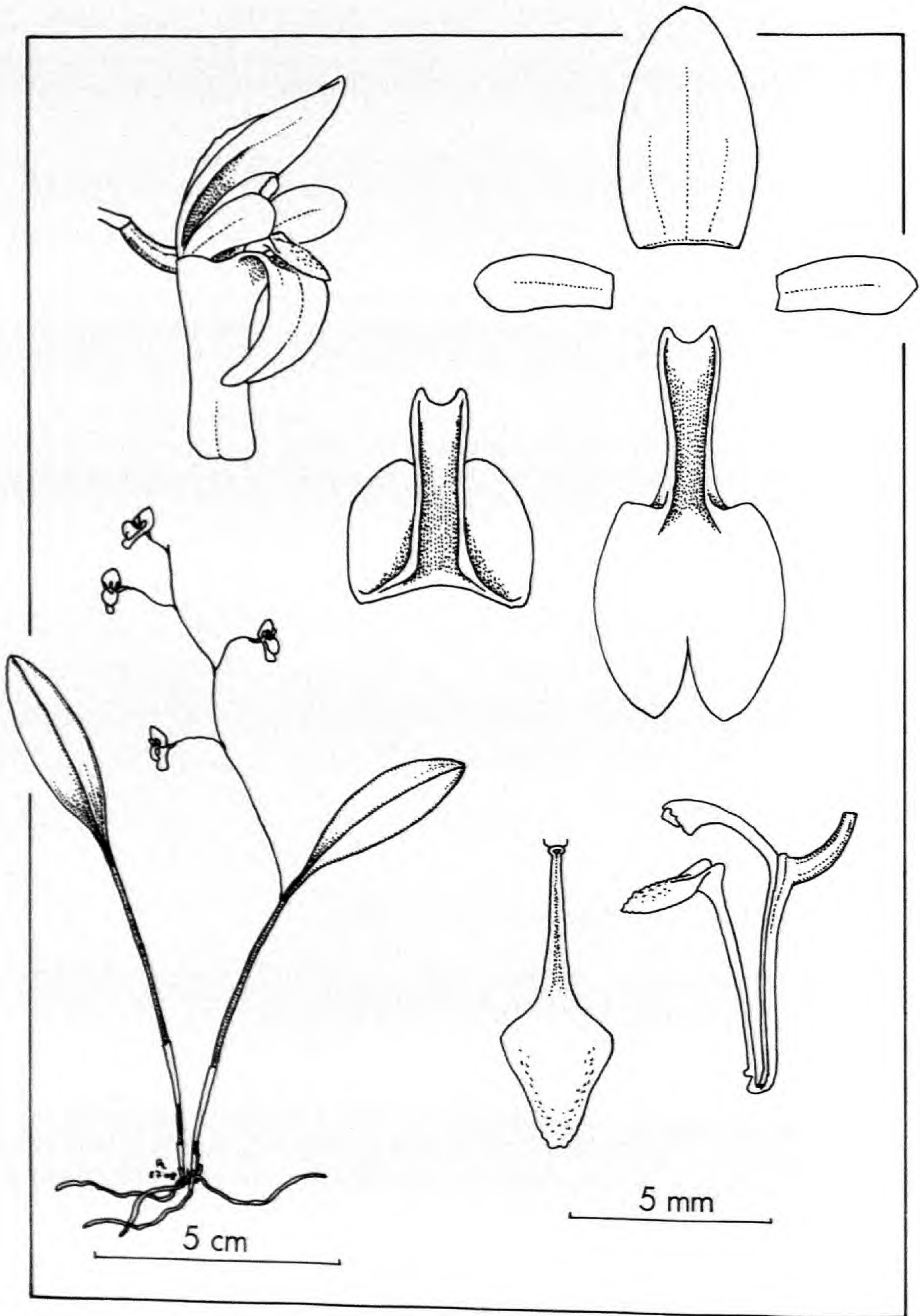


Plate 21. *Pleurothallis mirabilis* Schltr.

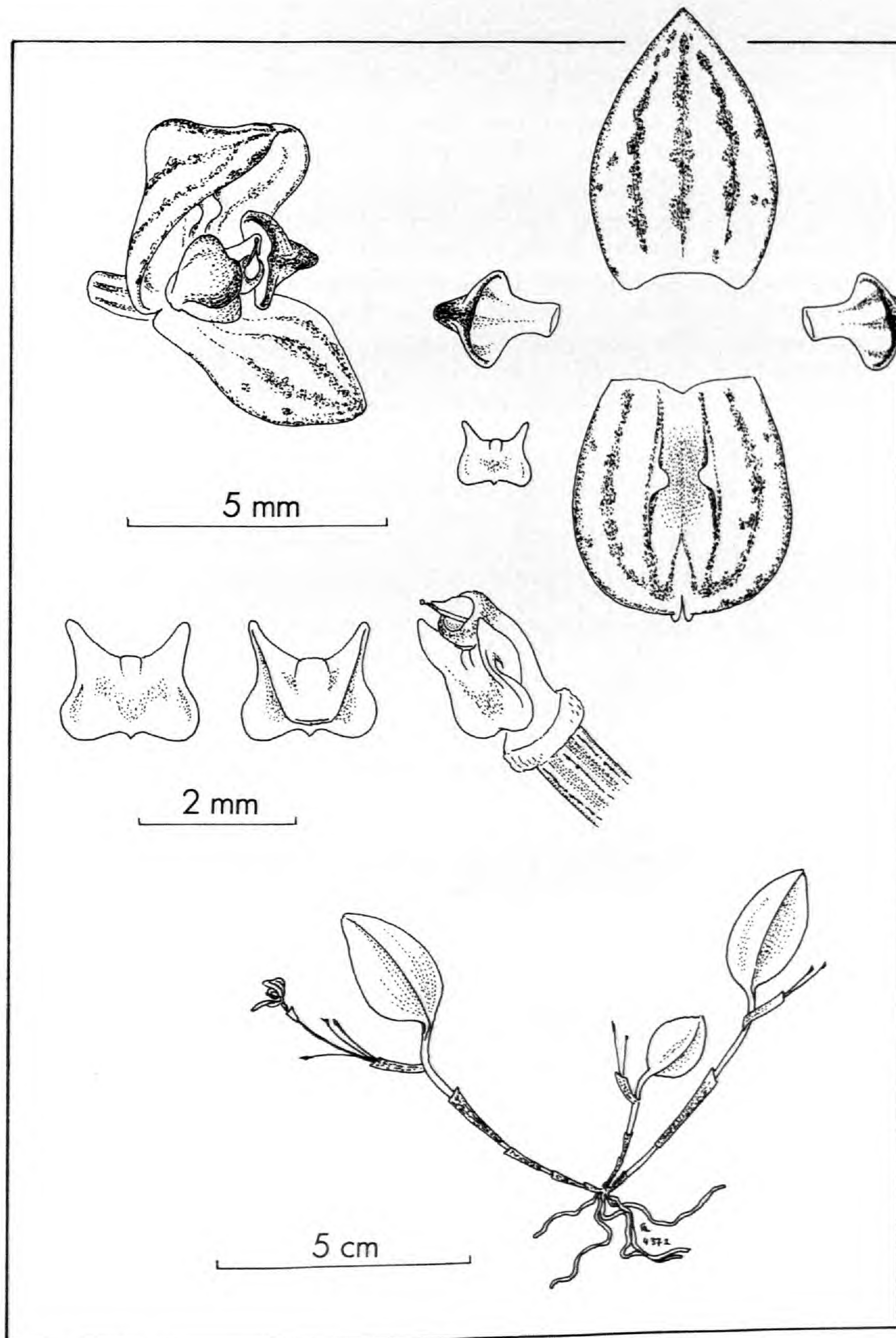


Plate 22. *Pleurothallis miranda* Luer

Pleurothallis subgen. **Mystax** Luer, subgen. nov.

Type: *Pleurothallis mystax* Luer, *Selbyana* 3:146, 1976.

Ety.: From the Latin *mystax*, "a moustache," referring to the appearance of the diverging lateral sepals beneath the noselike lip.

Planta parva ramicaulibus bene effectis. Racemus successiviflorus. Sepala lateralia supra medium late patentia, infra medium connata. Labellum spathulatum. Columna brevis anthera et stigmatibus apicalibus.

The unique Panamanian species that constitutes this subgenus is characterized by a well-developed ramicaul, loosely sheathed, with a petiolate leaf. The successively flowered raceme emerges with an annulus. The lateral sepals are connate below the middle, and widespread above. The lip, reminiscent of that of subgen. *Pleurobotryum*, is long-unguiculate, the channeled claw as long as the suborbicular blade. The column is short with an apical anther and stigma.

Species: *P. mystax* Luer Plate 23.

Pleurothallis subgen. **Physosiphon** (Lindl.) Luer, stat. nov.

Type: *Stelis tubata* Lodd., *Bot. Cab. t.* 1601, 1830. [*Pleurothallis tubata* (Lodd.) Steud., *Nomen. Bot. ed.* 2, 2:356, 1841.]

Ety.: from the Greek *physosiphon*, "a bladder-like tube," referring to the shape of the sepaline tube.

Bas.: *Physosiphon* Lindl., *Edwards' Bot. Reg.* 21: sub t. 1797, 1835.

Type: *Physosiphon loddigesii* Lindl., *Edwards' Bot. Reg.* 21: sub t. 1797, 1835 (*Stelis tubata* Lodd., *Bot. Cab. t.* 1601, 1830)

The few species, which constitute Lindley's *Physosiphon* sensu stricto, constitute this subgenus characterized by ramicauls about as long as or shorter than the leaves, a racemose inflorescence of simultaneous flowers from an annulus near the apex of the ramicaul, and sepals deeply connate into a tube constructed near the middle with the similar apices free. This sepaline tube is very similar to that of some species of *Masdevallia* subsect. *Tubulosae*. The petals are membranous. The lip is provided with callous lateral lobes near the middle, and the column is elongated with the apex more or less winged and partially covering the anther.

Species: *P. asperrima* Luer

P. serrulata (Barb. Rodr.) Luer

P. tubata (Lodd.) Steud. Plate 24.

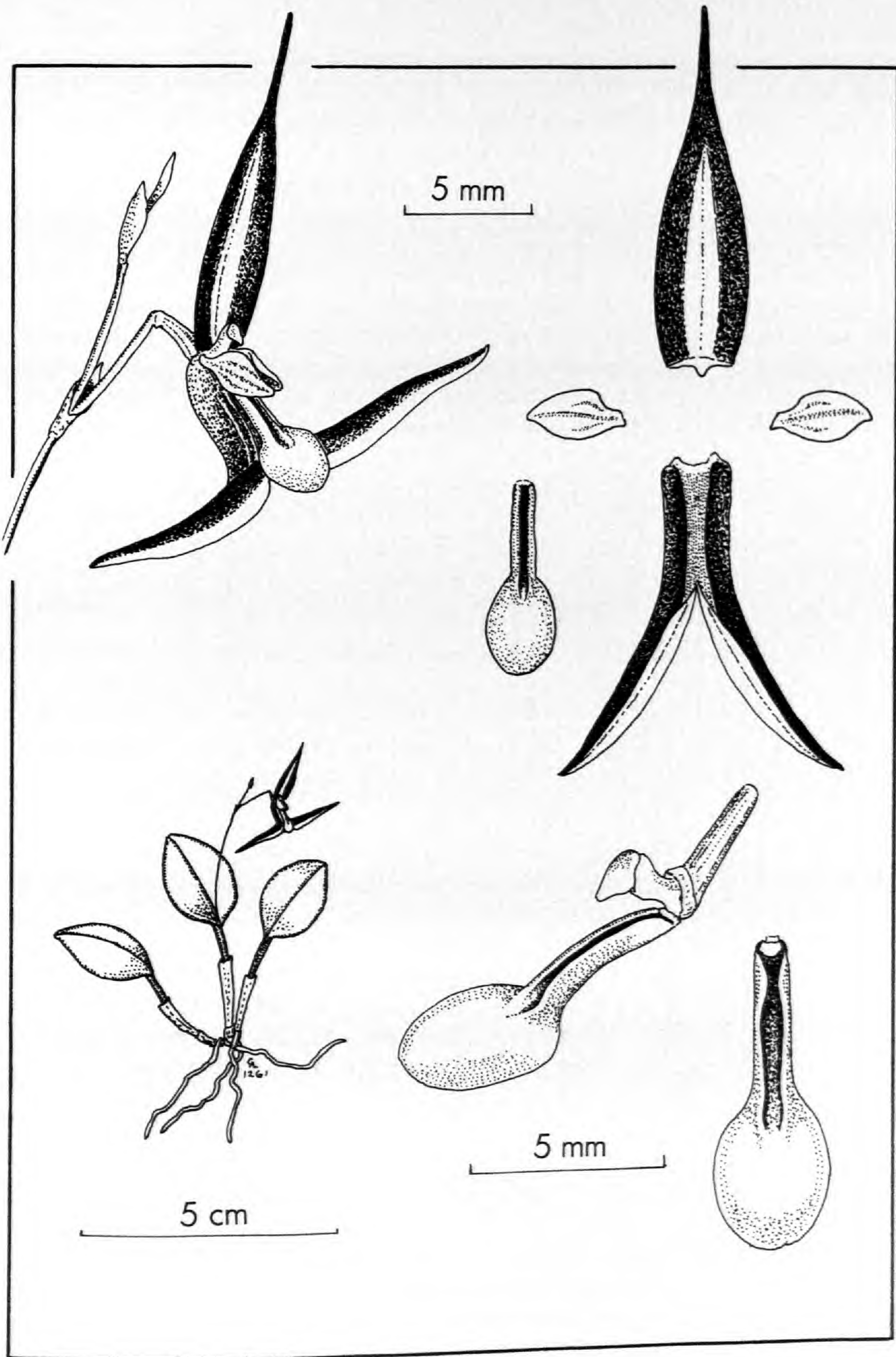


Plate 23. *Pleurothallis mystax* Luer

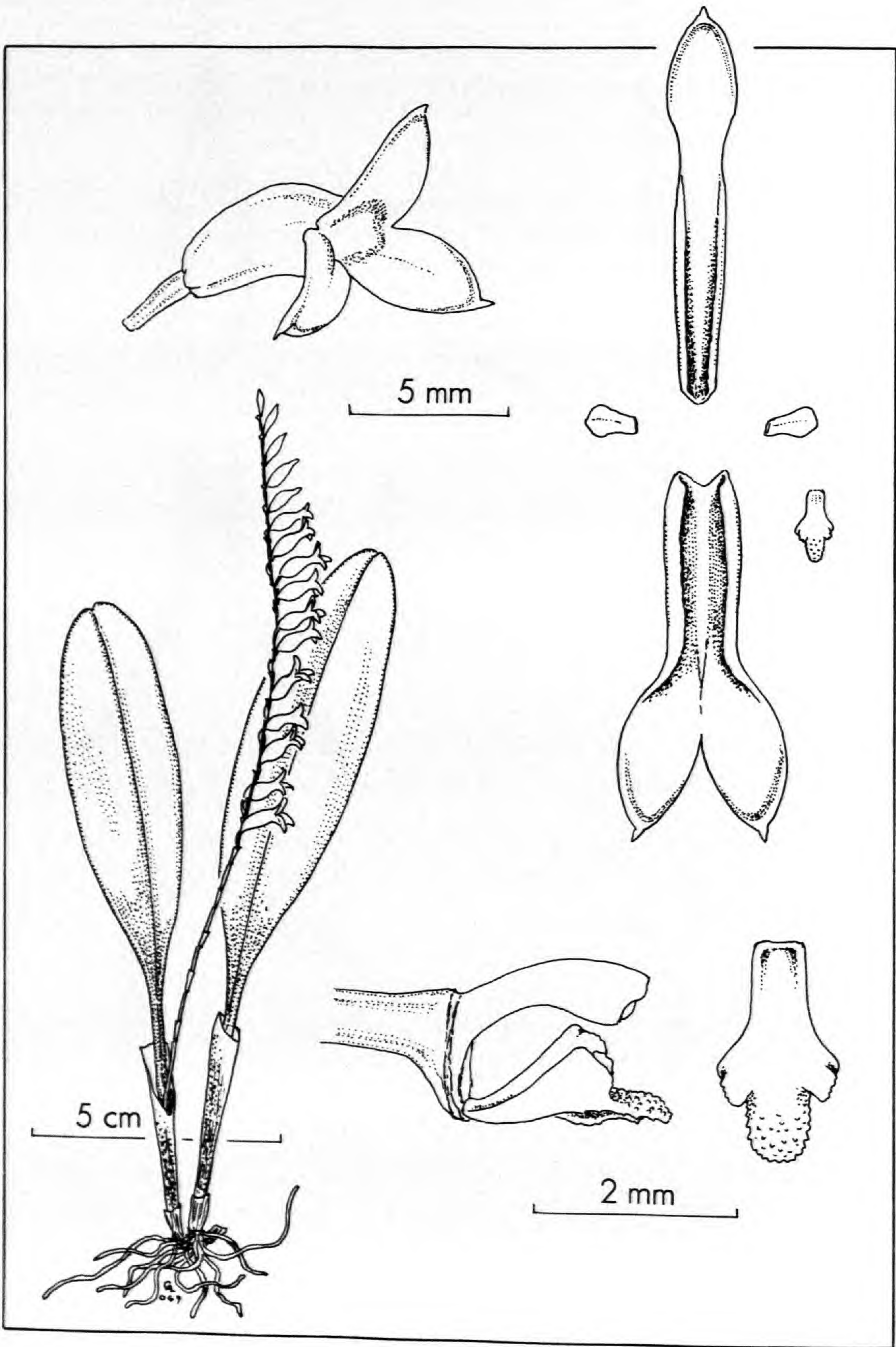


Plate 24. *Pleurothallis tubata* (Lodd.) Schltr.

Pleurothallis subgen. **Physothallis** (Garay) Luer, stat. nov.

Type: *Physothallis harlingii* Garay, Svensk Bot. Tidskr. 47:199, 1953.
(*Pleurothallis neoharlingii* Luer)

Ety.: Named for a supposed intermediate position of the plant between the genera *Physosiphon* and *Pleurothallis*.

Bas.: *Physothallis* Garay, Svensk Bot. Tidskr. 47:199, 1953.

Type: *Physothallis harlingii* Garay

Two terrestrial species from the dry highlands of southern Ecuador constitute this small subgenus characterized by coarse, thick leaves and ramicauls. The long, slender peduncle of successive, erect flowers emerges with an annulus below the abscission layer. In one clone of *P. neoharlingii* recently discovered the abscission layer is lacking, and consequently all expired leaves persist on the ramicauls.

The dorsal sepal is deeply connate to the lateral sepals which are less deeply connate to each other. All three apices are similar and free. The column is elongate with a hooded anther and ventral stigma, typical of subgenus *Specklinia*.

As is the case in *Andreettaea*, *Physosiphon* and *Sarracenella*, the degree of connation of the sepals alone cannot suffice for defining a genus.

The following new combination and new name become necessary:

Pleurothallis cylindrica (Luer) Luer, comb. nov.

Physothallis cylindrica Luer, Selbyana 3:224, 1976.

Pleurothallis neoharlingii Luer, nom. nov. Plate 25.

Physothallis harlingii Garay, Svensk Bot. Tidskr. 47:199, 1953, non *Pleurothallis harlingii* Garay 1953.

Pleurothallis subgen. **Pleurobotryum** (Barb. Rodr.) Luer, stat. nov.

Type: *Pleurobotryum atropurpureum* Barb. Rodr., Gen. Sp. Orch. Nov. 1:20, 1877. [*Pleurothallis teretifolia* Rolfe, Gard. Chron. 2:521, 1892, non *Pleurothallis atropurpurea* (Barb. Rodr.) Cogn. 1896]

Ety.: From the Greek *pleurobotrys*, "ribbed raceme," referring to some aspect of the appearance of the plant.

Bas.: *Pleurobotryum* Barb. Rodr., Gen. Sp. Orch. Nov. 1:20, 1877.

Type: *Pleurobotryum atropurpureum* Barb. Rodr., Gen. Sp. Orch. Nov. 1:20, 1877.

Syn.: *Pleurothallis* sect. *Pleurobotryum* (Barb. Rodr.) Cogn., F. Bras. 3(4):587, 1896.

This small Brazilian subgenus is characterized by a creeping rhizome, and terete or compressed leaves longer than the ramicaul. The racemose inflorescence emerges from the base of the leaf without an annulus. The lateral sepals are connate to above the middle. The lip of all species is spatulate, similar to that seen in the genus *Dryadella*. The blade is angled at the base with a pair of calli on the disc, and the long claw is concave and bilobulate at the base. The column is elongated with a ventral stigma, and with the anther more or less hooded.

Species: *P. albopurpurea* Krzl.
P. crepiniana Cogn. Plate 26.
P. hatschbachii Schltr.
P. mantiguayana Barb. Rodr.

P. rhabdosepala Schltr.
P. subulifolia Krzl.
P. teretifolia Rolfe

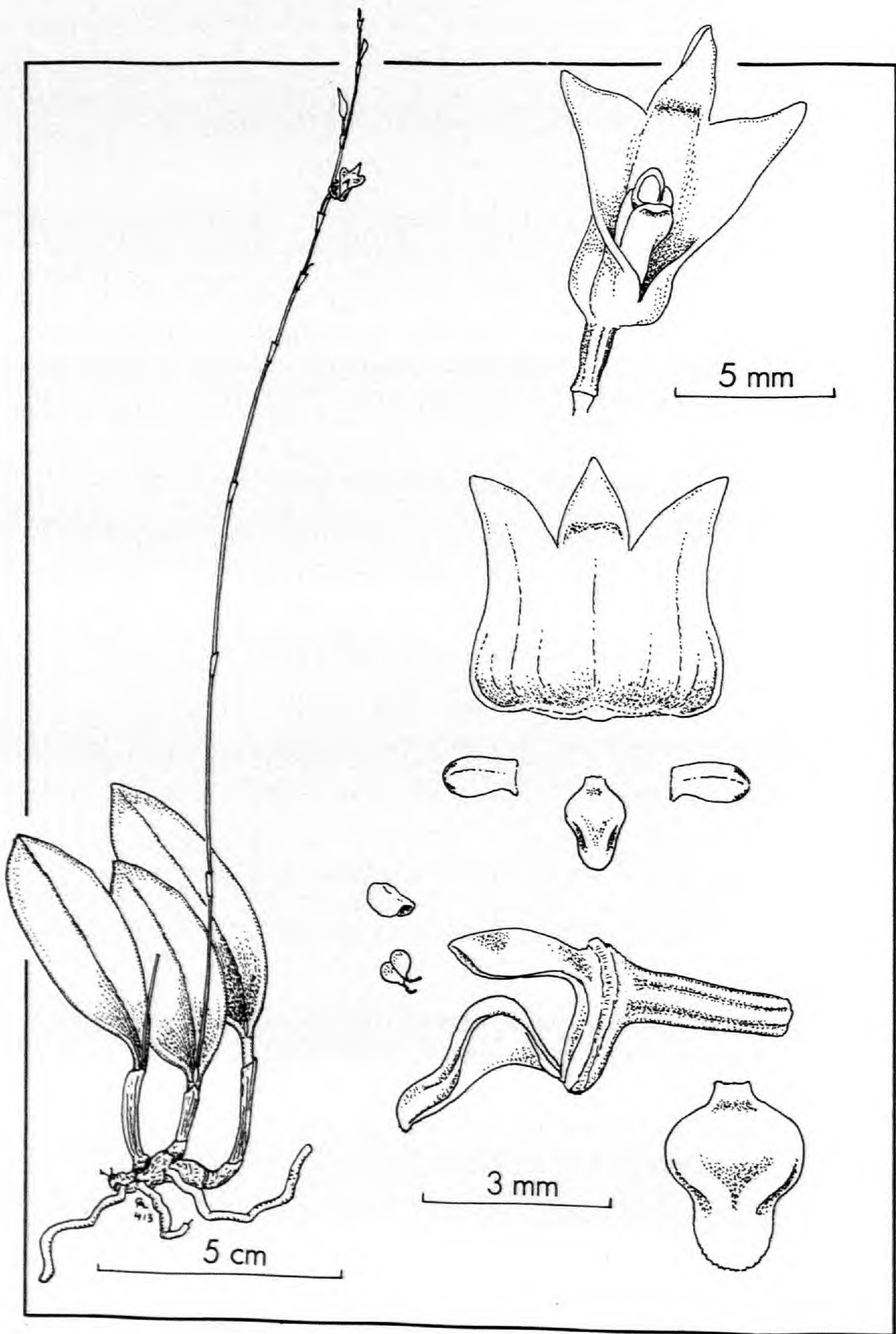


Plate 25. *Pleurothallis neoharlingii* Luer

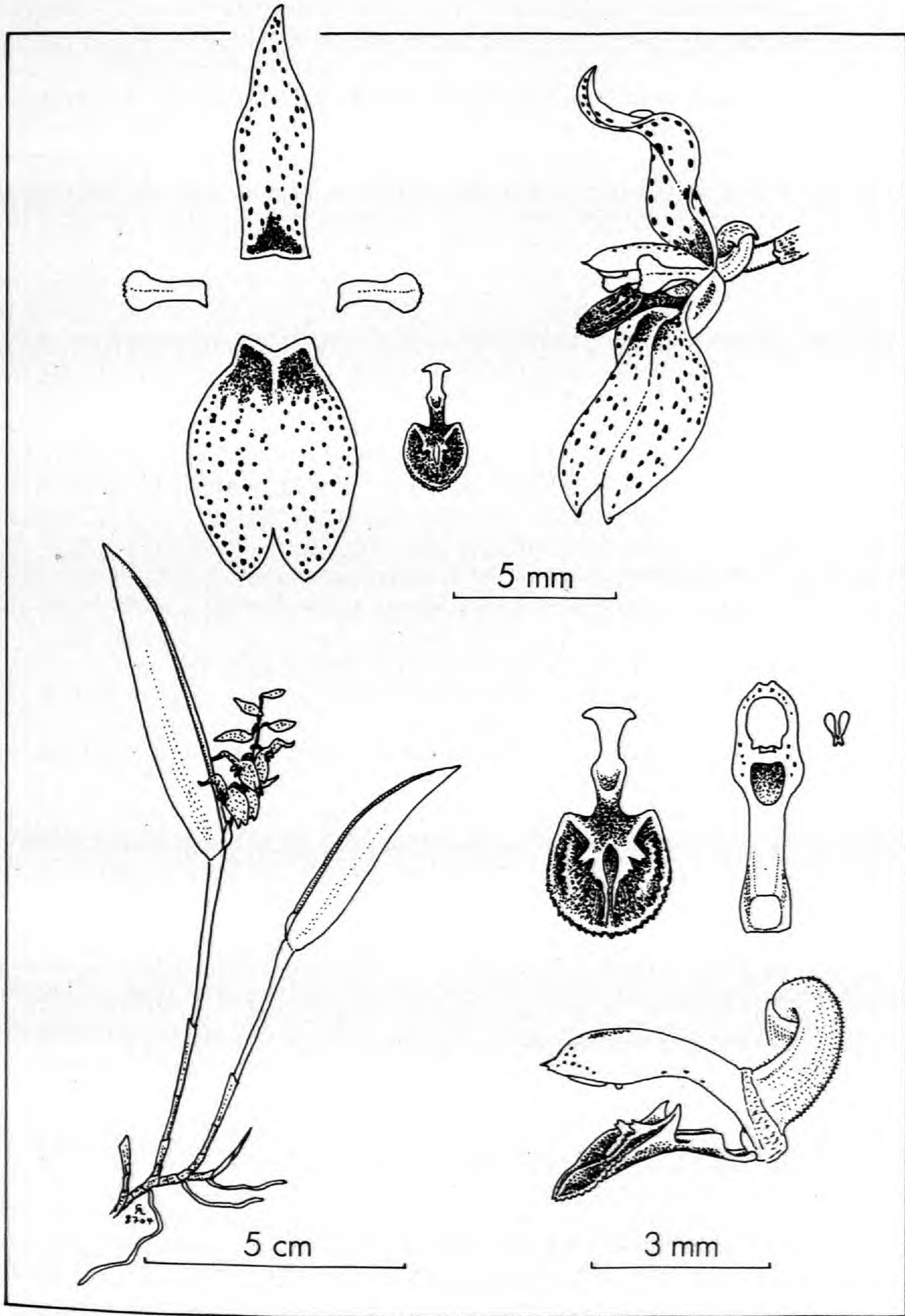


Plate 26. *Pleurothallis crepiniana* Cogn.

Pleurothallis subgen. **Pleurothallis**

Type: *Epidendrum ruscifolium* Jacq. [*Pleurothallis ruscifolia* (Jacq.) R. Br.]

An enormous number of species in interrelated groups are brought together in this subgenus. Vegetatively the mature ramicauls are terete, or occasionally lightly compressed above, usually as long as or longer than the leaves they bear. A tubular sheath is present near or below the middle of the ramicaul while the base is enclosed by a couple more. The rhizome is usually contracted between ramicauls, rarely long-repent. The leaves are commonly rounded to cordate at the base, sometimes petiolate. The inflorescences emerge from near or at the apex of the ramicaul. Racemose inflorescences emerge with an annulus, but this ring may be obscured in some species by the abscission layer. No annulus can be seen in the single-flowered species.

The lateral sepals are connate into a synsepal, and the dorsal sepal is essentially free. The petals are longer than broad and variable. The lip is variable, but commonly ligulate with or without basal lobes. The column is terete or semiterete, usually short and thick, without wings, hood, or teeth. The exposed anther, rostellum and stigma are apical or subapical. The stigma is more or less transverse, often bilobed. The base of the column is more or less pedestal-like, forming a short, thick foot with the end of the ovary. Sometimes a foot is totally lacking.

Four sections and three subsections may be recognized.

KEY TO THE SECTIONS AND SUBSECTIONS OF SUBGEN. *PLEUROTHALLIS*

- | | | |
|----|---|---|
| 1 | Inflorescence single-flowered | 2 |
| 1' | Inflorescence racemose | 3 |
| 2 | Column-foot thick or pedestal-like | <i>P. sect. Macrophyllae-Fasciculatae</i> |
| 2' | Column-foot absent | <i>P. sect. Abortivae</i> |
| 3 | Lip inflexibly connate to an obsolescent column-foot | <i>P. sect. Truncatae</i> |
| 3' | Lip hinged to a thick or pedestal-like column-foot | (<i>P. sect. Pleurothallis</i>) 4 |
| 4 | Petals narrow to linear, often thickened or terete toward the apex | <i>P. subsect. Pleurothallis</i> |
| 4' | Petals broad, sometimes serrate or denticulate, sometimes broadly thickened | 5 |
| 5 | Petals usually ciliate, denticulate, or fringed; lip usually longer than broad, acute | <i>P. subsect. Acroniae</i> |
| 5' | Petals usually entire; lip usually broader than long, obtuse | <i>P. subsect. Macrophyllae-Racemosae</i> |

Pleurothallis subgen. **Pleurothallis** sect. **Abortivae** Luer, sect. nov.

Type: *Pleurothallis abortiva* Luer, *Phytologia* 47:72, 1980.

Ety.: From the Latin *abortivus*, "abortive," referring to the obsolescent column-foot.

Columna cylindrica anthera stigmatum apicalibus pede nullo.

The species of this section are closely allied to subgen. *Ancipitia*. The section is characterized by a fascicle of usually long-pedunculate solitary flowers borne at the base of the leaf at the apex of an elongated ramicaul without a visible annulus. Instead of sharply ancipitous, the ramicaul is round in cross-section, but sometimes lightly compressed near the apex. The sepals and petals are also similar to those of subgen. *Ancipitia* but the column is narrowly cylindrical and footless, similar to the column of some species of *Lepanthes*. The unhooded anther, rostellum and stigma are apical.

Species: *P. abortiva* Luer

P. furcifera Luer

P. glochis Luer & Escobar

P. gracilipedunculata Foldats

P. habenula Luer & Escobar

P. stevensonii Luer

P. wigginsii C. Schweinf. Plate 27.

Pleurothallis subgen. **Pleurothallis** sect. **Macrophyllae-Fasciculatae** Lindl., *Folia Orchid. Pleuroth.* 9, 1859.

Lectotype here designated: *Pleurothallis grandiflora* Lindl., *Edwards' Bot. Reg.* 21:sub t. 1797, 1836. This species, typical for the section, is chosen from 18 closely allied species listed by Lindley.

Ety.: From the Greek *makrophyllon*, "a large leaf," and the Latin *fasciculatus*, "fasciculate," in reference to the fasciculate inflorescence at the base of a large leaf.

[Syn.: *Erectorostrata* Brieg., *Die Orchideen* 428, 1975, nomen invalid.]

This section of "the frogs" constitutes the largest group of closely related species in the entire subtribe. The section is characterized by mature leaves usually cordate at the base, often spreading or deflexed, and borne by well-developed ramicauls. Sometimes the stems are lightly compressed near the leaf, but not into sharp edges. Leaves of immature plants are elliptical, erect, and borne by short ramicauls.

The solitary flowers are produced singly or numerous in a fascicle at the base of the sessile leaf. No annulus is visible. The lip is commonly ligulate, but sometimes cordate with basal lobes, and often with a glenion at the base. The base is more or less flattened or concave on the end to fit beneath the column or to accommodate the broad column-foot.

The glenion is a circular structure, shiny or sticky, just above the edge of the base of the lip and directly beneath the rostellum thrust forward above from the column. Undoubtedly it plays a part in attracting pollinators. A glenion is also commonly developed in *Pleurothallis* sect. *Pleurothallis* and the genera *Brachionidium*, *Lepanthopsis*, *Platytele* and *Stelis*.

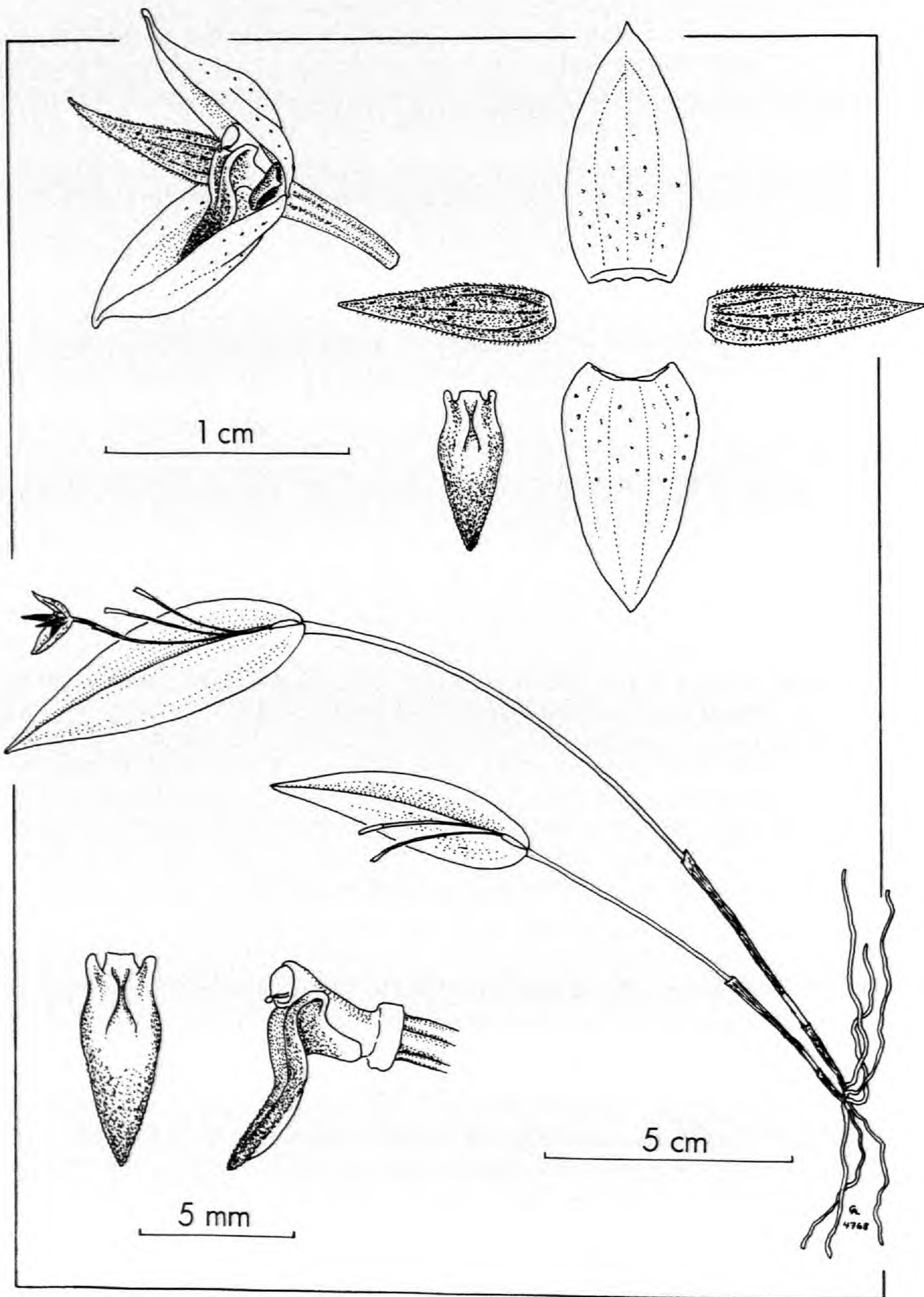


Plate 27. *Pleurothallis wigginsii* C. Schweinf.

Representative Species:

- P. aestroyphylla* Luer
P. adeleae Luer
P. allenii L.O. Wms.
P. alopex Luer
P. altimonile Luer & Escobar
P. ambyx Luer & Escobar
P. apopsis Luer
P. bivalvis Lindl.
P. blepharopetala Schltr.
P. bucculenta Luer
P. canaligera Rchb. f.
P. cardiantha Rchb. f.
P. cardiophylla Schltr.
P. cardiostola Rchb. f.
P. cardiothallis Rchb. f.
P. cobraeformis L. O. Wms.
P. concaviflora C. Schweinf.
P. cordata (Ruíz & Pav.) Lindl.
P. correllii Luer
P. cyanea Luer & Escobar
P. diabolica Luer & Escobar
P. discoidea Lindl.
P. ensata Luer
P. epiglottis Luer
P. fornix Luer & Escobar Plate 28.
P. ganymedes Luer & Escobar
P. giraffa Luer
P. gonioglossa Schltr.
P. grandiflora Lindl.
P. granularis Luer & Escobar
P. homalantha Schltr.
P. horichii Luer
P. ignivomi Schltr.
P. imperialis Luer
P. ionantha Rchb. f.
P. jupiter Luer
P. killipii Garay
P. lacera Luer
P. leucantha Schltr.
P. lilijae Foldats
P. linguifera Lindl.
P. macra Lindl.
P. matudiana C. Schweinf.
P. monocardia Rchb. f.
P. nephrocardia Schltr.
P. northenae Luer
P. pansamalae Schltr.
P. peculiaris Luer
P. perijaënsis Dunsterv.
P. peroniocephala Luer
P. phasmatodes Luer
P. phyllocardia Rchb. f.
P. phyllocardioides Schltr.
P. pulvinipes Schltr.
P. radula Luer
P. reptans Luer
P. rhodoglossa Schltr.
P. ruberrima Lindl.
P. saccatilabia C. Schweinf.
P. sanchoi Ames
P. scabrilinguis Lindl.
P. semiscabra Lindl.
P. simulans L. O. Wms.
P. stenopetala Rolfe
P. subtilis C. Schweinf.
P. tridentata Kl.
P. undulata Poepp. & Endl.
P. vinealis Luer & Escobar

Pleurothallis subgen. *Pleurothallis* sect. *Pleurothallis*

Type: *Epidendrum ruscifolium* Jacq. [*Pleurothallis ruscifolia* (Jacq.) R. Br.]

In this section the inflorescence is a raceme or a fascicle of racemes of simultaneous flowers. Sometimes the raceme is so abbreviated that it appears to be a fascicle of single flowers, as in *P. ruscifolia*. The annulus is often difficult to see, sometimes being obscured by the abscission layer. The synsepal is often deeply concave, often uppermost in the flower. The lip is more or less cordate or triangular with basal lobes often surrounding the column, and the base is more or less deflexed beneath the column.

Three subsections may be recognized, but the boundaries are not always clear. A few intermediate species are difficult to classify.

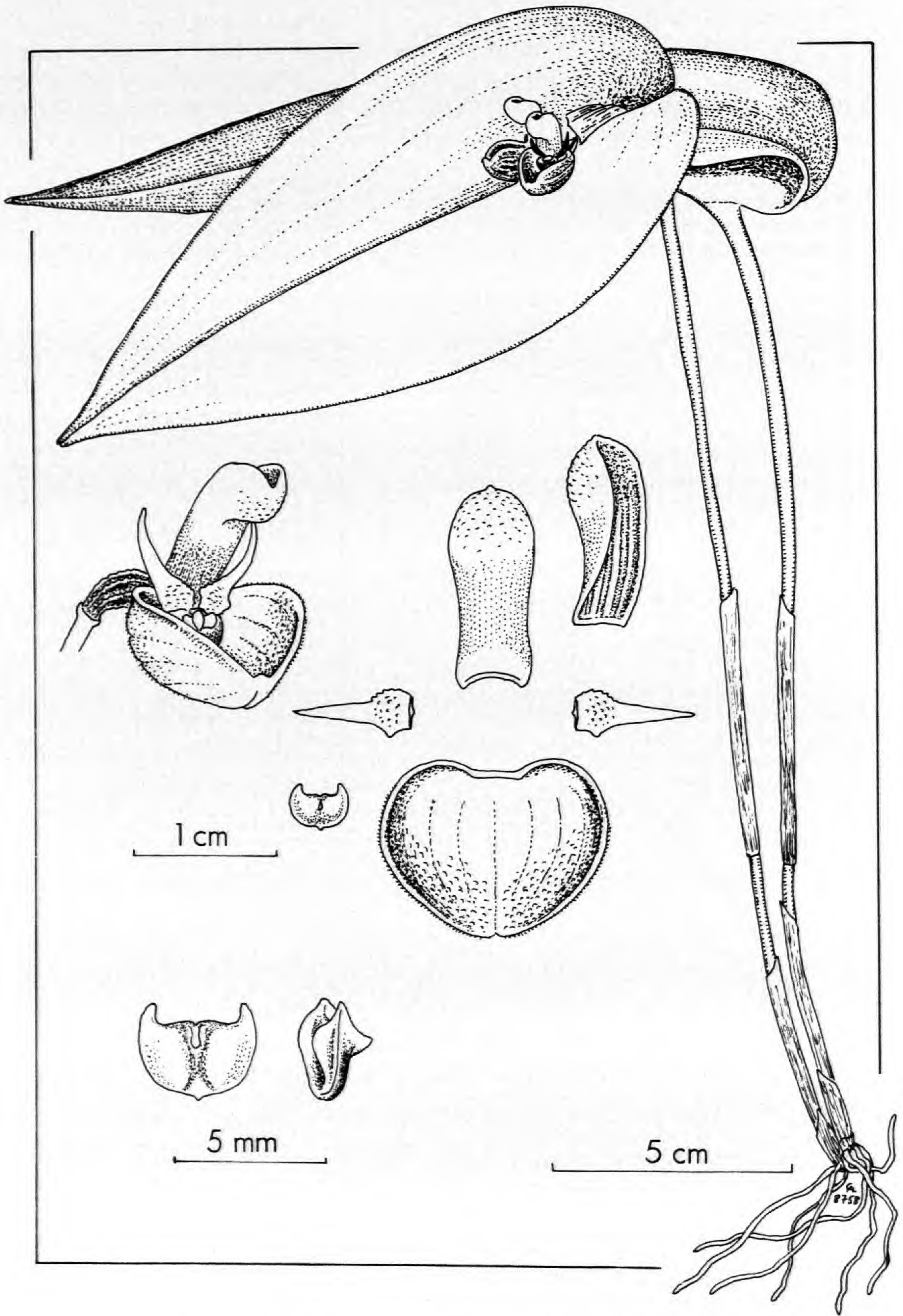


Plate 28. *Pleurothallis fornix* Luer & Escobar

Subsect. *Acroniae* Luer, nom. nov.

Type: *Acronia phalangifera* Presl, Rel. Haenk. 1:104, 1827. [*P. phalangifera* (Presl) Rchb. f., Ann. Bot. Syst. 6:168, 1861]

Ety.: From the Greek *acron*, "the summit, or top," without an obvious reference, possibly referring to the anther.

Bas.: *Acronia* Presl, Rel. Haenk. 1:103, 1827.

Type: *Acronia phalangifera* Presl [*Pleurothallis phalangifera* (Presl) Rchb. f.]

The species of this subsection are also numerous and relatively common. The racemes, sometimes reduced to a single flower, are usually erect, the petals are often serrulate or ciliate, and the lip is usually narrower than long with an acute apex.

Representative species:

<i>P. alvaroi</i> Luer & Escobar	<i>P. phalangifera</i> (Presl) Rchb. f.
<i>P. amphygia</i> Luer & Escobar	<i>P. polysticta</i> Luer
<i>P. annectens</i> Luer	<i>P. quadricaudata</i> Schltr.
<i>P. arachnion</i> Luer	<i>P. rowleei</i> Ames
<i>P. archicolonae</i> Luer	<i>P. sanluisii</i> Foldats
<i>P. dentipetala</i> Rolfe	<i>P. stalkyi</i> Luer
<i>P. forceps-cancris</i> Luer & Escobar	<i>P. stevensii</i> Luer
<i>P. fugax</i> Luer & Escobar	<i>P. stricta</i> Luer & Escobar Plate 29.
<i>P. longipedicellata</i> Ames & Schweinf.	<i>P. tipuloides</i> Luer
<i>P. luctuosa</i> Rchb. f.	<i>P. tryssa</i> Luer
<i>P. mammillata</i> Luer	<i>P. vieirae</i> Luer & Escobar
<i>P. pallida</i> Luer	<i>P. volcanica</i> Luer

Subsect. *Macrophyllae-Racemosae* (Lindl.) Luer, stat. nov.

Type: *Pleurothallis lindenii* Lindl., Ann. Mag. Nat. Hist. 12:397, 1843.
(*P. secunda* Poepp. & Endl., Nov. Gen. Sp. Pl. 1:49, 1836)

Ety.: From the Greek *makrophyllous*, "a large leaf," and the Latin *racemosus*, "racemose," referring to the leaf and inflorescence.

Bas.: *Pleurothallis* sect. *Macrophyllae-Racemosae* Lindl., Folia Orchid. *Pleuroth.* 7, 1859.

Lectotype here designated: *Pleurothallis lindenii* Lindl. (*Pleurothallis secunda* Poepp. & Endl.) This species is chosen from 11 listed by Lindley. It is the most common of four that can be attributed to this subsection. (*P. lindenii*, *P. bicornis*, *P. bicruris*, and *P. lamellaris*)

This subsection of numerous Andean species is characterized by broad petals that are commonly serrate and denticulate, and a broad lip with a round or obtuse apex. The racemes are commonly arcuate or pendent.

Representative species:

<i>P. amplexans</i> Luer	<i>P. inflata</i> Rolfe
<i>P. aporosis</i> Luer	<i>P. lamellaris</i> Lindl.
<i>P. archidonae</i> Lindl.	<i>P. magnifica</i> Luer & Escobar Plate 30.
<i>P. bicornis</i> Lindl.	<i>P. mundula</i> Luer & Escobar
<i>P. bicruris</i> Lindl.	<i>P. orthostachys</i> Luer & Escobar
<i>P. calvariola</i> Luer & Escobar	<i>P. pelex</i> Luer
<i>P. cernua</i> Luer	<i>P. pendula</i> Schltr.
<i>P. cornualis</i> Luer	<i>P. saccata</i> Ames
<i>P. crescentilabia</i> Ames	<i>P. secunda</i> Poepp. & Endl.
<i>P. decora</i> Luer & Escobar	<i>P. serpens</i> Luer & Escobar
<i>P. imber-florum</i> Luer & Escobar	<i>P. subreniformis</i> Schltr.
	<i>P. uvifera</i> Luer & Escobar

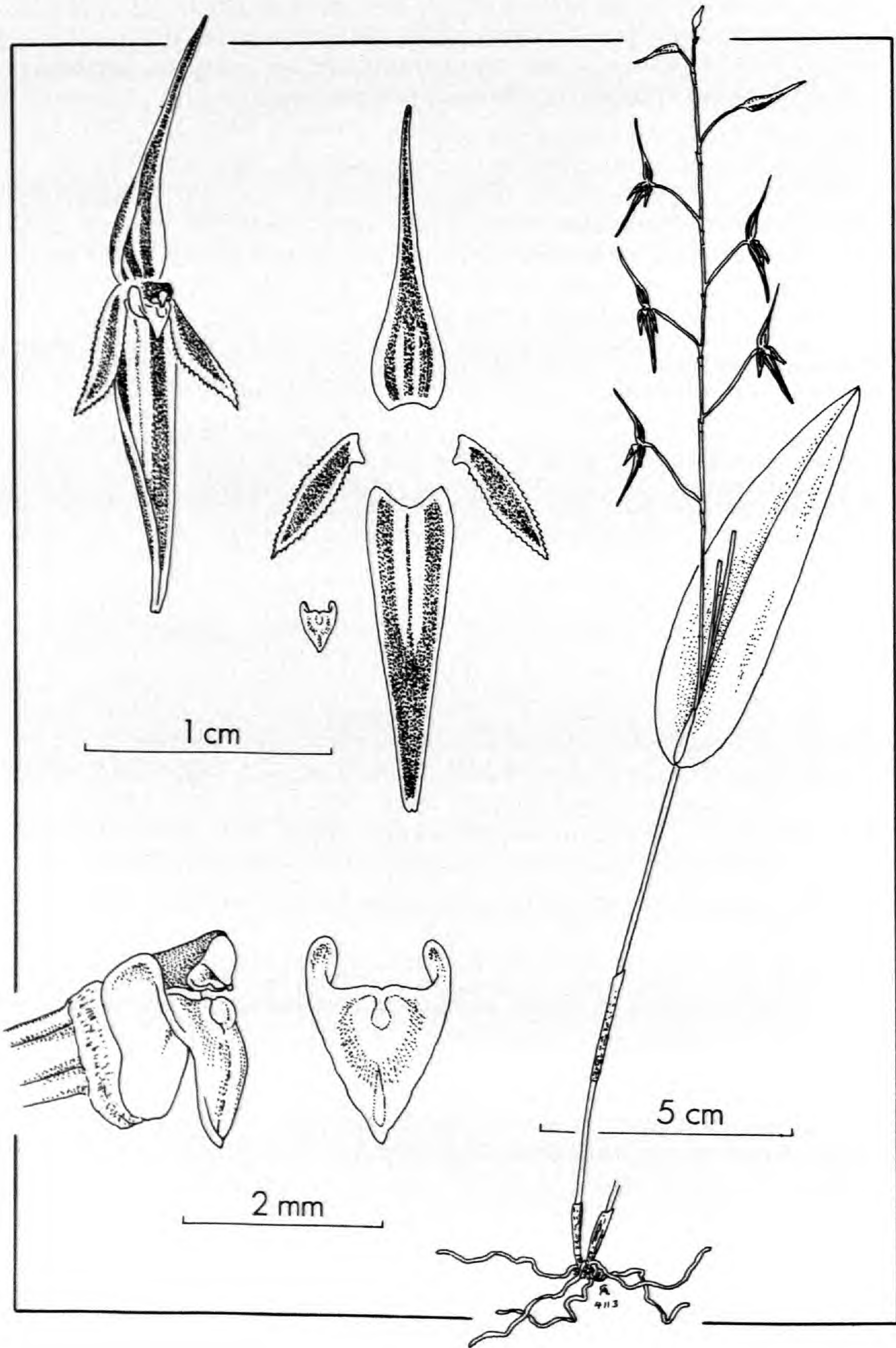


Plate 29. *Pleurothallis stricta* Luer

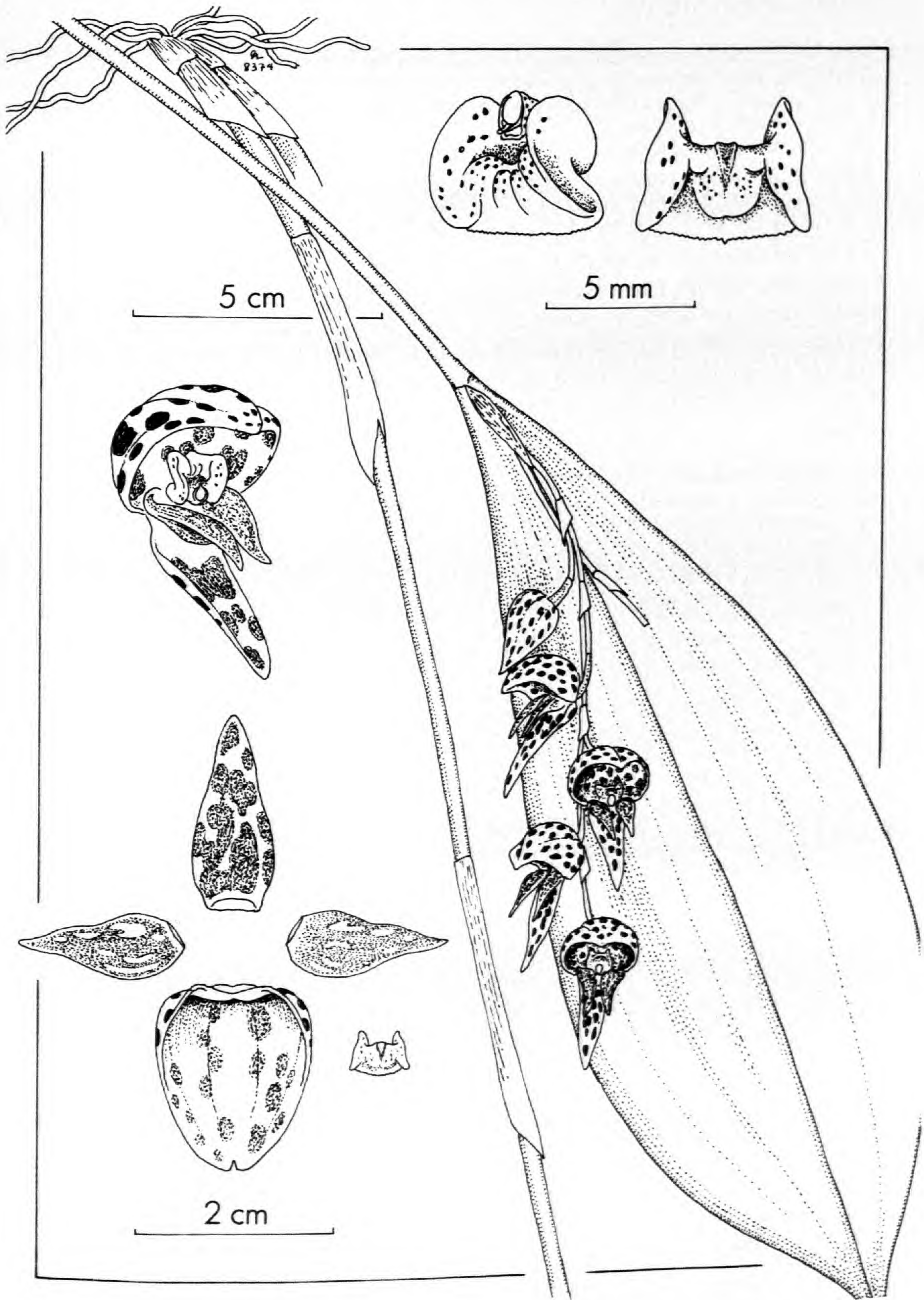


Plate 30. *Pleurothallis magnifica* Luer & Escobar

Subsect. *Pleurothallis*

Syn.: *Pleurothallis* sect. *Aggregatae* Lindl., Edwards' Bot. Reg. 28(Misc.):77, 1842.

Lectotype here designated: *Epidendrum ruscifolium* Jacq. [*Pleurothallis ruscifolia* (Jacq.) R. Br.] This species, the type of the genus, is chosen from 32 species listed by Lindley.

Ety.: From the Latin *aggregatus*, "clustered," referring to the inflorescence.

[Syn.: *Pleurothallis* sect. *Fasciculatae* Pabst, Orch. Bras. 1:153 et 164, 1975, nomen invalid.]

A large number of species, some relatively common, constitute this subsection. They are characterized by the narrow to linear, entire petals that are usually thickened and terete toward the apex. The racemes are erect to arching. In Series *Pleurothallis* the flowers are usually thought to be single and borne in a fascicle, but a close inspection reveals that the flowers are borne successively in short, fascicled racemes.

Representative species:

Series *Longiracemosae*

- P. alveolata* Luer
- P. antennifera* Lindl.
- P. aves-seriales* Luer
- P. brachiata* Luer
- P. cyclochila* Luer
- P. cymbisepala* Schltr.
- P. demissa* Luer & Vásquez
- P. eidos* Luer
- P. genychila* Schltr.
- P. hippocrepica* Luer & Escobar Plate 31.
- P. nasiterna* Luer
- P. parviflora* Luer
- P. penduliflora* Krzl.
- P. pruinosa* Lindl.
- P. pulvinaris* Luer & Escobar
- P. ramificans* Luer
- P. revoluta* (Ruíz & Pav.) Garay
- P. saltatoria* Lindl.
- P. scintillata* Luer
- P. suspensa* Luer
- P. taurus* Luer
- P. urceolata* Luer
- P. xanthochlora* Rehb. f.

Series *Pleurothallis*

- P. chloroleuca* Lindl.
- P. notabilis* Luer & Escobar
- P. ruscifolia* (Jacq.) R. Br. Plate 32.
- P. ventricosa* Lindl.

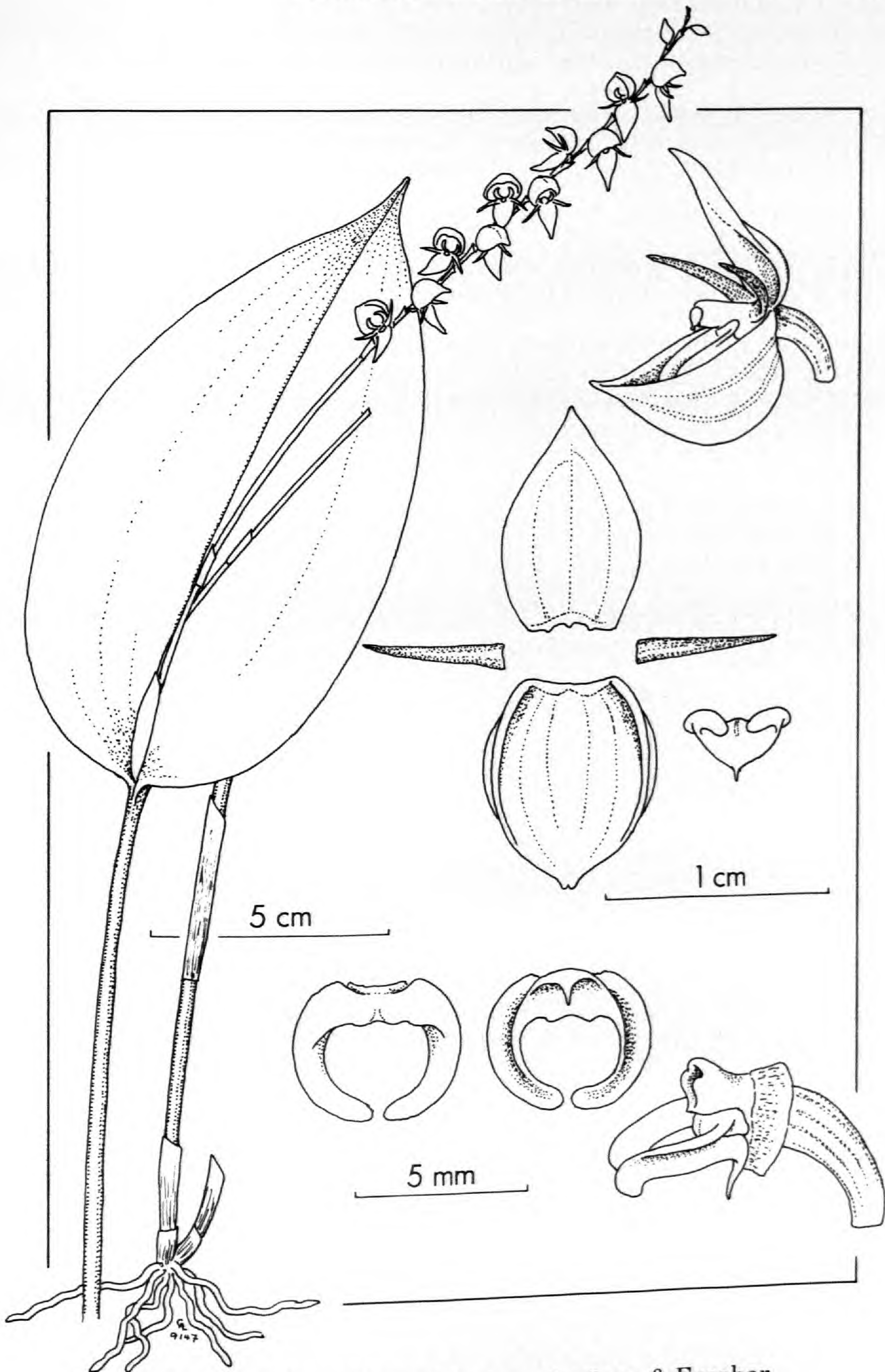


Plate 31. *Pleurothallis hippocrepica* Luer & Escobar

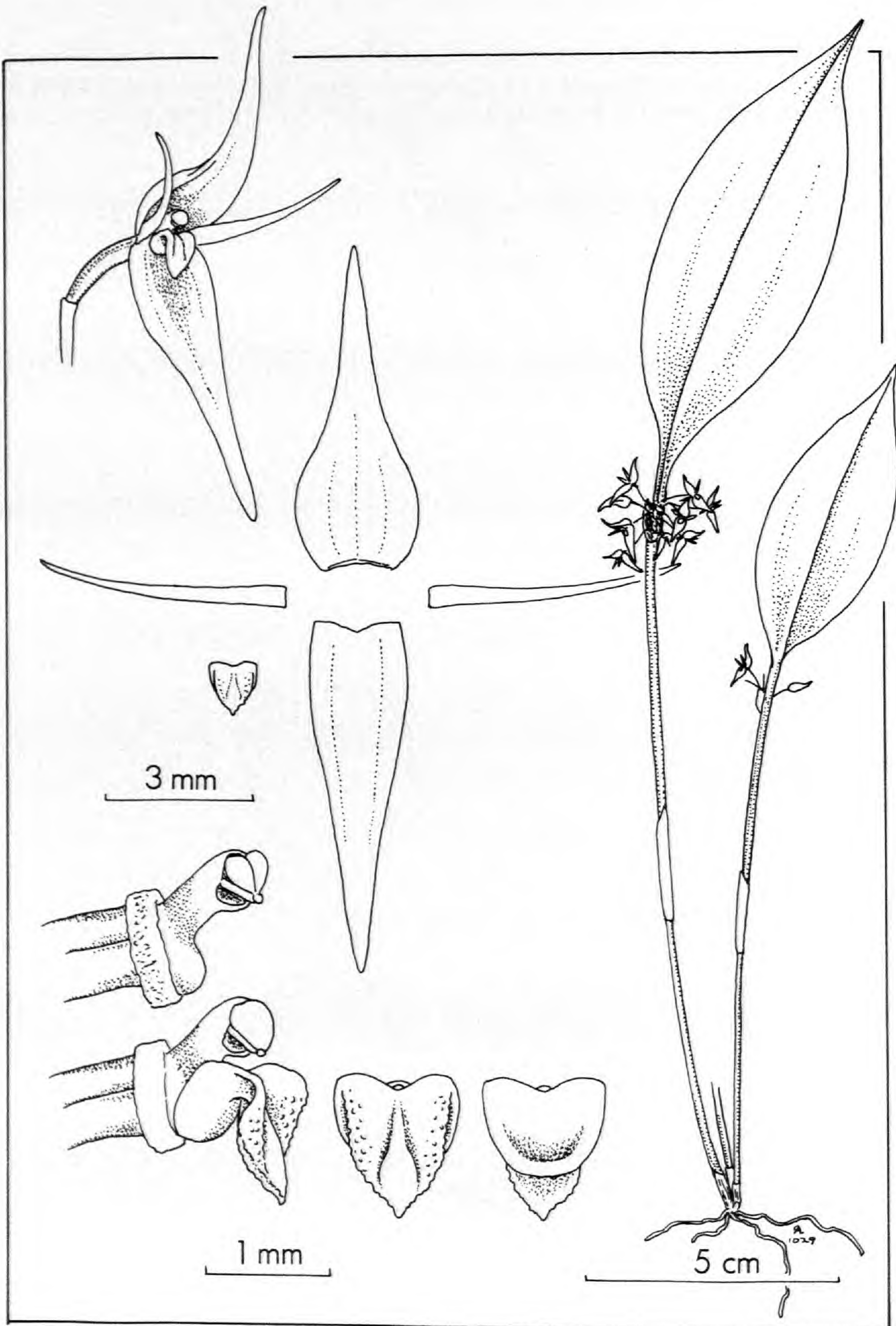


Plate 32. *Pleurothallis ruscifolia* (Jacq.) R. Br.

Pleurothallis subgen. **Pleurothallis** sect. **Truncatae** Luer, sect. nov.

Type: *Pleurothallis truncata* Lindl., Comp. Bot. Mag. 2:355, 1836.

Ety.: From the Latin *truncatus*, "truncate," in reference to the shape of the lip when expanded.

Labellum sphericum cum lateribus rotundatis incurvatis basi ad pedem obsolescentem columnae rigide affixum.

A solitary, unusual species is segregated here into a monotypic section characterized by the well-developed ramicaul, a sessile leaf, and a racemose inflorescence that emerges from the base of the leaf at the apex of the ramicaul without a visible annulus. The simultaneously flowered raceme lies upon the spreading leaf, very much like that seen in subgen. *Acianthera*. The flowers are subspherical with the synsepal deeply concave. In the natural position the lip is spherical, the broadly rounded lateral lobes incurved to meet in the midline, and the base is inflexibly connate to an obsolescent column-foot. This feature combined with an elongated column and an exposed apical anther, rostellum and stigma compatible with subgen. *Pleurothallis*, separate this species from all others in the subgenus.

The bright orange flowers and the shape of the lip suggest that this species is humming bird-pollinated. It is frequent at high altitudes in Ecuador.

Species: *P. truncata* Lindl. Plate 33.

Pleurothallis subgen. **Pseudoctomeria** (Krzl.) Luer, stat. nov.

Type: *Pleurothallis lentiginosa* Lehm. & Krzl., Bot. Jahrb. Syst. 26:446, 1899.

Ety.: From the Greek *pseudo-*, "false," and the genus *Octomeria*, referring to Kränzlin's view of the species.

Bas.: *Pseudoctomeria* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:220, 1925.

Type: *Pleurothallis lentiginosa* Lehm. & Krzl.

This unusual species of *Pleurothallis* from Costa Rica, treated here as a monotypic subgenus, was thought to be possibly an *Octomeria* by F. C. Lehmann who first discovered it. Kränzlin first described it in *Pleurothallis*, but in 1925 published it as a monotypic genus.

The ramicauls, about as long as the leaves they bear, are densely fascicled, and they produce a fascicle of small, single flowers near the apex with an annulus. The pedicels, ovaries and external surfaces of the sepals are verrucose, and the sepals are connate to above the middle. The oblong lip with a pair of longitudinal, marginal calli is hinged to a thick column-foot. The apex of the column is toothed, partially covering the ventral anther as seen in subgen. *Specklinia*. The stigma is ventral.

Species: *Pleurothallis lentiginosa* Lehm. & Krzl. Plate 34.

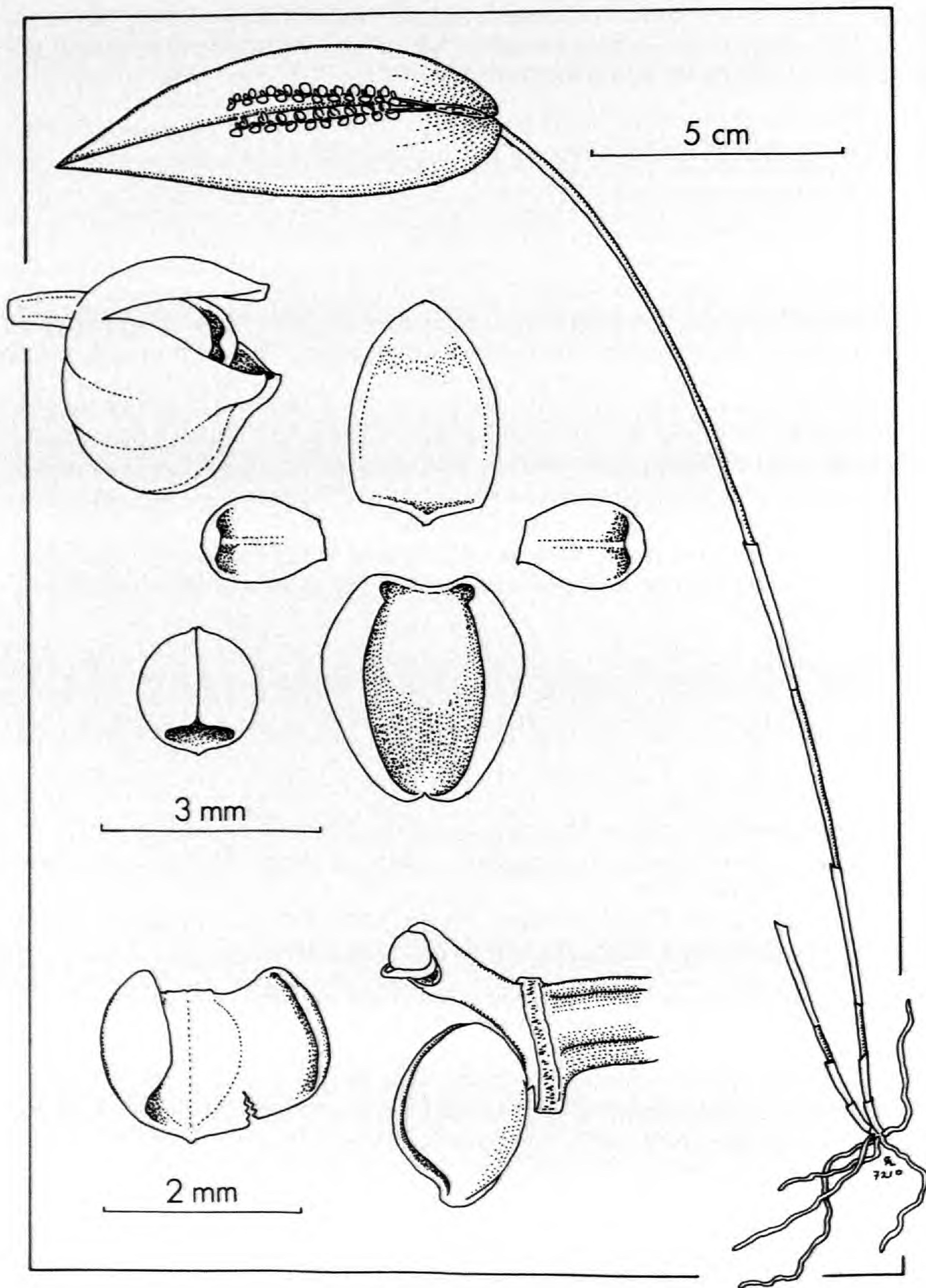


Plate 33. *Pleurothallis truncata* Lindl.

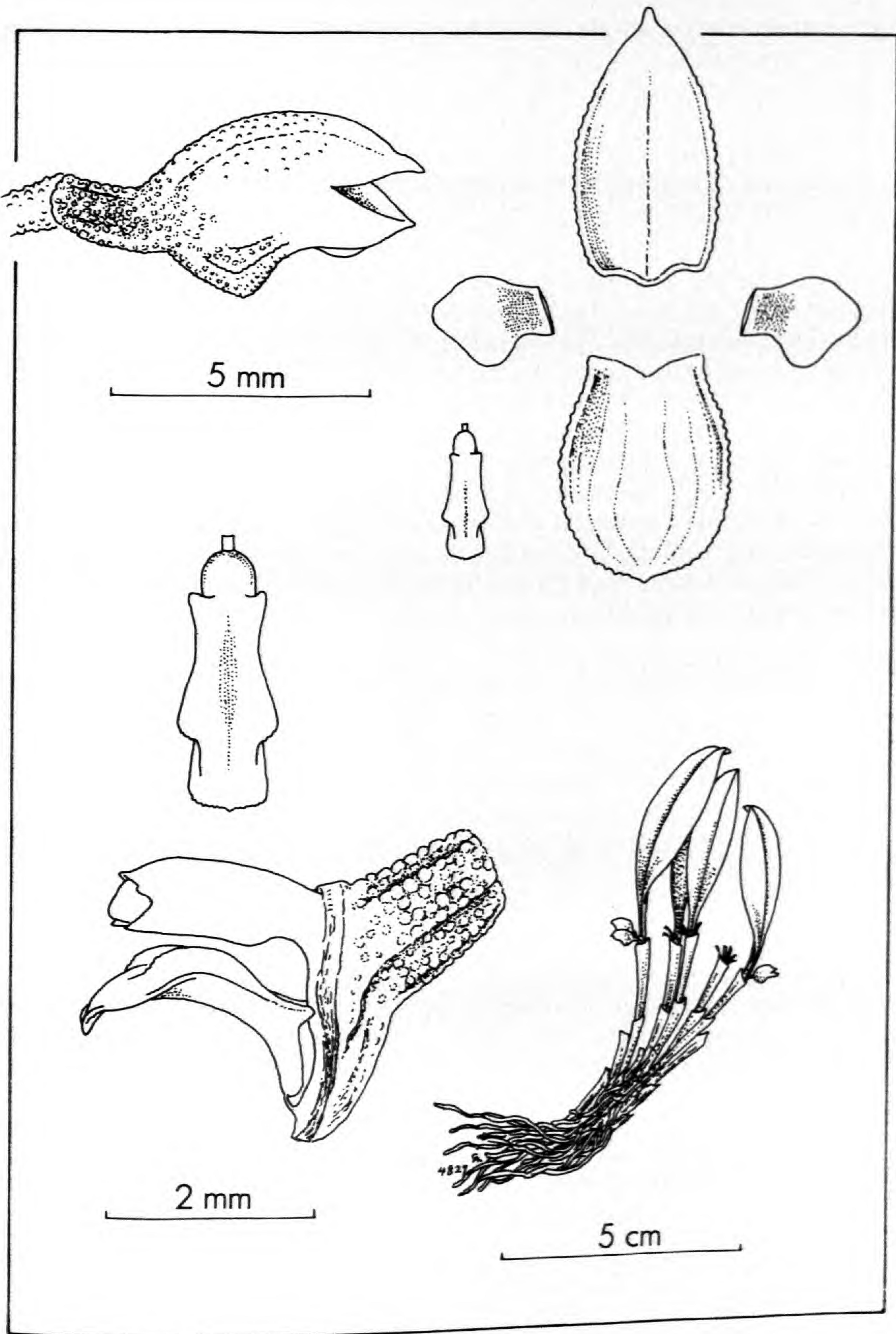


Plate 34. *Pleurothallis lentiginosa* Lehm. & Krzl.

Pleurothallis subgen. **Restrepioidia** Luer, nom. nov.

Type: *Pleurothallis hemirhoda* Lindl., Paxton's Fl. Gard. 3:133, 1853.

Ety.: Named for a similarity of the habit to that of the genus *Restrepia* H.B.K.

Syn.: *Pleurothallis* sect. *Restrepiodeae* Lindl., Folia Orchid. *Pleuroth.* 20, 1859.

Lectotype here designated: *Pleurothallis hemirhoda* Lindl. This species is one of two among eight listed by Lindley in his *Restrepiodeae* attributable to this subgenus. The other is *P. tentaculata*. (Lindley attributed his *P. restrepioides* to sect. *Elongatae*.)

In this subgenus the ramicaul is well-developed with a central tubular sheath and a few basal sheaths. The inflorescence is racemose or reduced to a fascicle of single flowers. The annulus may be obliterated by the abscission layer. The lateral sepals are connate, the apices of the petals are long-acuminate, and a pair of uncinat lobes rises from the basal part of the lip. The base of the lip is more or less adnate to the column-foot. The column is short and stout with a hooded ventral anther, and a thick, pedestal-like foot.

This subgenus is composed of a few relatively large to large species. One (*P. bisserula*), common and variable in the Eastern Cordillera of Colombia and neighboring Venezuela, has been known by six epithets. Two other species are widespread through the Andes, and the fourth (*P. tentaculata*) occurs in Peru.

Species: *P. biserrula* Rchb. f.

P. hitchcockii Ames

P. hemirhoda Lindl. Plate 35.

P. tentaculata (Poepp. & Endl.) Lindl.

Pleurothallis subgen. **Rhynchopera** (Kl.) Luer, stat. nov.

Type: *Rhynchopera pedunculata* Kl. in Link, Klotzsch & Otto, Ic. Pl. Rar. 2:103, 1844. [*P. pedunculata* (Kl.) Rchb. f., Linnaea 22:822, 1850]

Ety.: From the Greek *rhynchopera*, "a beaked bag," probably in allusion to the appearance of the flower.

Bas.: *Rhynchopera* Kl. in Link, Klotzsch & Otto, Ic. Pl. Rar. 2:103, 1844.

Type: *Rhynchopera pedunculata* Kl. [*P. pedunculata* (Kl.) Rchb. f.]

Klotzsch proposed *Rhynchopera* as a monotypic genus when he described *R. pedunculata*, but Reichenbach reduced it soon thereafter to *Pleurothallis*. Since then, several allied species have also been attributed to *Pleurothallis*, and they now form a small, homogeneous group which is easily recognizable.

The subgenus is characterized by well-developed ramicauls that bear a petiolate leaf. The simultaneously flowered raceme arises from a conspicuous, foliaceous spathe with an annulus below the abscission layer. The lateral sepals are connate, and the petals are narrowly acute. The most distinctive feature is the truncate base of the simple lip which is firmly and broadly united to the short, pedestal-like foot of the column. The column is cylindrical with an apical or subapical anther and stigma.

Species: *P. fastidiosa* Luer Plate 36.

P. navicularis Lindl.

P. lanceolata Lindl.

P. pedunculata (Kl.) Rchb. f.

P. loranthophylla Rchb. f.

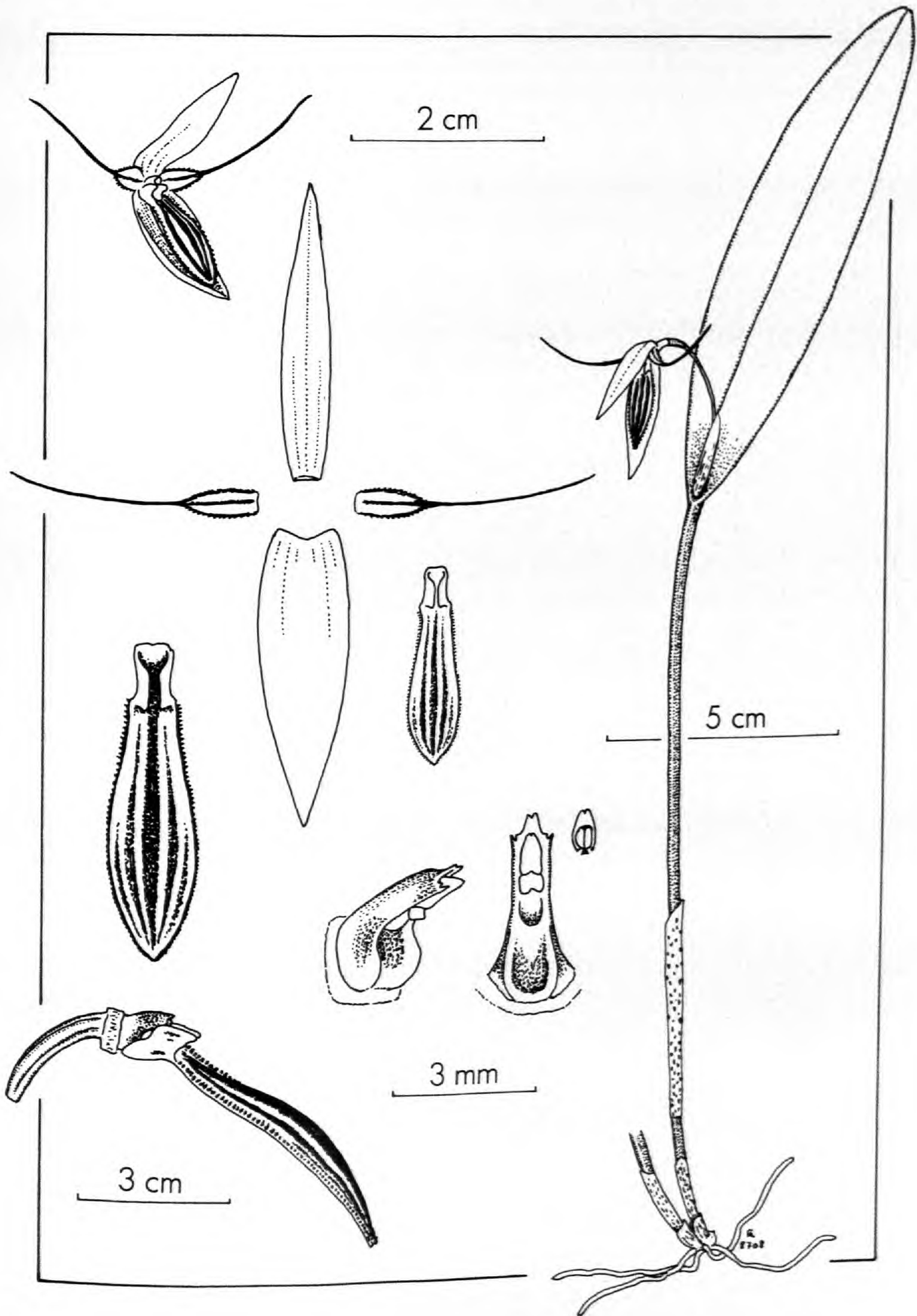


Plate 35. *Pleurothallis hemirhoda* Lindl.

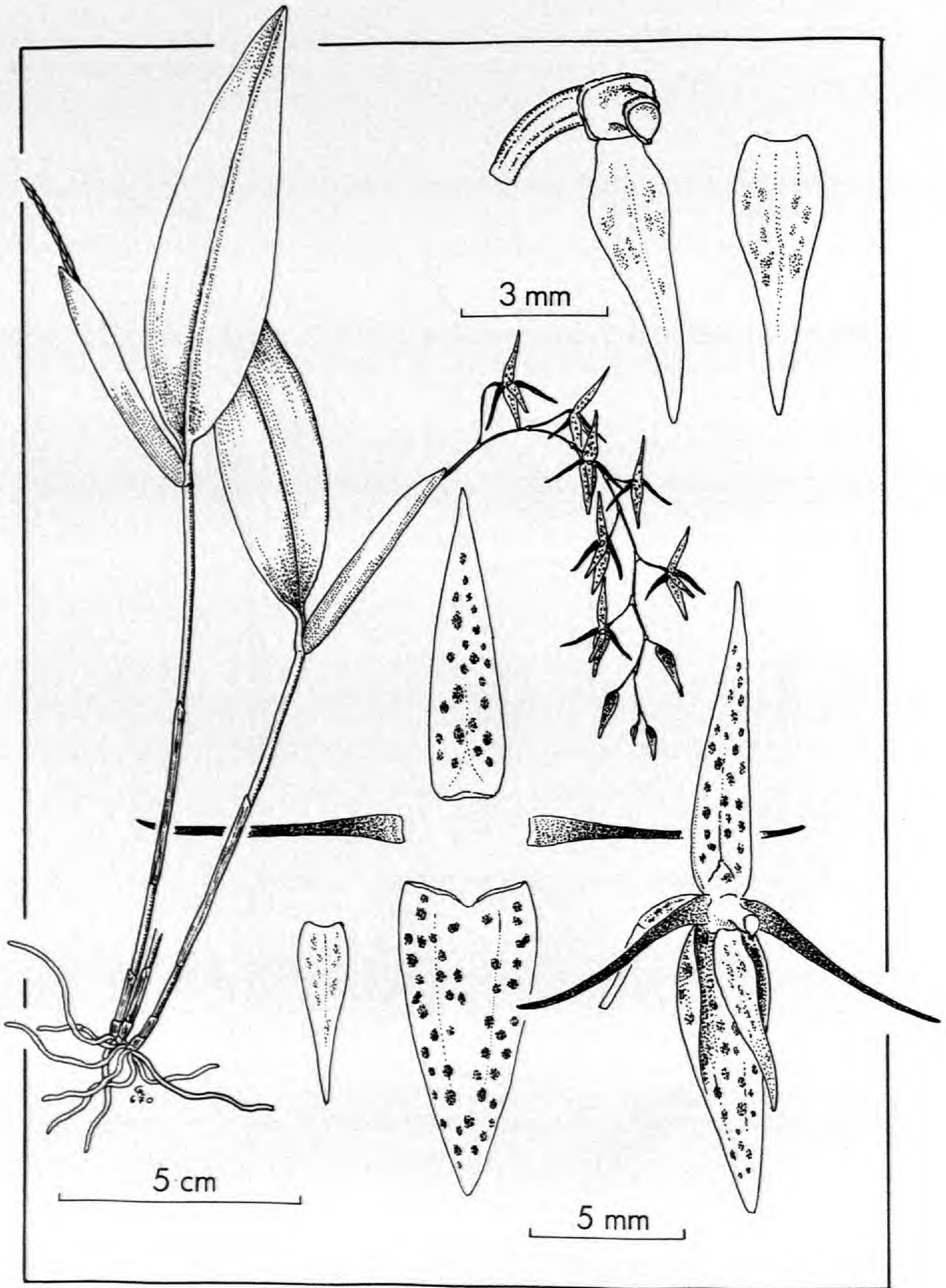


Plate 36. *Pleurothallis fastidiosa* Luer

Pleurothallis subgen. **Rubellia** Luer, subgen. nov.

Type: *Pleurothallis rubella* Luer, Selbyana 3:378, 1977.

Ety.: From the Latin *rubellus*, "a little red one," referring to the small habit and the little red flower.

Ramicaules abbreviati. Racemus elongatus fractiflexus successiviflorus. Labellum ciliatum callo basali orbiculari concavo pubescenti. Columna brevis cylindrica anthera apicali.

This subgenus consists of a single small species with a combination of morphological features that do not comply with those of any of the other subgenera. The habit is similar to that of *P.* subgen. *Specklinia*. The ciliate lip has a large, rounded, concave, pubescent callus at the base, possibly a greatly modified glenion. The column is short and terete with an exposed apical anther and stigma as in *P.* subgen. *Pleurothallis*.

A yellow form of this species was sent from Colombia to Garay who described it in the genus *Platystele*. A few years later the red form from Panama was described in *Pleurothallis*.

Species: *P. rubella* Luer, Selbyana 3:378, 1976 Plate 37.
Syn.: *Platystele aurea* Garay, Orquideología 8:182, 1973, nec *Pleurothallis aurea* Lindl. 1843, nec A. Rich. & Gal. 1845.

Pleurothallis subgen. **Sarracenella** (Luer) Luer, stat. nov.

Type: *Physosiphon pubescens* Barb. Rodr., Gen. Sp. Orch. Nov. 1:27, 1887.

Ety.: Named for the similarity of the sepaline tube to the tube of the pitcher-plant genus *Sarracenia* L.

Bas.: *Sarracenella* Luer, Selbyana 5:388, 1981.
Type: *Physosiphon pubescens* Barb. Rodr.

Syn.: *Physosiphon* "tribus" *Geocalpa* Krzl., Orchis 2:18, 1909, nomen nudum.
Lectotype here designated: *Physosiphon pubescens* Barb. Rodr., Gen. Sp. Orch. Nov. 1:27, 1877. (*P. sarracenia* Luer)

Ety.: From the Greek *geo-*, "earth-," *calpa*, "?calyx," referring to the position of the flowers borne from a creeping rhizome.

[Syn.: *Geocalpa* Brieg., Die Orchideen 440, 1975, nomen invalid.]

The two Brazilian species of this subgenus were recently transferred from *Physosiphon* to the genus *Sarracenella*. Although the sepaline tube is most unusual in the subtribe, it is difficult to maintain the genus while the habit, petals, lip and column can be so well accommodated in *Pleurothallis*.

The species are characterized by a creeping rhizome with erect, thick, short-stemmed leaves. The short raceme emerges from the base of the leaf without an annulus, and it usually produces a facing pair of erect, long-tubular flowers decurved at the apex. The petals and lip are deep within the sepaline tube. The column is elongate with a ventral stigma and a hooded ventral anther.

The following new name and combination become necessary:

Pleurothallis asaroides (Krzl.) Luer, comb. nov.

Physosiphon asaroides Krzl., Orchis 2:16, 1909.

Phloeophila asaroides (Krzl.) Garay, Orquideología 9:117, 1974.

Geocalpa asaroides (Krzl.) Brieg., Die Orchideen 440, 1975, nom. invalid.

Sarracenella asaroides (Krzl.) Luer, Selbyana 5:388, 1981.

Pleurothallis sarracenia Luer, nom. nov., non *P. pubescens* Lindl. Plate 38.

Physosiphon pubescens Barb. Rodr., Gen. Spec. Orchid. Nov. 1:27, 1877.

Phloeophila pubescens (Barb. Rodr.) Garay, Orquideología 9:118, 1974.

Geocalpa pubescens (Barb. Rodr.) Brieg., Die Orchideen 440, 1975, nom. invalid.

Sarracenella pubescens (Barb. Rodr.) Luer, Selbyana 5:388, 1981.

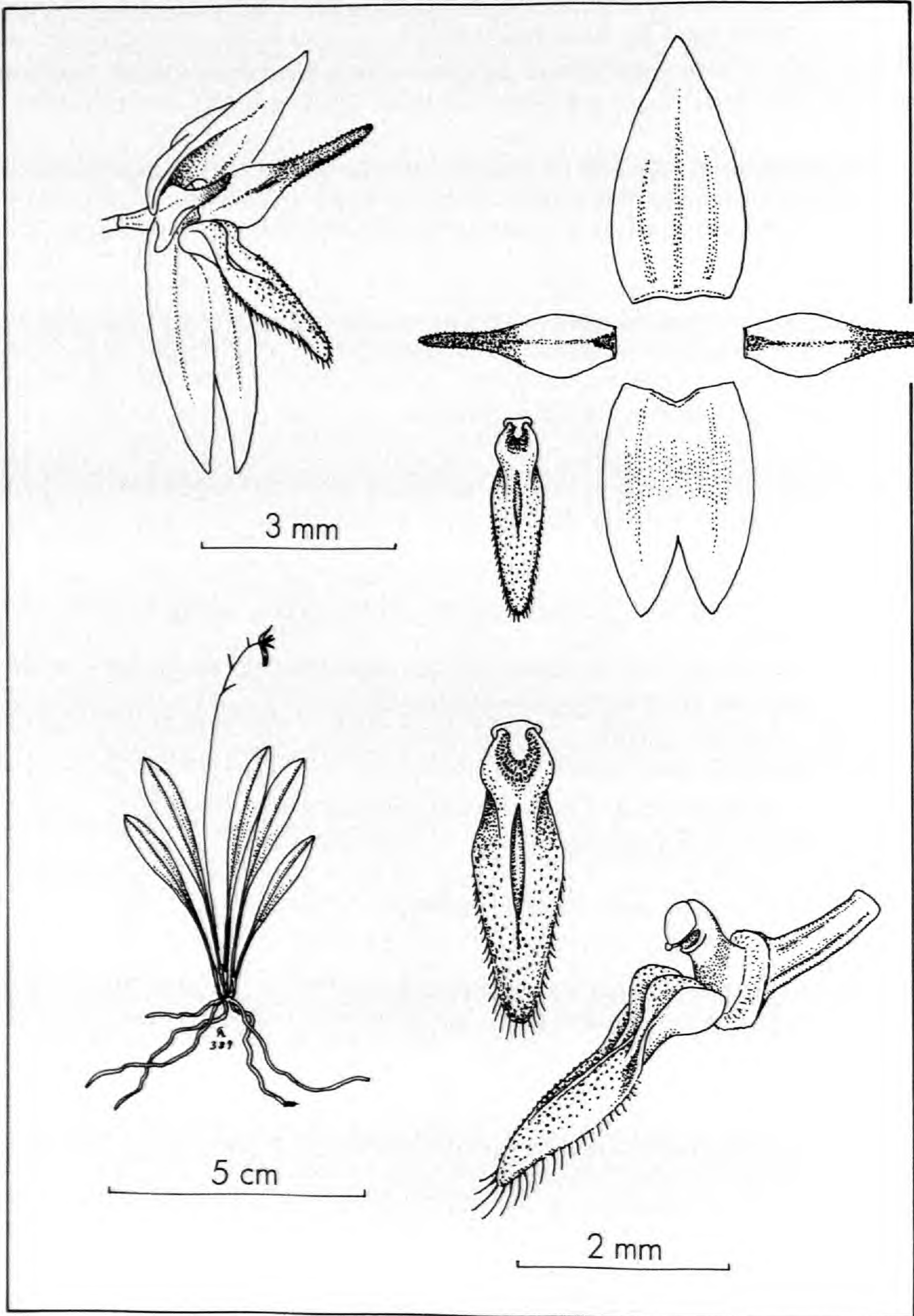


Plate 37. *Pleurothallis rubella* Luer

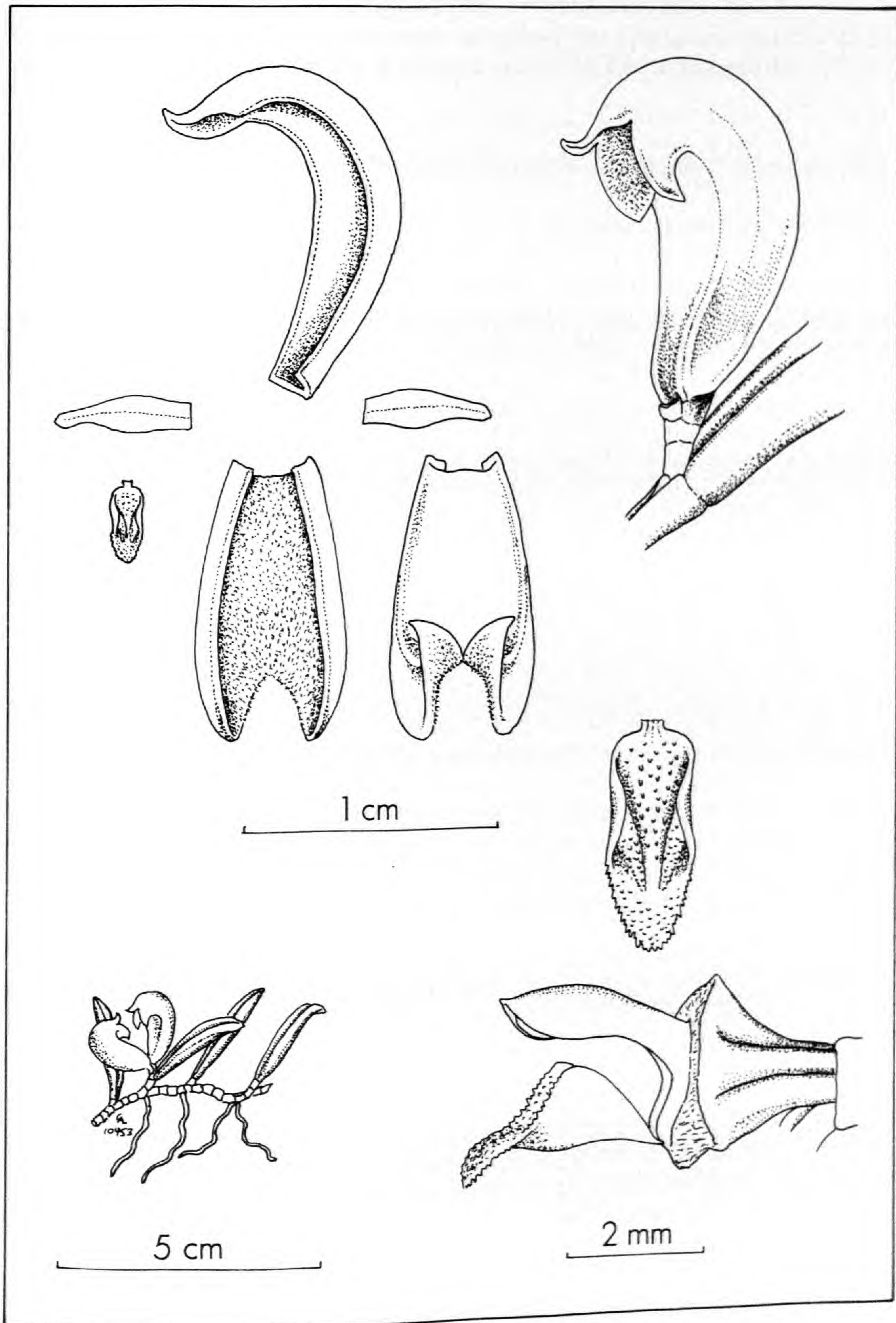


Plate 38. *Pleurothallis sarracenia* Luer

Pleurothallis subgen. **Scopula** Luer, nom. nov.

Type: *Colombiana garayana* Orquideología 8:230, 1974. [*Pleurothallis garayana* (Ospina) Luer, Selbyana 1:90, 1975]

Ety.: From the Latin *scopula*, "a little broom," referring to the fascicled inflorescence near the apex of the leaf.

Syn.: *Colombiana* Ospina, Orquideología 8:230, 1974.

Type: *Colombiana garayana* Ospina [*Pleurothallis garayana* (Ospina) Luer]

Ety.: Named for Colombia, the country of origin of *C. garayana*.

This subgenus, consisting of four Colombian and Ecuadorian species, is easily recognized by the elliptical or narrowly elliptical leaves with a tuft of single-flowered peduncles emerging from what looks like the midrib near the apex. The leaves are actually exceedingly long-decurrent on the ramicaul. No annulus is visible. The flowers are similar to those of *P.* subgen. *Pleurothallis*: the column is cylindrical with an apical or subapical anther and stigma, and an absolescent foot.

Species: *P. garayana* (Ospina) Luer

P. penicillata Luer Plate 39.

P. ruscaria Luer

P. scoparum Rchb. f.

Pleurothallis subgen. **Specklinia** (Lindl.) Garay, Orquideología 9:121, 1974.

Type: *Epidendrum lanceola* Sw., Nov. Gen. Sp. Prodr. 123, 1788. [*Pleurothallis lanceola* (Sw.) Spreng., Syst. 3:731, 1826]

Ety.: Named in honor of Rudolph Speckle, early nineteenth century English engraver of illustrations of plants.

Bas.: *Specklinia* Lindl., Gen. Sp. Orch. Pl. 8, 1830.

Lectotype: *Epidendrum lanceola* Sw., Nov. Gen. Sp. Prodr. 123, 1788. (Garay & Sweet, J. Arnold Arb. 53:528, 1972)

This subgenus includes a great number of species characterized by abbreviated or elongated ramicauls and an inflorescence that emerges with an annulus. The rhizome may be contracted or elongated. The sepals and petals are usually membranous, and the lateral sepals may be free or connate. The lip is freely hinged to the column-foot. The column is well-developed or elongated with or without wings, and the apex, frequently toothed, more or less covers the ventral anther, rostellum and stigma.

The above generalized description includes most of the taxa in the "Specklinia Affinity." Those groups of species which have evolved some morphological features or combinations of features that distinguish them from the above have been recognized as subgenera (e.g. *Dracontia*, *Elongatia*, *Empusella*, *Physosiphon* etc.), while those groups remaining within the above definition have been recognized as sections of *Specklinia*.

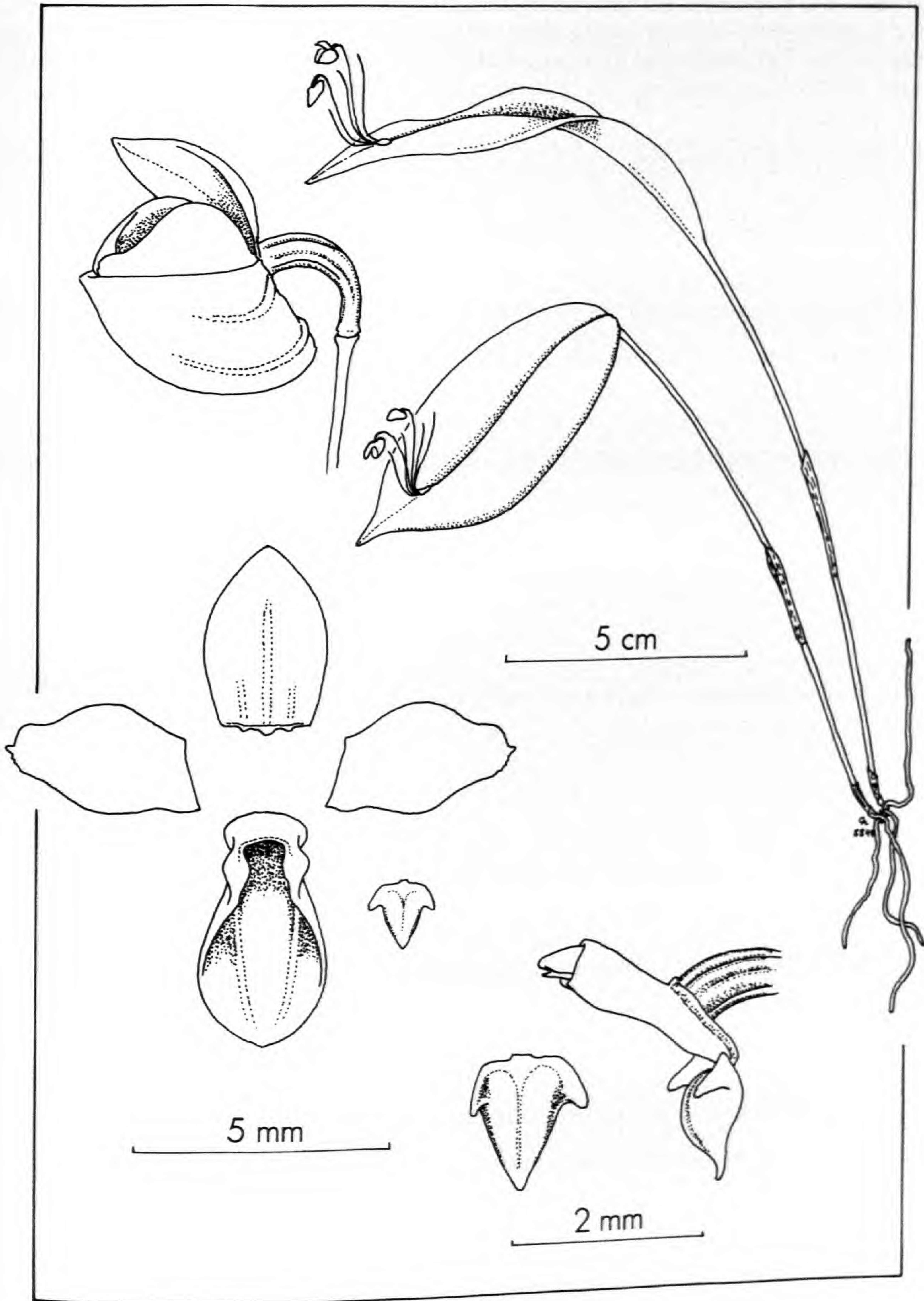


Plate 39. *Pleurothallis penicillata* Luer

Vegetatively some of the species of this subgenus are indistinguishable from those of several other genera (e.g. *Acostaea*, *Masdevallia*, *Platytele*, or *Scaphosepalum*) or some other subgenera of *Pleurothallis* (e.g. *Aenigma*, *Andreettaea*, *Mirabilia*, *Rubellia* or *Xenion*). Ten sections and two subsections may be defined. Although the divisions are usually easily recognizable, a few species sit on the various lines tentatively drawn.

KEY TO THE SECTIONS AND SUBSECTIONS OF SUBGEN. *SPECKLINIA*

- 1 Ramicaul shorter than the leaf 2
 1' Ramicaul longer than the leaf 11
- 2 Sepals free near the middle but adherent at the apex 3
 2' Sepals free at the apex 4
- 3 Raceme short, flowers fleshy *S. sect. Tribuloides*
 3' Raceme elongate, flowers membranous *P. alexii* (sect. *Hymenodanthae*)
- 4 Sepals fleshy and tall-carinate *S. sect. Tripteranthae*
 4' Sepals not tall-carinate 5
- 5 Raceme loose, more or less simultaneously flowered; lip
 with prominent, uncinata, basal lobes *S. sect. Unciferae*
 5' Not the above combination of characters 6
- 6 Lip cuneiform *S. sect. Mentosae*
 6' Lip not cuneiform 7
- 7 Raceme loose, 2 or more flowers open simultaneously;
 lip simple, longitudinally low-bicallous, not
 bilobulate at the base; column-foot often with
 a pair of lobules *S. sect. Hymenodanthae* subsect. *Longicaulae*
 7' Raceme variable; lip variably callous, usually with
 lateral or basal lobes, often bilobulate at the base 8
- 8 Raceme congested at the apex of the peduncle; petals
 ventricose and entire *S. sect. Hymenodanthae* subsect. *Apodae-Caespitosae*
 8' Raceme loose; petals not ventricose and entire 9
- 9 Petals often carinate or verrucose externally; lip more or less
 broadly unguiculate usually below obtuse marginal angles *S. sect. Effusae*
 9' Petals entire, fringed, ciliate, or long-acuminate, not carinate
 or verrucose (except *P. seriata*); lip variously lobed, often
 with membranous basal lobules, usually not unguiculate 10
- 10 Lip thick, callous, often verrucose or fringed, usually with
 lateral or basal lobes *S. sect. Muscaria*
 10' Lip longitudinally bicallous, usually ending in a bifid callus
 above the base, often with small, marginal lobes *S. sect. Muscosae*
- 11 Ramicaul enclosed by a series of sheaths; peduncle, pedicel
 and ovary verrucose *S. sect. Cucumeres*
 11' Ramicaul enclosed by basal sheaths, and often another near
 the middle; peduncle, pedicel and ovary not verrucose 12
- 12 All 3 sepals free above the base (except *P. racemiflora*); lip
 not broadly unguiculate *S. sect. Acuminatae*
 12' Lateral sepals connate or semiconnate; lip
 broadly unguiculate *S. sect. Effusae*

Pleurothallis subgen. **Specklinia** sect. **Acuminatae** Lindl., Folia Orchid. *Pleuroth.* 32, 1859.

Type: *Dendrobium acuminatum* H.B.K., Nov. Gen. Sp. 1:357, 1816. [*P. acuminata* (H.B.K.) Lindl., Edwards' Bot. Reg. 28(Misc.):70, 1842]

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

Syn.: *Anathallis* Barb. Rodr., Gen. Sp. Orch. Nov. 1:23, 1877.

Lectotype: *Anathallis fasciculata* Barb. Rodr., Gen. Sp. Orch. Nov. 1:23, 1877. [*P. fasciculata* (Barb. Rodr.) Cogn. Fl. Bras. 3(4): 559, 1896] (Garay, Orquideologia 9:122, 1974)

Ety.: From the Greek *anathallos*, "without a branch," without an obvious object of reference.

Syn.: *Pleurothallis* sect. *Anathallis* (Barb. Rodr.) Cogn., Fl. Bras. 3(4):380, 1896.

Lectotype here designated: *Anathallis fasciculata* Barb. Rodr. This species is the lectotype of the genus *Anathallis*.

Syn.: *Pleurothallis* sect. *Margaritifera* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7:272, 1918.

Type: *Pleurothallis margaritifera* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7:272, 1918.

Ety.: From the Latin *margaritifer*, "pearl-bearing," referring to the beaded callus down the center of the lip.

[Syn.: *Pleurothallis* sect. *Racemosae* Pabst, Orch. Bras. 1:164, 1975, nomen invalid.]

This section consists of species that vary from densely caespitose to shortly repent or prolific, with ramicauls shorter or longer than the leaf they bear. A tubular sheath is inserted near the middle of the ramicaul with another one or two at the base. The racemose inflorescence, single or multiple, longer or shorter than the leaf, emerges laterally from the ramicaul with an annulus below the abscission layer. The sepals, glabrous externally but often pubescent within, are free (except. *P. racemiflora*). The lip is oblong-ligulate usually with a pair of longitudinal calli, sometimes with a midline callus as well. In some species the widened margins below the middle are erect. The base is hinged simply to the stout column-foot. The column is elongated, with or without wings or teeth, with the ventral anther partially covered at the apex. A relationship with sect. *Hymenodanthe* subsect. *Longicaulae* can be seen.

Representative species:

P. acuminata (H.B.K.) Lindl.

P. amblyopetala Schltr.

P. angustilabia Schltr.

P. asperilinguis Rchb. f. & Warsc.

P. brittonii Rolfe

P. citrina Schltr.

P. coripatae Luer & Vásquez

P. dolichopus Schltr.

P. gelida Lindl.

P. gracilentata Luer & Vásquez

P. guentheri Schltr.

P. linearifolia Cogn.

P. margaritifera Schltr.

P. meridana Rchb. f.

P. obovata Lindl.

P. papuligera Schltr.

P. pidax Luer

P. platystylis Schltr.

P. racemiflora Lindl. ex Lodd.

P. ramulosa Lindl.

P. regalis Luer Plate 40.

P. sclerophylla Lindl.

P. soratana Rchb. f.

P. spathulabia Schltr.

P. tenuifolia C. Schweinf.

P. unduavica Luer & Vásquez

P. vasquezii Luer

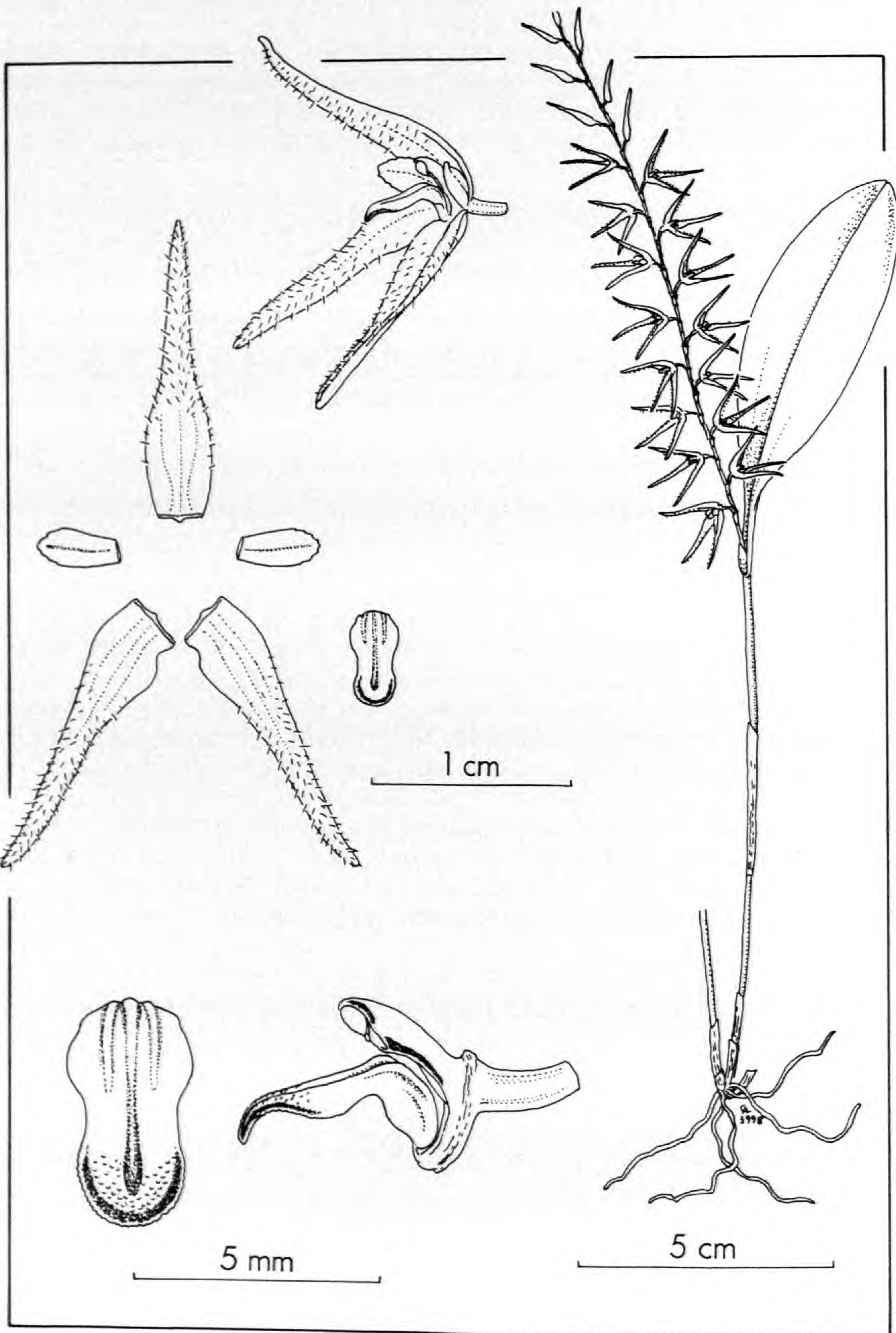


Plate 40. *Pleurothallis regalis* Luer

Pleurothallis subgen. **Specklinia** sect. **Cucumeres** Luer, sect. nov.Type: *Pleurothallis cucumeris* Luer, Selbyana 5:162, 1979.Ety.: From the Latin *cucumeris*, "like a cucumber," referring to the verrucose flowers.

Ramicaulis multivaginatius. Pedunculus pedicellus ovarium et sepala verrucosi.

The solitary species of this subgenus may be recognized by the ramicaul enclosed by a series of four to six sheaths of about equal length (not found elsewhere in the "Specklinia Affinity"), and short, simultaneously flowered racemes with verrucose peduncles, pedicels, ovaries and sepals. The lip is simple and the column is elongate with the toothed apex partially covering the anther.

Species: *P. cucumeris* Luer Plate 41.**Pleurothallis** subgen. **Specklinia** sect. **Effusae** Lindl., Edwards' Bot. Reg. 28(Misc.):74, 1842.

Lectotype here designated: *Pleurothallis hypnicola* Lindl., Edwards' Bot. Reg. 28(Misc.):75, 1842. This species is chosen from 21 various species listed by Lindley in sect. *Effusae*. It is the only species with a long, loose inflorescence not accommodated in other sections.

Ety.: From the Latin *effusus*, "spread out," in reference to the loose inflorescence.[Syn.: *Pleurothallis* sect. *Fractiflexae* Pabst, Orch. Bras. 1:154, 1975, nomen invalid.]

This large heterogeneous section is characterized by ramicauls shorter or longer than the leaves, and with a tubular sheath near the middle and two or three at the base. The racemose inflorescence, simultaneously or successively flowered, longer or shorter than the leaf, emerges from the ramicaul with a distinct or indistinct annulus which is sometimes obliterated by the abscission layer. The annulus is absent or not visible in *P. imraei* Lindl. and its relatives. The sepals are glabrous externally, but often pubescent within. The lateral sepals are connate at least to the middle. The petals are more or less verrucose, callous, or carinate externally on those species with a short ramical and often without a callus on those species with long ramicauls, but these characters blend together. The column is elongate, with or without teeth or wings, often but not always covering the anther. The anther and stigma, however, are always ventral.

Representative species:

P. amparoana Schltr.*P. arcuata* Lindl.*P. aristocratica* L. O. Wms.*P. avenacea* Ames*P. brenneri* Luer*P. campicola* Luer*P. chlorina* Luer*P. cypripedioides* Luer*P. diminuta* Luer*P. ephemera* Lindl.*P. flexuosa* (Poepp. & Endl.) Lindl.*P. granulosa* Barb. Rodr.*P. hians* Lindl.*P. hieroglyphica* Ames*P. hirsuta* Ames*P. humboldtiana* Luer*P. hypnicola* Lindl.*P. immersa* Lind. & Rchb. f.*P. imraei* Lindl.*P. longispicata* L. O. Wms.*P. nigriflora* L. O. Wms.*P. pelfifeloides* (Barb. Rodr.) Cogn.*P. pristeoglossa* Rchb. f. & Warm.*P. pseudochila* Luer & Escobar*P. resupinata* Ames*P. sarcopetala* (Barb. Rodr.) Cogn.*P. scabrata* Lindl.*P. schiedeii* Rchb. f.*P. trichostoma* Luer Plate 42.

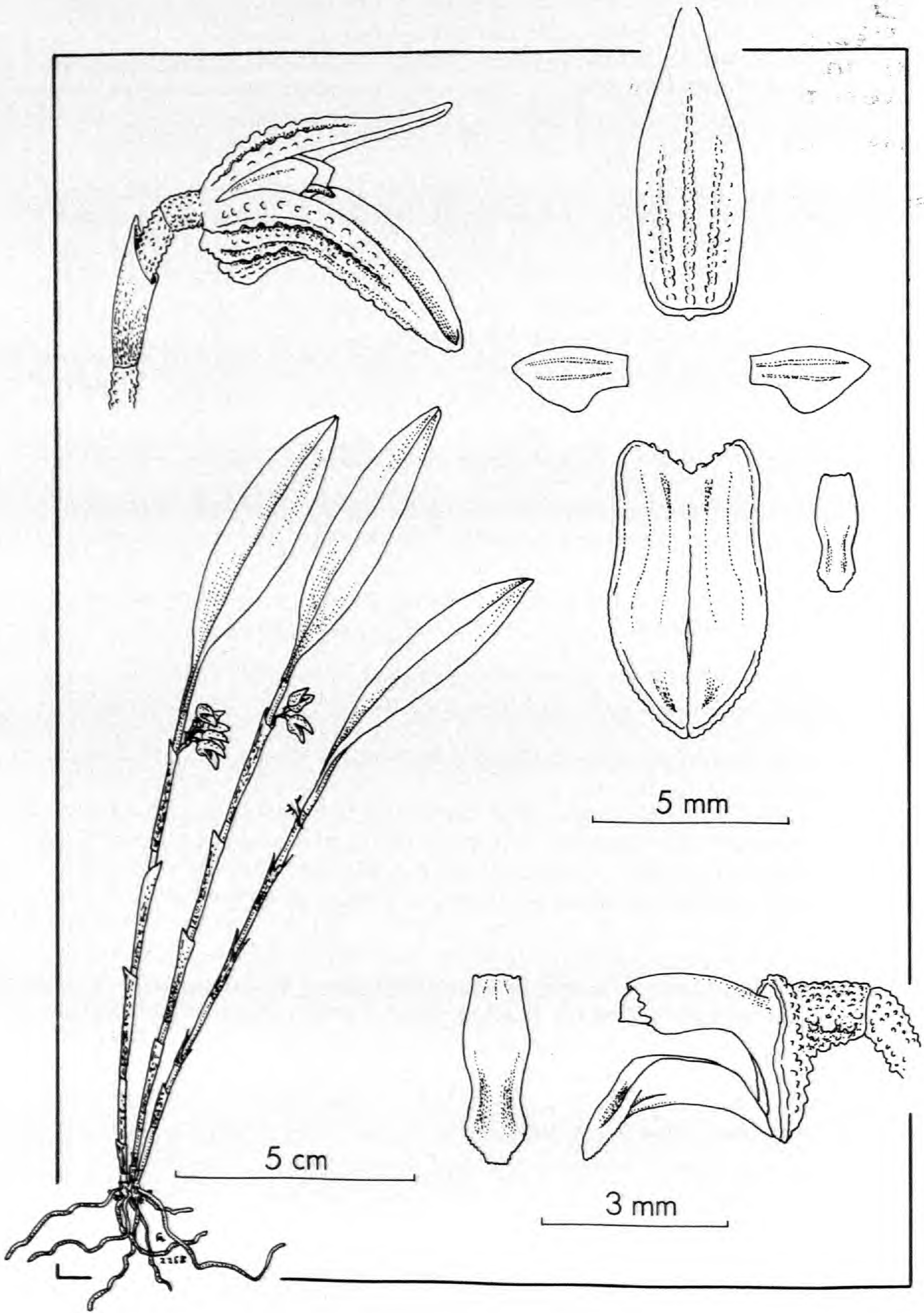


Plate 41. *Pleurothallis cucumeris* Luer

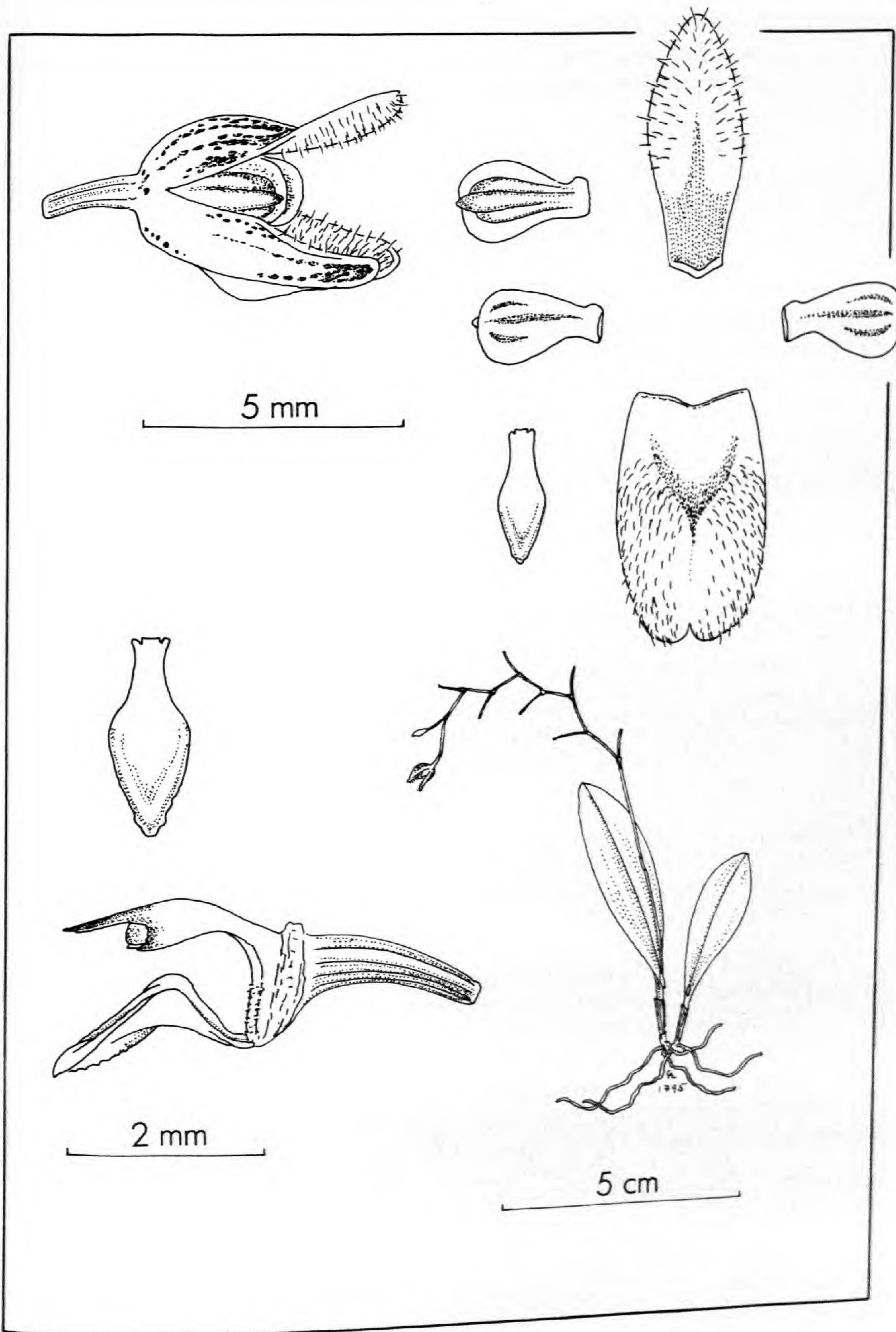


Plate 42. *Pleurothallis trichostoma* Luer

Pleurothallis subgen. **Specklinia** sect. **Hymenodanthae** Barb. Rodr., Gen. Sp. Orch. Nov. 2:9, 1882.

Lectotype here designated: *Pleurothallis grobyi* Batem. ex. Lindl., Edwards' Bot. Reg. 21:sub t.1797, 1835. This species, the most frequent and widespread, is one of 29 listed by Rodrigues.

Ety.: From the Greek *hymenodanthos*, "membranous flower," referring to the quality of the flowers.

This section, consisting of numerous, closely allied species, is characterized by small, caespitose, or repent plants with an abbreviated ramicaul and a racemose inflorescence, usually longer than the leaf, of two or more successive or simultaneous flowers. The inflorescence emerges from the ramicaul with an annulus.

The species can be subdivided into two subsections, but the boundary between the two is indistinct in several instances. The differences are little more than specific key characters, but most of the species can be assigned to one of the two subsections without difficulty.

Subsect. **Apodae-Caesпитosae** (Lindl.) Luer, stat. nov.

Type: *Epidendrum corniculatum* Sw., Prodr. 123, 1788. [*Pleurothallis corniculata* (Sw.) Lindl., Edwards' Bot. Reg. 28(Misc.):83, 1842.]

Ety.: From the Greek *apodion*, "an absent foot," and the Latin *caespitosus*, "tufted," referring to the short-stemmed, caespitose habit.

Bas.: *Pleurothallis* sect. *Apodae-Caesпитosae* Lindl., Folia Orch. *Pleuroth.* 35, 1859.

Lectotype here designated: *Epidendrum corniculatum* Sw. [*P. corniculata* (Sw.) Lindl.] This species, frequent and typical of the plants in this subsection, is chosen from 57 listed by Lindley.

This subsection of numerous species is characterized by the successively flowered, congested inflorescence borne at the apex of a filiform peduncle. The lateral sepals are semiconnate to connate. The petals are commonly dilated along the lower margin. The lip is fleshy or thick, often verrucose, with more or less erect lateral margins or lobes below the middle, often continuous with calli from the disc, suggesting the lips seen in *P.* subgen. *Acianthera*. The base may be bilobulate.

Representative species:

- | | |
|--|---|
| <i>P. acanthodes</i> Luer | <i>P. fulgens</i> Rchb. f. |
| <i>P. acicularis</i> Ames & Schweinf. | <i>P. glandulosa</i> Ames |
| <i>P. acrisepala</i> Ames & Schweinf. | <i>P. guanacastensis</i> Ames & Schweinf. |
| <i>P. alexii</i> Hawkes | <i>P. parvifolia</i> Lindl. |
| <i>P. areldii</i> Luer Plate 43. | <i>P. periodica</i> Ames |
| <i>P. barboselloides</i> Schltr. | <i>P. pyrsoles</i> Rchb. f. |
| <i>P. brighamii</i> S. Wats. | <i>P. sclarea</i> Rchb. f. |
| <i>P. cactantha</i> Luer | <i>P. scolopax</i> Luer & Escobar |
| <i>P. condylata</i> Luer | <i>P. uniflora</i> Lindl. |
| <i>P. corniculata</i> Lindl. | <i>P. vittariifolia</i> Schltr. |

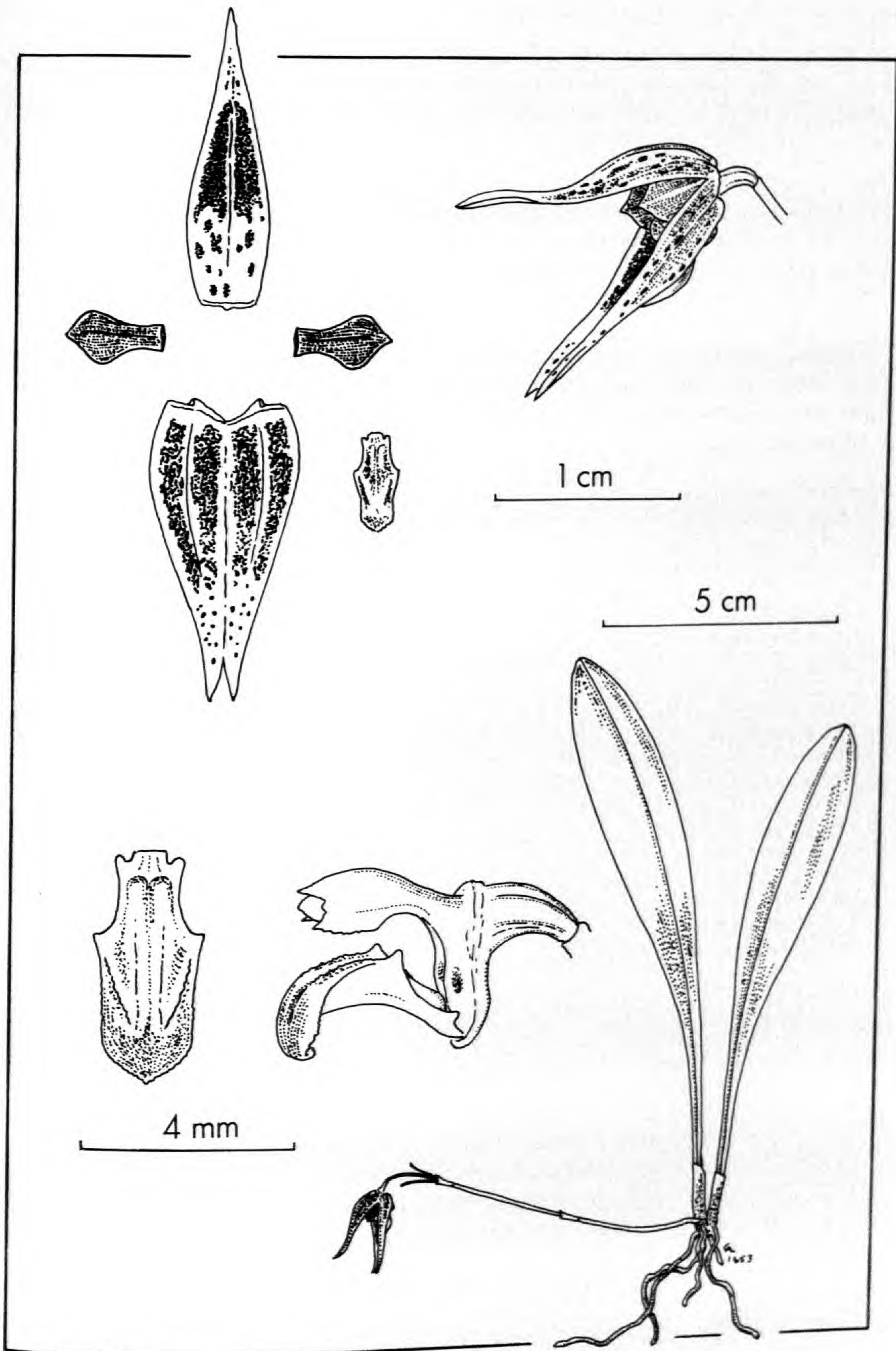


Plate 43. *Pleurothallis areldii* Luer

Subsect. **Longicaulae** (Barb. Rodr.) Luer, stat. nov.

Type: *Pleurothallis trilineata* Barb. Rodr., Gen. Sp. Orch. Nov. 1:6, 1877. (aff. *Pleurothallis grobyi* Batem. ex Lindl.)

Ety.: From the Latin *longicaulis*, "long-stemmed," referring to the long inflorescence.

Bas.: *Lepanthes* sect. *Longicaulae* Barb. Rodr., Gen. Sp. Orch. Nov. 2:40, 1882.

Lectotype here designated: *Pleurothallis trilineata* Barb. Rodr. (aff. *Pleurothallis grobyi* Batem. ex Lindl.)

[Syn.: *Pleurothallis* sect. *Prorepentes* Pabst, Orch. Bras. 165, 1975, nom. invalid.]

[Syn.: *Calyptrorchis* Brieg., Die Orchideen 428, 1975, nom. invalid.]

This subsection is characterized by the usually simultaneously flowered, loose raceme, usually longer than the leaf. The lateral sepals may be connate or free. The petals and lip are simple. The column-foot is often bicallos.

Representative species:

P. biglandulosa Schltr.

P. calyptrostele Schltr.

P. costaricensis Rolfe

P. curtisii Dod

P. digitale Luer

P. formondii Dod

P. geminiflora Ames, Hubbard & Schweinf.

P. gracillima Lindl.

P. grobyi Batem. ex Lindl. Plate 44.

P. haitiensis Dod

P. lanceola (Sw.) Spreng.

P. lichenicola Griseb.

P. microphila A. Rich. & Gal.

P. picta Lindl.

P. producta Luer

P. repens Ames

P. spiculifera Lindl.

P. stillsonii Dod

P. yucatanensis Ames & Schweinf.

Pleurothallis subgen. **Specklinia** sect. **Mentosae** Luer, sect. nov.

Type: *Pleurothallis mentosa* Cogn., Fl. Bras. 3(4):400, 1896.

Ety.: From the Latin *mentosus*, "with a prominent chin," in reference to the prominent mentum of the flower.

Racemus laxis successiviflorus. Flores mentosi. Labellum cuneiforme.

This section, composed of three closely allied species, is characterized by a loose, successively flowered raceme of flowers with a prominent chin formed by the bases of the sepals connate to the column-foot. The lip is cuneate. The column is elongate and cucullate.

Species: *P. aryter* Luer

P. determannii Luer Plate 45.

P. mentosa Barb. Rodr.

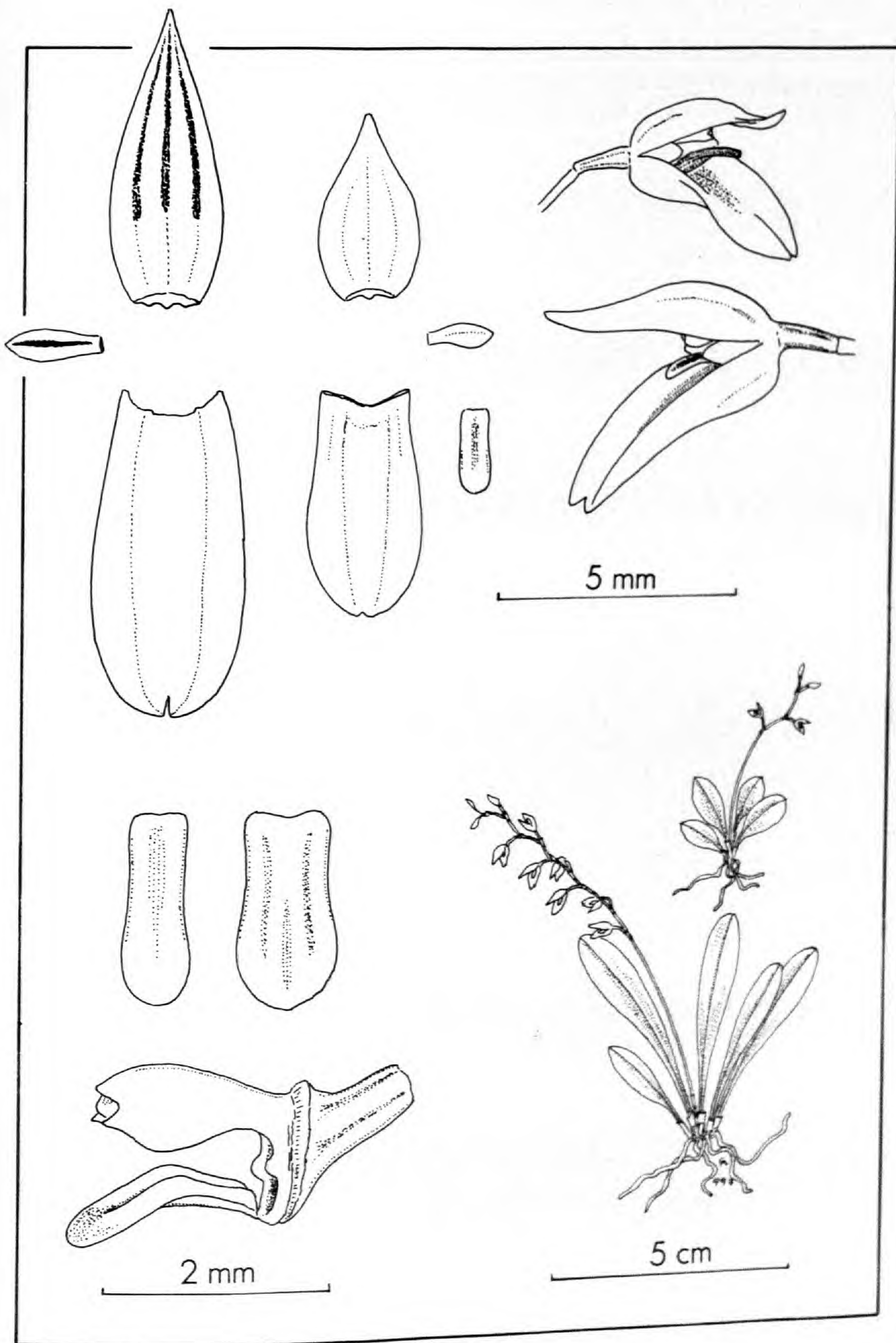


Plate 44. *Pleurothallis grobyi* Batem. ex Lindl.

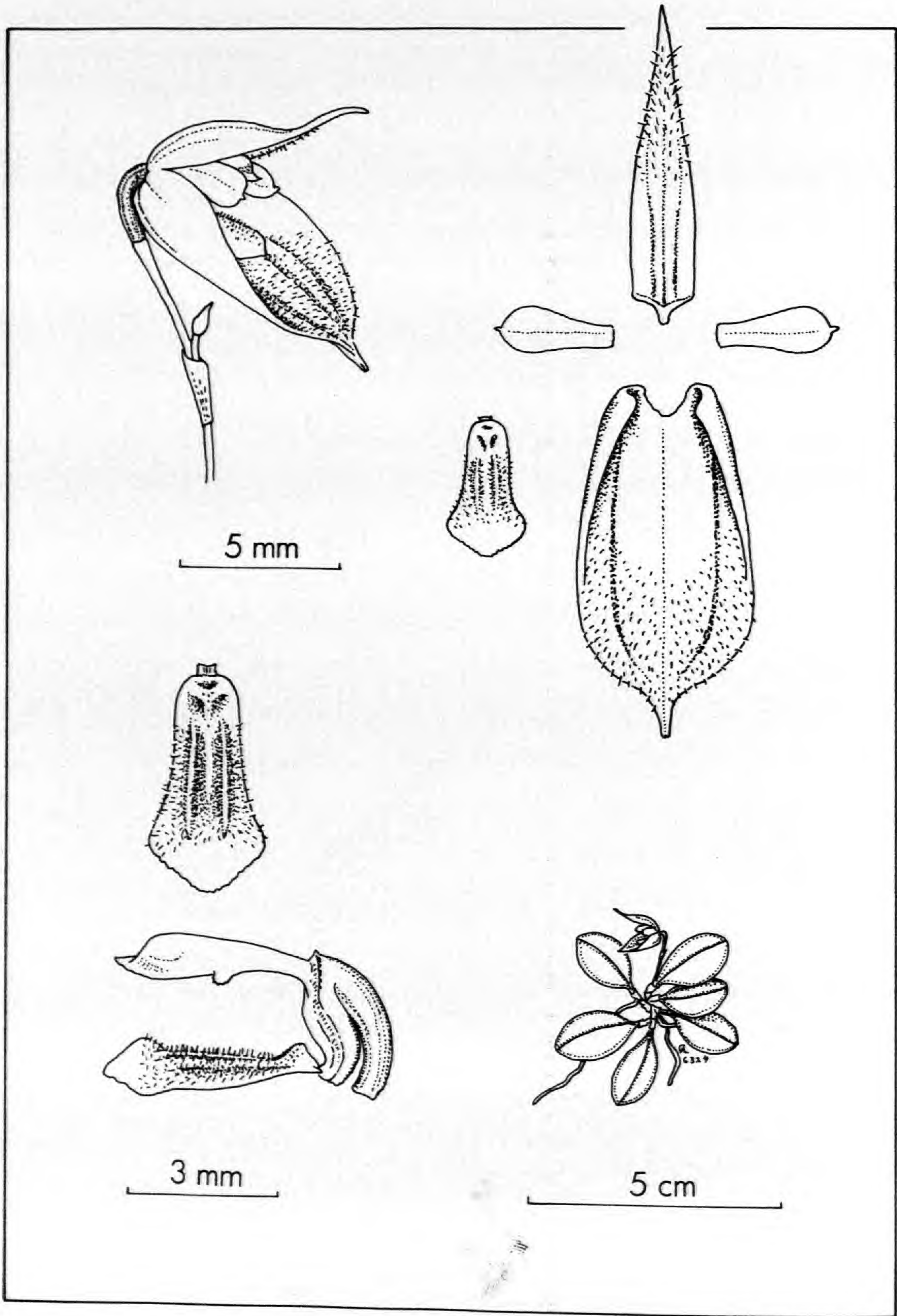


Plate 45. *Pleurothallis determannii* Luer

Pleurothallis subgen. **Specklinia** sect. **Muscariae** Luer, sect. nov.

Type: *Pleurothallis aristata* Hook., Ann. Mag. Nat. Hist. ser. 1, 2:329, 1839.

Ety.: From the Latin *muscarius*, "of flies," referring to the appearance of the flowers.

Racemus laxis successiviflorus. Sepala lateralibus libera. Petala acuta erosa lacerata vel fimbriata raro integra.

The species of this large section, characterized by small caespitose plants with a loose, successively-flowered raceme, are found commonly throughout the American tropics. The sepals are membranous and free, or the laterals may be connate to near the middle. The petals are variously lacerate, rarely entire, and the apex is commonly long-attenuate. The lip is fleshy or thick, often verrucose, with more or less erect lateral margins below the middle, often continuous with calli from the disc. The base may be membranously bilobulate. The lips are similar to many of those of *P.* subgen. *Acianthera*.

Representative species:

P. ancora Luer & Vásquez

P. aristata Hook.

P. caballensis Rchb. f.

P. cestrochila Garay

P. clavigera Luer

P. corynetes Luer & Vásquez

P. cynocephala Luer & Vásquez

P. echinodes Luer & Escobar

P. exesilabia Heller & Hawkes

P. gongylodes Luer

P. hastata Ames Plate 46.

P. helenae Fawc. & Rendle

P. herpestes Luer

P. ichthyonekeys Luer

P. intonsa Luer & Escobar

P. kennedyi Luer

P. latilabris Foldats

P. lipothrix Luer

P. macroblepharis Rchb. f.

P. megalops Luer

P. perangusta Luer

P. samacensis Ames

P. semperflorens Lindl.

P. seriata Lindl.

P. setigera Lindl.

P. setosa C. Schweinf.

P. simulatrix Luer

P. strumosa Ames

P. stumpflei Luer

P. tamboënsis Luer & Escobar

P. tempestalis Luer

P. xanthella Luer

Pleurothallis subgen. **Specklinia** sect. **Muscosae** Lindl., Edwards' Bot. Reg. 28(Misc.):82, 1842.

Lectotype here designated: *Epidendrum sertularioides* Sw., Prodr. 122, 1788. [*P. sertularioides* (Sw.) Spreng., Syst. Veg. 3:721, 1826], the earliest species attributable to this section.

Ety.: From the Latin *muscus*, "mossy," referring to the habit.

Syn.: *Palmoglossum* Kl. ex Rchb. f., Xenia Orchid. 1:175, 1856. nom. invalid.

Type: *Palmoglossum crassifolium* Kl. ex Rchb. f., Xenia Orch. 1:175, 1856. (*Pleurothallis minutalis* Lindl., Folia Orch. Pleuroth. 40, 1859)

Ety.: From the Greek, *palmoglossa*, "a shieldlike tongue," referring to the shape of the lip.

Syn.: *Pleurothallis* sect. *Subumbellatae* Pabst, Orch. Bras. 1:153, 1975.

Type: *Pleurothallis subumbellata* Cogn., Bull. Soc. Roy. Bot. Belgique 43:313, 1907.

Ety.: From the Latin *subumbellatus*, "subumbellate," referring to the inflorescence.

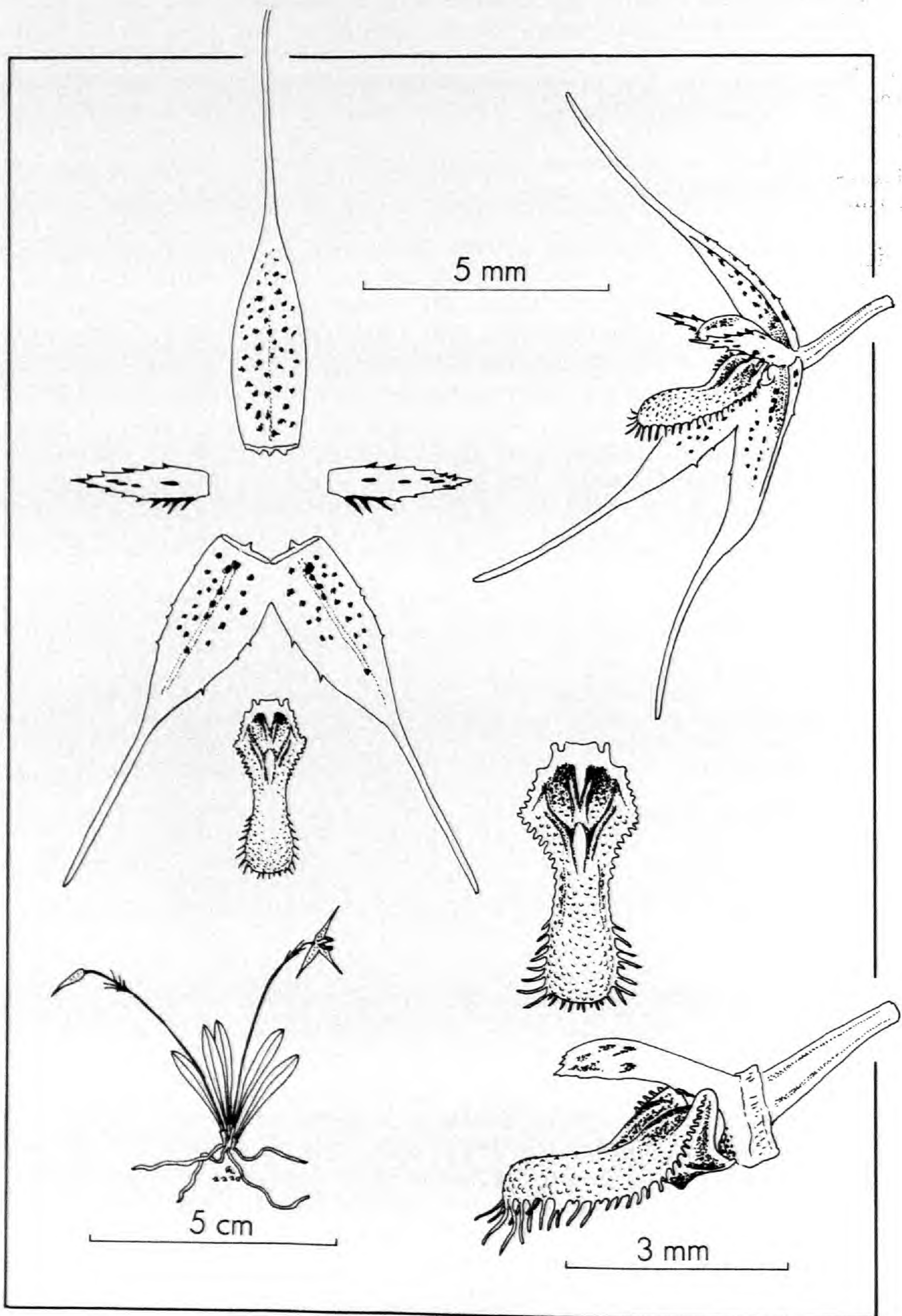


Plate 46. *Pleurothallis hastata* Ames

This large section is characterized by small caespitose or repent plants with an inflorescence of two or more flowers (rarely reduced to one) produced successively in a congested, subcongested or, less commonly, in a lax raceme which may be shorter or longer than the leaf. Sometimes the ramicaul approaches the leaf in length. The lateral sepals are free or connate. The petals are more or less acute or acuminate. The lip is ligulate, commonly ciliate, and often with small marginal lobes near the middle. The disc is provided with a pair of longitudinal calli that usually terminate in a more or less erect, bilobed projection above the base which is more or less accommodated by a concave column-foot. The base of the lip is often membranously bilobulate. The lip of some species is similar to that of some species of *Trichosalpinx* subgen. *Trichosalpinx*.

Representative species:

P. abbreviata Schltr.*P. aquinoi* Schltr.*P. barbulata* Lindl.*P. brevipes* Focke*P. breviscapa* C. Schweinf.*P. casualis* Ames*P. ciliolata* Schltr.*P. clandestina* Lindl.*P. comayagensis* Ames*P. corticicola* Schltr.*P. corynophora* Luer & Vásquez*P. cuspidata* Luer*P. dalessandroi* Luer*P. declivis* Lindl.*P. dendrophila* Rchb. f.*P. fuegii* Rchb. f.*P. githaginea* Pabst & Garay*P. iguapensis* Schltr.*P. implexa* Luer*P. iota* Luer*P. kautskyi* Pabst*P. megalophora* Luer*P. microblephara* Schltr.*P. microgemma* Schltr.*P. miguelii* Schltr.*P. minutalis* Lindl.*P. mitchellii* Dod*P. modesta* (Barb. Rodr.) Cogn.*P. muricaudata* Luer*P. pachyphyta* Luer Plate 47.*P. paranaënsis* Schltr.*P. polygonoides* Griseb.*P. rudolfii* Pabst*P. sertularioides* (Sw.) Spreng.*P. smaragdina* Luer**Pleurothallis** subgen. **Specklinia** sect. **Tribuloides** Luer, sect. nov.

Type: *Epidendrum tribuloides* Sw., Nov. Gen. Sp. Prodr. 123, 1788. [*P. tribuloides* (Sw.) Lindl., Gen. Sp. Orch. Pl. 6, 1830]

Ety.: Named for the genus *Tribulus* of the Zygophyllaceae, the Caltrop family, referring to the thorny fruit. From the Latin *tribulus*, a pronged implement used to impede cavalry, hence *tribulosus*, "thorny," referring to the prickly fruit.

Ramemus abbreviatus congestus floribus carnosus, apicibus sepali dorsali et synsepali conniventibus.

This section consists of one relatively frequent Central American and West Indian island species that differs from all others in the genus by the congested raceme of fleshy, brick-red flowers with the apices of the sepals connivent. This character led to the species being described once in the genus *Cryptophoranthus* by Kränzlin. A photograph of the plant appears in *Die Orchideen* by Brieger as a "new species."

The small caespitose habit with short ramicauls, an inflorescence that emerges with an annulus, and petals, lip and column compatible with subgen. *Specklinia* indicate that this species is best treated as a monotypic section of that subgenus. The spiny capsule resembles a small cocklebur.

Species: *P. tribuloides* (Sw.) Lindl. Plate 48.

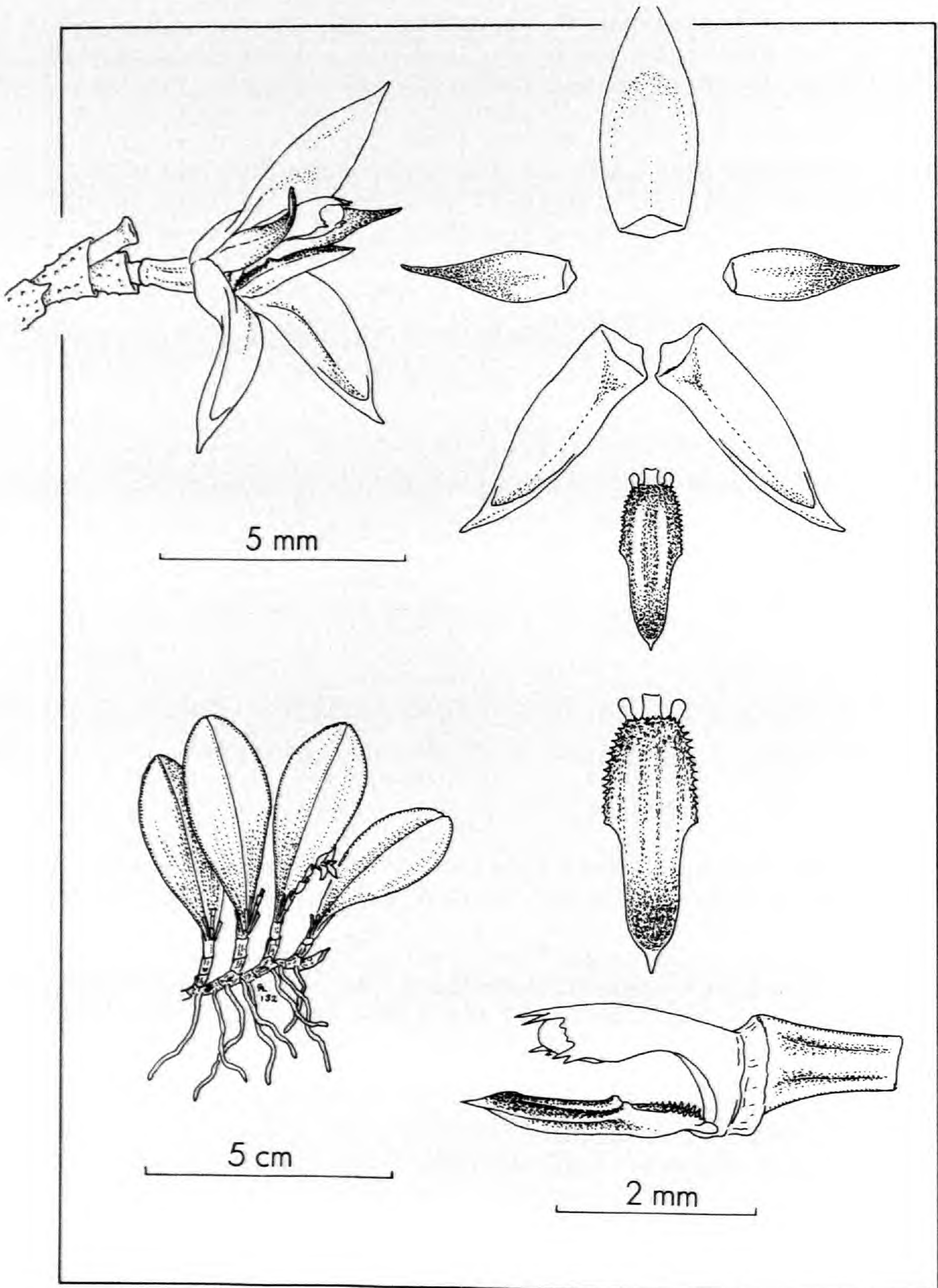


Plate 47. *Pleurothallis pachyphyta* Luer

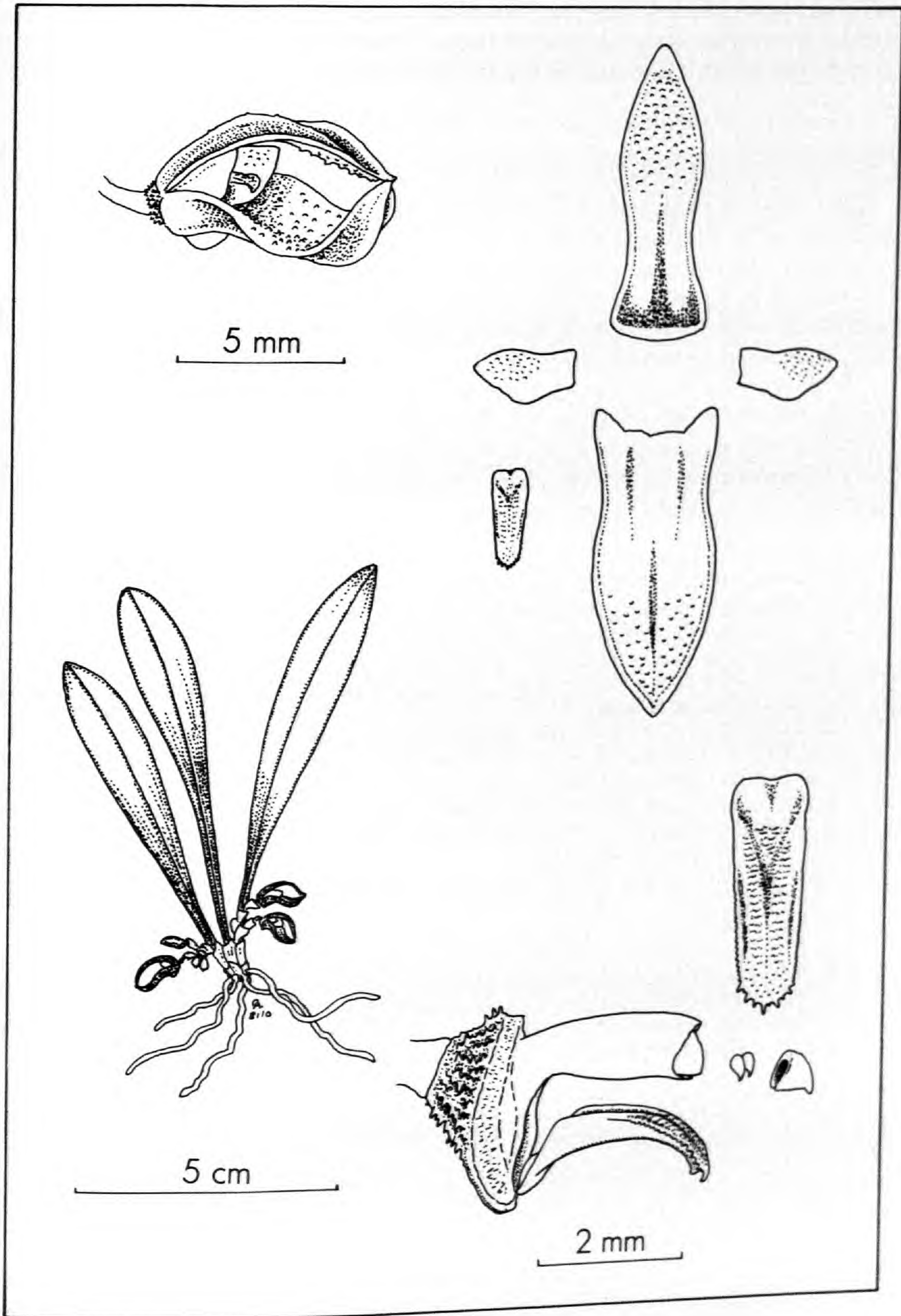


Plate 48. *Pleurothallis tribuloides* (Sw.) Lindl.

Pleurothallis subgen. **Specklinia** sect. **Tripteranthae** Luer, sect. nov.

Type: *Pleurothallis tripterantha* Rchb. f., Bonplandia 2:24, 1854.

Ety.: From the Greek *tripteranthos*, "three-winged flower," referring to the tall carinae of the ovaries and sepals.

Inflorescentia racemosa plus minusve pendens. Ovarium et flos carnosialati floribus saepe cleistogami.

This section consists of a variable and relatively common species, widespread in the neotropics. It is treated here as a monotypic section of subgen. *Specklinia*. Vegetatively it resembles a species of *Masdevallia*, and it has been described thrice in that genus by Kränzlin (*M. aperta*, *M. carpophora* and *M. tricarinata*. One was even transferred recently to *Scaphosepalum*).

The ramicauls are short and the inflorescence emerges laterally from the ramicaul with a bulge or an indistinct annulus. The several-flowered inflorescence is more or less pendent. The ovaries and sepals are conspicuously fleshy-carinate, the flowers frequently being cleistogamous. The petals, lip and column are typical for subgen. *Specklinia*.

The single species and its synonyms:

P. tripterantha Rchb. f., Bonplandia 2:24, 1854 Plate 49.

Syn.: *P. tripterygia* Rchb. f., Bonplandia 2:24, 1854. [first treated as a synonym of *P. tripterantha* by Foldats, Fl. Venez. 15(2):435, 1970]

P. procumbens Lindl., Folia Orch. *Pleuroth.* 35, 1859.

Lepanthes tricarinata Barb. Rodr., Gen. Sp. Orch. Nov. 2:43, 1882, non *P. tricarinata* Poepp. & Endl.

Humboldtia procumbens (Lindl.) Kuntze, Rev. Gen. Pl. 2:688, 1891.

Humboldtia tripterantha (Rchb. f.) Kuntze, Rev. Gen. Pl. 2:668, 1891.

Humboldtia tripterygia (Rchb. f.) Kuntze, Rev. Gen. Pl. 2:668, 1891.

P. trialata Cogn., Fl. Bras. 3(4):500, 1896.

Masdevallia tricarinata Lehm. & Krzl., Bot. Jahrb. Syst. 26:456, 1899, non *P. tricarinata* Poepp. & Endl.

P. hamata Rolfe [Orch. Rev. 24:187, 1916, nomen nudum] ex Ames, Sched. Orch. 3:8, 1923, descr.

Masdevallia carpophora Krzl., Repert. Spec. Nov. Regni Veg. 17:427, 1921.

P. medellinensis Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7:236, 1920.

Masdevallia aperta Krzl., Repert. Spec. Nov. Regni Veg. 17:430, 1921.

P. hunteriana Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17:20, 1922.

P. aperta (Krzl.) Ames, Sched. Orch. 7:17, 1924.

Scaphosepalum carpophorum (Krzl.) Garay, Bot. Mus. Leaflet 21:251, 1967.

Pleurothallis subgen. **Specklinia** sect. **Unciferae** Luer, sect. nov.

Type: *Pleurothallis segoviensis* Rchb. f., Bonplandia 3:223, 1855.

Ety.: From the Latin *uncifer*, "hook-bearing," referring to the uncinately lateral lobes.

Ramicales breves. Lobi laterales labelli uncinati.

This section consists of a few, closely related species. It is characterized by the short ramicaul and a simultaneously flowered raceme, or if successively flowered, several flowers open simultaneously. The sepals

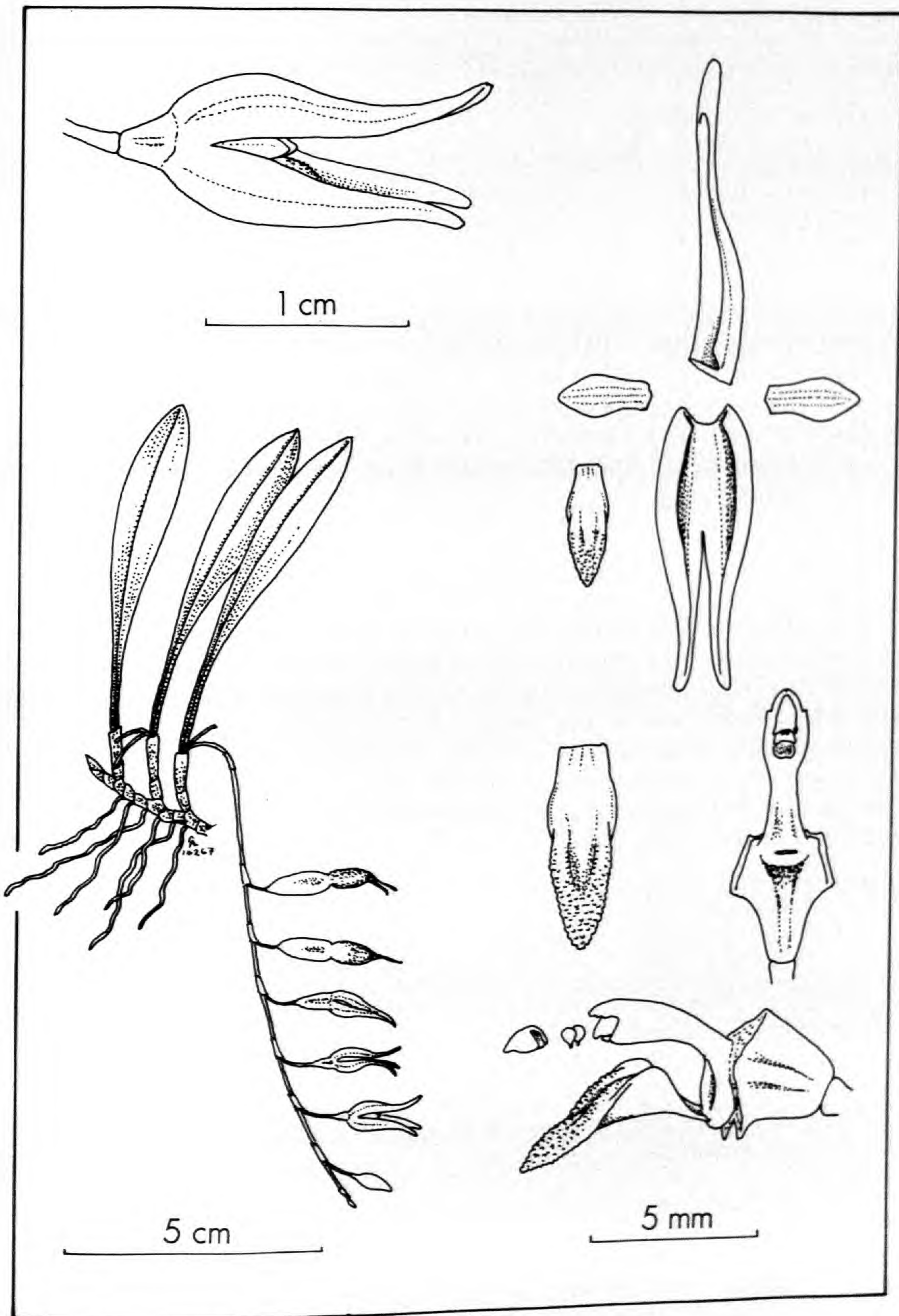


Plate 49. *Pleurothallis tripterantha* Rehb. f.

are pubescent within. The lips are provided with a prominent pair of uncinatate basal lobes. The column is elongate with a toothed, hooded apex, and ventral anther and stigma.

Species:

- P. aguilarii* Ames
P. amaliae Luer & Escobar
P. amethystina Ames
P. canae Ames
P. falcatiloba Ames
P. pompalis Ames Plate 50.
P. segoviensis Rchb. f.
P. vinacea Ames

Pleurothallis subgen. **Talpinaria** (Karst.) Luer, stat. nov.

Type: *Talpinaria bivalvis* Karst., Fl. Columb. 1:153, 1861. [*Pleurothallis talpinaria* (Karst.) Rchb. f., Flora 69:554, 1886]

Ety.: From the Latin *talpinus*, "molelike," referring to the fimbriate lobes of the lip which might have been compared to a star-nosed mole.

Bas.: *Talpinaria* Karst., Fl. Columb. 1:153, 1861.

Type: *Talpinaria bivalvis* Karst. [*P. talpinaria* (Karst.) Rchb. f.]

This subgenus brings together a few Andean species. The subgenus is characterized by a well-developed ramicaul with a central tubular sheath and a few basal sheaths. The leaf is petiolate. The inflorescence is a single flower borne in a fascicle from a spathe at the apex of the ramicaul with an indistinct annulus. The lateral sepals are connate, the petals are elongate and acute, the lip is variously lobed, and the column is elongated and lightly winged with a ventral anther. The lip is hinged to the column-foot.

Species: *P. punctulata* Rolfe

- P. talpinaria* (Karst.) Rchb. f. Plate 51.
P. talpinarioides Garay & Dunsterv.

Pleurothallis subgen. **Xenion** Luer, subgen. nov.

Type: *Pleurothallis xenion* Luer & Escobar, Orquideología 16:38, 1983.

Ety.: From the Greek *xenion*, "a stranger," in allusion to the unusual morphological characters.

Plantae repentes ramicaulibus abbreviatis. Labellum excavatum trilobatum base ad pedem columnae adfixum.

Two unusual species are brought together to form this subgenus. Although the climbing habit with short ramicauls is similar to that of several other taxa in the Pleurothallidinae (e.g., *P.* subgen. *Aenigma*), this subgenus is distinguished by a three-lobed lip excavate centrally and firmly fixed at the base to the column-foot. The column is elongate with the hooded apex winged.

Species: *P. spiralis* Lindl.

- P. xenion* Luer & Escobar Plate 52.

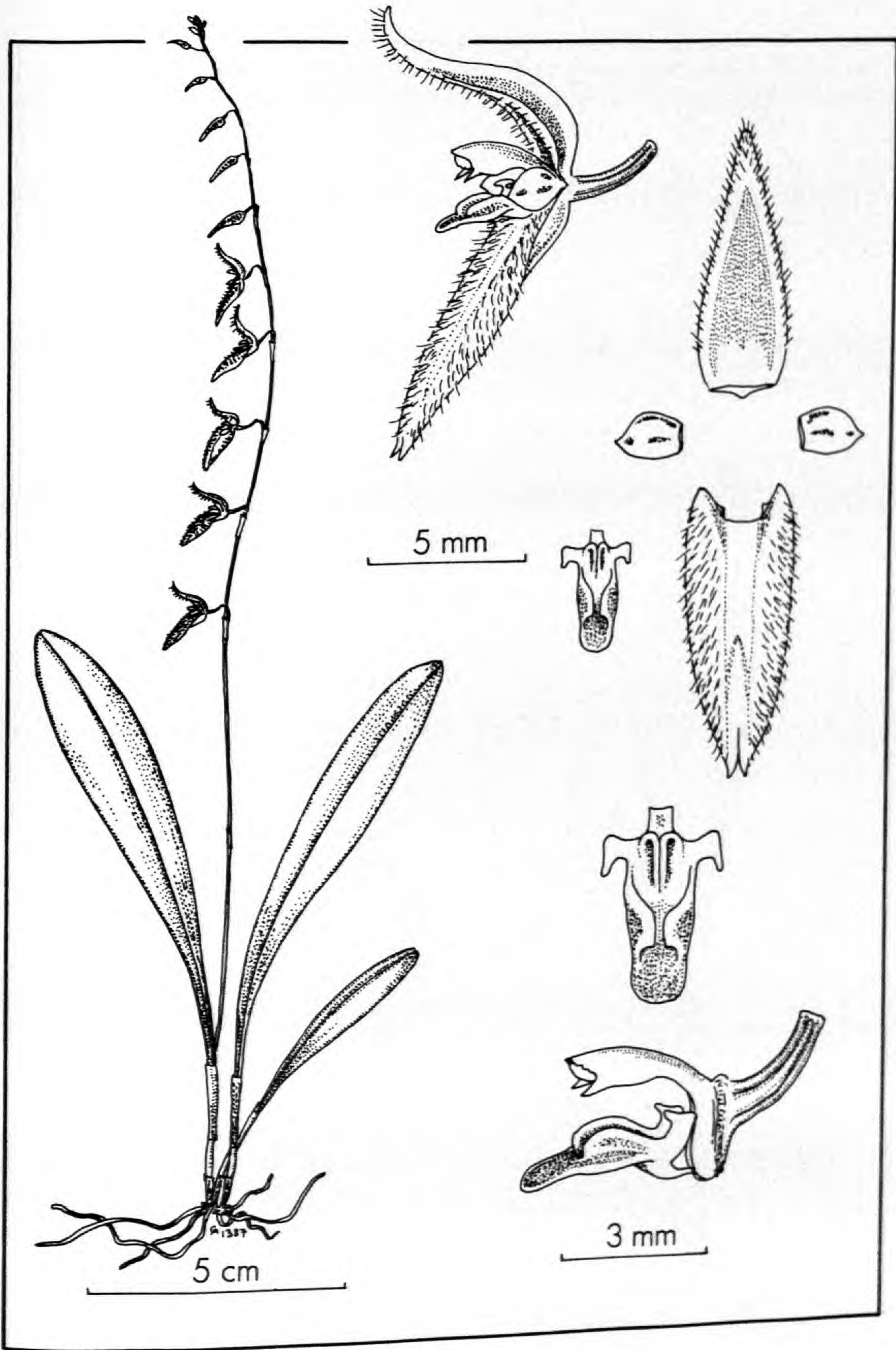


Plate 50. *Pleurothallis pompalis* Ames

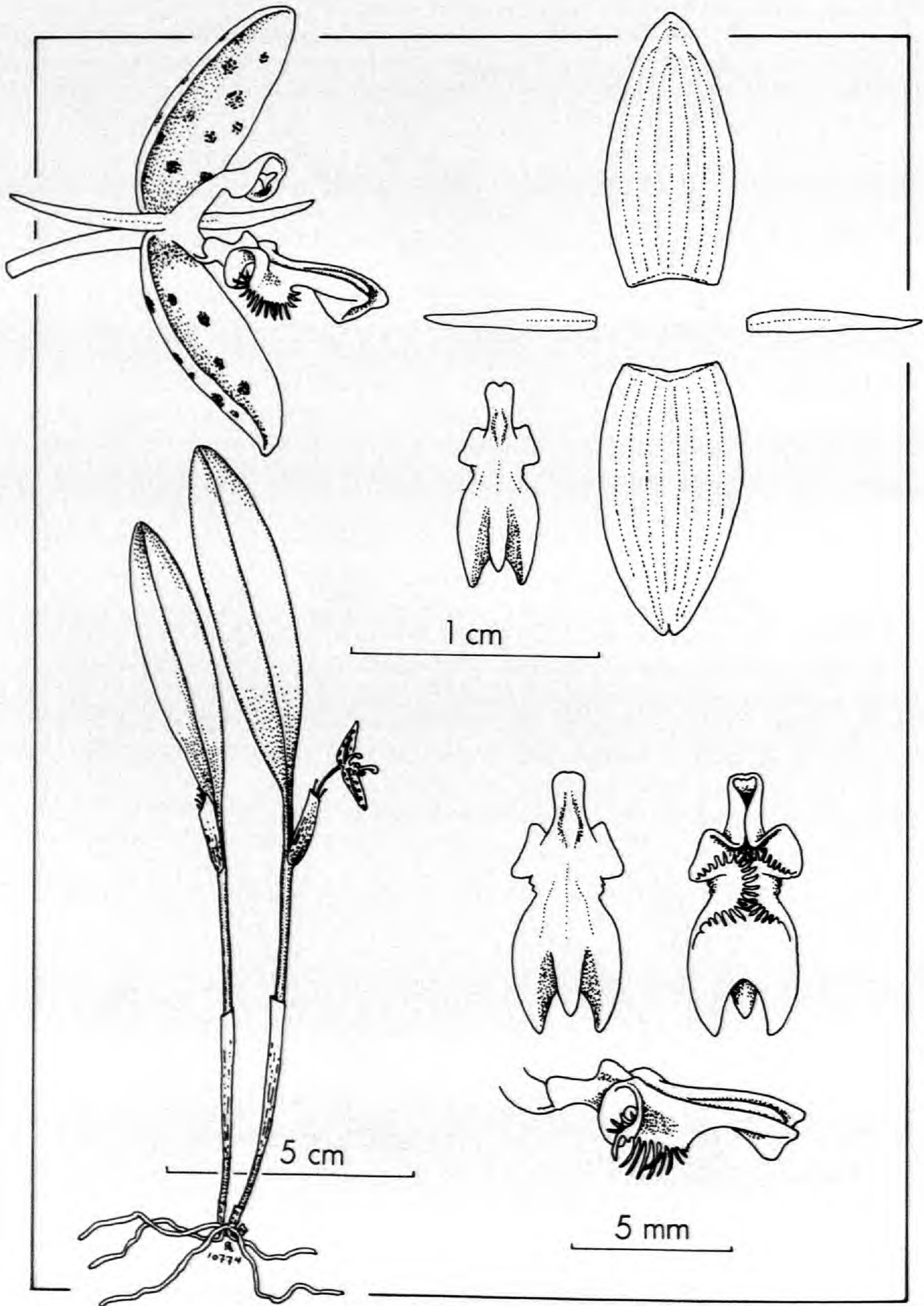


Plate 51. *Pleurothallis talpinaria* (Karst.) Rchb. f.

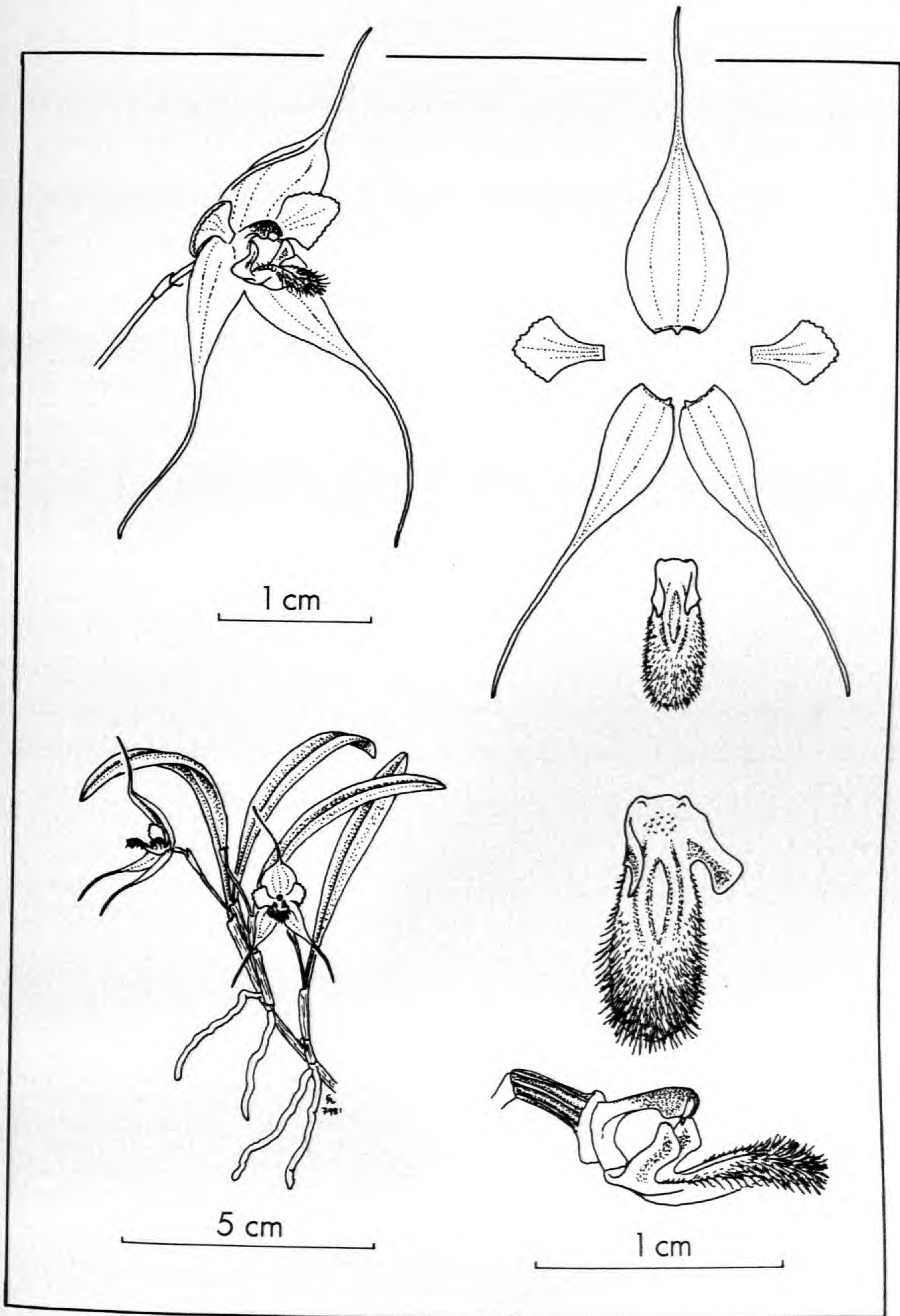


Plate 52. *Pleurothallis xenion* Luer & Escobar

ACKNOWLEDGMENTS

I am grateful to Drs. Calaway H. Dodson, Robert L. Dressler, Dan H. Nicolson and Norris H. Williams for their criticisms and suggestions.

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ADDENDA ET CORRIGENDA
 ICONES PLEUROTHALLIDINARUM II
 SYSTEMATICS OF *MASDEVALLIA*

- Page 11. Plate 1. should read *Masdevallia amanda* Rchb. f.
 Page 18. Add *M. audax* Kgr. to list of species for sect. *Amaluzae*.
 Page 23. Add *M. spilantha* Kgr. to list of species for subsect. *Coriaceae*.
 Page 26. In the list of species *M. cucullata* Rchb. f. should read *M. cucullata* Lindl.
 Page 27. Plate 11. should read *Masdevallia cucullata* Lindl.
 Page 29. Add *M. asterotricha* Kgr. to list of species for subsect. *Caudatae*.
 Page 32. *M. figueroae* should read *M. figueroae* Luer
 Add *M. lilacina* Kgr. to list of species for subsect. *Masdevallia*.
 Delete *M. cinnamomea* Rchb. f. from list of species for subsect. *Masdevallia*.
 Add *M. rufescens* Kgr. to list of species for subsect. *Oscillantes*.
 Page 43. Add *M. concinna* Kgr. to list of species for subsect. *Alaticaulae*.
 Add *M. garciae* Luer to list of species for subsect. *Alaticaulae*.
 Add *M. lintrricula* Kgr. to list of species for subsect. *Alaticaulae*.
 Delete *M. rechingeriana* Krzl. from list of species for subsect. *Alaticaulae*.
 Page 48. The last sentence of the paragraph for subsect. *Reichenbachianae* should read:
All are native to Central America, with one disjunct station for
***M. striatella* in Venezuela.**
 Delete *M. garciae* Luer from list of species for subsect. *Reichenbachianae*

INDEX

- Page 57. Add *audax* 18
 Add *asterotricha* 29
 Add *concinna* 43
 Delete 32 from *cinnamomea*
 Page 58. Add *lilacina* 32
 Add *lintrricula* 43
 Change *garciae* from 48 to 43
 Page 59. Add *spilantha* 23
 Add *rufescens* 32
 Delete *rechingeriana* 48
 Page 61. Add *rechingeriana* Krzl. = *sceptrum*
 Add *triquetra* Scheidw. = *infracta*?
heteropetala should read *heterotepala*
xiphium Rchb. f. ex Rchb. f. should read *xiphium* Rchb. f. ex Krzl.
 Page 63. Delete *triquetra* Scheidw. from epithets referable to *Pleurothallis*

