

MISCELLANEOUS SPECIES OF *Pleurothallis*

***Pleurothallis acrisepala*** Ames & Schweinf., Sched. Orchid. 8:22. 1925.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, 5-10 mm long, with 1-2 thin, ribbed, fugacious sheaths, unifoliate. Leaf narrowly obovate, subacute to obtuse, tridenticulate, base narrowly cuneate and indistinctly petiolate, 4-7 cm X 6-9 mm. Inflorescence a few-flowered (3-8) fascicle, the flowers borne successively, from the apex of the peduncle; peduncle purple, filiform, 8-13 cm long, from a node on the secondary stem; flowers gaping, green and intensely marked with purple; floral bract tubular, 4-6 mm long; pedicel slender, 8-14 mm long; ovary 2-3 mm long; dorsal sepal narrowly elliptical, acuminate, acute 7.5-10 X 2.25-2.75 mm; 3-veined, unicarinate, green below the middle, purple above the middle from coalescing spots, connate basally with the lateral sepals; lateral sepals narrowly ovate, acuminate, acute, connate below the middle, sometimes lightly adherent to near the apices 7-10 X 3.5-5 mm together, bicarinate, forming a mentum with the column-foot, colored similarly to the dorsal sepal; petals fleshy, dark purple, ovate, oblique, acuminate, acute, the labellar margin dilated, 2-3 X 1.5-1.75 mm; lip yellow to purple, oblong, 3.25-4 X 1 mm, apex obtuse, minutely lacerate, with a pair of short, oblique lateral lobes below the middle and extending forward into a pair of intramarginal, erose crests, base shortly hinged to the column-foot, biauriculate, disc thickened posteriorly; column 2.5-3 mm long, broadly winged, the clinandrium dentate, the foot 1 mm long.

ETYMOLOGY: From the Latin *acer*, *acris*, "pointed," and *sepalum*, in reference to the acute, acuminate sepals.

TYPE: PANAMA: without exact locality, C. W. Powell 420 (HOLOTYPE: AMES).

DISTRIBUTION: Costa Rica and Panama.

COSTA RICA: PUNTARENAS: Osa, Aug. 1973, R. McDiarmid s.n. (SEL), flowered in cult. Oct. 1975.

PANAMA: PANAMA: Santa Rita Ridge, F. L. Stevenson 61874-1 (SEL), flowered in cult. June 1974; Altos de Pacora, alt. 600 m, 4 March 1976, C. Luer, J. Luer, P. Taylor & R. L. Dressler 680 (SEL).

The identity of this distinctive species has long been obscured by its lack of an illustration, and a consequent fact that it has been secreted away in synonymy. Heretofore, it has been recorded only from an unidentified site in Panama; this is the first report from Costa Rica.

*Pleurothallis acrisepala* is a small species characterized by its abbreviated secondary stems, narrowly obovate leaves, and a slender peduncle which exceeds the leaves in length. At the summit of the peduncle a contracted, fasciculate inflorescence is produced by overlapping bracts and pedicels. An interesting, long-pedicellate flower appears at intervals. The apices of the sepals are pointed and dark purple from the coalescence of numerous spots. The margins are revolute. The fleshy petals are ventricose and also dark purple. The lip is distinguished by a pair of erose lamellae which extend forward a short distance along the margins from small lateral lobes. Close relatives include the Central American *P. brighamii* S. Wats., *P. fulgens* Rchb. f., and *P. periodica* Ames.

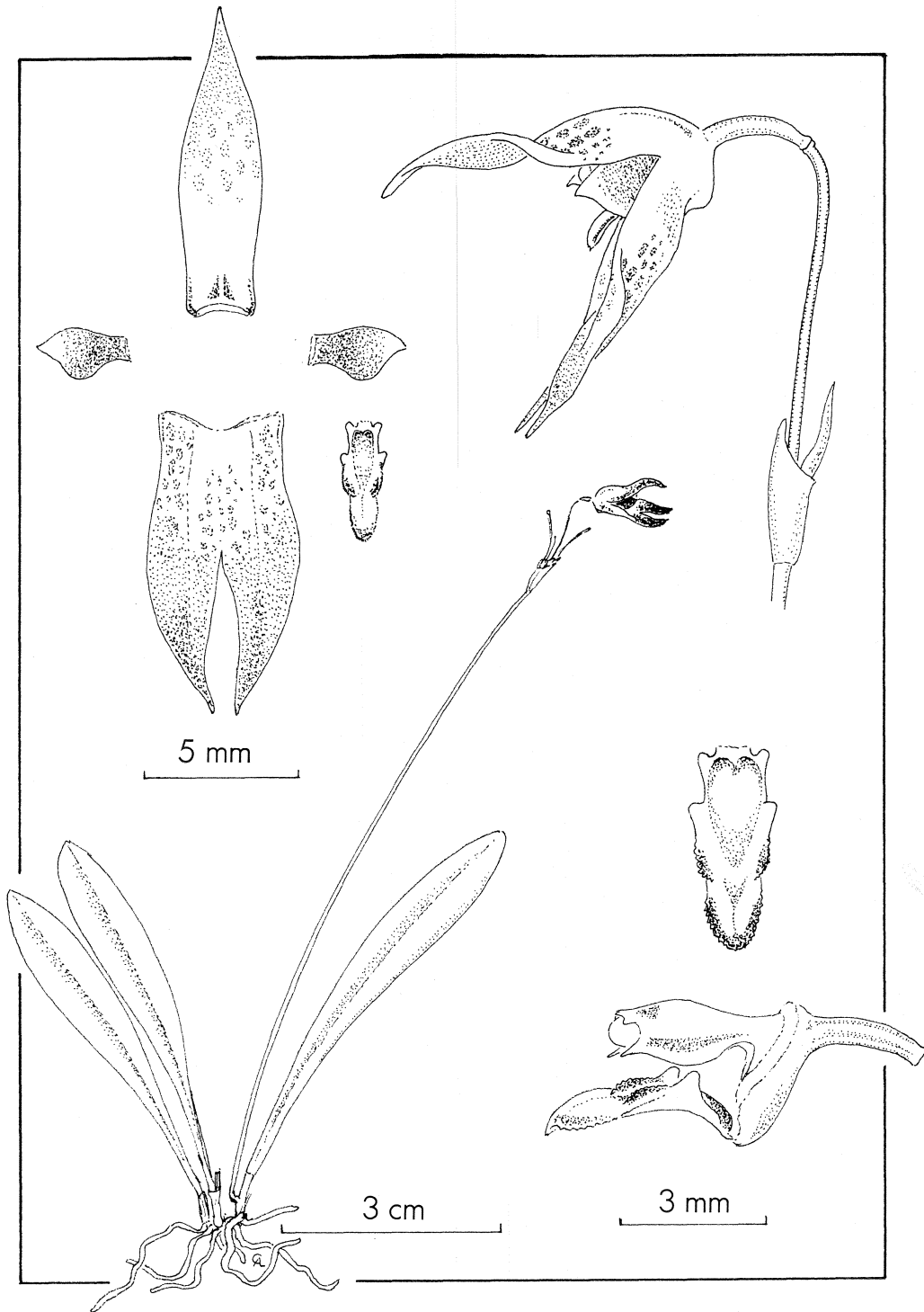


Figure 122. *PLEUROTHALLIS ACRISEPALA* Ames & Schweinf.

**Pleurothallis adonis** C. A. Luer, sp. nov.

Planta grandis caespitosa, caulibus secundariis gracilibus unifoliatis, foliis anguste ovatis acuminatis basi profunde cordatis, floribus solitariis fasciculatis magnis polychromis, sepalo dorsali aurantiaco purpureo-vittato elliptico acuto, synsepalo anguste ovato acuto spiculato, petalis linearibus acutis glabris, labello erecto atro-coccineo tubuliformi marginibus revolutis serrulatis acuto basi concavo.

Plant large, epiphytic to terrestrial, caespitose; roots fasciculate flexuous. Secondary stems slender, erect, 15-35 cm tall, with a tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf narrowly ovate, acuminate, acute, tridentate, base deeply cordate, sessile, 10-12 × 4-5.5 cm. Inflorescence fasciculate, 1-3 large, single, colorful flowers borne from the base of the leaf; floral bract 5-8 mm long; pedicel 15 mm long; ovary 10 mm long; dorsal sepal yellow-orange, striped with purple, minutely flecked with brown, broadly elliptical, acute, 21 × 13 mm, 5-veined; lateral sepals completely united into a narrowly ovate synsepal, acute, 21 × 9 mm, 4-veined, the inner surface liberally covered by erect red spicules; petals very narrowly triangular-linear, oblique, acute, 16 × 2 mm, glabrous, maroon; lip erect, maroon, tubular, the sides revolute and serrulate, acute, 14 mm long, 4.5 mm across near the base to 2.5 mm across near the middle, destructed when flattened, the base concave to accommodate the column-foot; column stout, 2 × 3 mm, with a bulbous foot equally large, 2 × 3 mm.

ETYMOLOGY: Named for *Adonis*, who, in Greek mythology, is a beautiful youth loved by Aphrodite.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: terrestrial on a road-cut near km 20 between Loja and Zamora, alt. 2000 m, 5 Aug. 1975, C. A. Luer, G. M. Luer, & S. Wilhelm 454 (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador.

This beautiful species with its erect tubular lip is similar in many respects to *Pleurothallis grandiflora* Lindl.; pressed specimens appear deceptively alike. The lip of the former is long with revolute margins which cannot be spread without breaking. The lip of the latter is described as "oblong-cordate," and the sketch on the holotype sheet, *Jameson s.n.* (K), seems more broadly ovate. At most, it appears only convex. The petals of *P. adonis* are glabrous instead of serrate or dentate. An unusual feature of the inner surface of the lateral sepals is the covering with conspicuous, erect, red spicules which seem to preclude a reclining lip. The large gaping flower is very colorful with its orange sepals striped with purple, and the maroon petals and protruding lip.

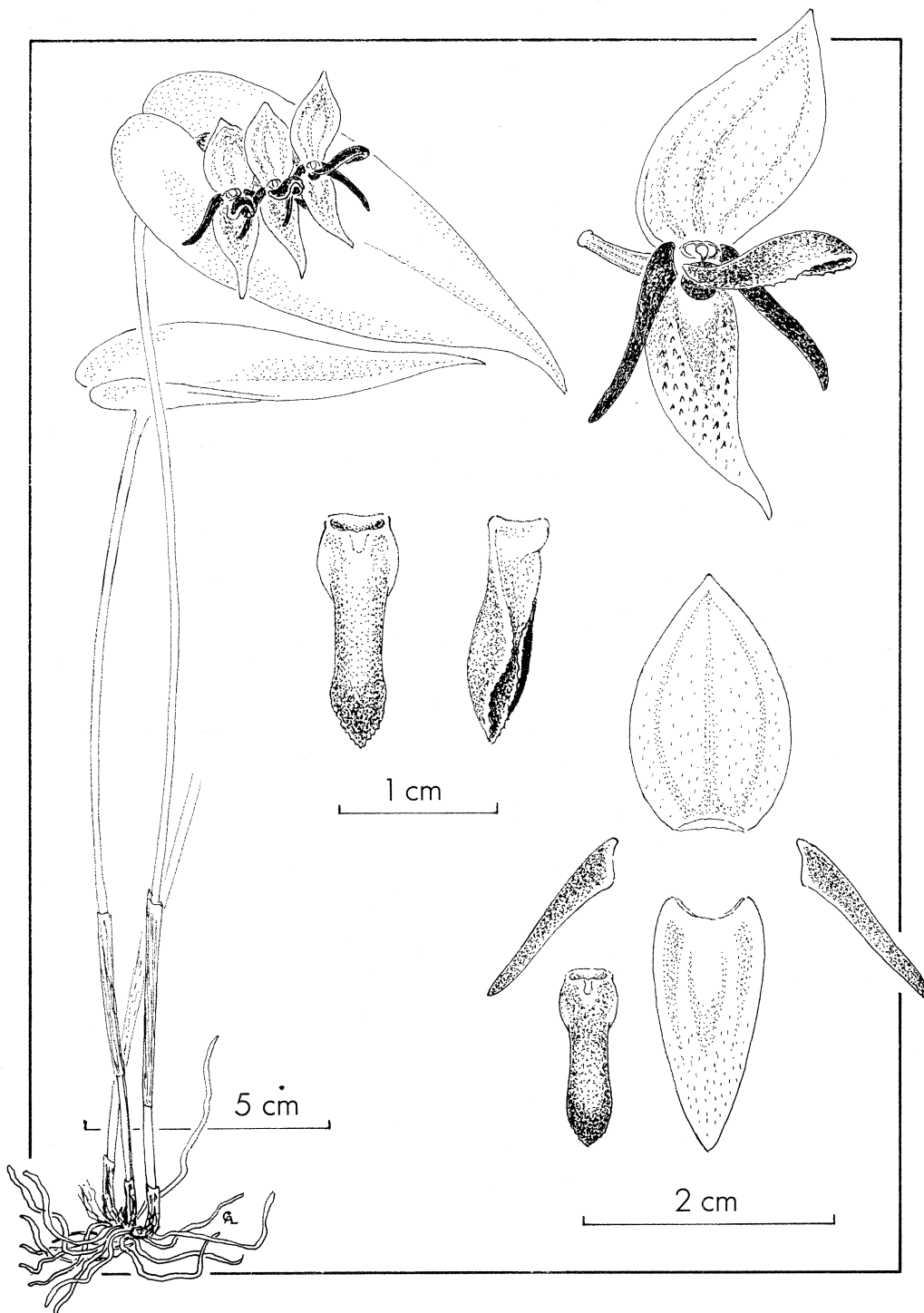


Figure 123. PLEUROTHALLIS ADONIS C. A. Luer



**Pleurothallis aechme** C. A. Luer, sp. nov.

Herba mediocris epiphytica caespitosa, caulibus secundariis angustis compressis canaliculatis unifoliatis, foliis ovatis acuminatis acutis sessilibus, racemo brevi paucifloro, floribus carnosus viridibus pubescentibus, sepalo dorsali obovato, synsepalo bidentato acuto, petalis spatulatis acutis serrulatis, labello oblongo obtuso marginibus denticulato, infra medium marginis rotundato, disco bicalloso, base unguiculata biauriculata.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems narrow, laterally compressed with sharply edged margins, channeled most of the length, 8-12 cm long, with 2-3 loose, tubular sheaths at the base, unifoliate. Leaf oblong, acuminate, acute, tridenticulate, the base cuneate, the sides decurrent a short distance onto the wings of the stem, 12-15 × 3.2-4 cm. Inflorescence a short (3 cm), few-flowered (6) raceme; peduncle stout, from a spathe 8-11 mm long at the apex of the stem; flowers fleshy, green, shortly pubescent externally; floral bract tubular, 2 mm long; pedicel abbreviated, 1 mm long; ovary pubescent, 3 mm long; dorsal sepal obovate-oblong, subacute, 7 × 2.5 mm, 3-veined, lightly pusticulate internally; lateral sepals united into an ovate, bidentate lamina, acute, 7 × 5 mm, 6-veined, green, blotched with brown; petals oblong-spatulate, the apex acute, serrulate, 3 × 1.2 mm, 1-veined, translucent yellow-green; lip oblong, apex obtuse to rounded, minutely denticulate, the margins rounded and erect below the middle, extending into a pair of longitudinal calli above the middle, the base shortly unguiculate, minutely auriculate, the disc fleshy-thickened, 4.5 × 1.75 mm, yellow-green, suffused with purple-brown; column yellow, winged, 3.5 mm long, with a short foot.

ETYMOLOGY: From the Greek *aechme*, "a spear," in allusion to the spear-shaped leaf and stem.

TYPE: *ECUADOR*: PASTAZA: epiphytic a few km below Río Negro in woods along Río Pastaza, alt. 1500 m, 18 March 1976, C. Luer, J. Luer & P. Taylor 955 (HOLOTYPE: SEL), flowered in cult. 19 April 1976.

DISTRIBUTION: Eastern Ecuador.

Had Lindley had this plant, *Pleurothallis aechme* would have been one of his "sicarians," which are named for their dagger-like shapes. Vegetatively it is very similar to *P. sicaria* Lindl. with its laterally compressed secondary stems. The sharp-edged sides with an adaxial groove, meet in a sharp carina along the back. Above, the edges of the sides are continuous with the margins of the leaf. The relatively soft leaves are proportionately larger than those of *P. sicaria*, as long as or longer than the stem. The flowers of the short raceme are green and pubescent, and similar to those of *P. lanceana* Lodd. The spatulate petals are finely denticulate toward the apex, and the fleshy lip, lacking the uncinatate lateral lobes of *P. sicaria*, has rounded margins below the middle which merge above into thickened calli.

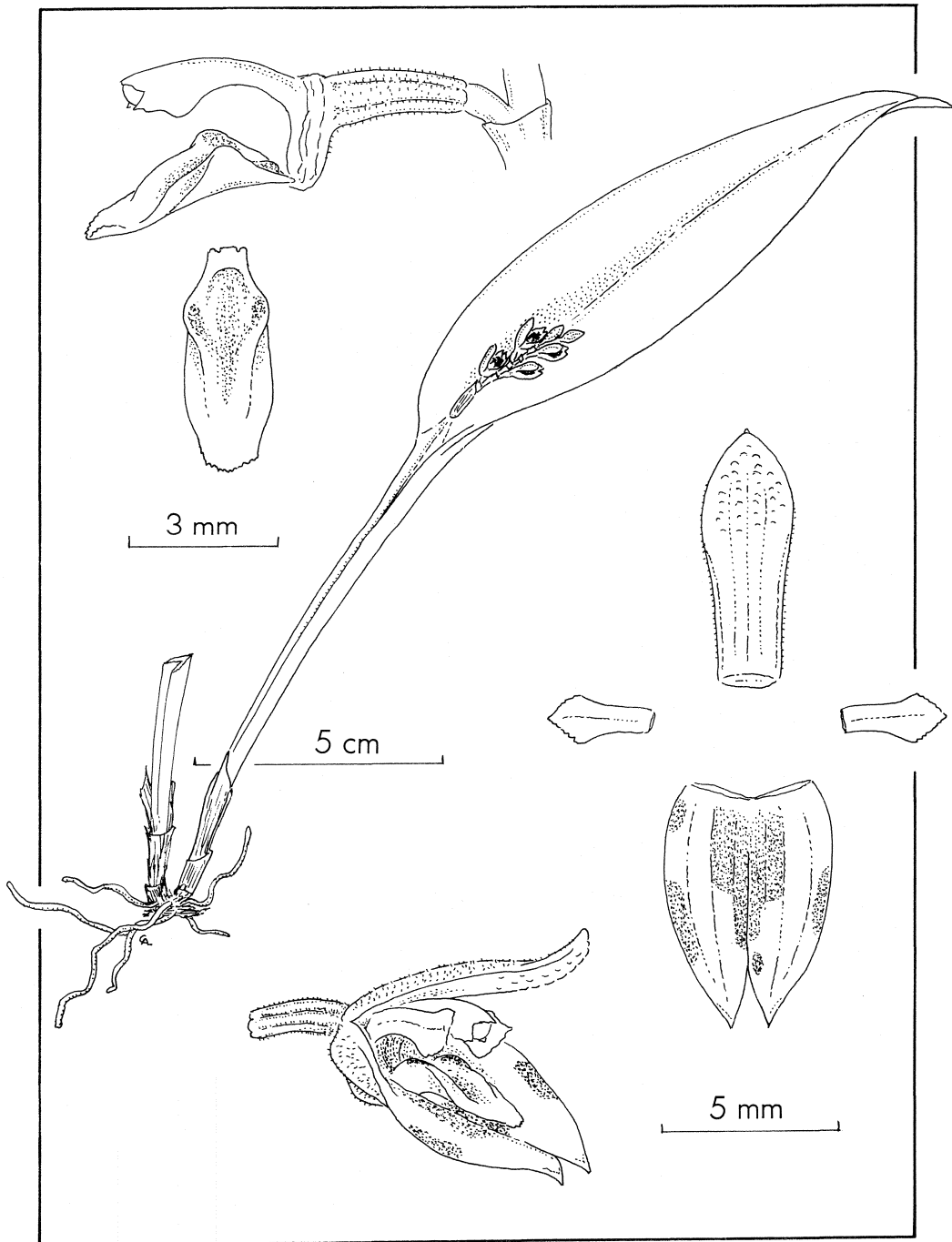


Figure 124. PLEUROTHALLIS AECHME C. A. Luer

**Pleurothallis alexandrae** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:103. 1923.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, terete, slightly compressed above, 3-18 cm long, concealed by 4-5 loose, scarios sheaths, frequently torn or shed, unifoliate. Leaf coriaceous, thin, narrowly elliptical, subacute, tridentate, the base cuneate sessile, 12-28 X 2-4 cm, longitudinally veined. Inflorescence fasciculate, the flowers dirty-green, fleshy, produced successively and usually singly, from a conduplicate spathe 1.5-3 cm long, fugacious; peduncle 2.5-3.5 cm long, pubescent; floral bract pubescent, 5-10 mm long; pedicel 4 mm long; ovary shortly pubescent, 4-5 mm long; sepals dull greenish, marked with dull purple, pubescent externally, lightly verrucose within; dorsal sepal obovate-oblong, subacute to obtuse, 20-22 X 8 mm, 5-veined; lateral sepals lightly connate and easily separable, together obtuse to rounded, 17-19 X 8-9 mm, each 3-veined; petals fleshy, spotted with purple or red on yellow, subrhombic to obovate, subacute, subunguiculate, 6 X 2 mm, 3-veined; lip oblong to subpanduriform, 8 X 3 mm, the anterior lobe rounded to obtuse, the upper surface more or less smooth, the lateral lobes uncinata, acuminate, just below the middle and directed forward, the base concave and broadly attached to the column-foot, disc with a high, inverted U-shaped callus near the base and extending forward between the lateral lobes, and with a pair of thick lamellae extending from the lateral lobes onto the middle lobe, yellow, marked with red-purple; column broadly winged, 5 mm long, anther yellow with a patch of bristles along the upper margin.

ETYMOLOGY: Named by Schlechter in honor of his wife Alexandra, nee Sobennikoff.

TYPE: COSTA RICA: SAN JOSÉ: Tablazo, alt. 1900 m, July 1909, A. & C. Brade 1159.

DISTRIBUTION: Costa Rica, Panama, and Venezuela.

PANAMA: COCLÉ: epiphytic in the hills above El Valle, alt. 1000 m, Oct. 1974, G. Kennedy s.n. (SEL), flowers nearly continuously in cultivation; same area, 2 Sept. 1976, C. Luer & H. Butcher 1105 (SEL); VERAGUAS: epiphytic in the cloud forest near the continental divide above Santa Fe, alt. ca. 700 m, 5 Sept. 1976, C. Luer & R. L. Dressler 1135 (SEL).

This species, closely allied to *Pleurothallis uncinata* Fawc. and sometimes included in its synonymy, was described from Costa Rica by Schlechter and compared to *Restrepiella ophiocephala* (Lindl.) Garay. Heller did not find *P. alexandrae* in Nicaragua, but it is known across Panama where it is locally common. Undoubtedly it also occurs in Colombia because it also exists in Venezuela. A closely related species has recently been discovered in the Oriente of Ecuador.

Vegetatively *P. alexandrae* is very similar to *P. pastacensis* C. Luer and *P. uncinata*. The loose, cauline sheaths are often shed or fragmented, leaving shreds clinging to joint-like rings on the robust stem. The fleshy, shortly pubescent, dull greenish flowers are usually produced singly and successively on peduncles about 3 centimeters long. The fleshy lip is narrowed near the middle above the lateral lobes in the region of the lateral calli before it expands into the broad apex. The panduriform shape is destroyed when the lip is forcibly expanded. Similar to *P. pastacensis*, an inverted U-shaped callus extends forward from the base.

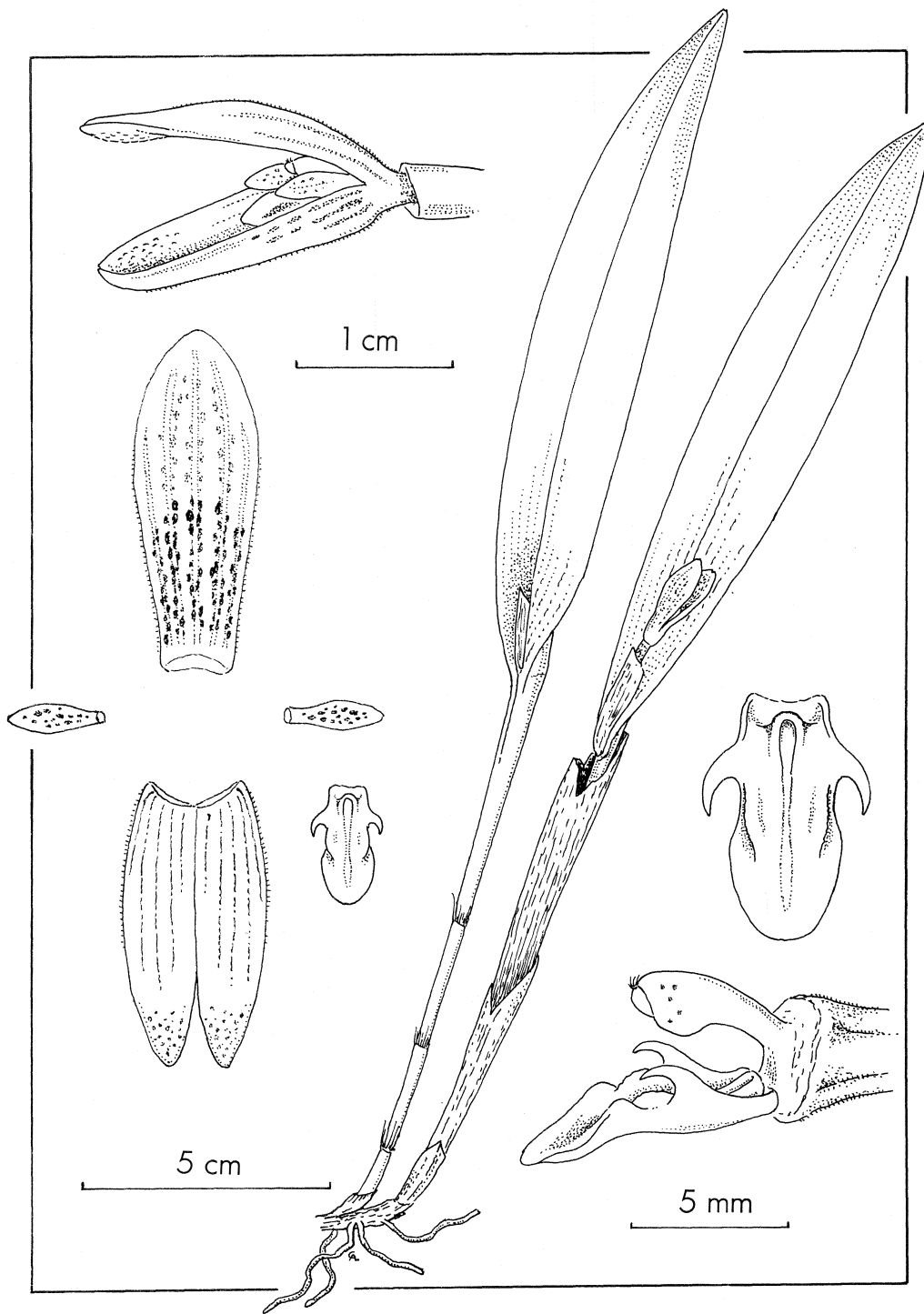


Figure 125. PLEUROTHALLIS ALEXANDRAE Schltr.

**Pleurothallis alopex** C. Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis gracilibus teretibus unifoliatis, foliis deflexis anguste ovatis acutis base cordatis, floribus fasciculatis singularibus successivis marroninis, spatha grandi, sepalo dorsali late ovato vel suborbiculato obtuso, synsepalo ovato subacuto marginibus revolutis, petalis anguste obovatis acuminatis marginibus ciliolatis, labello ovato subtrilobato, lobis basalibus rotundatis incurvis, lobo antico rotundato bilamellato asperulato, base concavo.

Plant medium in size, epiphytic, caespitose; roots fine, flexuous. Secondary stems ascending, slender, terete, 8-20 cm long, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliolate. Leaf deflexed, narrowly ovate, acute, tridenticulate, the base cordate, sessile, 6-9.5 × 1.8-2.7 cm. Inflorescence fasciculate, the flowers maroon, produced singly, successively, facing downward, from a conspicuous spathe 12-20 mm long at the base of the leaf, floral bract 5-6 mm long; pedicel 7-8 mm long; ovary 7 mm long, minutely papular; dorsal sepal broadly ovate, suborbicular, obtuse, 8 × 7 mm, 5-7 veined, the surface minutely colliculate; lateral sepals completely connate into an ovate synsepal, subacute, the margins longitudinally revolute, 9 × 4.5 mm, 6-veined; petals narrowly obovate, oblique, acuminate, acute, the margins minutely ciliate, 7 × 1.75, 1-veined; lip ovate to obscurely 3-lobed, the basal lobes rounded, incurved, the apical lobe obtuse to rounded, with a converging pair of low, yellow, lamellae, the base broadly concave below the column, 3.5 × 4 mm; column stout, 1 × 2 mm.

ETYMOLOGY: From the Greek *alopex*, "a fox," in honor of its discoverer, Fred J. Fuchs, Jr., of Naranja, Florida.

TYPE: PARAGUAY: ALTO PARANA: epiphytic about 25 km northwest of Puerto de Presidente Stroessner, *Fred Fuchs, Jr. s.n.* (HOLOTYPE: SEL), cultivated at SEL, greenhouse acc. no. 26-74-97, flowered in cult. April 1975, and intermittently.

DISTRIBUTION: Paraguay.

This Paraguayan species is closely related to the Venezuelan *Pleurothallis lilijae* Foldats and the more widespread *P. cardiostola* Rchb. f. The leaves of all three species are narrowly ovate and acutely deflexed at the sessile, cordate base. Like *P. cardiostola*, a large, conspicuous spathe protrudes at right angles from the blade from which the non-resupinate flowers emerge. Unlike either of the other two species, the smaller, maroon flowers of *P. alopex* face downward, placing the broad "dorsal" sepal beneath the spathe while the tubular synsepal protrudes outward above the lip. The petals are narrower, and the obscurely three-lobed lip bears a pair of converging calli on the anterior lobe.

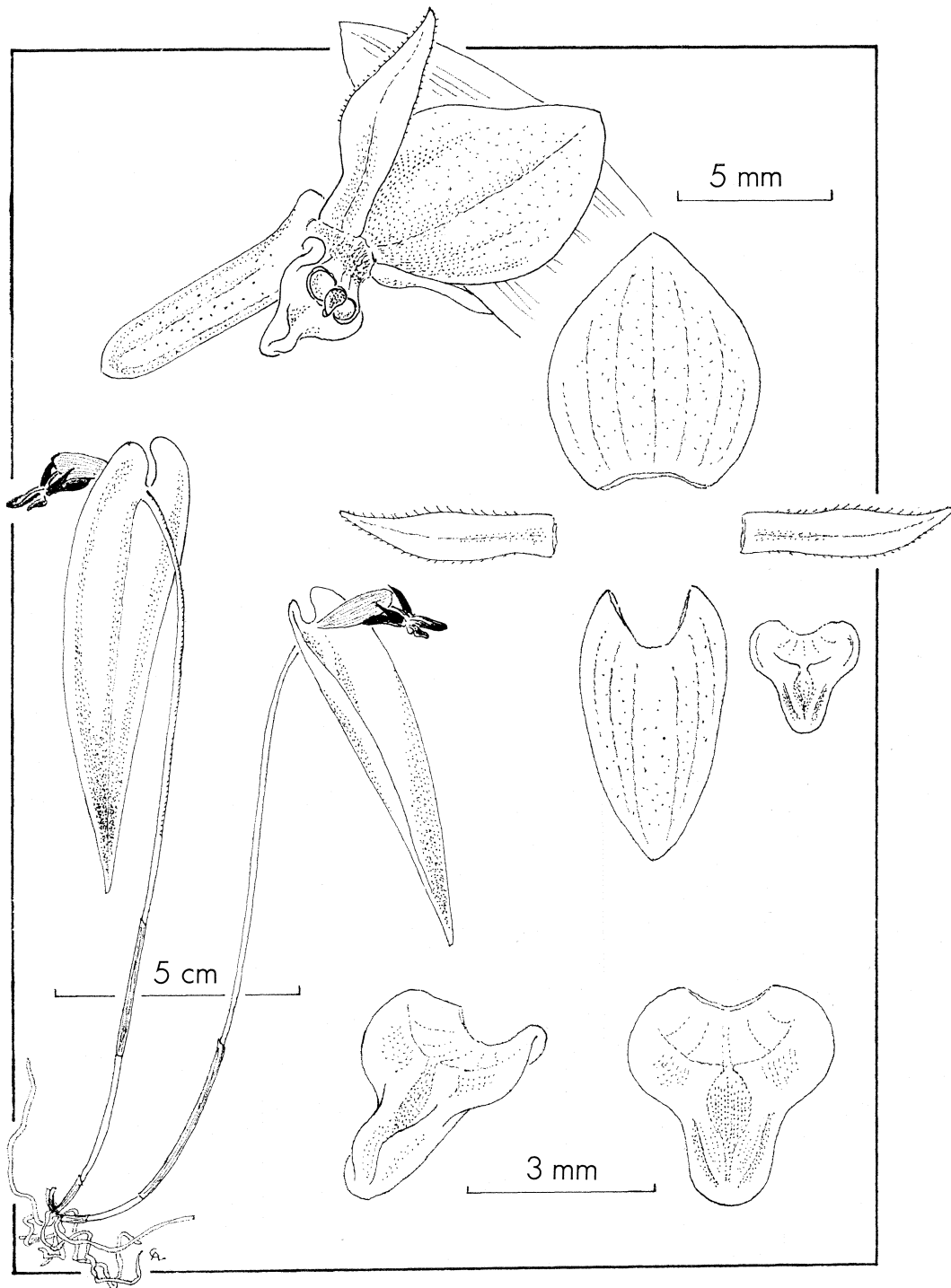


Figure 126. PLEUROTHALLIS ALOPEX C. A. Luer

**Pleurothallis alveolata** C. Luer, sp. nov.

Planta parva vel mediocris epiphytica caespitosa, caulibus secundariis gracillimis teretibus unifoliatis basibus laxè vaginatis, foliis tenuibus ellipticis acuminatis basibus rotundatis subsessilibus, racemo solitario vel geminato, floribus pallido flavovirentibus non-resupinatis distichis, sepalo mediano elliptico acuto, synsepalo profunde cucullato acuto, petalis anguste obovatis obliquis, labello e roseo albo cum roseo guttato crassissimo subquadrato valde deflexo supra medium profunde alveolato.

Plant small to medium-sized, epiphytic, caespitose; roots filiform, flexuous. Secondary stem very slender, terete, 3-10 cm long, monophyllous, often shorter than the leaf it bears, the lower portion enclosed by a pair of loose sheaths. Leaf thin, elliptic-ovate, acuminate, acute, tridenticulate, the base cuneate, subsessile, 5-9 × 2.5-4 cm. Inflorescence an erect or ascending, solitary (occasionally 2) raceme, to 16 cm long, of many small, pale yellow-green, non-resupinate, distichous flowers; peduncle slender, from a narrow spathe, about 1 cm long, at the base of the leaf; floral bract tubular, 2 mm long; pedicel 1 mm long; ovary purple, curved, 2 mm long; middle sepal elliptical, acute, 5 × 2.75 mm, 3-veined; lateral sepals completely united into a deeply concave hood over the lip, acute, 5 × 5 mm spread out, 6-veined; petals narrowly obovate, slightly oblique, acute, 2.75 × 1 mm, 1-veined; lip pale green or pink with rose spots, inverted, thick, fleshy, subquadrate, apiculate, markedly deflexed near the middle, the sides thin and turned up, the apical half deeply concave, the base revolute, very shortly hinged to the under surface of the column; column rose-spotted, terete, 1.5 mm long, footless.

**ETYMOLOGY:** From the Latin *alveolatus*, "with a small cavity" (from the dim. of *alveus*, "a cavity"), in reference to the socket-shaped cavity of the lip.

**TYPE:** *ECUADOR:* PASTAZA: epiphytic in felled trees about 20 km east of Puyo, alt. 600 m, collected 19 March 1976, C. Luer, J. Luer & P. Taylor 697 (HOLOTYPE: SEL), flowered in cult. 24 June 1976.

**ADDITIONAL MATERIAL EXAMINED:** PASTAZA: epiphytic about 10 km north of Puyo, alt. 700 m, collected 21 March 1976, C. Luer, J. Luer & P. Taylor 1021 (SEL), flowered in cult. 15 July 1976.

**DISTRIBUTION:** Eastern Ecuador.

This dainty species of the Oriente of Ecuador stands between *Pleurothallis revoluta* (Ruiz & Pav) Garay and its allies, and *P. secunda* Poepp. & Endl. and its allies. Like a bonnet the uppermost, deeply concave synsepal completely surrounds the unique lip. The little flowers are superficially similar to those of the resupinate *P. revoluta*. The lip, attached to the under surface (upper in the natural position) of the short, terete column, is very thick and markedly deflexed 180° upon itself. The apical half, now in a transverse position within the cavity of the synsepal, is deeply concave and spotted with pink to add to the illusion of a tooth-socket. It is filled with a clear liquid.

The thin leaves are elliptical with an acuminate apex, and they are borne by shorter, loosely sheathed stems.

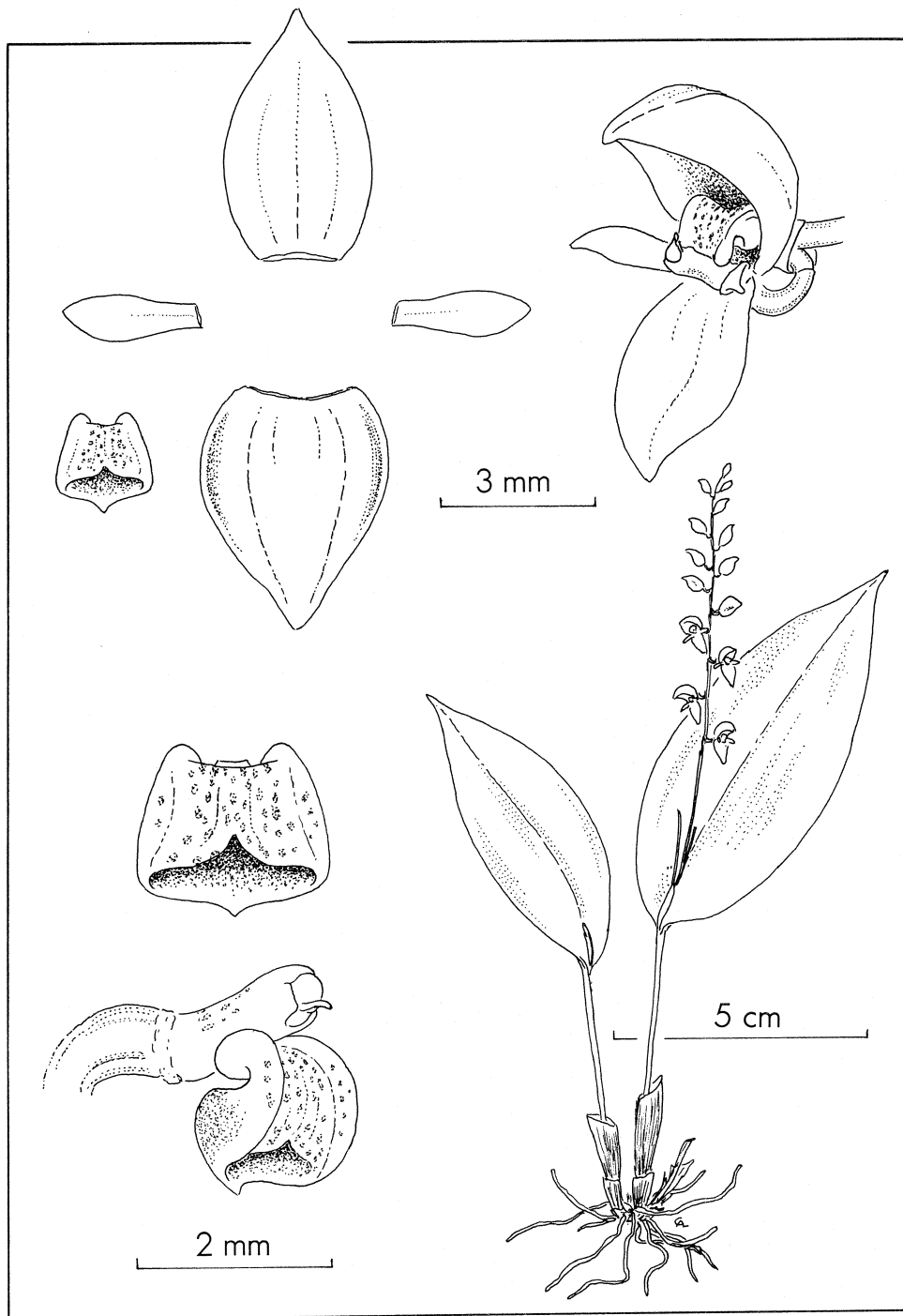


Figure 127. *PLEUROTHALLIS ALVEOLATA* C. A. Luer



**Pleurothallis aphthosa** Lindl., Edward's Bot. Reg. 24:misc. 42. 1838.

*Pleurothallis foetens* Lindl., Edward's Bot. Reg. 29:misc. 5. 1843.

*Pleurothallis pelioxantha* Barb. Rodr., Gen. Sp. Orchid. Nov. 1:17. 1877.

*Pleurothallis macrophyta* Barb. Rodr., l. c. 1:17. 1877.

*Humboldtia foetens* (Lindl.) O. Ktze., Rev. Gen. Pl. 2:667. 1891.

Plant epiphytic, robust, rhizome thick, shortly creeping, producing a secondary stem about every 1 cm; roots fleshy, flexuous. Secondary stem stout, terete below, slightly compressed and channeled above, 8-13 cm long, with 2-3 thin sheaths on the lower half, monophyllous. Leaf green, often suffused beneath with purple, thick and coriaceous, elliptical, apex obtuse to subacute, tridentate, base cuneate, sessile, 10-16 × 3.5-4.5 cm. Inflorescence a fascicle of a few (1-4), few-flowered (1-4), short racemes; peduncles stout, 5-10 mm long, from evanescent spathes about 1.5 cm long in the axil of the leaf; floral bract infundibular, 2 mm long; pedicel stout, 3 mm long; ovary minutely pubescent, 2 mm long; flowers fleshy, spreading shortly pubescent, yellow-green marked with purple, odor foul; sepals obovate, acuminate, apiculate, verrucose internally, 10 × 4.5 mm, the lateral sepals slightly oblique, united only at the base where they form a shallow mentum; petals ovate, acute, margins obscurely serrate, 3.5 × 1.5 mm; lip purple, fleshy, oblong-obovate, 5 × 2.5 mm, apex broadly rounded, base cuneate, obscurely auricled and hinged to the column-foot, obscurely lobed below the middle with erect margins, disc verrucose with a central pair of low, thick, longitudinal lamellae; column green, stout, 3 mm long with a thick foot, winged apically with a purple anther.

**ETYMOLOGY:** From the Greek *aphthosus*, "ulcerated" (*aphtha*, "a small ulceration of the lips or mouth"), presumably in fancied comparison of the warty interior of the bilabiate flowers to an aphthomatous mouth.

**TYPE:** Mexico (in error), (HOLOTYPE: K).

**DISTRIBUTION:** Southern Brazil, Paraguay, Bolivia, and Colombia.

**BOLIVIA:** SANTA CRUZ: 5 km north of Zamapato, *Fred Fuchs, Jr., s.n.* (SEL) greenhouse acc. no. 26-74-95, flowering in cult. 18 Jan. 1975.

**COLOMBIA:** RISARALDA: epiphytic in forested ravine near Hacienda San Francisco, La Virginia, alt. 700 m, Apr. 1972, *R. McCullough 1862* (SEL); flowered in cult. 15 Apr. 1976.

**PARAGUAY:** GRAN CHACO: 50 km west of Puerto Stroessner, *Fred Fuchs, Jr. s.n.* (SEL), flowered in cult. 23 Feb. 1975.

This species was first described by Lindley from material, reportedly from Mexico, which was sent to him by Mr. Batemann who had received it from the Birmingham Botanic Garden. Lindley later cited another horticultural specimen, supposedly from Guatemala, from the Garden of Woburn. Apparently he doubted both sources; in his *Folia Orchidaceae* he states that the native country is uncertain. There have been no further records of *Pleurothallis aphthosa* from Mexico or Guatemala, but the species has been redescribed several times from southern Brazil where it is known to occur. Lindley himself aptly renamed it *P. foetens*.

This species has recently been discovered by Fred Fuchs in two new widely separated localities, one in Bolivia, the other in Paraguay, both for the first times from these countries. Apparently there is some variation in the flowers. The flowers of the plant from the second location are smaller

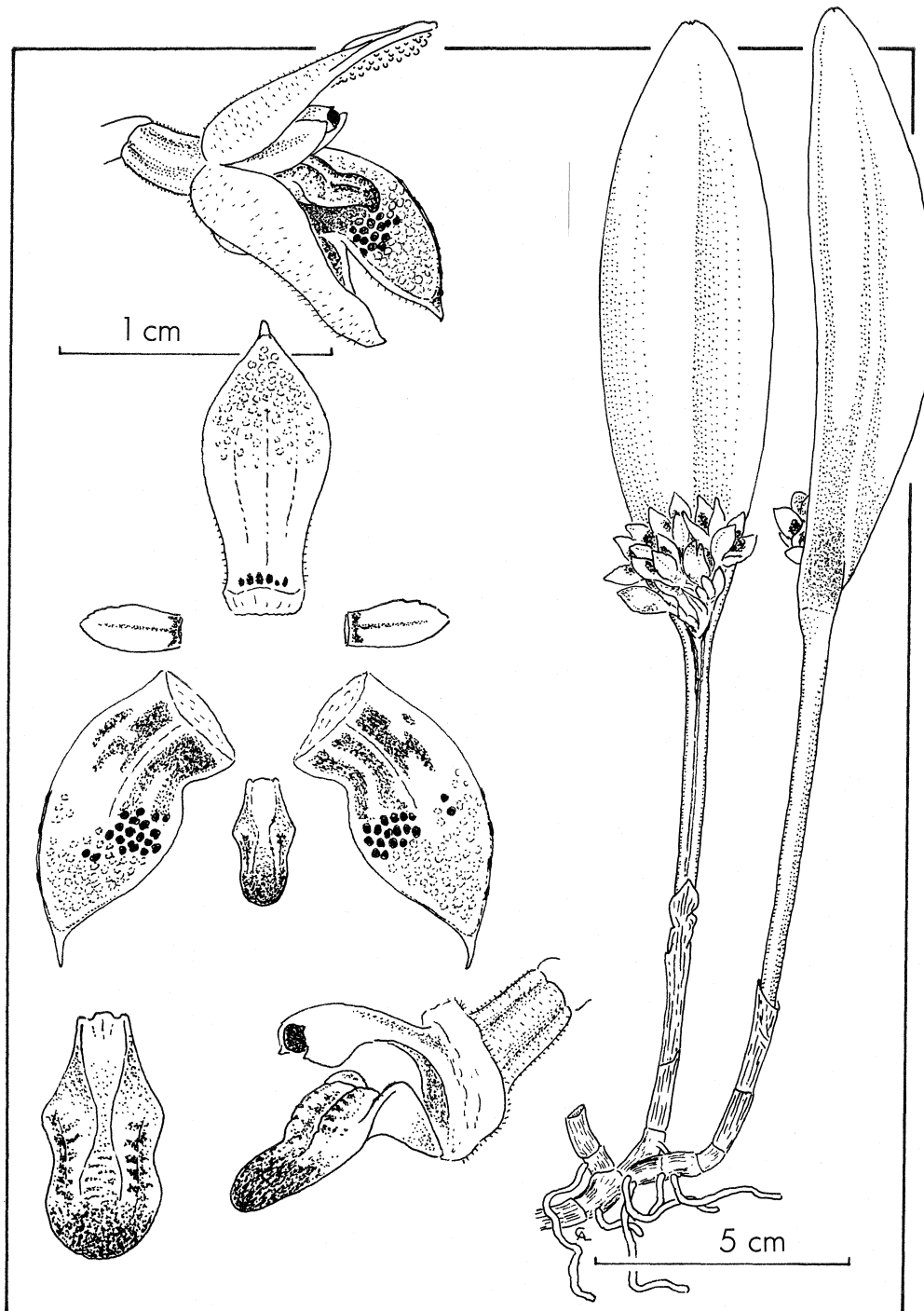


Figure 128. PLEUROTHALLIS APHTHOSA Lindl.

and less colorful than those from the first. The petals are obscurely serrate in the specimens examined, but they vary from distinctly serrulate to smooth in the other descriptions. A yellow-orange-flowered form has recently been discovered in Colombia by McCullough to extend the range far to the North.

The large erect purplish leaf and stem are uncommonly thick and rigid; the creeping rhizome is woody-like. From the base of the sessile leaf appears a cluster of flowers which are borne on very short, few-flowered racemes. The fleshy, widely spread flowers are yellowish and marked with dull purple, puberulent externally and verrucose internally. The most prominent feature of the flowers, however, is the strong, unpleasant scent which is reminiscent of putrifying flesh. Lindley called it "stercoreus". Several flies approached the flowers while the plant was being carried outside from the greenhouse to the laboratory for examination.

***Pleurothallis archicolonae* C. A. Luer, sp. nov.**

Planta epiphytica parva caespitosa, caulibus secundariis gracillimis teretibus unifoliatis, foliis coriaceis anguste ellipticis vel linearibus, inflorescentia fasciculata, floribus successivis solitariis vel racemis bifloris longipedicellatis bilabiatis flavis rubrovittatis, sepalo dorsali synsepaloque ovatis concavis acuminatis anguste obtusis, petalis oblongis falcatis subacutis vitatis marginibus erosis, labello crasso geniculato trilobato flavoviriscenti, lobo medio triangulari, lobis lateralibus subquadratis erectis.

Plant epiphytic, small, caespitose; roots filamentous, flexuous. Secondary stems very slender, terete, 3-6 cm long, with a tight-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, narrowly elliptical to linear, acute, tridenticulate, base cuneate to indistinctly short-petiolate, 3-8 × 0.8-1 cm. Inflorescence fasciculate; flowers solitary or in a 2-flowered raceme 2.5 cm long, from a spathe about 3 mm long in the axil of the leaf; peduncle filiform, 10-13 mm long; floral bract 2 mm long; pedicel about 5 mm long; ovary 2.5 mm long; dorsal sepal ovate, concave, apex acuminate, narrowly obtuse, 4-5 × 3 mm, 3-veined, the central vein subcarinate externally, yellow, striped with red; lateral sepals united into a synsepal similar to the dorsal sepal, 4-5 × 3 mm, 4-veined, blotched with red along the veins; petals oblong, falcate, subacute, 3 × 1.25 mm, margins microscopically erose, translucent yellow with red stripes; lip thick, protruding, geniculate, broadly 3-lobed, middle lobe triangular, subacute, lateral lobes larger than the mid-lobe, rounded to subquadrate, erect, 1.5 × 2.25 mm spread, base shortly unguiculate, yellow-green with 3 red-purple stripes beneath; column stout, terete, 1 mm long, with a short foot.

ETYMOLOGY: From the Greek *archi-*, "chief," or "jefe," and *kolone*, "hill," or "cerro," in reference to the region where the plant was found.

TYPE: PANAMA: PANAMA: epiphytic on Cerro Jefe, alt. 1000 m, 2 March 1976, C. Luer, J. Luer, P. Taylor & H. Butcher 964 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: PANAMA: Cerro Jefe, 19 Nov. 1967, R. L. Dressler 3175 (SEL) and 6 Jan. 1968, R. L. Dressler 3328 (SEL); COLON: Río Iguanita, March 1976, N. H. Williams 5273 (SEL).

DISTRIBUTION: Panama.

*Pleurothallis archicolonae* is apparently known only from eastern Panama. It is locally abundant on Cerro Jefe, a 1000 meter high "hill" only a

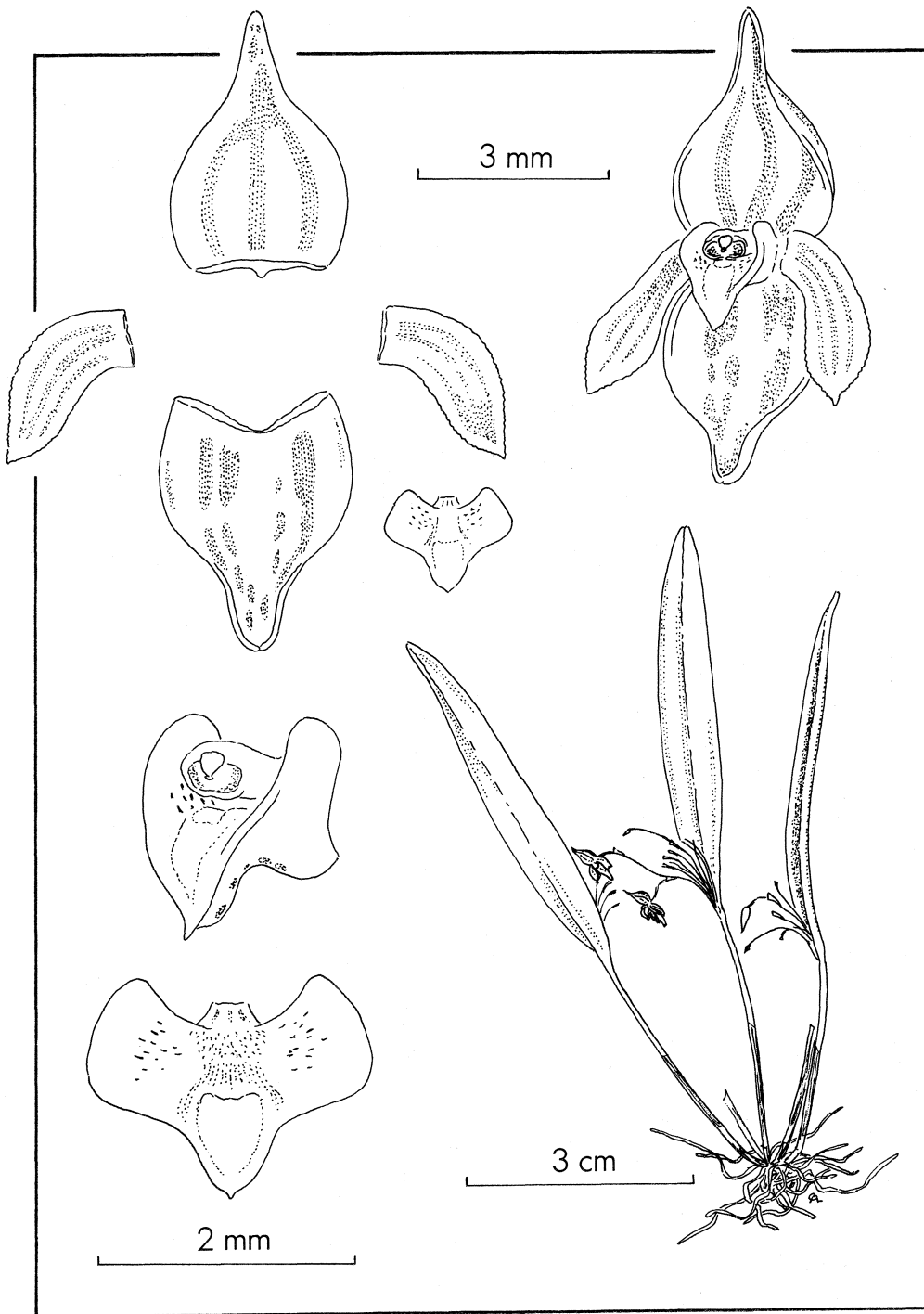


Figure 129. *PLEUROTHALLIS ARCHICOLONAE* C. A. Luer

short distance from Panama City. Several other endemic species have been discovered in the same area.

The very slender secondary stems bear a narrowly linear leaf which is usually a little longer than the stem. A fascicle of numerous, old, dry, arching peduncles is commonly found in the axil of the leaf. Little, long-pedicellate, yellowish flowers with red stripes are produced at irregular intervals either singly or on a weak, two-flowered raceme. The dorsal sepal and the synsepal, concave and shortly acuminate, spread opposite each other. The petals are broad and prominently striped. The lateral lobes of the minute, protruding lip curve up to either side of the column, while the thick middle lobe is deflexed.

***Pleurothallis aryter* C. Luer, sp. nov.**

Planta parva epiphytica breviter repens, caulibus secundariis brevissimis unifoliatis, foliis coriaceis late ellipticis obtusis sessilibus, racemo dependenti brevi paucifloro, flore successivo non-resupinato cremeo purpureo punctato, sepalo antico anguste lineari-ovato acuto naviculari, synsepalo erecto concavo late ovato obtuso, petalis oblongo-obovatis obtusis, labello cuneiformi breviter unguiculato apice late rotundato disco bilamellato leviter dentato, columna cucullata alata denticuato.

Plant small, epiphytic, shortly creeping, the primary stem stout, with short, deciduous sheaths; roots few, flexuous. Secondary stems terete, about 5 mm long, mostly concealed by 1-2 short sheaths, unifoliate. Leaf coriaceous, broadly elliptical, flat, light green, apex obtuse to rounded, emarginate with an apiculum in the sinus, base broadly cuneate to rounded, sessile, 2.5-4.5 × 1.1-1.8 cm. Inflorescence a pendent, few-flowered (1-3) raceme, about 2 cm long; flowers non-resupinate, produced singly, successively, all parts cream-colored, flecked with red-purple; peduncle filiform, from a node on the secondary stem; floral bract acute, 2 mm long; pedicel 5-9 mm long; ovary green, speckled with purple, 4 mm long; middle sepal thick, narrowly linear-ovate, navicular, 9-11 × 2-3 mm; lateral sepals connate into an erect, concave, broadly ovate to obovate, obtuse, uppermost synsepal, minutely spiculate within, 9-11 × 6-8 mm; petals oblong-obovate, obtuse, slightly oblique, 4 × 1.5 mm; lip cuneiform, the base shortly and narrowly clawed, the sides more or less straight, the apex broadly rounded, with a central pair of shortly toothed lamellae, 4.5 × 2-3 mm; column white, 4 mm long, hooded, with lightly toothed wings, and with a posteriorly directed foot.

ETYMOLOGY: From the Greek *aryter*, "a ladle, or a dipper," in allusion to the appearance of the inflorescence.

TYPE: PERU: HUANUCO: epiphytic about 35 km south of Tingo Maria, *Fred Fuchs s.n.* (HOLOTYPE: SEL), cultivated at SEL, greenhouse acc. no. 5-75-2, flowered in cult. 31 July 1976.

ADDITIONAL MATERIAL SEEN: COSTA RICA: without locality, *H. H. Morgan s.n.* (SEL), cultivated by Morgan, flowered in cult. 27 Jan. 1975.

DISTRIBUTION: Peru and Costa Rica.

This species was first brought to my attention in January 1975 by H. H. "Pete" Morgan of Myakka City, Florida, who had brought it from Costa Rica. For the next year and a half the sketches lay in my file until a plant from Peru, submitted by Fred Fuchs of Naranja, Florida, flowered in our "cool" house. Although apparently originating in two disjunct stations, the

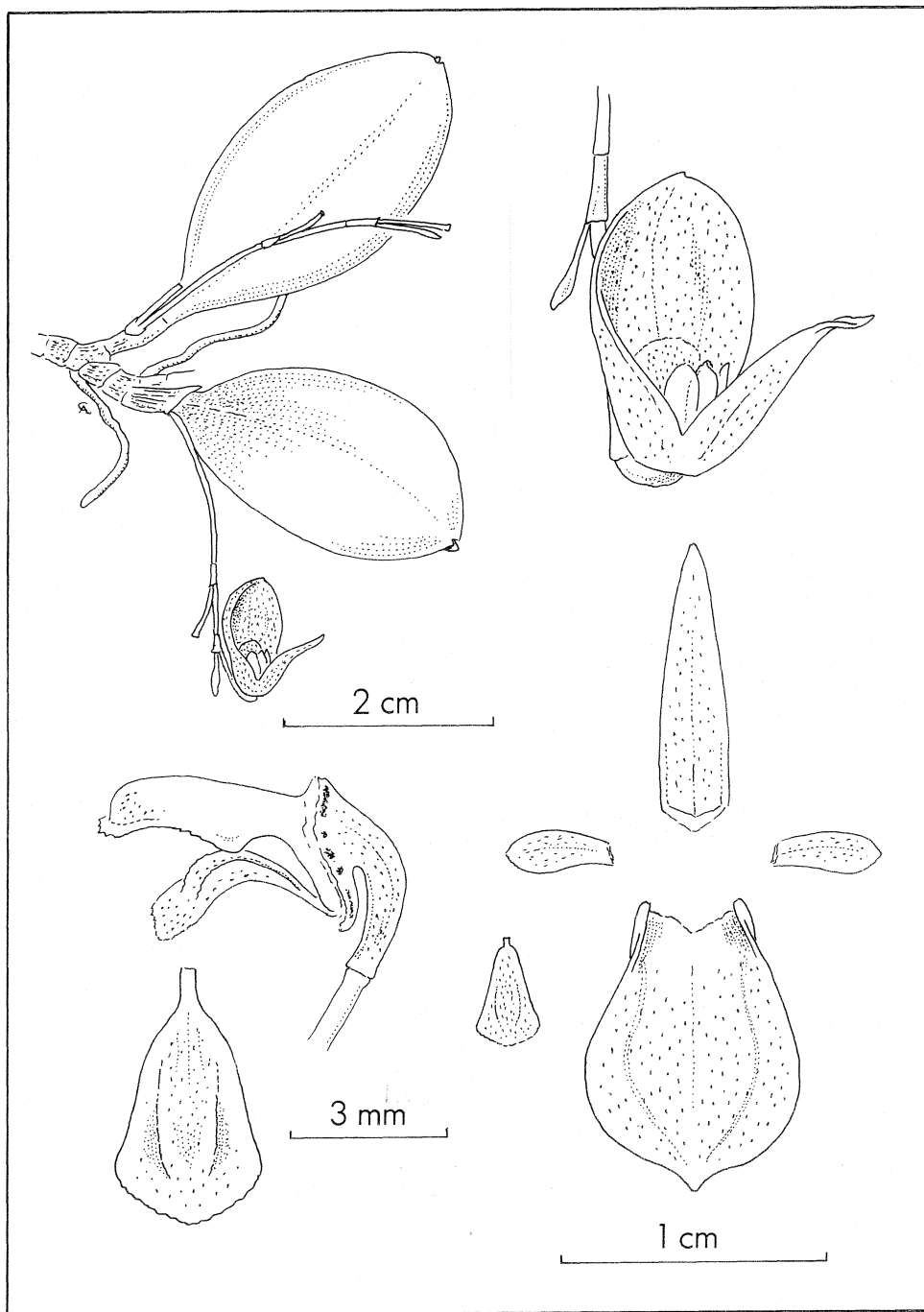


Figure 130. PLEUROTHALLIS ARYTER C. A. Luer

two plants differ only in minor details. Perhaps further investigation will fill the gap. *Pleurothallis aryter* is allied to *P. mentosa* Cogn.

Broadly elliptical, short-stemmed leaves are produced on a short, creeping rhizome. At intervals of time, the short pendent raceme produces a single, ivory-colored flower covered with minute specks of red-purple. At the bottom of the stem, the large, concave synsepal is uppermost in the flower, giving the appearance of a long-handled dipper.

***Pleurothallis barboselloides*** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17:18. 1922.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 5-12 mm long, mostly concealed by 2-3 short, basal sheaths, unifoliate. Leaf suberect, coriaceous, narrowly elliptical to narrowly obovate, subacute to obtuse, tridenticulate, the base cuneate, petiolate, 2-4.5 cm long including the 5-12 mm long petiole, 9-14 mm wide. Inflorescence a single (occasionally 2), long-pedicellate flower, yellow-green to greenish-orange, borne on a filiform peduncle 3-5 cm long, from a node on the secondary stem; floral bract 3 mm long; pedicel 10-15 mm long; ovary smooth to minimally verrucose, 2.5 mm long; dorsal sepal elliptical, the apex subacute to obtuse, thickened, slightly verruculose, 8-10 × 3-4 mm, 3-veined, the veins prominent dorsally; lateral sepals connate to nearly the apex into an elliptical lamina, subacute, retuse, 8-9 × 3.5-4 mm, bicarinate; petals obovate-spatulate, oblique, abruptly acuminate, shortly obtuse, the labellar margin dilated, 2.5-3 × 1.5 mm, the 2 veins orange on translucent yellow; lip yellow to orange, ligulate to subpandurate, the apex obtuse to rounded, minutely verrucose and erose, with obtuse, lateral angles below the middle, the base shortly hinged to the column-foot, the disc thickened, with a pair of low, minutely serrulate calli extending forward from the angles, 2.75-3 × 1 mm; column thick, 2 mm long, with a short foot.

ETYMOLOGY: Named for the superficial similarity of the plant to the genus *Barbosella*.

TYPE: PANAMA: PANAMA: on hills by Panama City, *C. W. Powell* 98.

DISTRIBUTION: Panama.

PANAMA: COCLÉ: epiphytic in the hills above El Valle, alt. 1000 m, *George Kennedy s.n.* (SEL), greenhouse acc. no. 30-74-159, flowered 20 July 1976; LOS SANTOS: Azuero Peninsula, *Ken Baker s.n.* (SEL), greenhouse acc. no. 43-76-207, flowered 2 July 1976.

Vegetatively this species is similar to *Pleurothallis brighamii* S. Wats. and its many allies. It has been reduced by some authors to the synonymy of the latter. It is also similar to the smaller *P. corniculata* (Sw.) Lindl. which has smaller flowers borne on short pedicels in several-flowered fascicles. It is most similar to *P. jocolensis* Ames which has a smaller, but also long-pedicellate flower. Perhaps the latter is merely a geographical variant.

*Pleurothallis barboselloides* may be recognized by its long-pedicellate, yellow-orange flower, occasionally followed by a second, borne by a hair-like peduncle and held higher than the leaves. The fleshy dorsal sepal and synsepal are nearly equal in size and shape, the oblique petals are broadly dilated and abruptly acuminate, and the lateral lobes of the ligulate lip are reduced to broadly obtuse angles below the middle.

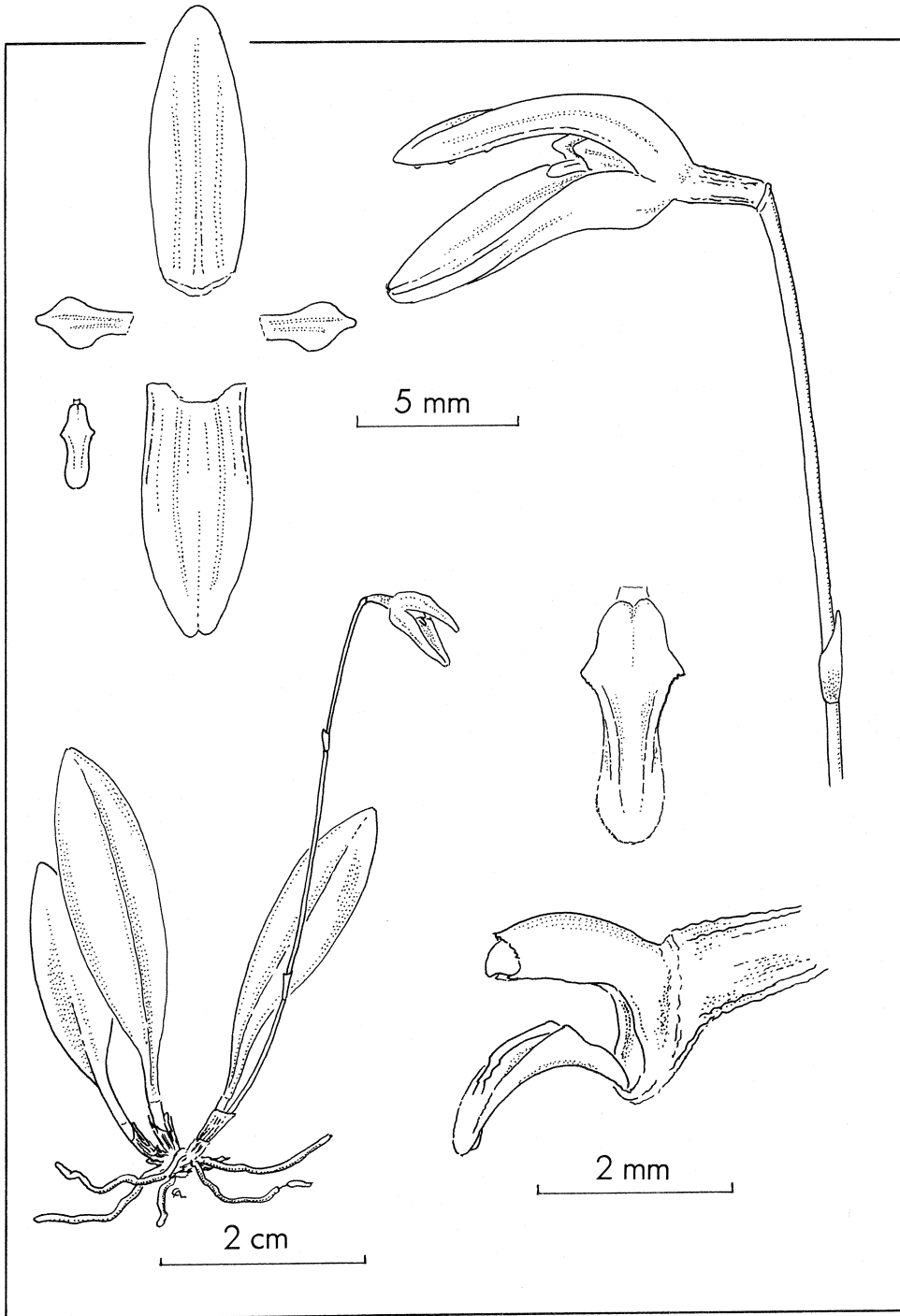


Figure 131 PLEUROTHALLIS BARBOSELLOIDES Schltr.



**Pleurothallis batillacea** C. Luer, sp. nov.

Planta grandis caespitosa, caulibus secundariis fasciculatis valdis longis teretibus vaginis laxis tubulatis unifoliatis, foliis coriaceis ellipticis vel suborbiculatis obtusis batillaceis breviter petiolatis, pauciracemis multifloris foliis leviter longioribus strictis ex spatha crassa, floribus parvis flavis purpureo vittatis, sepalis ciliatis, sepalo dorsali suborbiculari concavo, sepalis lateralibus oblongis obtusis prope medium connatis, petalis ellipticis apicibus rotundatis trinerviis, labello subrhomboideo trilobato basi concavo, lobis lateralibus late triangularibus rotundatis callis crassis complanatis, lobo antico late ovato obtuso.

Plant large, epiphytic to terrestrial, caespitose; roots slender, flexuous. Secondary stems fasciculate, stout, terete, 25-75 cm long, with a tubular sheath near the middle and 2-3 others at the base, often including other stems, unifoliate. Leaves coriaceous, elliptical to suborbicular, obtuse, base rounded with a short petiole 1-1.5 cm long, the blade 13-22 × 7-16 cm. Inflorescence racemose (1-4), strict, densely many-flowered, 18-27 cm long, from a thick spathe 1-3 cm long, at the base of the leaf; floral bract inflated, 4 mm long; pedicel and ovary each about 1.5 mm long; sepals yellowish, marked with reddish purple along the veins, ciliate along the margins; dorsal sepal broadly ovate to suborbicular, obtuse, concave, 5.5 × 4.5 mm, 3-veined; lateral sepals oblong, obtuse, connate to near the middle, 6 × 3.5 mm together; petals elliptical to obovate, rounded, translucent yellow-green marked with purple, 3 × 1.3 mm, 3-veined; lip subrhomboid, 3-lobed, the base concave with a curved, transverse ridge for the column-foot, the lateral lobes broadly triangular, rounded, with a flat, thickened callosity protruding over the anterior margin, extending onto the middle lobe, the mid-lobe broadly ovate, obtuse, edged in purple, 2.25 × 2 mm; column stout, terete, 1.5 mm long, with a short, thick foot.

ETYMOLOGY: From the Latin *batillum*, "a shovel," and *-aceus*, "resembling," in allusion to the large blade and stem.

TYPE: *ECUADOR*: PICHINCHA: terrestrial on a road embankment near km 60, old road, Quito to Santo Domingo, alt. 2200 m, 12 March 1976, C. Luer, J. Luer & P. Taylor 853 (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador and ? Venezuela.

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: PICHINCHA: terrestrial near km 70, Quito to Santo Domingo, alt. 1800 m, 10 March 1975, C. Luer & R. Kent 227 (SEL).

This species is capable of producing one of the largest plants of the genus. Although many stems bear elliptical, obtuse leaves, some of the larger ones can produce huge, nearly orbicular, shovel-like blades. The thick stems arise adjacent to each other in a dense fascicle enveloped by large, tubular, imbricating sheaths.

*Pleurothallis batillacea* is similar to *Pleurothallis galeata* Lindl. from which it differs by producing one or a few straight racemes as long as or longer than the leaf. *Pleurothallis galeata* amasses numerous ascending racemes considerably shorter than the leaf. The dorsal sepal of both species is deeply concave and orbicular, considerably wider than the combined width of the oblong, semiconnate lateral sepals. The petals of the species described here are three-veined, but the plant illustrated in Venezuelan Orchids 4:216, which very likely represents this species, has one-veined petals similar to

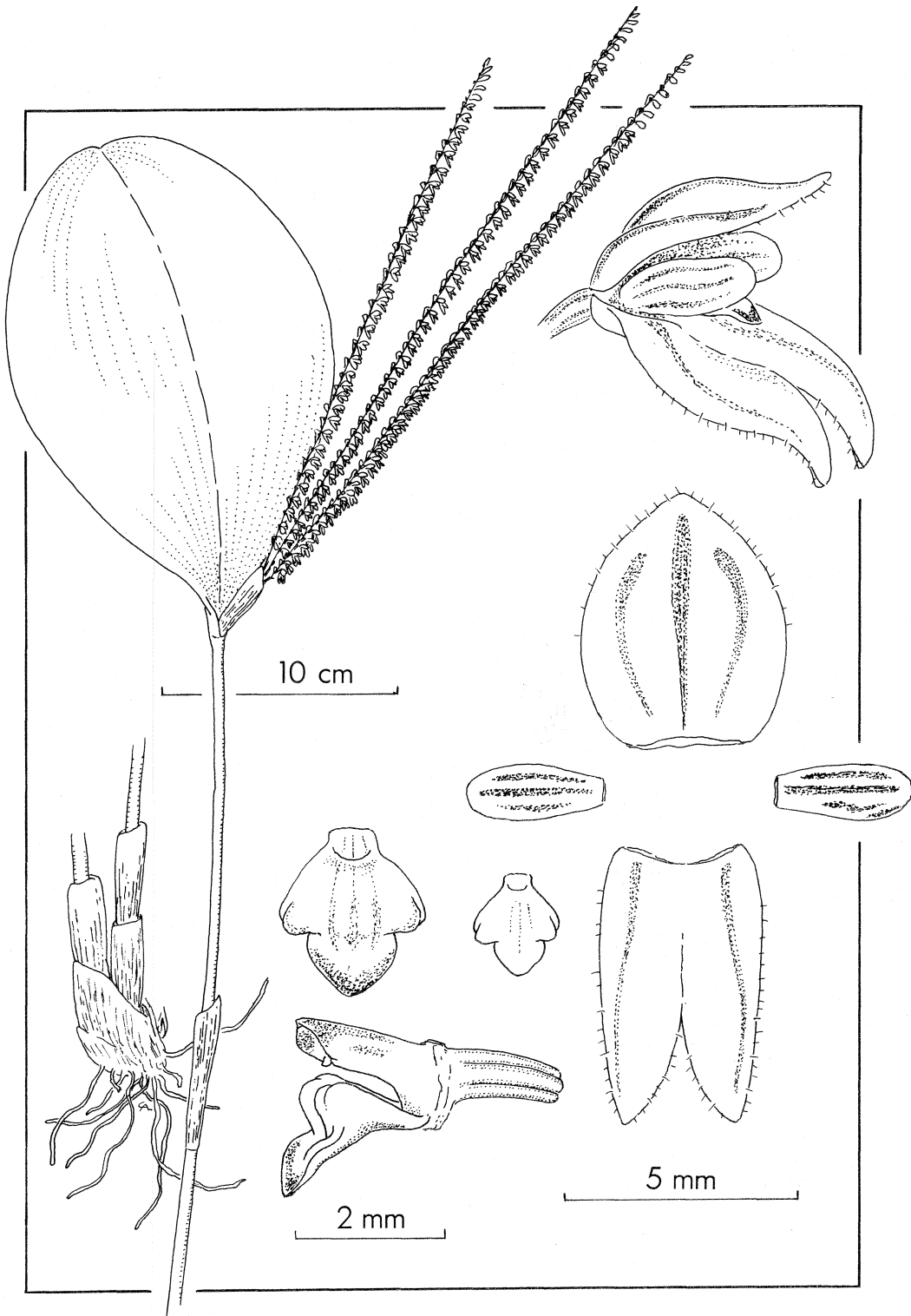


Figure 132. PLEUROTHALLIS BATILLACEA C. A. Luer

*P. galeata*. The broad lateral lobes of the lip are overlaid by a thick, flat, protruding callus, while the callus of the lateral lobes of *P. galeata* is reduced to a ridge behind the margin.

***Pleurothallis berlineri* C. A. Luer, sp. nov.**

Planta parva epiphytica caespitosa, caulibus secundariis ascendentibus arcuatis vaginis lepanthiformibus obtectis unifoliatis, foliis coriaceis pendulis anguste ellipticis vel linearibus acutis basi cuneatis breviter petiolatis, racemo pendenti folio plus minusve longiore laxifloro, floribus nutantibus ringentibus pallido rubiginosis, sepalo dorsali anguste ovato apice obtuso crasso, sepalis lateralibus oblongis infra medium connatis obtusis crassis, petalis oblongis obtusis, labello oblongo-obovato glabro apice rotundato base truncato biauriculato disco basi calloso.

Plant small, epiphytic, caespitose; roots filiform, flexuous. Secondary stem slender, ascending, arcuate, 9-15 cm long, largely concealed by 7-10 imbricating to closely spaced, tubular, costate sheaths, the apices dilated, oblique, acute, with ciliate margins, unifoliate. Leaf coriaceous, pendent, narrowly elliptical, linear, acute, base cuneate, petiolate, 8-13 cm long including the 1 cm long petiole, and 10-12 mm wide. Inflorescence, 1-2 laxly few-flowered (8-10), pendent racemes, up to 15 cm long; peduncle slender, from a 5-6 mm scarious spathe at the apex of the stem, sometimes accompanied by the bases of old peduncles; floral bract and pedicel each 2-4 mm long; ovary 2.5 mm long; flowers nodding, gaping, bilabiate; sepals pale rose-brown, glabrous except for a rare marginal hair; dorsal sepal narrowly ovate, obtuse, concave below the middle thick and convex above, 12 × 3.5 mm; lateral sepals connate for the basal third, lightly adherent for the remainder, oblong, thick and convex above the middle, together forming a rounded apex, basally forming a shallow mentum with the column-foot, minutely pubescent basally within, 10 × 5 mm together; petals oblong, obtuse, 2.5 × 1 mm; lip pale yellow-green, oblong-obovate, apex rounded, base truncate, biauriculate, disc with a curved, smooth elevation at the base, the remainder plain, 2.5 × 1.5 mm; column white, winged, 2 mm long, column-foot concave, 1.5 mm long.

**ETYMOLOGY:** Named in honor of Benjamin C. Berliner, M.D., who discovered the plant in Ecuador.

**TYPE:** *ECUADOR: LOJA:* epiphytic, ca. 12 km east of Loja, alt. ca. 2500 m, *B. Berliner s. n.* (HOLOTYPE: SEL).

**DISTRIBUTION:** Southern Ecuador.

This peculiar species, apparently so distinct, is closely allied to the group of species similar to *Pleurothallis ciliaris* (Lindl.) L. Wms. The habit is similar to *P. dependens* C. A. Luer. The slender, arching stems are concealed by long, lepanthiform sheaths. From the apex of each stem the narrow leaf hangs perpendicularly, and beside it dangles the limp, loosely-flowered raceme. The pale rose-brown flowers face downward, the sepals curving back with blunt, thickened apices. The petals are entire. The oblong lip is free of any cilia, but it possesses a basal callosity and auricles similar to those of its allies.

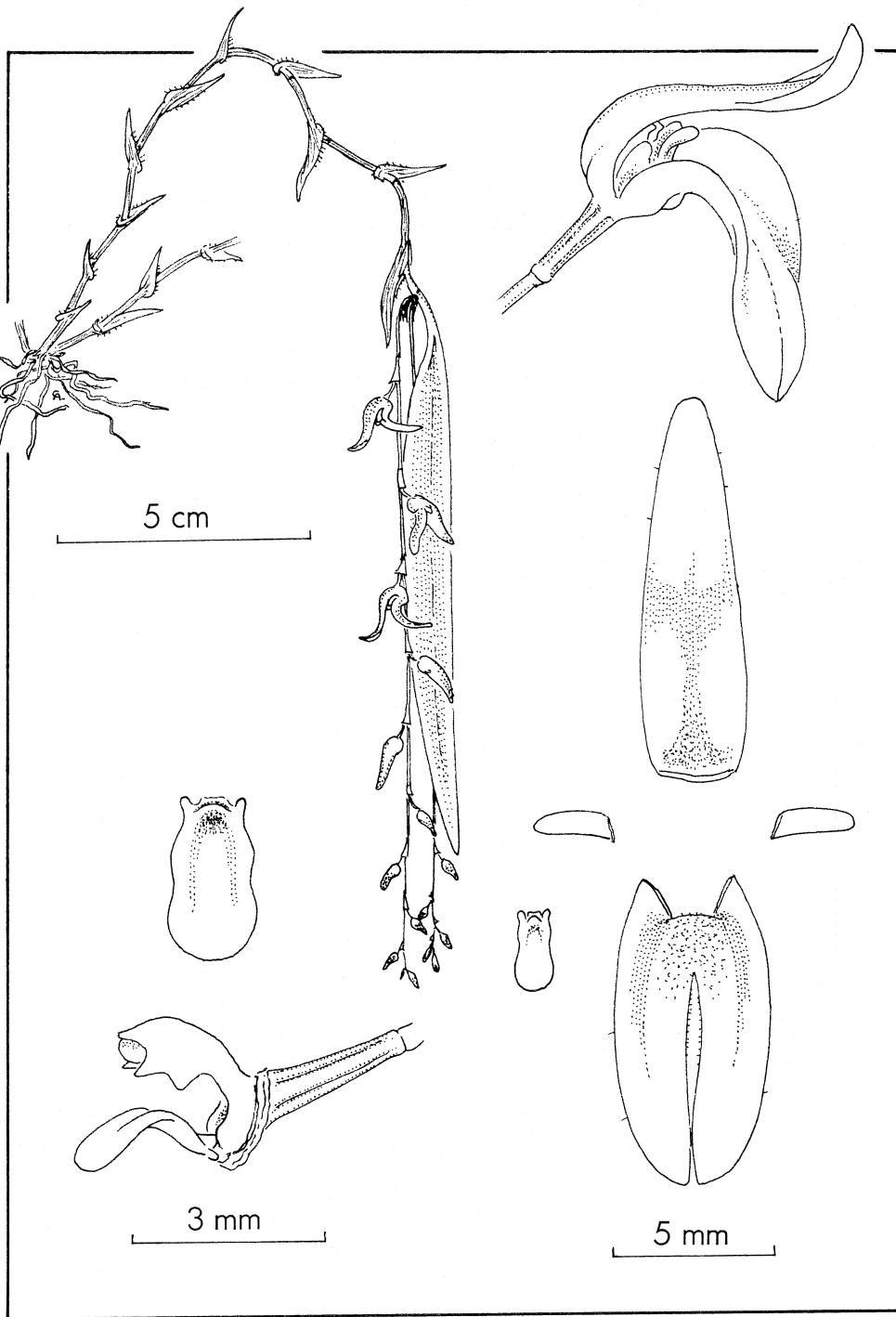


Figure 133. PLEUROTHALLIS BERLINERI C. A. Luer

**Pleurothallis brachyblephara** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 9:72. 1921.

Plant medium in size, epiphytic, caespitose; roots filamentous, flexuous. Secondary stems erect, slender, terete, 10-30 cm long, with a close-fitting tubular sheath below the middle and 1-2 others basally, spotted when immature, monophyllous. Leaf suberect to spreading, broadly ovate, acuminate, acute, tridenticulate, base deeply cordate, sessile, 8-12 × 4-6.5 cm. Inflorescence a fascicle of single flowers, successive, from a fugacious spathe at the base of the leaf; floral bract and pedicel each about 5 mm long; ovary green, slightly verruculose, 5 mm long; sepals yellow, sometimes veined and suffused with brown, shortly but densely pubescent externally, glabrous internally; dorsal sepal broadly elliptical, acute, 6 × 4.5 mm, 3-veined; lateral sepals united into a broadly ovate synsepal, acuminate, bidentate, concave basally, 5-6 × 5.5 mm, 4-veined; petals yellow, suffused with brown, narrowly elliptical, slightly oblique or subfalcate, 4 × 1 mm, margins erose, surface finely pubescent; lip brown, oval, subcordate, apex obtuse to rounded, minutely apiculate, margins ciliate-erose, sometimes microscopic, surface glandular-papillose, concave at the base, 3 × 2.5 mm; column short, 1 × 1.5 mm with a 1 mm foot.

ETYMOLOGY: From the Greek *brachys*, "short," and *blepharis*, "eyelash," in allusion to the shortly ciliated margins of the sepals and the erose-ciliated margins of the petals and lip.

TYPE: PERU: CUZCO: stony slopes near Sandia, alt. 2300 m, March 1902, A. Weberbauer 635.

DISTRIBUTION: Ecuador and Peru.

ECUADOR: ZAMORA-CHINCHIPE: epiphytic near km 40 between Loja and Zamora, alt. 1500 m, collected 5 Aug. 1975, C. Luer, G. Luer & Wilhelm 637 (SEL), cultivated at the Marie Selby Botanical Gardens, greenhouse acc. no. 44-75-181, flowered in cult. 2 Jan. 1976; MORONA-SANTIAGO: epiphytic in felled trees 30 km south of Gualaquiza, alt. 600 m, collected 6 Aug. 1975, C. Luer, G. Luer & Wilhelm 648 (SEL), greenhouse acc. no. 44-75-170, flowered in cult. 30 Jan. 1976.

The description of this species is very close to that of the widespread, common and variable *Pleurothallis cordata* (Ruiz & Pav.) Lindl. and it has sometimes been included in the synonymy of the latter. Although the description of the plant figured, collected near the Peruvian frontier, is similar to that of *P. cordata*, the aspect of the flowering plant appears distinctly different. It seems to answer best the description of Schlechter's *P. brachyblephara* from Peru.

The leaves are broadly ovate, but not as proportionately broad and rounded as those of *P. cordata*. The flowers are golden yellow, suffused with brown, but this color combination also occurs in populations of *P. cordata*. The sepals are minutely pubescent externally, with a shortly ciliated margin visible from the front. Instead of being held down to either side of the lip, the erose-margined petals spread widely. The margins of the oval lip are usually conspicuously erose.

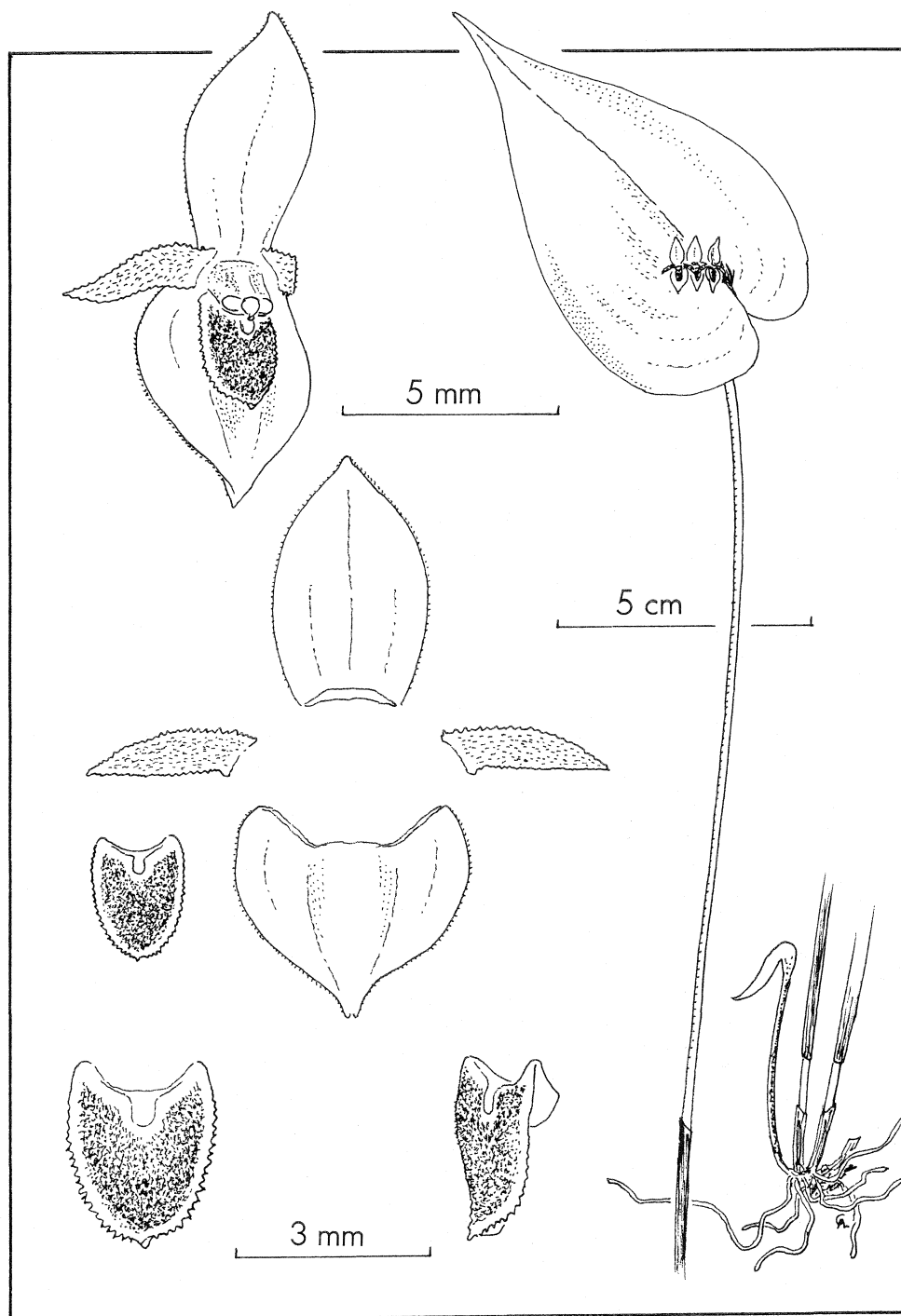


Figure 134. PLEUROTHALLIS BRACHYBLEPHARA Schltr.

**Pleurothallis brenneri** C. A. Luer, sp. nov.

Planta parva epiphytica caespitosa, tenuicaulibus secundariis teretibus unifoliatis, folio coriaceo elliptico obtuso punctato basi rotundato petiolo torto, racemo brevi bifloro, floribus carnis flavovirentibus purpureo guttatis, sepalis interius puberulis, sepalo dorsali obovato obtuso, sepalis lateralibus oblongis retusis ad medium connatis basi gibbosis, petalis obovatis retusis, labello hastato obtuso unguiculato angulis lateralibus obtusis marginibus cristatis.

Plant small, epiphytic, caespitose; roots filiform, flexuous. Secondary stems slender, terete, 4-6 cm long, with a close-fitting, tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous elliptical, subacute to obtuse, tridenticulate, base broadly cuneate to rounded, with a twisted, channeled petiole 7-8 mm long, the blade 2-3 X 1.2-1.5 cm, dotted with purple, especially on the under surface. Inflorescence a short, 2(3)-flowered raceme, about 1.5 cm long, from a spathe about 5 mm long at the apex of the stem; floral bract and pedicel each about 1.5 mm long; ovary pubescent, spotted with purple, 1.5 mm long; sepals fleshy, glabrous externally, puberulent within, yellow-green with purple spots; dorsal sepal obovate, obtuse, 8 X 4 mm, 3-veined; lateral sepals united to near the middle, oblong, apices obtuse to retuse, convex, concave basally, forming a mentum with the column-foot, 7 X 2.5 mm together; petals obovate, rounded, retuse, 4 X 2 mm, pale yellow with 3 very close, brown-striped veins; lip hastate, apex obtuse, the angles below the middle also obtuse, margins microscopically irregular, with a pair of slightly toothed crests just within the margins, base long-unguiculate, 3.5 X 2 mm spread, yellow-orange with purple spots; column terete, 2.5 mm long, with a foot 2 mm long.

ETYMOLOGY: Named in honor of Joe Brenner of Puyo, Ecuador who discovered the species.

TYPE: *ECUADOR*: BOLIVAR: epiphytic in orange grove near Pallatanga, alt. 800 m, *J. Brenner 4* (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador.

This small species from the low land, coastal region of Ecuador was recently discovered by Joe Brenner, and is cultivated by him in Puyo in the Oriente. The plant is characterized by its elliptical leaf, minutely dotted with purple, which is twisted on its well-developed petiole so that the short raceme is borne along the back surface of the blade, much the same as *Pleurothallis imraei* Lindl. Usually only two flowers, opening in close succession, are produced. The obtuse floral parts are fleshy and spotted with purple. The triangular lip is supported by a distinct claw.

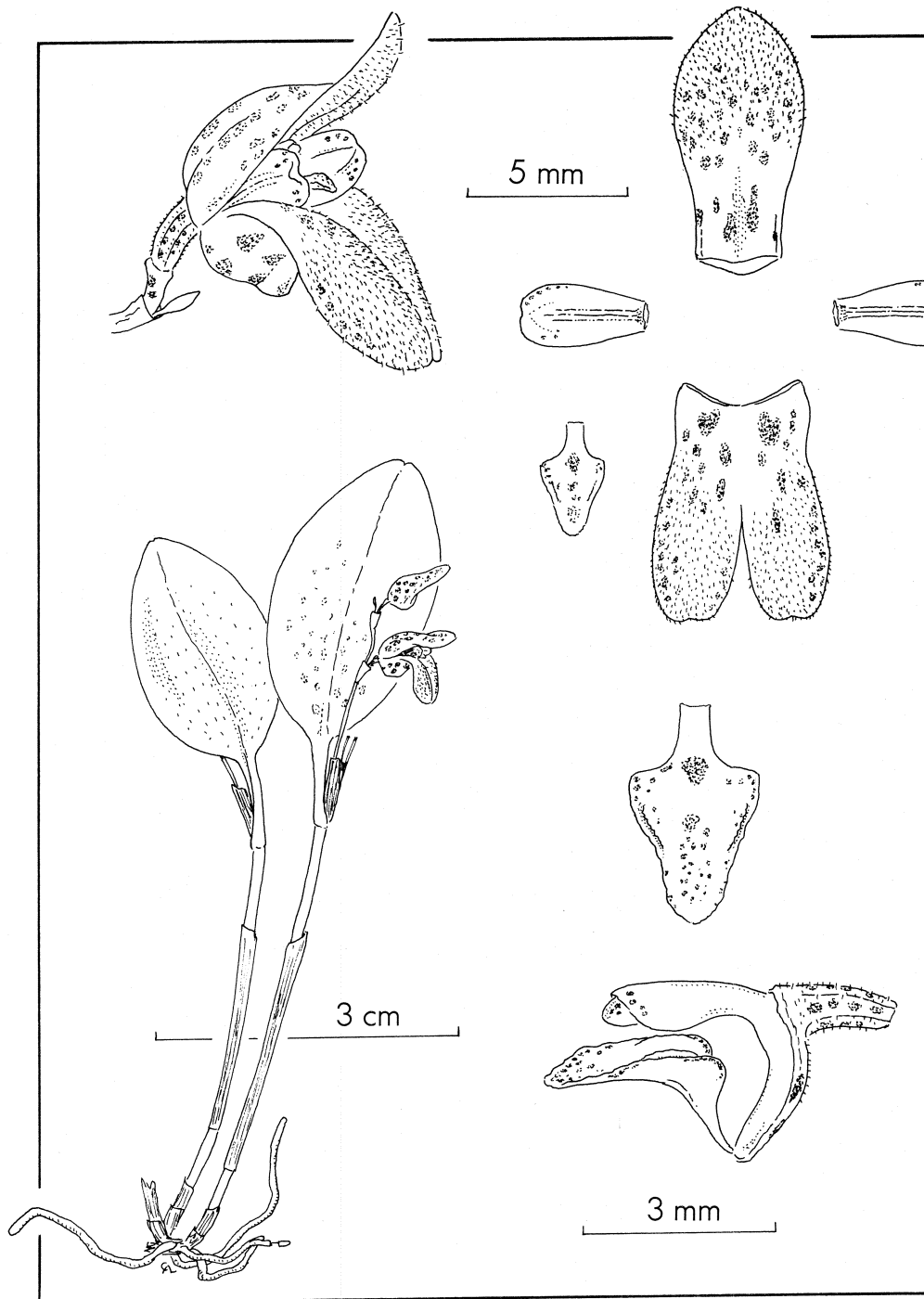


Figure 135. PLEUROTHALLIS BRENNERI C. A. Luer



**Pleurothallis brevipes** Focke in Tijdschr. Wis-Natuurk, Wetensch. Eerste Kl. Kon. Ned. Inst. Wetensch. 2:198. 1849.

*Humboldtia brevipes* (Focke) Kuntze, Rev. Gen. Pl. 2:667. 1891.

Plant epiphytic, small, caespitose; roots slender, flexuous. Secondary stem slender, 1-4 cm long, commonly shorter than the leaf, clothed by 2-3 ribbed tubular sheaths, monophyllous. Leaf coriaceous, minutely flecked with purple, narrowly elliptical, apex acute, tridenticulate, base cuneate, petiolate, 2.5-5.5 cm long (including the 8-19 mm long petiole) and 6-15 mm wide. Inflorescence a short (up to 2 cm long), few-flowered (1-6) raceme producing a yellow-orange flower singly and successively; peduncle from the base of the petiolate leaf; floral bract glabrous, infundibular, 2 mm long; pedicel 3 mm long; ovary 1-1.5 mm long; dorsal sepal ovate, acute to acuminate, 6-6 × 2.5 mm; lateral sepals similar to the dorsal sepal, slightly oblique, free to near the base where they form a shallow mentum; petals ovate, acuminate to aristate, yellow, sometimes with a red apex, 4 × 1.5 mm; lip yellow, marked with orange or red, oblong, 2 × 0.6 mm, apex rounded, sometimes apiculate, base shortly unguiculate with a very small pair of lobules, margins below the middle slightly dilated, minutely serrulate and incurved; column 1.5 mm long with a 0.5 mm foot.

ETYMOLOGY: From the Latin *brevis*, "short," and *pes*, "foot," probably in allusion to the short secondary stem which, nevertheless, is about as long as the little leaf.

TYPE: SURINAM: epiphytic by the River Para, 1845, *Willschlaegel 1589* (HOLOTYPE: W).

DISTRIBUTION: Surinam, Venezuela, Bolivia, and Ecuador.

BOLIVIA: SANTA CRUZ: 1 km west of Buena Vista, *Fred Fuchs, Jr. s.n.* (SEL), greenhouse acc. no. 26-74-83; 100 km north of Santa Cruz, *Fred Fuchs, Jr. s.n.* (SEL), greenhouse acc. no. 26-74-117, continuously in flower.

ECUADOR: TUNGURAHUA: in cloud forest between Baños and Río Bamba, *Janet Kuhn s.n.* (SEL), flowered in cult. 29 Apr. 1976.

*Pleurothallis brevipes* may be recognized by its slender secondary stems which approach the leaves in length, acute elliptical leaves which may be suffused or flecked with purple, a short raceme producing successively yellow-orange flowers with red aristate petals, and an oblong lip without lateral lobes but with minute basal lobules. Plants remain in flower nearly continuously.

This species is similar to the Brazilian *P. modesta* (Barb. Rodr.) Cogn. which may be distinguished by its minutely ciliate petals. It is also similar to the Ecuadorian *P. pachyphtha* Luer which may be distinguished by its short, thick secondary stem and the minute lateral lobes of the lip. This is the first report of this species from Bolivia and Ecuador.

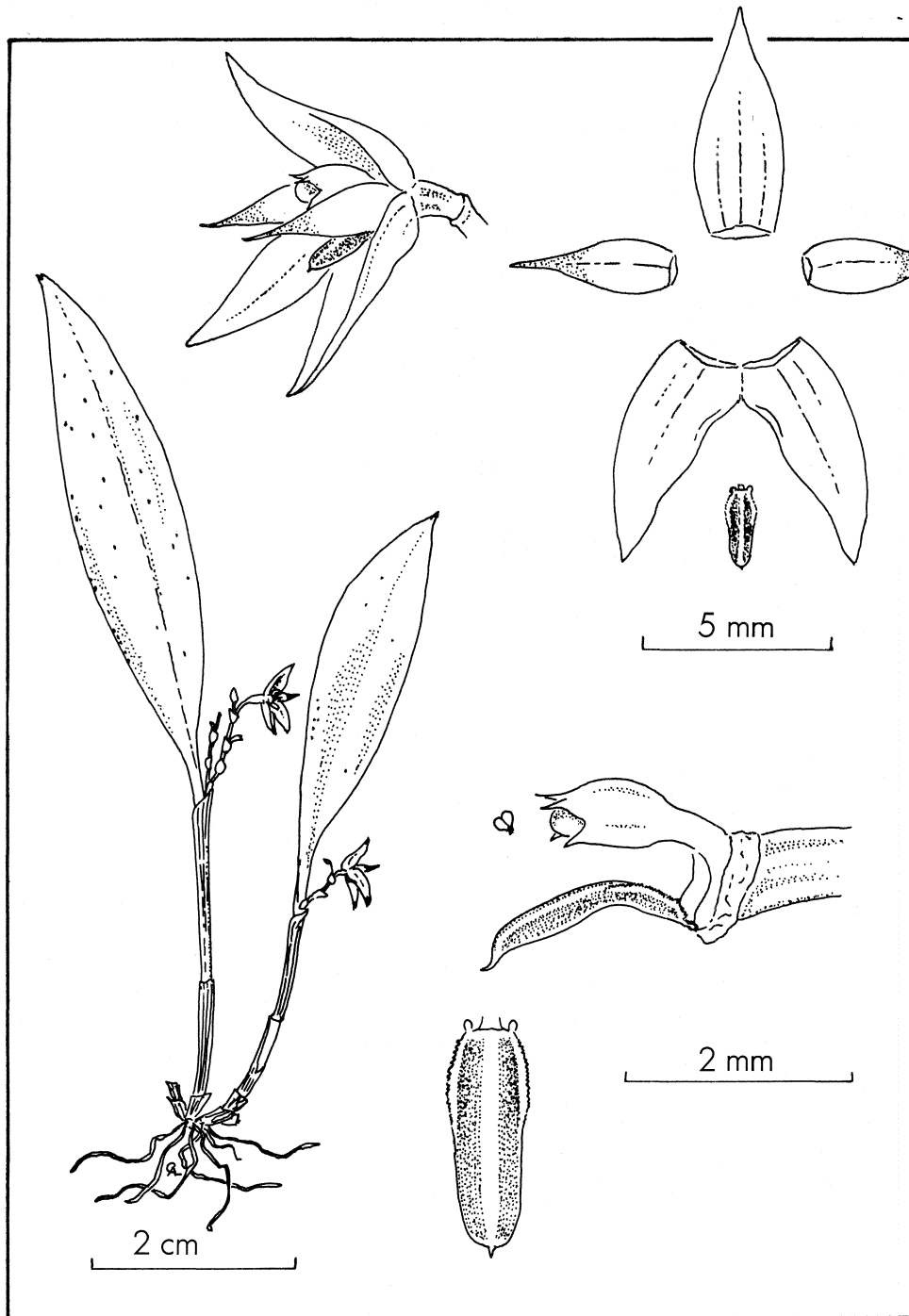


Figure 136. *PLEUROTHALLIS BREVIPES* Focke

**Pleurothallis brighamii** S. Wats., Proc. Amer. Acad. Arts 23:285. 1888.

Plant small, epiphytic, densely caespitose; roots filamentous, flexuous. Secondary stems abbreviated, 2-6 mm long, mostly concealed by 2-3 short, thin, ribbed sheaths, unifoliate. Leaf coriaceous, narrowly obovate, subacute, to obtuse, tridenticulate, the base gradually narrowed into a channeled petiole, 2-9 cm long, 5-12 mm wide. Inflorescence a fascicle, or a very contracted raceme, of single, successive flowers, from the apex of a filiform peduncle, 3-10 cm long, from a lateral node on the secondary stem; floral bracts acute, 2-4 mm long; pedicel 4-5 mm long; ovary 1.5-2 mm long; dorsal sepal elliptical to obovate, acute, 8 × 3 mm, 3-veined, the veins subcarinate, striped with brown or purple; lateral sepals connate to slightly above the middle into a broadly elliptical to obovate bifid lamina, the apices acute, 8 × 5 mm together, purple-brown below the middle, veined in brown or purple above the middle; petals more or less dolabriform, acute, oblique, the labellar margin swollen in varying degrees, 2-2.5 × 1-1.25 mm, yellow, striped with brown; lip oblong, the apex more or less dilated, and rounded with a minutely erose margin, with a pair of broad angles below the middle, the base very shortly unguiculate, with a pair of translucent, white auricles, disc with a pair of low lamellae extending forward from the lateral angles, 2.5 × 1 mm; column terete, 2 mm long, with a foot 1.5 mm long.

ETYMOLOGY: Named for an unidentified personality.

TYPE: GUATEMALA: IZABAL: epiphytic in the Chocon forests, 1885, *S. Watson s.n.*, flowered in cult. Aug. 1887.

DISTRIBUTION: Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, and Panama.

NICARAGUA: JINOTEGA: without specific locality, *F. Fuchs, Jr. s.n.* (SEL), flowering nearly continually in cultivation.

PANAMA: PANAMA: epiphytic along the Altos de Pacora road, alt. 650 m, 4 Mar. 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 971* (SEL); Río Bajiño, *G. Kennedy s.n.* (SEL), flowering nearly continually in cultivation.

Although frequent and widespread in Central America, this little species escaped a formal description until that of Sereno Watson. Several related species (*Pleurothallis acrisepala* Ames, *P. barboselloides* Schltr., and *P. periodica* Ames) have been included in the synonymy.

*Pleurothallis brighamii* is characterized by a dense tuft of obovate, obtuse leaves borne by very short secondary stems. A filiform peduncle, nearly as long as, to twice as long as the leaves, bears at the summit a fascicle of successive, yellowish flowers marked with purple-brown. The lateral sepals, conspicuously a solid dark color below the middle, are dilated into a broad, obtusely bifid lamina which is yellow and only veined in purple. The striped petals are markedly swollen along the labellar margin. The lamellae forward of the lateral angles of the lip are low and smooth.

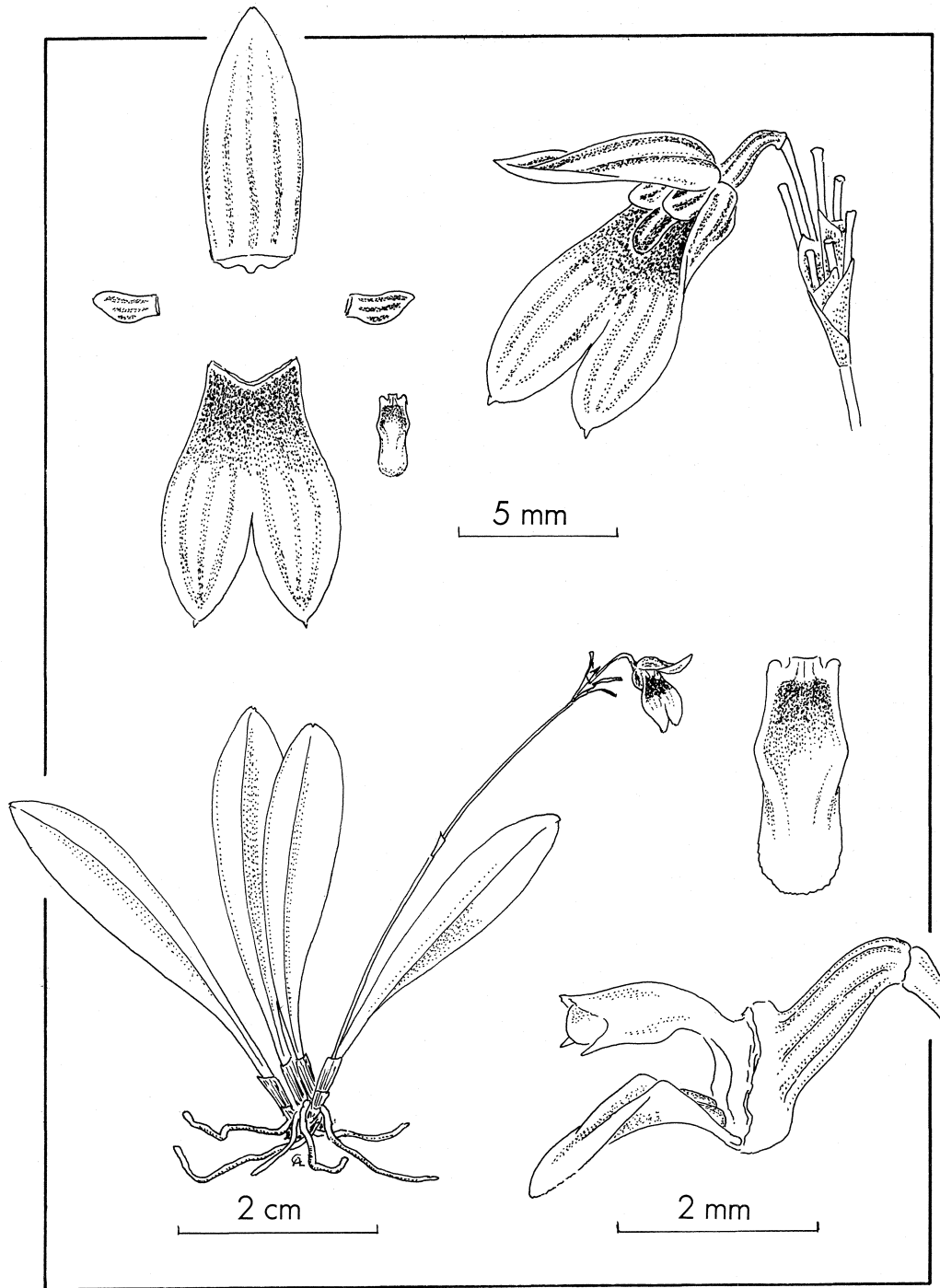


Figure 137. PLEUROTHALLIS BRIGHAMII S. Wats

**Pleurothallis bucculenta** Luer, sp. nov.

Planta mediocris caespitosa, caulibus secundariis erectis gracilibus teretibus unifoliatis, foliis patentibus coriaceis ovatis acuminatis acutis basi profunde cordatis, flore solitario successivo bilabiato glabro atropurpureo, sepalo dorsali elliptico obtuso, synsepalo ovato obtuso, petalis linearibus falcatis acutis laevibus, labello elliptico obtuso canaliculato bucculento.

Plant medium in size, caespitose, epiphytic to terrestrial; roots filamentous, flexuous. Secondary stems erect, slender, terete, 6-13 cm long, with 2-3 close-fitting, tubular sheaths at the base, unifoliate. Leaf deep green, spreading, coriaceous, ovate, acuminate, acute, tridenticulate, deeply cordate, sessile, 5-6.5 × 2.3-2.7 cm. Inflorescence fasciculate; flower solitary, successive, bilabiate, all parts dark red-purple, from a spathe 7-9 mm long at the base of the leaf; pedicel and floral bract each about 7 mm long; ovary 5 mm long; sepals glabrous, but microscopically glandular externally and along the margins; dorsal sepal oblong-elliptical, obtuse to rounded, 10-11 × 6-7 mm, 5-veined; lateral sepals connate into an ovate, obtuse synsepal 10 × 7 mm, 4-veined; petals narrowly triangular to linear, falcate, margins smooth, 6 × 1 mm, 1-veined; lip oblong-elliptical, apex obtuse, apiculate, base shortly reflexed and concave, the disc shallowly channeled centrally, with the lateral halves convex, the margins minimally irregular and microscopically pebble-like, 5 × 3 mm; column stout, 1.5 × 2 mm.

ETYMOLOGY: From the Latin *bucculentus*, "with full cheeks" (*bucca*, "cheek"), in allusion to the cheek-like appearance of the halves of the lip.

TYPE: ECUADOR: TUNGURAHUA: terrestrial on a road cut between Baños and Rio Negro, alt. 1500 m, collected March 1975, C. Luer & R. Kent 642 (HOLOTYPE: SEL), greenhouse acc. no. 15-75-252, flowered in cult. Jan. 1976.

DISTRIBUTION: Ecuador.

This species is one of many allies basically similar to the variable and widespread concepts known as *Pleurothallis cordata* (Ruiz & Pav.) Lindl. and *P. linguifera* Lindl., but it qualifies to be included in neither. At the present time it is known only from the type collection.

*Pleurothallis bucculenta* may be recognized by its medium stature, its comparatively short, slender stems and the spreading, dark, glossy green, leathery, heart-shaped leaves. The plant was collected while not in flower because the leaves appeared a little different from those of the other species we had been seeing. Several plants are growing well in cultivation, and recently each leaf has borne its solitary, relatively large, glistening, maroon flower. The sepals are obtuse, but the smooth petals are narrow and pointed. The most distinguishing feature is the elliptical lip, convex with a shallow central groove, which appears to present a pair of full, rounded cheeks.

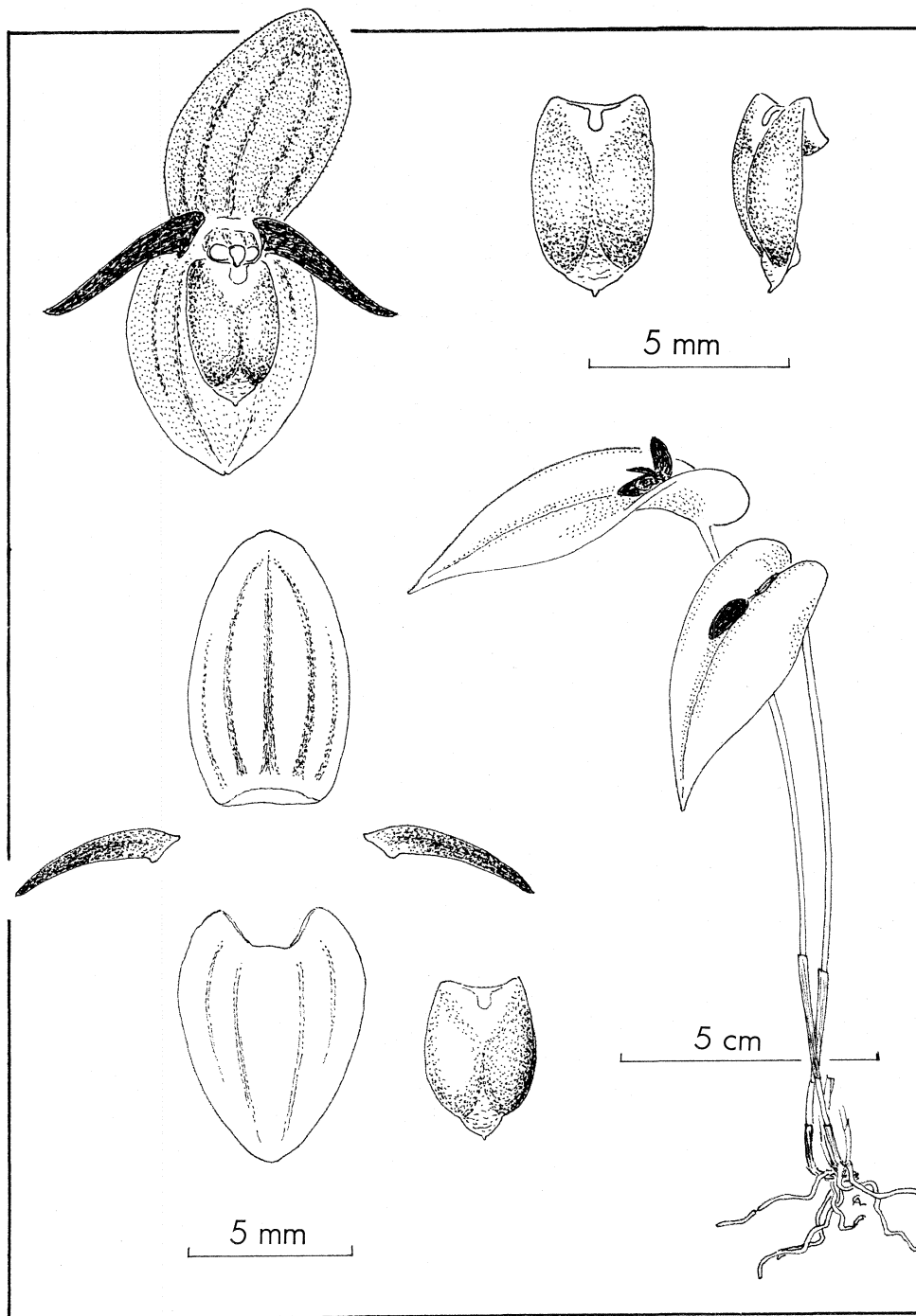


Figure 138. *PLEUROTHALLIS BUCCULENTA* C. A. Luer

**Pleurothallis cactantha** C. A. Luer, sp. nov.

Herba epiphytica perpusilla caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis coriaceis ellipticis vel oblongis obtusis cuneatis breviter petiolatis, flore grandi pro planta albo subroseo suffuso spiculato solitario successivo fasciculato, pedunculo gracili sparsim spiculato, ovario echinato, sepalis ovatis acuminatis carinatis, petalis cuneatis retusis apiculo sinu, labelle carnosae rubro ovato apice rotundato eroso disco bilamellato.

Plant epiphytic, very small, caespitose; roots filamentous, flexuous. Secondary stems abbreviated, 2-4 mm long, mostly concealed by 2 costate sheaths, unifoliate. Leaf dark green to blue-green, coriaceous, elliptical to oblong, obtuse, tridenticulate, marginate, base cuneate, indistinctly short-petiolate, 7-10 × 2-4 mm. Flower large for the plant, solitary, successive, in a fascicle borne on a slender peduncle; peduncle sparsely spiculate, 13-20 mm long, from a node on the secondary stem; floral bract scarious, acute, 1.5 mm long; pedicel sparsely spiculate, 2 mm long; ovary echinate, 0.75 mm long; sepals translucent white, often faintly suffused with pink, spiculate externally; dorsal sepal ovate, long-acuminate, acute, 10-11 × 3 mm, 3-carinate; lateral sepals oblong, united to near the middle, the apices long-acuminate, 10-11 × 3.5 mm together, each bicarinate; petals translucent pale green, flushed with rose centrally, cuneiform, retuse, with a minute apicule in the sinus, 2.5 × 1.5 mm; lip red, fleshy, ovate, apex rounded, microscopically erose, dilated with upturned margins below the middle, with a pair of low, smooth lamellae near the margins, base shortly unguiculate; column pale green, terete, 2 mm long, with a foot 1.5 mm long.

ETYMOLOGY: From the Greek *kaktos*, "a spiney plant," later, "cactus," and *anthos*, "flower," in allusion to the spiney flowers.

TYPE: PANAMA: PANAMA: epiphytic along the Altos de Pacora road, alt. 650 m, 4 March 1976, C. Luer, J. Luer, P. Taylor, & R. L. Dressler 743 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: PANAMA: epiphytic, Cerro Jefe, alt. 1000 m, 19 Aug. 1967, R. L. Dressler 3027 (SEL); La Eneida, Cerro Jefe, alt. 1000 m, 9 June 1971, R. L. Dressler 4029 (SEL).

DISTRIBUTION: Panama.

This minute species is apparently endemic in the cloud forests around Cerro Jefe east of the Canal Zone. Plants are distinguished by their clumps of thick, little, oblong, blue-green leaves, lighter in color along the margins and mid-rib. They are locally abundant on the mossy branches of the larger trees, and untold quantities are dying as a result of clearing the land. Hair-like peduncles bear at their apices beyond the apices of the leaves, a fascicle of old pedicels, and at intervals an oversized flower. A faint pink flush appears in an otherwise white flower covered with minute, sparkling prickles. The rosy-suffused petals and red lip are visible through the translucent, long-attenuate sepals. The red lip is simple with intramarginal lamellae.

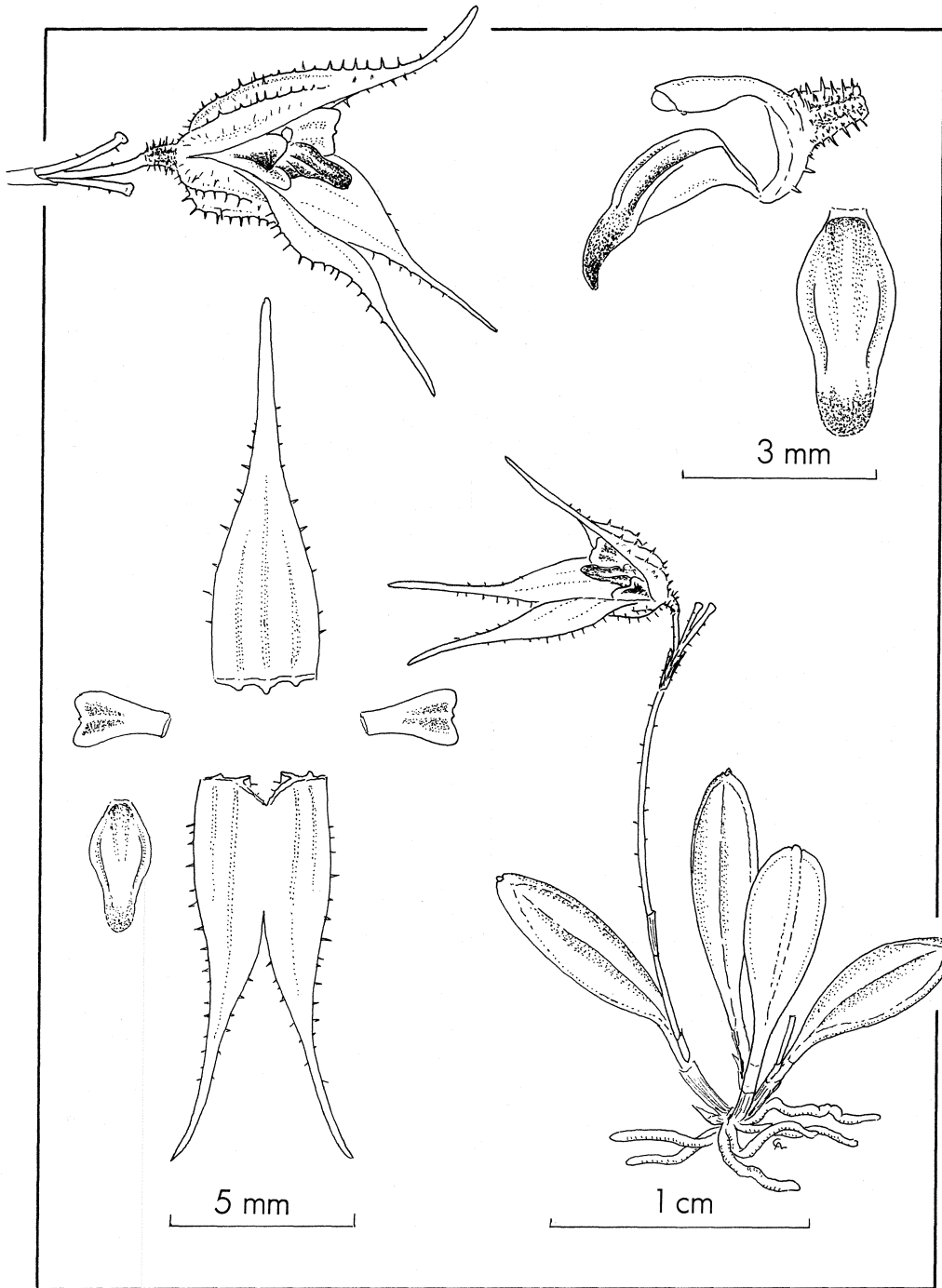


Figure 139. PLEUROTHALLIS CACTANTHA C. A. Luer



**Pleurothallis caligularis** C. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis gracillimis teretibus vaginis obtectis unifoliatis, foliis coriaceis ellipticis acutis breviter petiolatis, spatha minima, racemo bifloro, floribus carnosis purpureis, sepalo dorsali synsepaloque elliptico concavo, petalis ellipticis vel obovatis obtusis marginibus incurvis extus verruculosus intus lamellatis, labello albo purpureo picto caliguliformi trilobato, lobis basalibus erectis rotundatis, lobo antico multimagiori ovoideo excavato marginibus involutis.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems very slender, terete, 2-5 cm long, with 2-3 brown, tubular sheaths, unifoliate. Leaf coriaceous, elliptical, acute, tridenticulate, the base cuneate with a short petiole 2-3 mm long, the blade 2.5-5 cm long, 10-12 mm wide. Inflorescence a short (to 2 cm long), 1- to 2-flowered raceme; flowers fleshy, red-purple with a prominent white lip; floral bract, pedicel, and ovary each about 2.5 mm long; dorsal sepal elliptical to obovate, acute, 10 X 4 mm, 3-veined; lateral sepals united into a concave, elliptical synsepal, subacute, minutely bidentate, 8 X 6 mm, 4-veined; petals elliptical to obovate, the apex obtuse with incurved margins, verruculose externally, smooth and lamellate within along the 3 veins, purple on translucent white, 4.5 X 2.5 mm; lip white, marked with purple toward the base, boot-shaped, 3-lobed, the basal lobes rounded and erect, the anterior lobe much larger, hollow, ovoid, with involute margins, and with a crest within down the center, the base concave and broadly united to the column-foot; column stout, 2.25 mm long, with a short, thick foot.

**ETYMOLOGY:** From the Latin *caligula*, "a little boot" (dim. of *caliga*), in allusion to the shape of the lip.

**TYPE:** PANAMA: VERAGUAS: Guabal, Río Dos Bocas, 16 km NW of Santa Fe, alt. 500 m, 15 Nov. 1974, R. L. Dressler 4808 (HOLOTYPE: SEL); same area, R. L. Dressler, s.n. (SEL), cult. at SEL, flowered 16 July 1976.

**DISTRIBUTION:** Panama.

This dwarf relative of *Pleurothallis pachyglossa* Lindl. and its allies is apparently endemic in the cloud forests of central Panama. Rigid, little, elliptical leaves are borne on very slender secondary stems in dense clumps. The short, weak peduncle bears its one or two comparatively large flowers among the leaves. The snow white, thick, rounded lip is most conspicuous wedged between the bivalved, maroon sepals. The broad, obtuse petals are concave with a warty external surface.

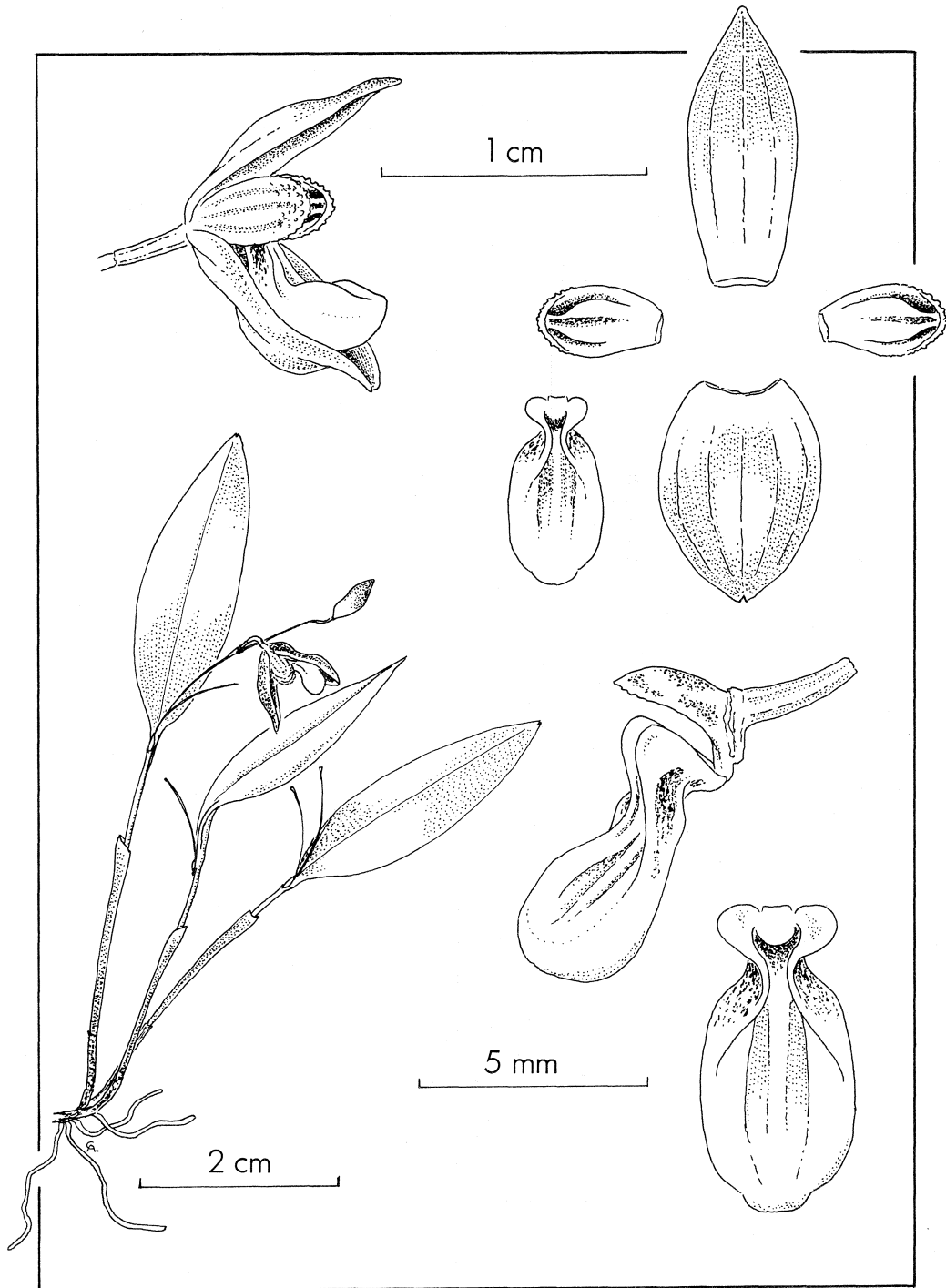


Figure 140. *PLEUROTHALLIS CALIGULARIS* C. A. Luer

**Pleurothallis cardiophylla** Schltr., Repert. Spec. Nov. Regni Veg. 14:128. 1915.

Plant medium to large, epiphytic to terrestrial, caespitose; roots slender, fasciculate, flexuous. Secondary stems slender, terete, 15-30 cm long, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, spreading, broadly ovate to suborbicular, shortly acuminate, acute, tridenticulate, the base deeply cordate, the basal auricles sometimes overlapping, 7-12 × 5-8 cm. Inflorescence a fascicle of single, successive flowers from a spathe 5-7 mm long at the base of the leaf; floral bract and pedicel each about 5 mm long; ovary about 5 mm long; flowers widely spread, yellow to brownish, minutely colliculate externally; dorsal sepal broadly elliptical to broadly obovate, the apex rounded to obtuse, convex, 5-12 × 4-7 mm, 3-veined; lateral sepals united into a broadly ovate synsepal, subacute to obtuse, 4-8 × 5-8 mm, 4-veined; petals ovate, falcate, microscopically cilio-denticulate, acute to subacute, 4-6 × 1-1.5 mm; lip oval to suborbicular, apex rounded with microscopically erose margins, the base shallowly concave, disc smooth to minutely colliculate, 3.5 × 2-3 mm; column stout, 1.5 × 1.5 mm.

ETYMOLOGY: From the Greek *cardia*, "heart," and *phyllon*, "leaf," in allusion to the heart-shaped leaf.

TYPE: *ECUADOR*: PICHINCHA: in the western subandean forests of Mt. Pichincha, A. Sodiro 3.

DISTRIBUTION: Western Ecuador.

*ECUADOR*: PICHINCHA: terrestrial along the roadside near Chiriboga between Quito and Santo Domingo, alt. 2100 m, 26 Oct. 1961, C. H. Dodson & L. B. Thien 1121 (SEL); same area, 2 March 1975, C. Luer & R. Kent 646 (SEL).

Schlechter described this species from an area of Pichincha probably very near where the present collections have been made. It is very similar to *Pleurothallis cordata* (Ruiz & Pav.) Lindl. and *P. cordifolia* Rchb. f. Vegetatively they are indistinguishable; all three have broadly ovate, abruptly acuminate, deeply cordate leaves. Herbarium specimens are difficult to differentiate with certainty.

The usually yellow and comparatively large flowers of *P. cardiophylla* spread widely, commonly appearing flat or convex as the sepals arch back toward the surface of the leaf. The dorsal sepal is comparatively long, broad, often widest above the middle, and convex with a more or less rounded apex. The ovate synsepal is usually as wide as it is long with a subacute apex. The petals, held down to either side of the lip, are sickle-shaped and tapered to the apex, and the margins, which appear glabrous to the naked eye, are microscopically serrulate. They are often flecked with purple or brown. The lip is small with a rounded apex and shallowly concave at the base. The margin is microscopically denticulate. The petals and lip of *P. cordata* are minutely but visibly ciliate-denticulate. The rounded synsepal of *P. cordifolia* is considerably wider than the dorsal sepal, and the lip is thicker.

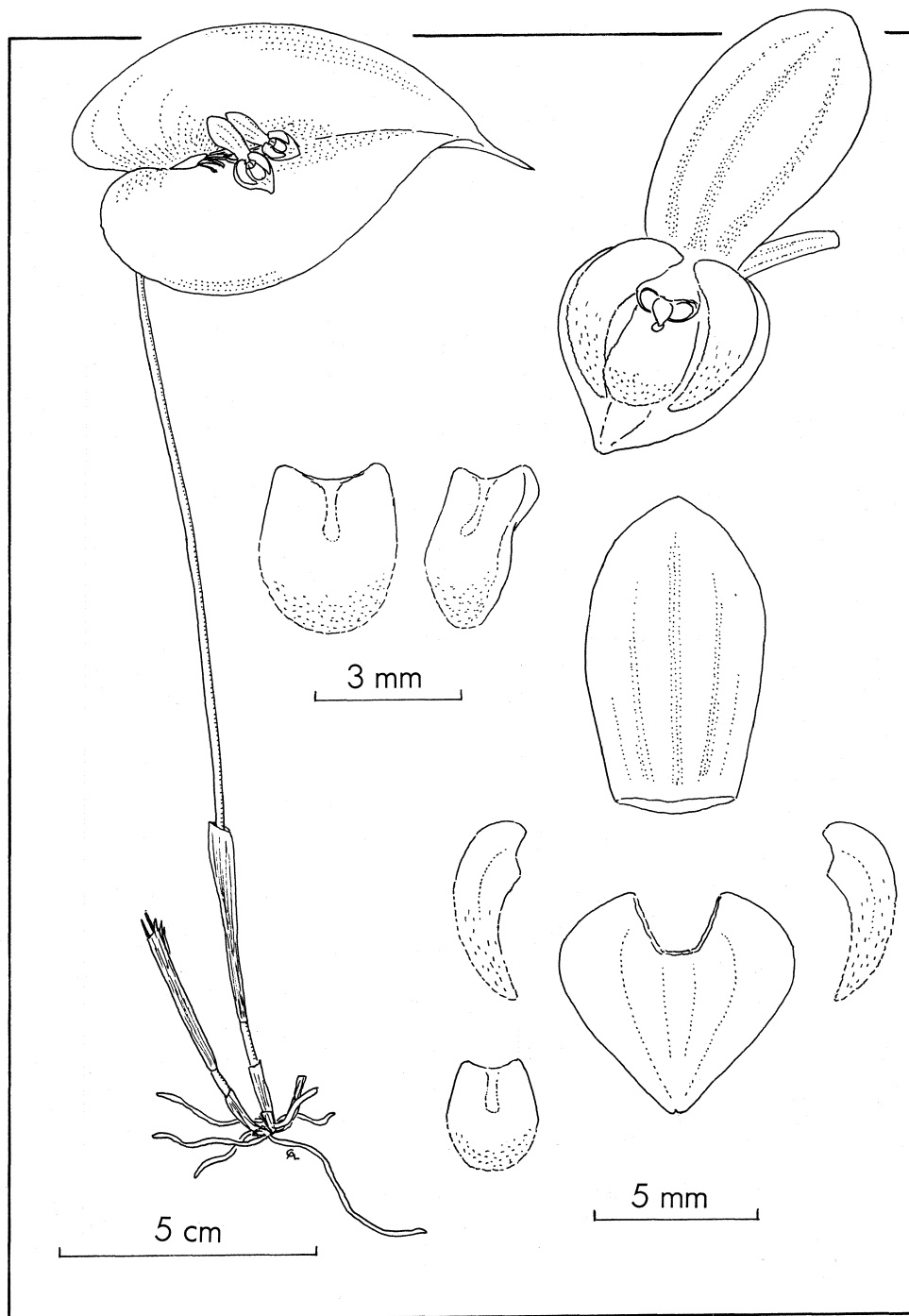


Figure 141. PLEUROTHALLIS CARDIOPHYLLA Schltr.

**Pleurothallis coffeicola** Schltr., Repert, Spec. Nov. Regni Veg. 27:50. 1929.

Plant medium in size, epiphytic, repent; rhizome thick, producing a secondary stem every 0.5-1 cm, concealed by sheaths; roots few, flexuous. Secondary stems more or less stout, compressed, channeled between sharp margins, 5-9 cm long, 4 mm broad above, with 2 loose, basal sheaths, unifoliate. Leaf broadly ovate, acute to acuminate, tridenticulate, the base cordate, sessile, horizontally spreading, 5-8 × 3-5 cm. Inflorescence an abbreviated, few-flowered (2-3) raceme, about 1 cm long, from a fugacious spathe, about 8 mm long, in the axil of the leaf; floral bract white, infundibuliform, acute, 4 mm long; pedicel 1 mm long; ovary green, pubescent, 2 mm long; sepals fleshy, green marked with purple, apiculate at the apices, minutely pubescent externally toward the base; dorsal sepal obovate, obtuse, 8 × 3 mm; lateral sepals united to near the apex into a suborbicular, emarginate synsepal, 6 × 5.5 mm; petals broadly elliptical, subacute, denticulate above the middle, translucent yellow-green spotted with purple, 3.5 × 2.25 mm; lip elliptical, fleshy, the apex rounded, minutely erose, scabrous above, dull yellow, red-brown below the apex, with a pair of small, semiorbicular erect lateral lobes just below the middle, the base very shortly unguiculate, the disc with a pair of low, denticulate lamellae from near the lateral lobes to above the middle, 3.5 × 2.5 mm; column 3.5 mm long, with rounded apical wings, with a short, pubescent foot.

**ETYMOLOGY:** From the genus of the coffee tree, *Coffea* (from the Turkish *kahve*), and *-cola*, "inhabiting," referring to the habitat of the species.

**TYPE:** *BOLIVIA:* LA PAZ: on coffee trees of the Hacienda Simaco, above the way to Tipuani, alt. 1400 m, Dec. 1922, *O. Buchtien 7214*.

**DISTRIBUTION:** Bolivia, Brazil, Peru, Ecuador, Colombia, Venezuela, and Panama.

*PANAMA:* COLON: epiphytic along the Santa Rita lumber road, 28 Jan. 1968, *R. L. Dressler 3362* (SEL); Rio Iguanita, March 1976, *N. H. Williams, s.n.* (SEL), flowered in cult. 9 May 1976; *PANAMA:* epiphytic along the El Llano-Carti road, alt. 300 m, March 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 987* (SEL).

*ECUADOR:* Los Rios: epiphytic in cloud forest 12 km from Patricia Pilar on road to 24 de Mayo, Montañas de Ila, alt. 540 m, 30 May 1976, *C. H. Dodson 6096* (SEL).

This species is proving to be widely distributed in tropical America. Its range is now known to extend into eastern Panama.

The short secondary stems, produced at intervals by a tough, creeping and branching rhizome, are laterally compressed, the sides forming a longitudinal groove flanked by sharp margins. The cordate leaf bends back at a 90° angle to bear on the upper surface the short raceme of fleshy, greenish flowers marked with purple.

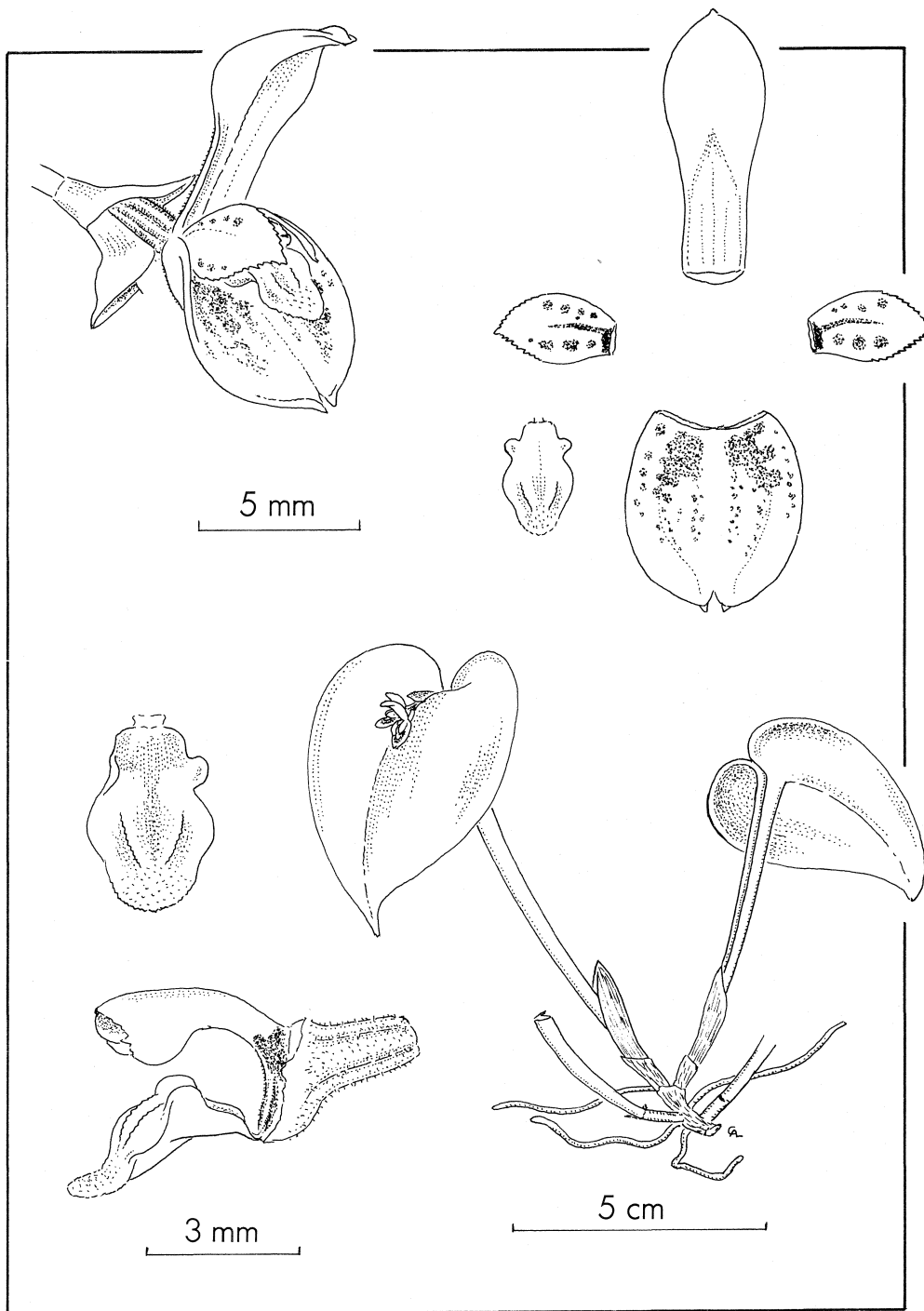


Figure 142. PLEUROTHALLIS COFFEICOLA Schltr.

**Pleurothallis condylata** C. Luer, sp. nov.

Planta epiphytica parva caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis anguste obovatis subacutis, inflorescentia subfasciculata pedunculo filiformi folio aequilongo, flore singulari successivo grandi aureo purpureo punctato, sepalo dorsali elliptico acuto, sepalis lateralibus ad medium connatis mentum formantibus apice acuminatis bicarinatis, petalis obovatis obliquis, labello marronino cuneiformi apice deflexo undulato, prope medium late angulato, base unguiculato, columna gracili pede aequilonga.

Plant epiphytic, small, densely caespitose; roots fasciculate, flexuous; secondary stems abbreviated, terete, 5-8 mm long enclosed by a loose, tubular sheath, unifoliolate. Leaf suberect, coriaceous, narrowly obovate, subacute, tridenticulate, the base narrowly cuneate, gradually petiolate, sulcate, 4-8 cm X 8-12 mm. Inflorescence a contracted, subfasciculate raceme at the apex of a filiform peduncle 4-6 cm long, descending to suberect, from a node on the secondary stem, the flowers relatively large, yellow, speckled with purple, not wide-spreading, produced singly and successively; floral bract ribbed, brown, acute, 2-3 mm long; pedicel 4-6 mm long; ovary flecked with purple, 2 mm long; sepals and petals golden yellow, dotted with purple-brown; dorsal sepal elliptical-oblong, the apex thickened, acute, 13 X 6 mm, tricarinate; lateral sepals connate to near the middle, forming a deep mentum, obovate, the apices abruptly acuminate, acute, 13 X 8 mm together, bicarinate; petals obovate, oblique, subacute to obtuse, 4.5 X 2 mm, 3-veined; lip maroon, cuneiform, the apex truncate, retuse, undulate, deflexed, microscopically denticulate, with a low pair of obtuse angles just below the middle, the disc with a pair of low, parallel, rounded calli extending from the middle to the undulate apex, the base unguiculate, sulcate centrally; column slender, spotted, the apex denticulate, 5 mm long, with an equally long foot.

ETYMOLOGY: From the Latin *condylatus*, "with knuckles, or knuckled" (Greek *kondylos*, "knuckle, fist"), in allusion to the appearance of the apex of the lip.

TYPE: PANAMA: CHIRIQUI: epiphytic in trees along the stream near San Vicente, alt. 500 m, between Concepción and Volcán, 11 Sept. 1976, C. Luer & Butcher 1198 (HOLOTYPE: SEL).

DISTRIBUTION: Panama.

This species was found to be frequent on small limbs overhanging a rocky stream in western Panama. Vegetatively the plant is very similar to *Pleurothallis brighamii* and its allies, but the flower, similarly borne singly in a fascicle on a hair-like peduncle, is considerably larger and heavier. The golden sepals and petals are diffusely dotted with brownish purple and the lip is deep red-purple. From a narrowed base and above the low, obtuse angles near the middle, the lip is broadly dilated toward the deflexed apex. Two longitudinal calli terminate at the apex and curve down with the lamina. This gives the appearance of a two-knuckled fist in a gauntlet.

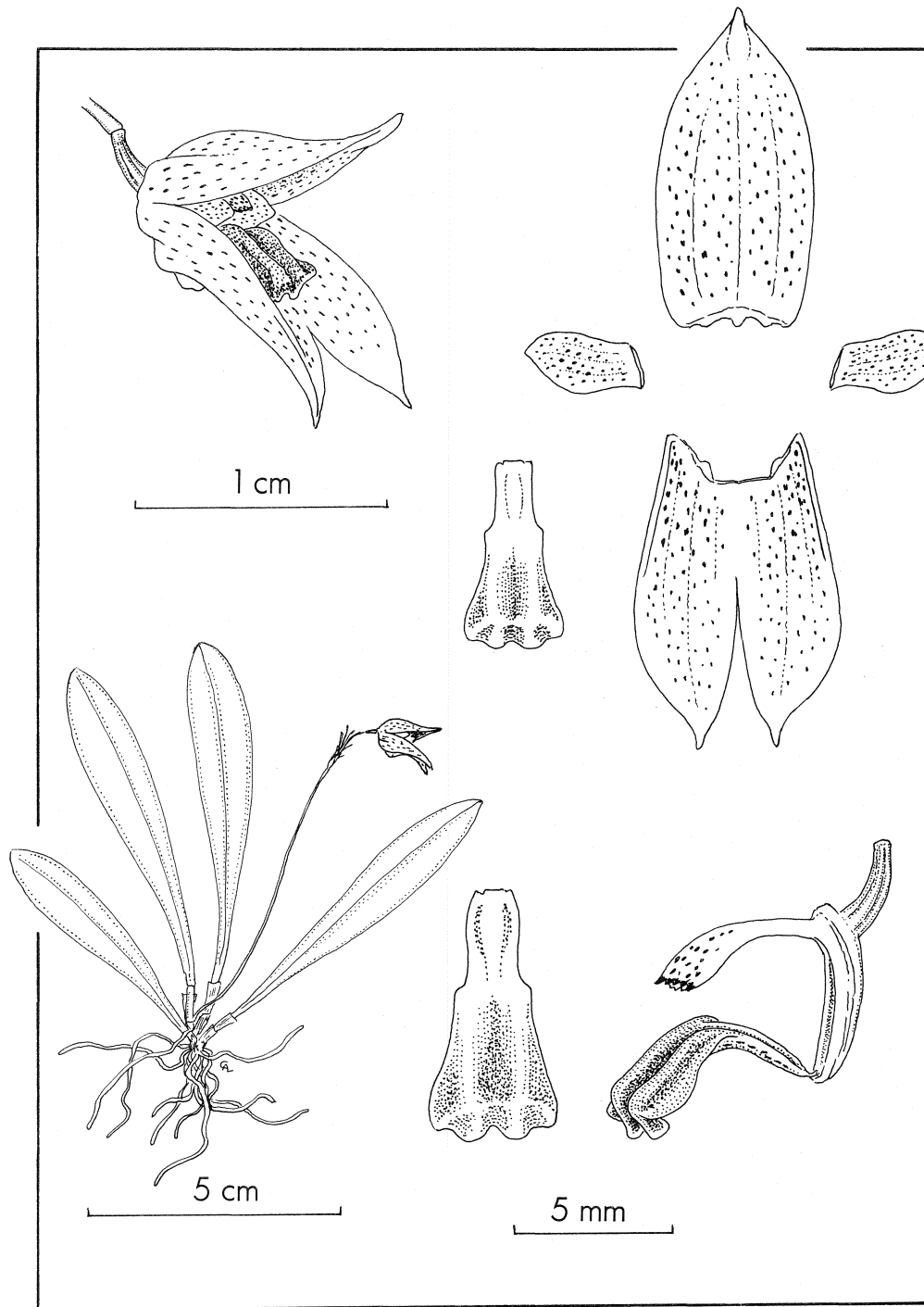


Figure 143. *PLEUROTHALLIS CONDYLATA* C. A. Luer



**Pleurothallis cordata** (Ruiz & Pav.) Lindl., Gen. Sp. Orchid. 5. 1830.

*Humboldtia cordata* Ruiz & Pav., Syst. Veg. 1:234, 1798.

*Stelis cordata* (Ruiz & Pav.) Willd., Sp. Pl. 4:140. 1805.

*Pleurothallis rhopalocarpa* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10:43. 1922.

Plant medium to large, caespitose, epiphytic to terrestrial; roots slender, fasciculate, flexuous. Secondary stems slender, terete, to about 35 cm long, with a close-fitting, tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf spreading, coriaceous, broadly ovate to sub-orbicular, shortly acuminate, acute, tridenticulate, base deeply cordate, often with overlapping auricles, 9-12 × 5-8 cm. Inflorescence fasciculate; flowers solitary, successive, bilabiate, yellow to brown to purple, shortly pubescent externally; spathe about 1 cm long; floral bract and pedicel each 5-7 mm long; ovary 5 mm long; dorsal sepal suborbicular to broadly elliptical, obtuse, concave, 6-9 × 5-7 mm, 3-veined; lateral sepals completely united into a broadly or transversely ovate synsepal, obtuse, concave, 6-8 × 6-9 mm, 4-veined; petals oblong, curved, obtuse to acute, 5-6 × 1.5 mm, 1-veined, the margins denticulate-ciliate; lip suborbicular to broadly elliptical, obtuse to rounded, sometimes apiculate, base shortly concave, 2-3 × 2 mm, the margins also denticulate-ciliate; column stout, 1 × 1 mm.

ETYMOLOGY: From the latin *cordatus*, "heart-shaped" (*cor*, *cordis*, "heart"), in reference to the conspicuous shape of the leaf.

TYPE: PERU: ANCASH: on rocks and trees in the mountains of Muña, common toward Rinconada, *Ruiz s.n.* (HOLOTYPE: M).

DISTRIBUTION: Venezuela, Colombia, Ecuador, Peru, and Bolivia.

ECUADOR: PICHINCHA: terrestrial on road embankment near km 29 between Quito and Santo Domingo, alt. 2900 m, 22 Oct. 1961, *C. H. Dodson & L. B. Thien 1041* (SEL); between km 60 and 85, alt. 1500-1700 m, 5 Feb. 1963, *C. H. Dodson & L. B. Thien 2234* (SEL); same area 2 March 1975, *C. Luer & R. Kent 313* (SEL).

*Pleurothallis cordata* was the first of the great mass of the Andean cordate-leaved species to be recognized. Since then numerous closely allied species have been described. Those species most closely related (e.g. *P. brachyblephara* Schltr., *P. cardiophylla* Schltr. and *P. cordifolia* Rchb. f. & Weg.) differ only in combinations of variations of some morphological characters. Living plants, however, are usually readily distinguishable, but dried plants may be indistinguishable.

*Pleurothallis cordata* is characterized by its slender stem bearing a broadly ovate leaf with a short acuminate apex and a deeply cordate base. The basal auricles often overlap. The flowers are small for the plant and they vary in color from yellow to purple, but most are shades of brown. The dorsal sepal is broad and concave with an obtuse apex. The synsepal is similar but commonly broader. The external surfaces and the margins are finely pubescent, but this may be reduced to a microscopically colliculate surface. The petals, more or less oblong and curved with denticulate margins, are held down to either side of the lip. The margins of the little, roundish lip are also minutely serrate to ciliate.

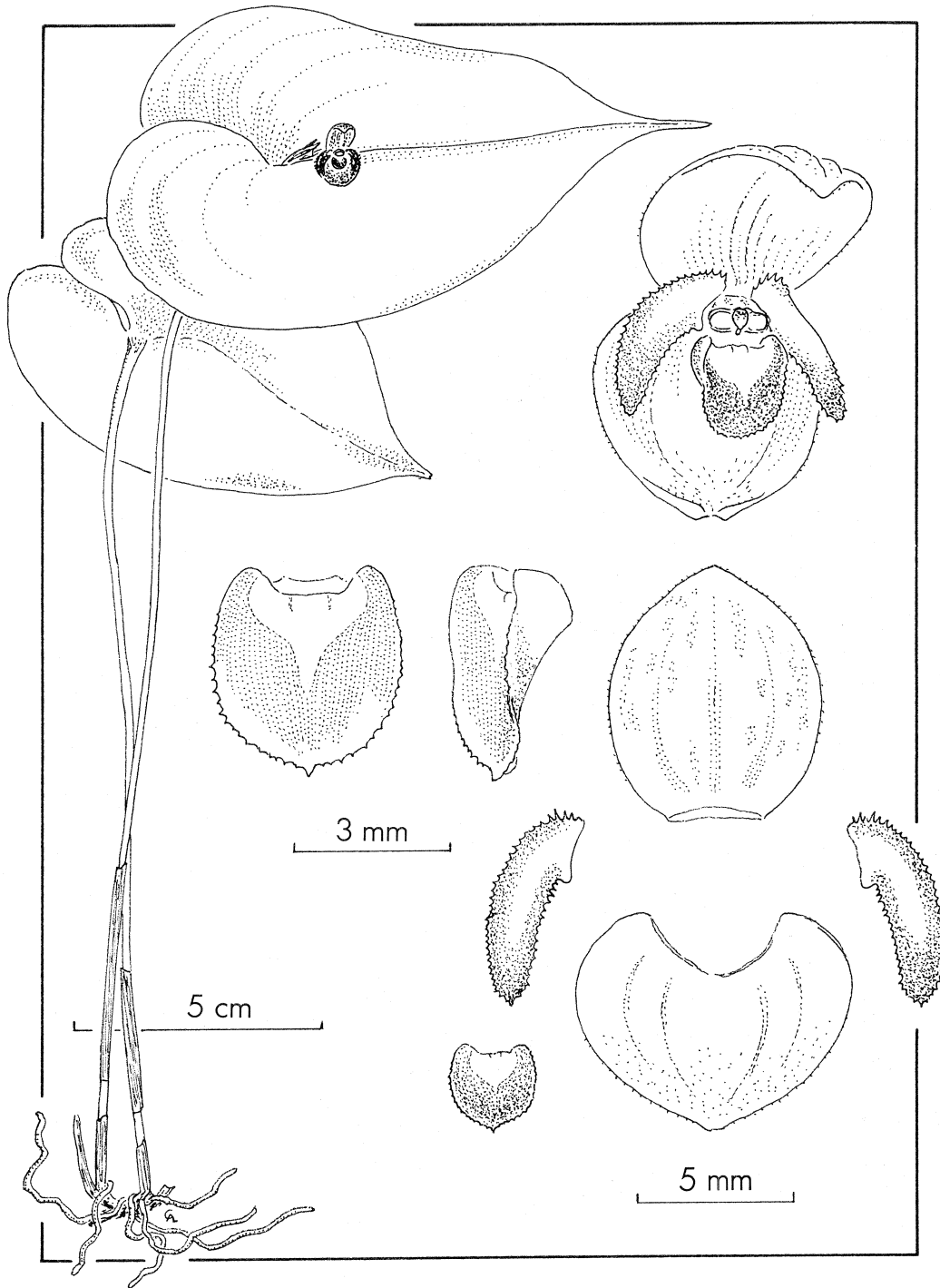


Figure 144. *PLEUROTHALLIS CORDATA* (Ruiz & Pav.) Lindl.

**Pleurothallis cordifolia** Rchb. f. & Wegener, Bonplandia 2:26. 1854.

*Humboldtia cordifolia* (Rchb. f. & Wegener) Kuntze, Rev. Gen. Pl. 2:667. 1891.

*Pleurothallis platycardium* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7:529. 1921.

Plant medium to large, epiphytic to terrestrial, caespitose; roots slender, fasciculate, flexuous. Secondary stems slender, terete, 15-40 cm long, with a closely fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, spreading, broadly ovate to suborbicular, shortly acuminate, acute, tridentate, the base deeply cordate, often with overlapping basal auricles, 4-13 × 3-9 cm. Inflorescence fasciculate, the flowers produced singly and successively from a spathe 5-8 mm long at the base of the leaf; floral bract, pedicel, and ovary each about 5 mm long; flowers widely spread, purple to orange and purple; dorsal sepal broadly elliptical to broadly obovate, the apex rounded to obtuse, 5-8 × 4-5.5 mm, 3-veined; lateral sepals united into a broadly to transversely ovate, rounded to obtuse synsepal, 4-6 × 5-7.5 mm, 4-veined; petals elliptical, oblique, minutely papillose and denticulate, the apex acute to subacute, 3.5-6 × 1-2 mm; lip thick, oblong to subquadrate, the apex rounded with microscopically erose margins, the base truncate with a small central swelling, the disc smooth to microscopically papillose; column stout, 1.5 × 1.5 mm.

ETYMOLOGY: From the Latin *cor*, *cordis*, "heart," and *folium*, "leaf," referring to the heart-shaped leaf.

TYPE: VENEZUELA: DIST. FED.: Caracas, alt. ca. 1300 m, *Wegener 147* (HOLOTYPE: W).

DISTRIBUTION: Venezuela, Colombia, and Ecuador.

ECUADOR: TUNGURAHUA: 4 km east of Baños near Río Blanco, alt. 1600 m, 8 Oct. 1961, *C. H. Dodson & L. B. Thien 902* (SEL); terrestrial on the northeast slope of Mt. Tunguragua, 20 km from Baños, alt. 2330 m, 7 Jan. 1962, *C. H. Dodson & L. B. Thien 1827* (SEL); epiphytic between Baños and Puyo, alt. 1300 m, 9 Jan. 1962, *C. H. Dodson & L. B. Thien 2022* (SEL); same area, 10 March 1975, *C. Luer & R. Kent 204* (SEL); NAPO: epiphytic in felled trees 14 km north of Archidona, alt. 600 m, 27 July 1975, *C. Luer, G. Luer & S. Wilhelm 649* (SEL), greenhouse acc. no. 44-75-112.

This Andean species is similar to many of the other cordate-leaved species. The spreading leaves, borne on long, slender stems, are broadly ovate to suborbicular, with shortly acuminate apices, and with large, overlapping basal auricles. They are especially similar to those of *Pleurothallis cardiophylla* Schltr. and *P. cordata* (Ruiz & Pav.) Lindl. Although fresh flowers are easily distinguishable, they differ only in relative degrees of morphological features. The broad, more or less rounded synsepal is noticeably shorter and wider than the obovate, rounded dorsal sepal above. The thick, rounded lip appears glabrous to the naked eye.

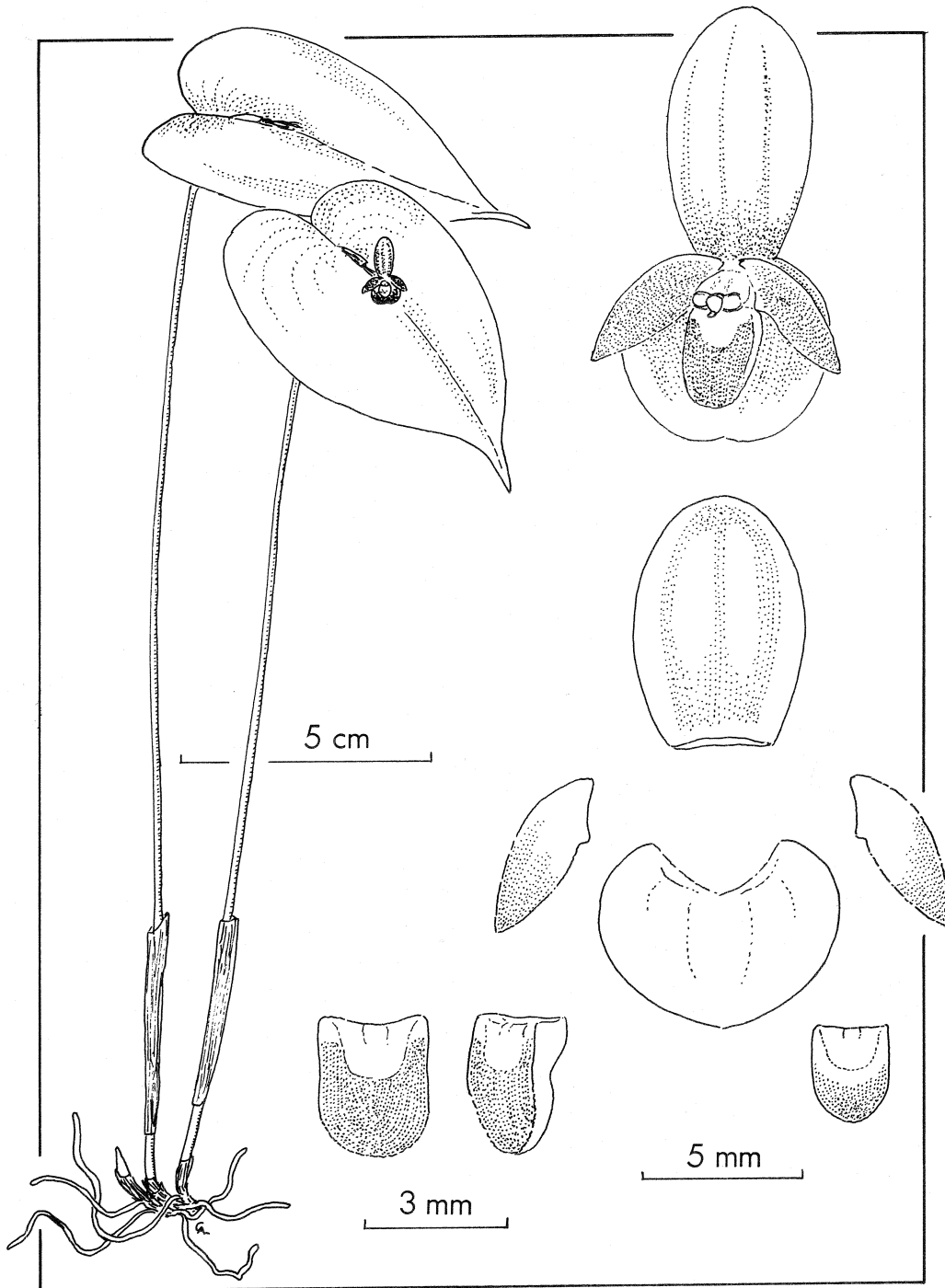


Figure 145. *PLEUROTHALLIS CORDIFOLIA* Rehb. f.

**Pleurothallis cornualis** C. A. Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis erectis teretibus prope apicem leviter compressis unifoliatis, foliis nervatis ovatis acuminatis acutis sessilibus, racemo pendulo paucifloro, floribus inversis bilabiatis maculatis, sepalo mediano anguste ovato acuto, synsepalo ovato acuto profunde concavo, petalis obovatis obliquis acuminatis unguiculatis marginibus laceratis, labello ovato obtuso integris, basi bicornuta infra columna reflexa.

Plant medium in size, caespitose, epiphytic; roots filamentous, flexous. Secondary stems erect, slender, terete, slightly compressed near the apex, 12-26 cm long, with 2 close-fitting, basal sheaths, unifoliate. Leaf thin, light green, longitudinally veined, ovate to elliptic, acuminate, acute, tridenticulate, base broadly cuneate to rounded, sessile, 9-15 × 3-5 cm. Inflorescence a pendulous raceme (occasionally 2), 10-12 cm long, of 3-4 distant flowers, from a narrow spathe, 1-1.5 cm long, in the axil of the leaf; flowers inverted, bilabiate, translucent yellow-green spotted with red-purple; floral bract infundibuliform, loose, 6-7 mm long; pedicel about 5 mm long; ovary 5 mm long, spotted with purple; middle sepal narrowly ovate, acute, 13 × 4 mm, 3-veined; lateral sepals connate into an ovate, deeply concave, acute synsepal, 13 × 8 mm, 4-veined; petals obovate, oblique, lacerate, apex acuminate, acute and thickened, base distinctly clawed, 9 × 3 mm, 3-veined; lip uppermost, ovate, obtuse to rounded, entire, base bicornuate, the horns thick, obtuse, 1.5 mm long and diverging, base acutely reflexed below the column, 5 × 4 mm, flecked with purple; column marked with purple, terete, 2.5 mm long, with an obsolescent foot.

ETYMOLOGY: From the Latin *cornualis*, "of horns," in reference to the pair of horns on the base of the lip.

TYPE: ECUADOR: PICHINCHA: epiphytic near km 85 between Quito and Santo Domingo, alt. 1500 m, collected 3 March 1975, C. Luer & R. Kent 628 (HOLOTYPE: SEL), greenhouse acc. no. 15-75-224, flowered in cult. 20 Dec. 1975.

DISTRIBUTION: Western Ecuador.

*Pleurothallis cornualis* is a medium-sized plant characterized by slender stems and thin, light green, longitudinally veined leaves with an acuminate apex. The purple-spotted, inverted flowers hang perpendicularly in a loose, few-flowered raceme. Over the uppermost lip the concave synsepal acts as a bonnet, balanced by the narrower middle sepal below. The serrated petals reach straight forward from below the lip. From the base of the lip two thick finger-like horns protrude to either side of the column while the blade of the labellum stands erect within the hood.

This species is closely allied to *P. secunda* Poepp. & Endl. and *P. bicornis* Lindl., its spotted flowers apparently resembling those of the latter very much. It is easily distinguished by its lacerate petals and the horned calli at the base of the lip.

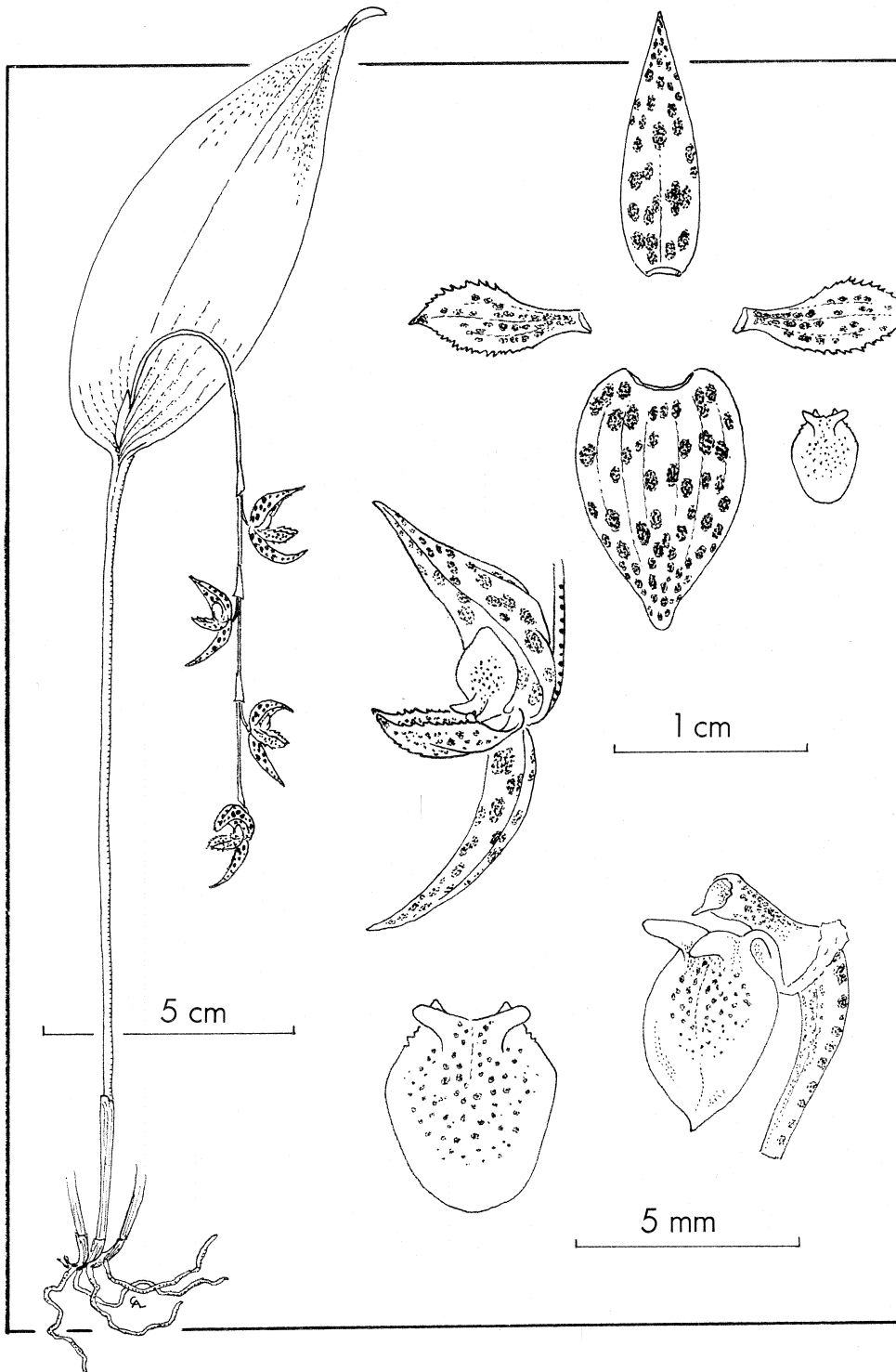


Figure 146. *PLEUROTHALLIS CORNUALIS* C. A. Luer

**Pleurothallis correllii** C. A. Luer, nom. nov.

*Pleurothallis pansamalae* Schltr. var. *triangulabia* Correll, Lloydia 10:210. 1947; not *P. triangulabia* C. Schweinf.

Plant small, epiphytic, caespitose; roots filamentous, flexuous. Secondary stems erect, slender, terete, 7-14 cm long, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf narrowly ovate, acuminate, acute, tridenticulate, base shallowly cordate, sessile, 4-6.5 cm  $\times$  18-25 mm. Inflorescence fasciculate, the flowers small, bilabiate, produced singly and successively from a brown, conduplicate spathe, 6-9 mm long, from the base of the leaf; pedicel 4-7 mm long; ovary 3 mm long; dorsal sepal broadly ovate, subacute to obtuse, 3.5  $\times$  2.75 mm, 3-veined, translucent pale yellow; lateral sepals united into a broadly ovate synsepal, minutely bidentate, 3  $\times$  3 mm, 4-veined, also translucent pale yellow; petals linear, falcate, subacute, 2.5  $\times$  0.5 mm, 1-veined, margins minutely irregularly serrulate; lip triangular-hastate, apex acute, apiculate, basal lobes rounded, 2  $\times$  2 mm, the margins minutely undulate, disc with a rounded prominence at the base; column stout, 1  $\times$  1 mm, with a foot 1.5 mm long.

ETYMOLOGY: Named in honor of Donovan Stewart Correll, noted student and author of American botany, who first described this species.

TYPE: GUATEMALA: QUEZALTENANGO: epiphytic on Volcán Zunil, alt. 2600 m, 4 Aug. 1934, A. F. Skutch 942A. (HOLOTYPE: AMES).

DISTRIBUTION: Mexico and Guatemala.

MEXICO: CHIAPAS: epiphytic, on the Lagos de Monte Bello road, alt. 1500 m, collected 6 Jan. 1970, R. McCullough 1863 (SEL), flowered in cult. 15 Dec. 1975.

Vegetatively this species is similar to the widespread Central American *Pleurothallis pansamalae* Schltr. Correll described it originally as a variety of that species. The specimen from Chiapas illustrated here has slightly smaller flowers than those described as typical. This is the first report of the species from Mexico.

Similar to many other species in the section, slender stems support small shallowly cordate leaves. The little flowers, produced successively from a compressed spathe, are translucent pale yellow-green. The lip originates from an elongated column-foot so that the lip is not held snugly beneath the column as it is in many of the other species, including *P. pansamalae*. Instead, it is presented in the center of the concavity of the synsepal, the three corners of its triangular surface about equidistant from the margins of the synsepal.

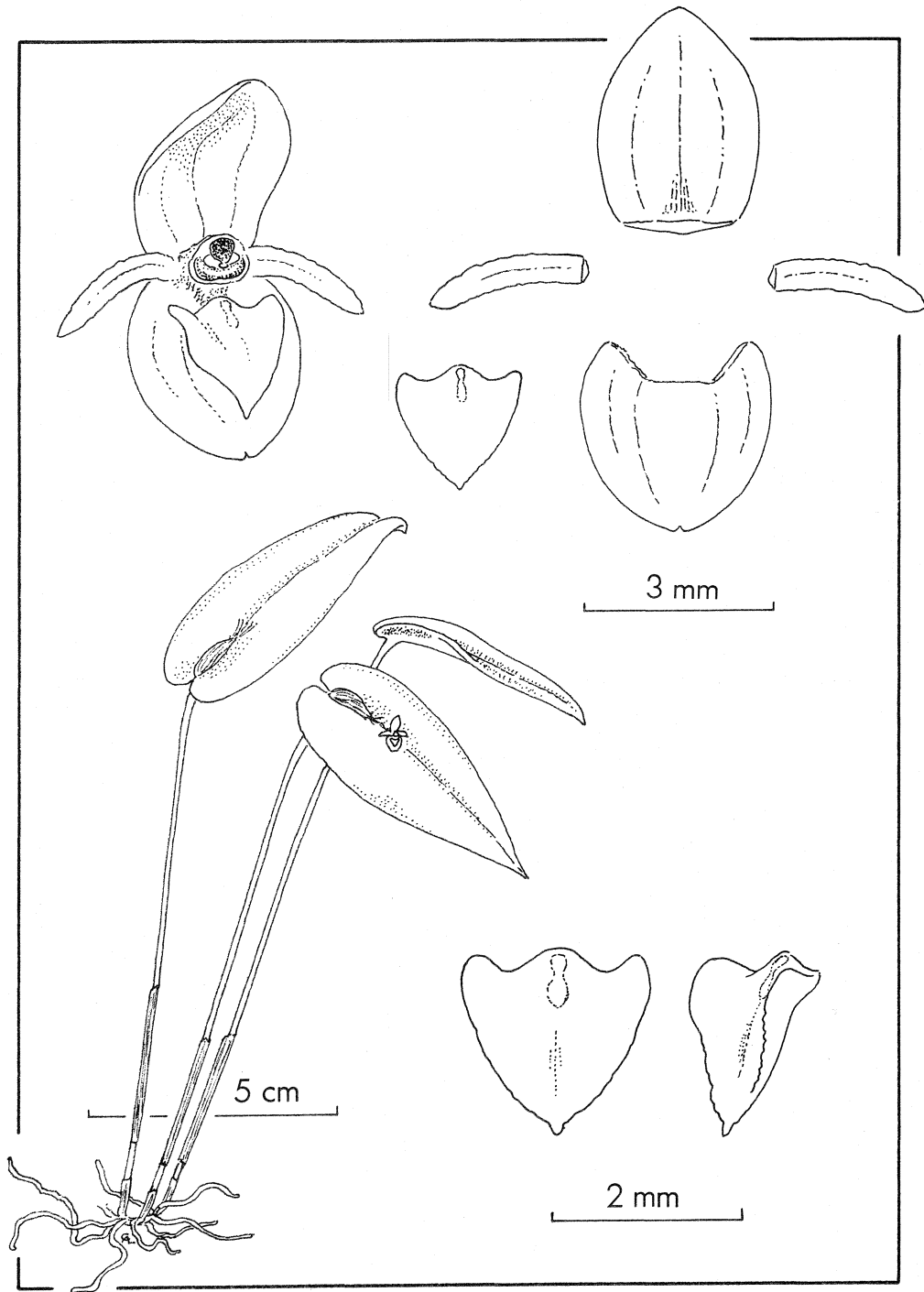


Figure 147. *PLEUROTHALLIS CORRELLII* C. A. Luer



**Pleurothallis crassapex** Luer, sp. nov.

Planta mediocris vel grandis epiphytica caespitosa, caulibus secundariis gracilibus teretibus unifoliatis, foliis coriaceis ovatis acuminatis acutis base profunde cordatis, floribus singularibus successivis porphyreis vel citreis bilabiatis, sepalo dorsali et synsepalo ovatis subacutis, petalis linearibus falcatis ciliatis, labello oblongo subpanduriformi apice rotundato crassissimo margine microscopice ciliato base leviter concavo.

Plant epiphytic to terrestrial, medium to large, caespitose; roots slender, fasciculate, flexuous. Secondary stems slender, terete, up to 47 cm long, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliolate. Leaf spreading, coriaceous, broadly ovate, acuminate, acute, tridenticulate, base deeply cordate, often with overlapping basal auricles, sessile, 7-18 × 3.5-10 cm. Inflorescence a fascicle of single flowers, from a spathe up to 1.5 cm long at the base of the leaf; flowers yellow to red-brown, surface pebble-like externally; floral bract and pedicel each about 5 mm long; ovary slightly verrucose, about 4 mm long; dorsal sepal ovate, subacute to acute, 8-9 × 4 mm, 3-veined; lateral sepals connate into an ovate subacute to acute synsepal, 7-8 × 4.5-5 mm, 4-veined; petals linear-falcate, acute, ciliate 5 × 0.6-1.0 mm; lip oblong, subpanduriform, the apex rounded, thickened and protuberant, the margin microscopically ciliate, the base shallowly concave and dilated, with rounded basal angles, 4 × 2.5 mm; column stout, 1 × 1.5 mm.

ETYMOLOGY: From the Latin *crassus*, "thick," and *apex*, "apex," in allusion to the thickened apex of the lip.

TYPE: ECUADOR: PICHINCHA: epiphytic on a fallen tree near km 80 between Quito and Santo Domingo, alt. 1500 m, 3 March 1975, C. Luer & R. Kent 273 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: terrestrial on the roadside near km 92 between Quito and Santo Domingo, alt. 1200 m, 31 Jan. 1963, C. H. Dodson & L. B. Thien 2203 (SEL); same area, 3 March 1975, C. Luer & R. Kent 271 (SEL).

DISTRIBUTION: Western Ecuador.

Although some specimens of this species have been found in flower with relatively narrow and small leaves, the plant possesses the capability of producing very large, broadly and deeply cordate leaves, larger than most we have seen in *Pleurothallis cordata* (Ruiz & Pav.) Lindl. Vegetatively, however, the plant is indistinguishable from its close allies (e.g. *P. cordata*, *P. cardiophylla* Schltr., etc.). The flowers are also basically similar, but the sepals are narrow as seen in *P. undulata* Poepp. & Endl. and its allies (e.g. *P. linguifera* Lindl., etc.). The petals are narrowly linear and ciliate. The rounded, thickened apex of the oblong lip is the most distinctive feature. The prominence commonly seen beneath the tip of the labellum of the allied species is unusually thickened in this species so that the under surface of the apex protrudes beyond the upper surface.

Apparently a similar labellar apex occurs in *P. millei* Schltr. 1915 (not 1917), which may be distinguished by its narrower, subcordate leaves, glabrous petals, and a lip narrowed (instead of dilated) toward the base.

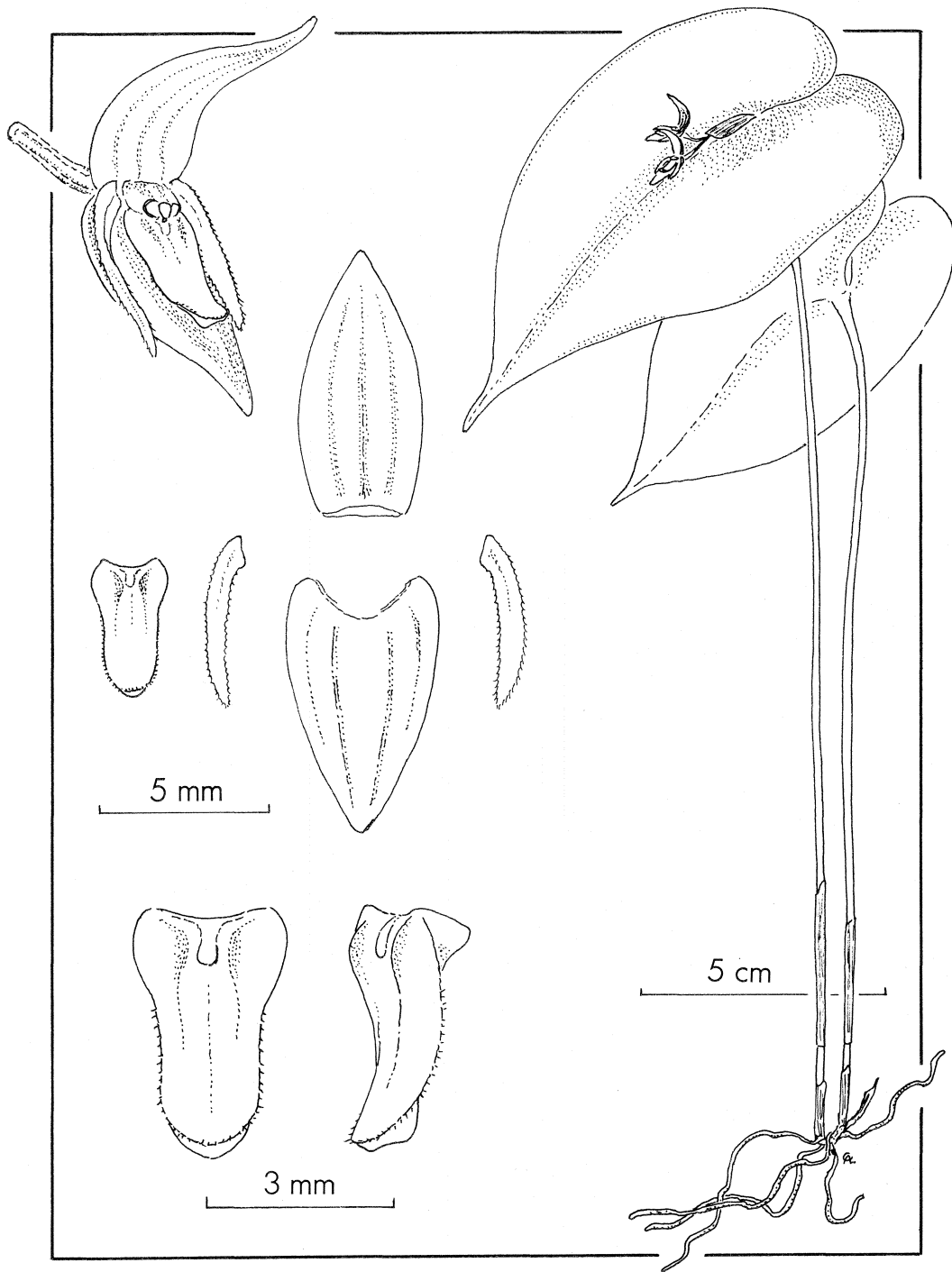


Figure 148. PLEUROTHALLIS CRASSAPEX C. A. Luer

***Pleurothallis cyclophylla* Luer, sp. nov.**

Planta parva epiphytica repens, caulibus secundariis teretibus supra medium leviter compressis et canaliculatis unifoliatis, foliis horizontalibus crassis orbicularibus convexis sessilibus, racemo abbreviato 3-floro, floribus bilabiatis carnis ochraceis, sepalis oblongis apicem versus convexis virescentibus, synsepalo bidentato, petalis obovatis acutis laciniatis, labello carnoso elliptico apicem versus tuberculato rotundato infra medium lobis lateralibus parvis base biauriculata, disco bicristato.

Plant small, epiphytic, repent; primary stem terete, elongated, branching sheathed, producing a secondary stem about every 1.5 cm; roots few, flexuous. Secondary stems ascending terete below, slightly compressed and channelled above, 3-4 cm long, with 1-2 sheaths near the base, unifoliate. Leaf horizontal, thick and coriaceous, circular and convex, apex rounded, retuse with a mucro in the sinus, base rounded, sessile, 26-30 × 21-27 mm. Inflorescences a short, 3-flowered, compact raceme; peduncle from a 3 mm spathe at the base of the leaf; floral bract 1 mm long; pedicel 1.5 mm long; ovary 1 mm long; flowers fleshy, bilabiate, yellow-orange; dorsal sepal linear-oblong obtusa, apiculate, toward the apex with a green, convex thickening, 7 × 1.75 mm 3-veined; lateral sepals united to very near the apices into an oblong lamina, abruptly acute and bidentate, with convex thickenings similar to the dorsal sepal, 6 × 3.5 mm, 6-veined; petals obovate, acute, lacinate above the middle, 3 × 1 mm, 1-veined, translucent yellow; lip fleshy, yellow-orange, elliptical, 3 × 1.5 mm, apex rounded, the margins and surface tuberculate, with small, erect, triangular lateral lobes below the middle, disc with a pair of low, longitudinal, fleshy crests, base shortly hinged to the column-foot and flanked by a pair of auricles; column terete 3 mm long, with a 1 mm long, shortly pubescent foot.

ETYMOLOGY: From the Greek *cyclos*, "round, circular," and *phyllon*, "leaf," in reference to the very round leaves of the species.

TYPE: BOLIVIA: SANTA CRUZ: epiphytic near Samapata, alt. 1500 m, Fred Fuchs, Jr. s.n. (HOLOTYPE: SEL).

DISTRIBUTION: Bolivia.

This species is most remarkable in its habit. A creeping, multi-branching rhizome gives rise to distantly spaced, ascending secondary stems similar to those of its ally *Pleurothallis saundersiana* Rchb. f. The stems are slightly compressed before they join the leaf. The round leaves are held horizontally to the substratum so that the blades more or less align themselves in a plane forming an ill-defined, rooflike stratum. The "surface" of this plane is "cobble-stoned" because of the convexity of the numerous, approximate leaves. This effect is dramatically demonstrated by a plant cultivated by Janet Kuhn of Easton, Connecticut. Several years ago she fastened a plant to a large tree-fern ball, which is now cloaked in its entirety by an elevated mantle of little green discs.

The yellow-orange flowers appear in a short, few-flowered raceme at the base of the leaf. The sepals are distinctive in possessing a green convex thickening which occupies much of their inner substance above the middle.

*Pleurothallis cyclophylla* is closely allied to *P. agathophylla* Rchb. f., also from Bolivia, but the former is distinguished by its distinctly rounded leaves and by the cushion-like thickening of the sepals.

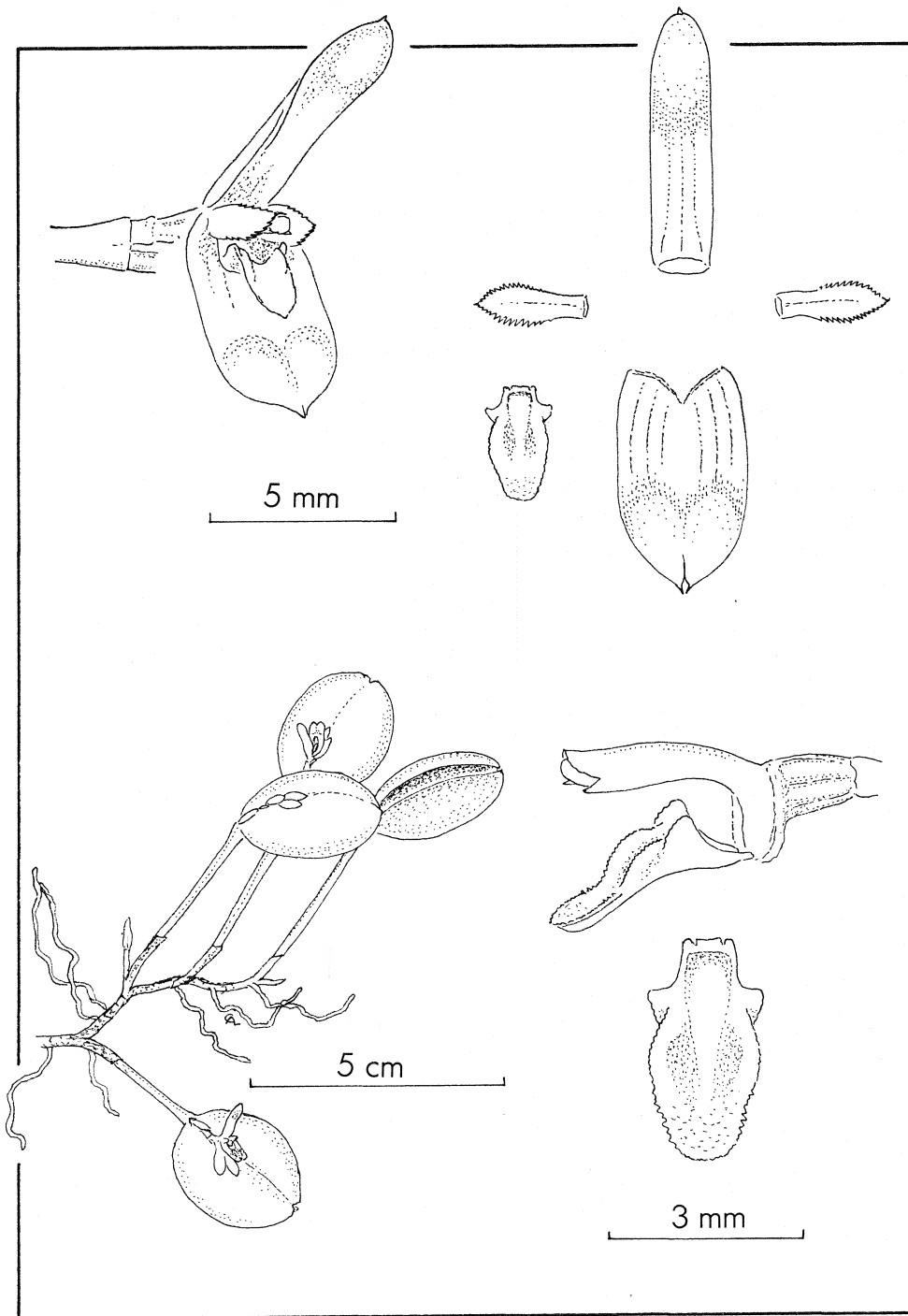


Figure 149. PLEUROTHALLIS CYCLOPHYLLA C. A. Luer

**Pleurothallis dependens** C. A. Luer, sp. nov.

Plants parva epiphytica caespitosa, caulibus secundariis descendentibus vaginis lepanthiformibus obtectis unifoliatis, foliis coriaceis dependentibus anguste ellipticis vel linearibus acutis basi cuneatis breviter petiolatis, racemo pendentem brevi paucifloro, floribus flavis, sepalo dorsale ovato subacuto, sepalis lateralibus obliquis obtusis infra medium connatis, petalis oblongis apice rotundato ciliato, labello oblongo-obovato marginibus ciliatis apice rotundato convexo basi biauriculato disco crasso.

Plant small, epiphytic, caespitose; roots slender, flexuous; secondary stems slender, descending, 8-10 cm long, largely concealed by 7-9 imbricating to closely spaced, tubular, costate sheaths, the apices dilated, oblique, acute, with ciliated margins, unifoliolate. Leaf coriaceous, dependent, narrowly elliptical to linear, acute, base cuneate, petiolate, 5-8 cm long including the petiole, and 6-8 mm wide. Inflorescence racemose, pendent, 1-2 few-flowered (5-8) racemes, up to 2.5 cm long; flowers small, yellow; peduncle slender, from the apex of the stem; floral bract infundibuliform, 1.5 mm long; pedicel 1 mm long; ovary 2 mm long; dorsal sepal ovate, subacute, 4 × 2.25 mm, 3-veined, the margins ciliate; lateral sepals ovate, oblique, obtuse, connate and gibbous below the middle, 3.5 × 2.5 mm together, 4-(6-) veined, the margins ciliate; petals translucent yellow-green, oblong, slightly curved, the apex rounded and ciliate, 2 × 0.6 mm, 1-veined; lip orange-brown, oblong-obovate, the margins ciliate, the apex convex and rounded, the base shortly unguiculate, with a pair of up-curved, auriculate processes, disc thickened; column yellow, 1.5 mm long winged, clinandrium denticulate, with a distinct foot.

ETYMOLOGY: From the Latin *dependens*, "hanging down," in allusion to the position of the stems, leaves, and inflorescences of the plant.

TYPE: *ECUADOR*: TUNGURAHUA: Epiphytic on the lower slopes of Volcán Tunguragua, alt. ca. 2000 m, cultivated by J. Brenner, *J. Brenner* 22 (HOLOTYPE: SEL), flowered in cult. 22 March 1976.

DISTRIBUTION: Eastern Ecuador.

This species has been cultivated by Joe Brenner in Puyo, Pastaza, for several years, but his memory of the exact locality from whence it came has been erased by time. At least, however, it came from the mountainous slopes near Baños.

*Pleurothallis dependens* is about midway between the species similar to *P. ciliaris* (Lindl.) L. Wms. and *P. berlineri* C. Luer. Although smaller it has the habit of the latter, but the flowers are reminiscent of the former. Apparently with the maturing leaf, the lepanthiform-sheathed stem descends to hold the narrow blade in a dependent position. The short raceme bears a few yellow flowers with obtuse, ciliated flower parts.

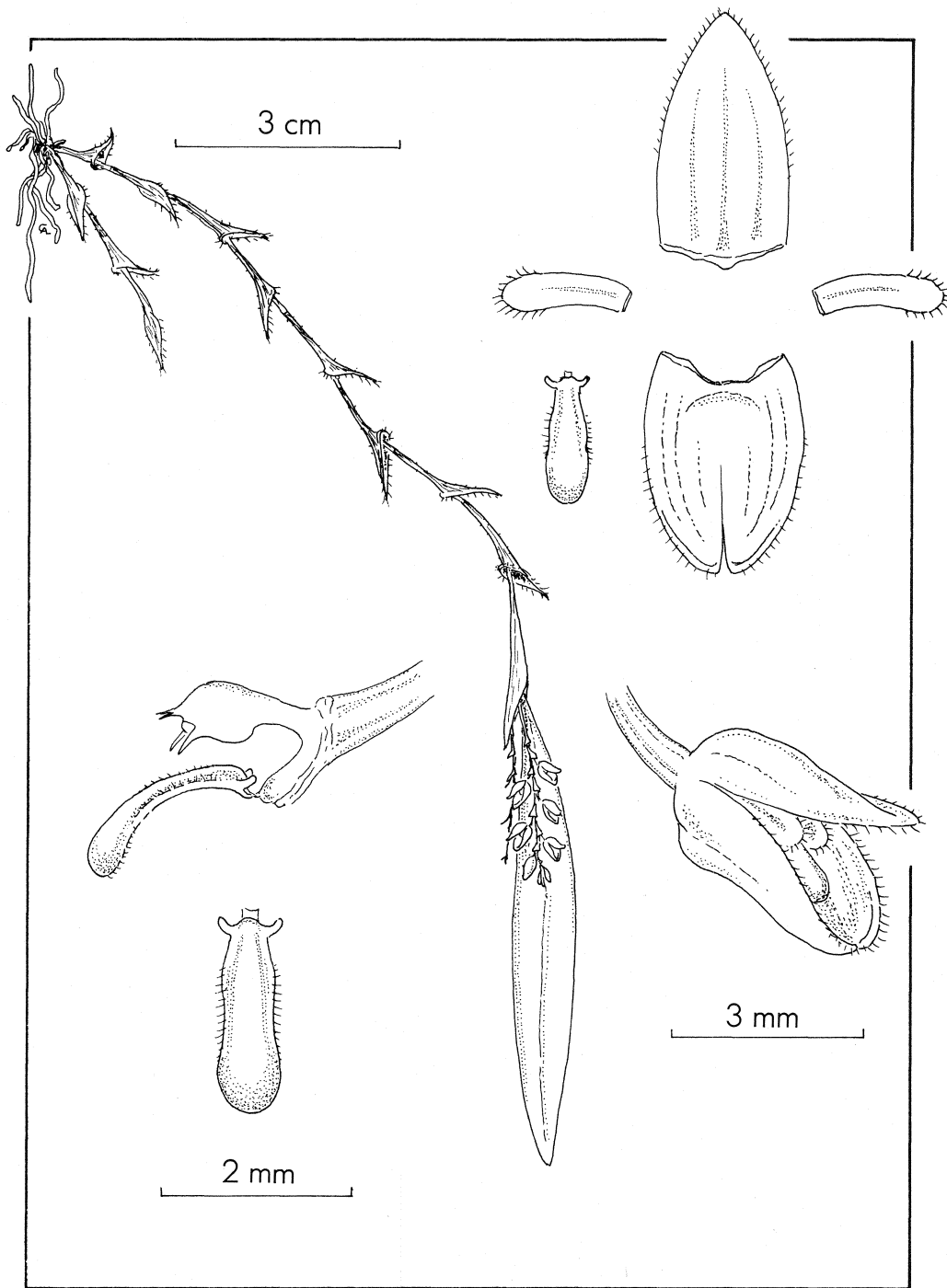


Figure 150. PLEUROTHALLIS DEPENDENS C. A. Luer

**Pleurothallis dodsonii** Luer, sp. nov.

Planta epiphytica repens parva vel mediocris, caulibus secundariis brevibus teretibus vaginis obtectis unifoliatis, foliis coriaceis decumbentibus late ellipticis sessilibus purpureo punctatis, spatha magna inflata, flore rubro pubescentia alba parvo carnosio successivo spatha obtecto, sepalis triangularibus acutis basibus connatis, petalis ellipticis acutis unguiculatis, labello ovato infra medium obscure trilobato, lobo medio oblongo subacuto, lobis lateralibus late triangularibus obtusis erectis, base unguiculata auriculata, disco crasso.

Plant epiphytic, small to medium in size, repent, the primary stem long-creeping and branching, sheathed at intervals of 5 mm by loose tubular sheaths; roots flexuous, from nodes along the rhizome. Secondary stems short, terete, 3-10 mm long, concealed by 2 loose, infundibular sheaths 5-8 mm long, unifoliate. Leaves decumbent, green speckled with purple, coriaceous, broadly elliptical, obtuse to subacute, tridentate, base rounded, sessile, 2-3.5 × 1.5-2.2 cm. Inflorescence a single flower produced successively behind an inflated spathe; spathe 10-15 mm long and 5-8 mm wide, at the base of the leaf; flower fleshy, red with white pubescence, incompletely opening; floral bract 2 mm long; pedicel 1.5 mm long; ovary pubescent, 0.75 mm long; dorsal sepal triangular-ovate, acute, concave, 5 × 2.25 mm, 3-nerved, connate basally to the lateral sepals; lateral sepals triangular-ovate, acute, oblique, adherent but readily separable, the bases forming a mentum with the column-foot, each 5.5 × 2.5 mm; petals red, elliptical, acute to acuminate, entire, narrowed below the middle, unguiculate 3.5-4 × 1.5 mm; lip ovate, obscurely 3-lobed and red below the middle, 4 × 2 mm, middle lobe broadly triangular, obtuse, erect, continuous with intramarginal thickenings toward the apex, base unguiculate with minute basal auricles, disc thickened above the base, channeled toward the apex; column yellow and red, terete, 3 mm long, column-foot 2 mm long.

ETYMOLOGY: Named in honor of Calaway H. Dodson, investigator of the orchid flora of Ecuador.

TYPE: ECUADOR: TUNGURAHUA: epiphytic near Río Blanco east of Baños, alt 1600 m, 8 Oct. 1961, C. H. Dodson & L. B. Thien 889 (HOLOTYPE: SEL). The illustration was made from a living plant collected from the same area, C. Luer 958 (SEL).

ADDITIONAL MATERIAL SEEN: BOLIVAR: epiphytic near Balzapamba north of Babahoyo, alt. 730 m, 21 May 1960, C. H. Dodson 70 (SEL); NAPO: epiphytic west of Baeza, alt. ca. 1900 m, 25 Oct. 1971, B. MacBryde 843 (SEL) and 26 Oct. 1971, B. MacBryde 862 (SEL).

DISTRIBUTION: Ecuador.

Calaway H. Dodson discovered this species on both sides of the Andes in central Ecuador during his collecting expeditions of the early 1960's. The creeping rhizome of the plant produces oval leaves which lie more or less prostrate upon bark on which it grows. Vegetatively it is similar to the Caribbean *Pleurothallis testaeifolia* (Sw.) Lindl.

The upper surface of the broad green leaf is minutely spotted with purple. From the round base a proportionately large, inflated spathe lies upon the blade. Only withered flowers on protruding capsules or swelling ovaries are visible, because a fresh flower remains completely hidden behind the spathe.

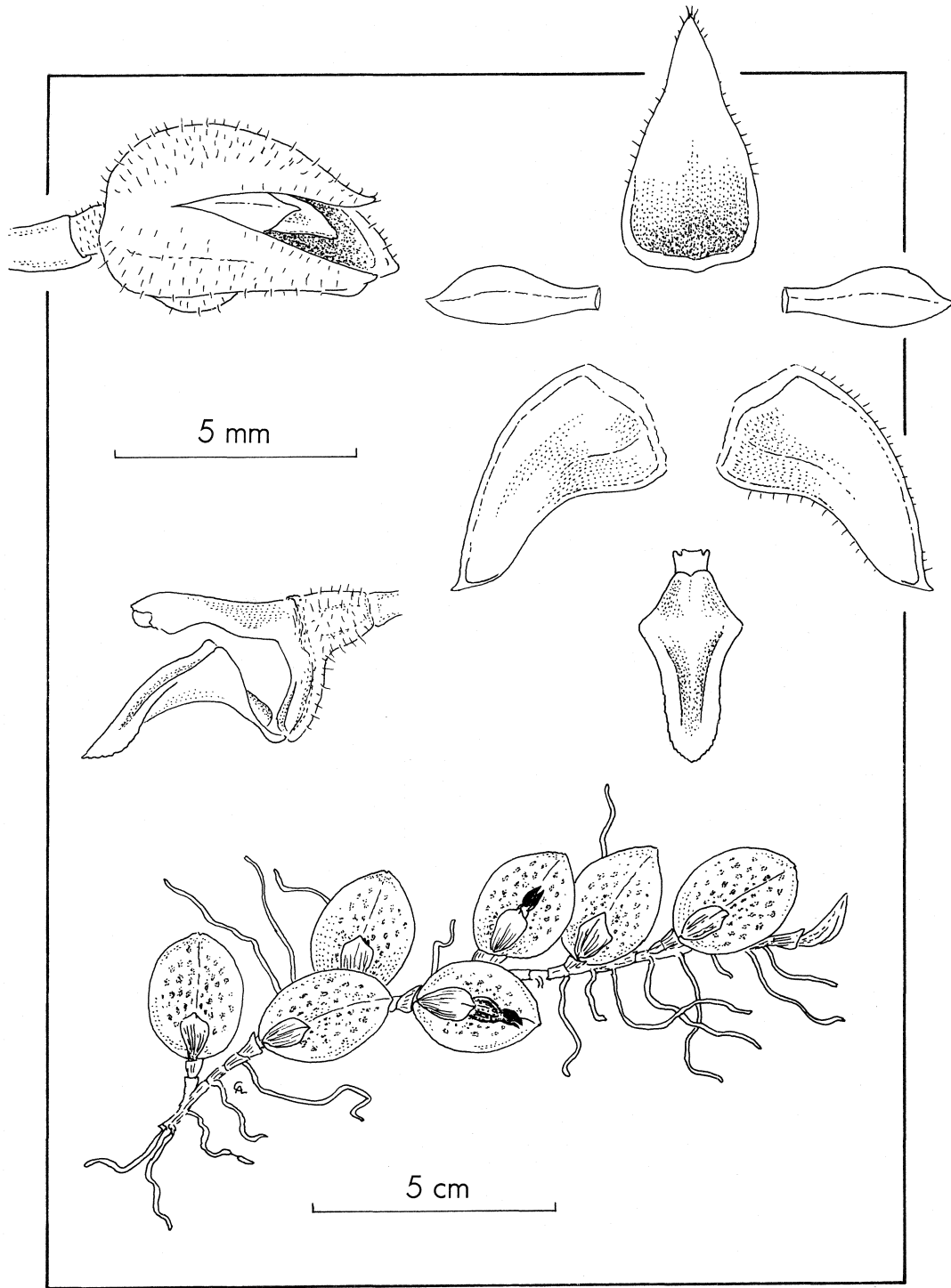


Figure 151. PLEUROTHALLIS DODSONII C. A. Luer



***Pleurothallis dressleri* C. A. Luer, sp. nov.**

Planta minutissima epiphytica repens, caulibus primariis et secundariis brevissimis vaginis costatis, foliis carnosis suborbicularibus minimis, pedunculo filiformi folio longiore, racemo paucifloro, floribus successivis grandibus pro planta, sepalo dorsali ovato acuminato acuto purpureo vittato, sepalis lateralibus ovatis obliquis acuminatis purpureis ad medium connatis, petalis spatulatis obtusis, labello orbiculari laciniato bicristato base appendicula erecta tuberculata digitiformi.

Plant extremely small, epiphytic, creeping, the primary stem 1-3 mm long; roots comparatively thick, velamentous. Secondary stem stout, 1-2 mm long, concealed by 1-2 thin, infundibular, ribbed sheaths, unifoliate. Leaf more or less prostrate, fleshy, light green veined in dark green, the surface pustulate, suborbicular, apex emarginate with a mucro in the sinus, 2-4 × 2-3.5 mm, with the petiole 0.5 mm long. Inflorescence a few-flowered (1-3), compact raceme; flowers large for the plant, single, successive; peduncle filiform, 5-7 mm long, from a node on the secondary stem; floral bract infundibular, 1 mm long; pedicel 2 mm long; ovary 1 mm long; dorsal sepal translucent yellow-brown striped with purple, ovate, concave, apex caudate-acuminate, tricarinate, 7.5 × 3.5 mm, the lowest 1 mm united to the lateral sepals; lateral sepals purple, ovate, oblique, short caudate-acuminate, each bicarinate, 7.5 × 3 mm, united to near the middle; petals yellow, obovate-spatulate, obtuse, the apical margin minutely irregular, 3.5 × 2 mm, 1-veined; lip red-brown, suborbicular, 2.5 × 2.5 mm, apex rounded, margin denticulate-laciniate, disc with a pair of fringed crests from the base to above the middle, with an erect, tuberculate, finger-like appendage from the center of the base, the base cordate, shortly hinged to an extension from the column-foot; column broadly winged, 2.5 mm long, the foot bilobed and concave between the lobes, with a central ligulate extension to articulate with the lip.

ETYMOLOGY: Name in honor of Robert L. Dressler, renowned botanist of the Smithsonian Tropical Research Station in Balboa, Canal Zone, who first discovered the species.

TYPE: PANAMA: PANAMA: epiphytic on mossy limbs, Cerro Jefe, alt. 1000 m, 20 Aug. 1967, *R. L. Dressler 3033* (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: Same locality, 8 Jan. 1969, *R. L. Dressler 3600* (SEL); *F. L. Stevenson 1-476-6* (SEL), flowered in cult. 15 Jan. 1976; epiphytic along the Altos de Pacora road, alt. 650 m, 4 March 1976, *C. Luer, J. Luer & P. Taylor 731* (SEL).

DISTRIBUTION: Panama.

This tiny species grows on mossy branches of wet rain forests in eastern Panama. The habit suggests other minute creeping species with round leaves such as *Pleurothallis nummularia* Rchb. f. and *P. peperomioides* Ames.

The minute orbicular leaves of *P. dressleri* are light green with darker green central and circular veins plainly visible through the thick, semitransparent substance of the blade. The hair-like peduncle lifts the comparatively huge flower well above the mat of nearly microscopic leaves. The dimensions of the flower are about twice those of the leaf. The dorsal sepal is

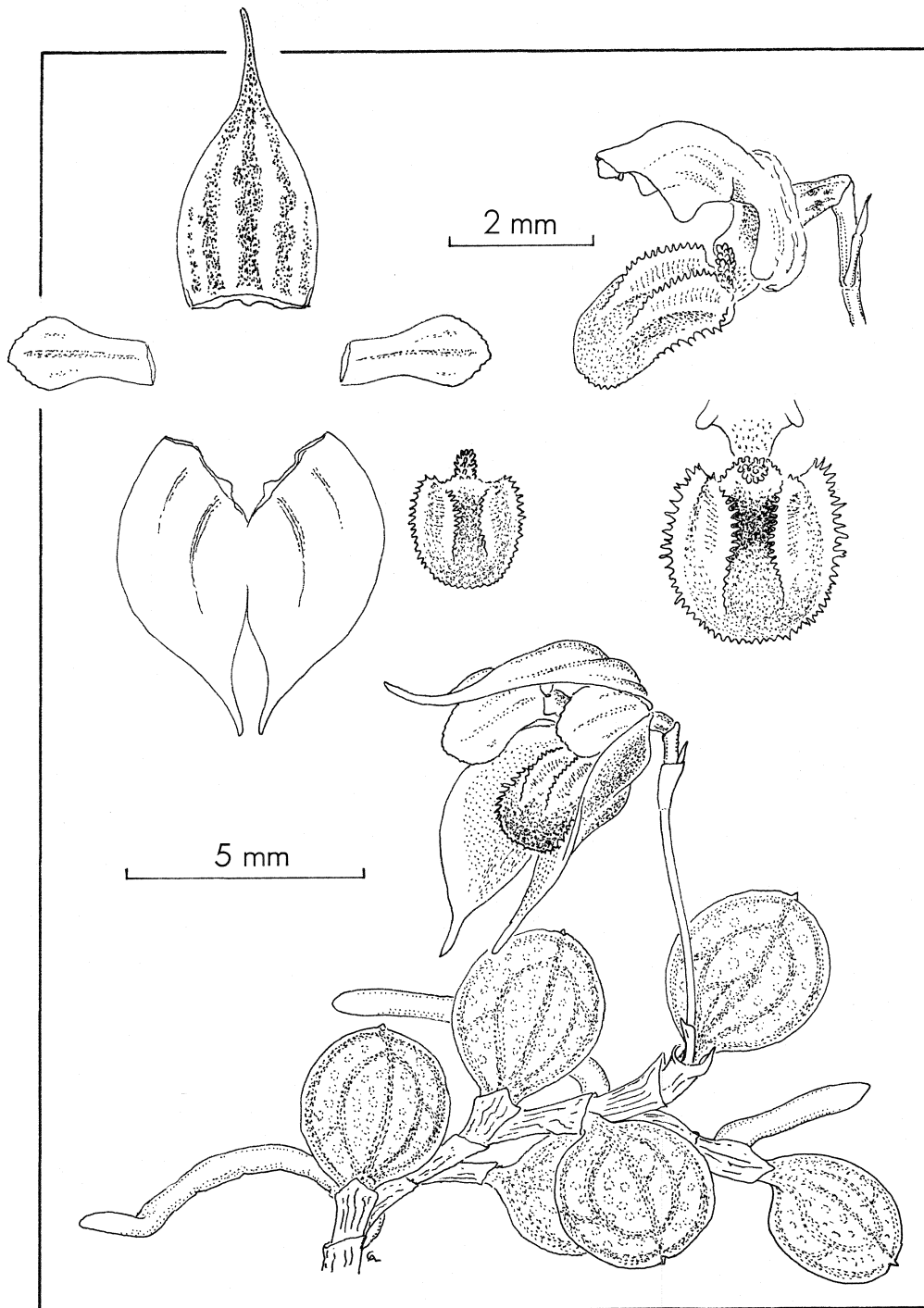


Figure 152. PLEUROTHALLIS DRESSLERI C. A. Luer

caudate with three stripes of purple; the broad purple lateral sepals, connate to near the middle, are acuminate and aristate. The petals are small and spatulate. The remarkable lip is round and fringed, with a pair of central fringed crests. At the base between the crests and behind the rostellar apparatus and stigma stands a warty, finger-like appendage, suggesting a decoy or bait to lure the pollinator into the flower.

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

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

*Masdevallia platyrachis* Rolfe, *Gard. Chron.* 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 platyrachys* (Rolfe) Rolfe, *Orchid Rev.* 23:326. 1915.

Plant medium to large, epiphytic, caespitose; roots slender, fleshy, flexuous. Secondary stem, short, stout, channeled, 1-2 cm long, concealed by 2 loose sheaths, unifoliate. Leaf fleshy, narrowly obovate, obtuse to subacute, tridenticulate, attenuated into a narrowly cuneate base, sessile, 6-22 × 1.4 × 3.1 cm. Inflorescence a few- to many-flowered raceme, 12-35 cm long, the flowers fleshy, red to red-orange, produced singly and successively; peduncle compressed, with sharp edges, from a node on the secondary stem; floral bract oblique, conduplicate, 5-10 mm long; pedicel 6-10 mm long; ovary 3-angled, 5 mm long; dorsal sepal narrowly ovate, subacute, the inner surface markedly rugose, convex above the middle, 16-20 × 6 mm; lateral sepals narrowly obovate, subacute, united basally to form a shallow mentum, similarly rugose, each 14-18 × 4 mm, petals oblong, the apex subacute, more or less incurved, minutely tuberculose within, glabrous without, 5.5 × 1 mm; lip rigidly arched in the natural position, cannot be straightened without fracturing, oblong, subacute, with marginal lamellae, bright red-orange, 5 × 2 mm, column 5 mm long, with denticulate wings, foot 3 mm long.

ETYMOLOGY: From the Greek *endo-*, "inside-," and *trachys*, "rough," in allusion to the markedly rugose character of the inner surfaces of the sepals and petals.

TYPE: COSTA RICA: *Endres s.n.*

DISTRIBUTION: Mexico, Salvador, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela.

PANAMA: CHIRIQUI: epiphytic in the cloud forest above Guadalupe, alt. 2500 m, 13 Sept. 1976, *C. Luer & Butcher 1216* (SEL).

MEXICO: OAXACA: Colonia Rudolfo Figuero, alt. 1300 m, 22 June 1967, cultivated by *Janet Kuhn s.n.*, flowered 21 Oct. 1975.

SALVADOR: without specific location, *P. Bernhardt s.n.* (SEL).

Known locally from Mexico to Venezuela, this remarkable species grows in thick, lush blankets engulfing trunks of great trees in cloud forests of western Panama. From among the masses of slick, narrowly obovate leaves, long, flattened, progressively flowering stems bear at their summits a large, hard, red-orange flower. The three colorful sepals curve outward to expose their roughened inner surfaces. Microscopically they appear as a deeply wrinkled, wet, mucosal lining of some digestive organ. The smaller petals are simply warty, and the small lip is arched below a slightly larger column.

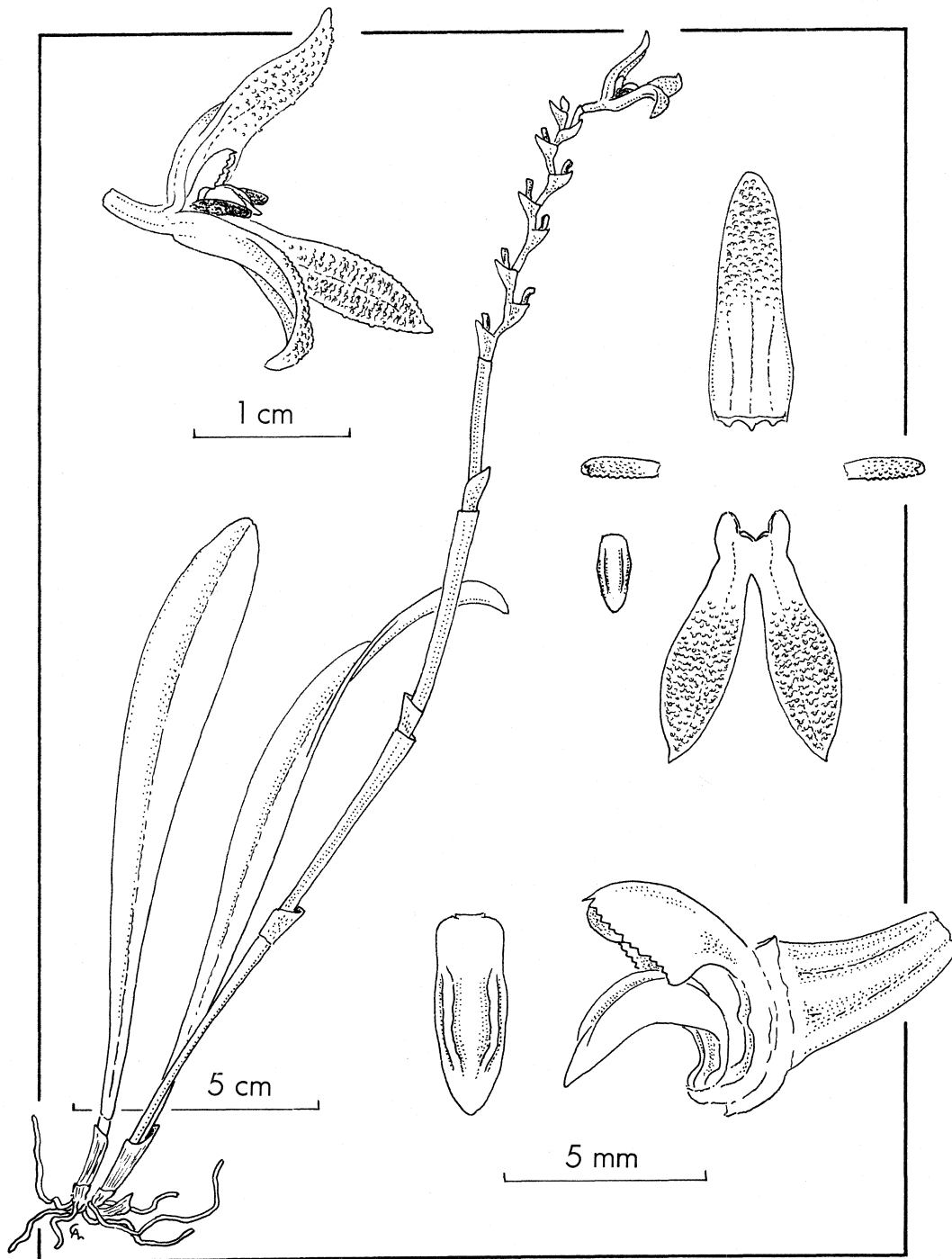


Figure 153. *PLEUROTHALLIS ENDOTRACHYS* Rehb. f.

***Pleurothallis erymnochila* Luer, sp. nov.**

Planta epiphytica mediocris vel grandis caespitosa, caulibus secundariis gracilibus teretibus unifoliatis, foliis late ovatis acuminatis base profunde cordatis, floribus solitariis successivis aureobrunneis glabris bilabiatis, sepalo dorsali et synsepalo late ovatis subacutis, petalis lineari-ovatis ciliatis, labello suborbiculato plano margine ciliis erectis limbato.

Plant medium to large, epiphytic to terrestrial, caespitose; roots slender, fasciculate, flexuous. Secondary stems slender, terete, up to 45 cm tall, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf spreading, coriaceous, broadly ovate, acuminate, acute, tridentate, base deeply cordate, often with overlapping basal auricles, sessile, 7-12 × 4.5-7 cm. Inflorescence a fascicle of single, successive flowers, 1-8 simultaneously, from a spathe about 1 cm long, or from a mass of old pedicels, at the base of the leaf; flowers small, bilabiate, yellow or orange suffused with brown, surface minutely glandular externally; floral bract and pedicel each 4-6 mm long; ovary verruculose, 3-4 mm long; dorsal sepal ovate, subacute, 5-6 × 4 mm, 3-veined; lateral sepals connate into a broadly ovate, subacute lamina, 4.5-5.5 × 5 mm, 4-veined; petals narrowly linear-ovate, acute, ciliate, 4 × 1 mm, 1-veined; lip suborbicular, apex rounded, base shallowly concave, basal angles rounded, disc plane, with an erect, ciliate margin, 3 × 3 mm; column stout, 1 × 1.5 mm.

ETYMOLOGY: From the Greek *erymnos*, "fenced," and *cheilos*, "lip," in reference to the erect, ciliate, fence-like border of the lip.

TYPE: ECUADOR: PICHINCHA: terrestrial on road embankment between Quito and Santo Domingo, alt. 2000 m, 15 Aug. 1975, C. Luer, G. Luer & S. Wilhelm 573 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: same area, C. Luer & R. Kent 251 (SEL); near Chiriboga, alt. 1600 m, C. H. Dodson, N. H. Williams & R. Adams 3830 (SEL); west of Nono, alt. 3000 m, 9 March 1976, C. Luer, J. Luer & P. Taylor 971 (SEL).

DISTRIBUTION: Ecuador.

This species resembles the widespread *Pleurothallis cordata* (Ruiz & Pav.) Lindl. and at first it was thought to be a local variation, but in western Pichincha the two species are distinct and sympatric. Differences are difficult to distinguish on dried specimens. *Pleurothallis erymnochila* is, however, easily recognizable in living material.

The apex of the leaf is abruptly and conspicuously acuminate. The auricles of the deeply cordate base diverge as they spread from their junction with the apex of the stem, then curve back to overlap. The flowers, several of which are commonly borne simultaneously, sometimes protrude behind from the space between the auricles.

The small flowers are golden yellow suffused with brown, the only color combination we have seen in numerous living specimens in the wild. The sepals and petals are similar to a small-flowered *P. cordata*, but they are more subacute than obtuse. The lip, however, is readily distinguishable. The circular margin of the lip of *P. erymnochila* is trimmed with a more or less erect, ciliated border resembling a minute fence. The ciliated margin of the lip of *P. cordata* is not erect.

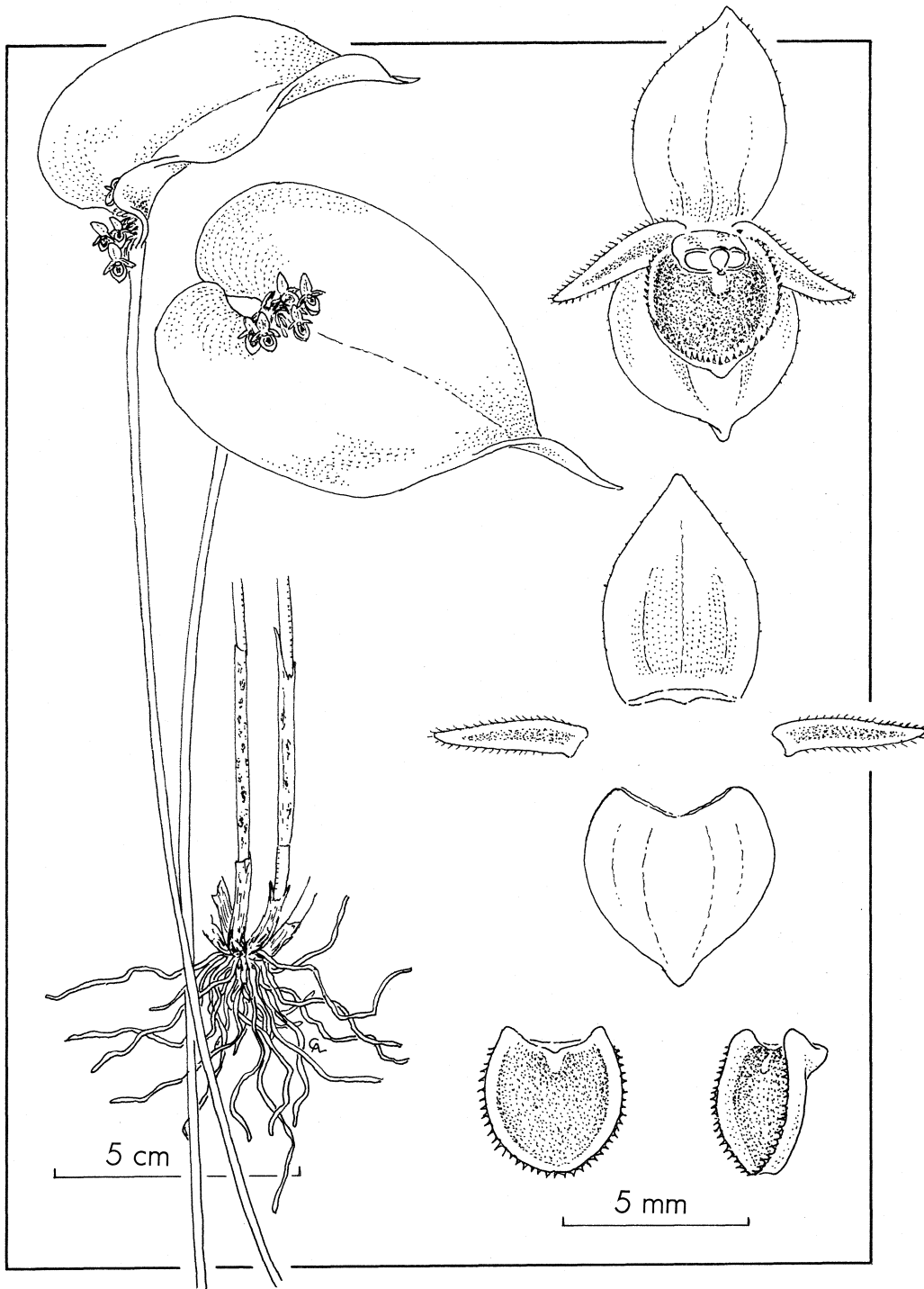


Figure 154. PLEUROTHALLIS ERYMNOCHILA C. A. Luer

**Pleurothallis exotica** C. A. Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis fasciculatis teretibus unifoliatis, foliis costatis ellipticis obtusis bene petiolatis, spatha magna foliacea, racemo flore solitario successivo inverso albo purpureo-punctato, sepalo medio ovato acuto, synsepalo ovato obtuso retuso, petalis ellipticis obtusis purpureo-vittatis, labello suborbiculari concavo.

Plant medium in size, epiphytic, caespitose; roots filamentous, flexuous. Secondary stems fasciculate, slender, terete, 10-20 cm long, with a tubular sheath near the middle and 1-2 others at the base, unifoliolate. Leaf light green, coriaceous, longitudinally ribbed, elliptical, apex obtuse, retuse, base cuneate, with a distinct, channeled petiole 2-2.5 cm long, the blade 6-8 × 3-4 cm. Inflorescence a solitary raceme, eventually lengthening beyond the leaf, producing an inverted flower singly at intervals; flower white, extensively marked with purple, not wide-spreading; peduncle stout, from a foliaceous spathe 2-3.5 cm long from the apex of the stem; floral bract 4-5 mm long; pedicel 3 mm long; ovary 2 mm long; middle sepal ovate, apex acute and recurved, 9 × 4.5 mm, united for 2.5 mm at the base with the lateral sepals, 5-veined, the 3 central veins prominent externally, speckled and mottled with purple on white; lateral sepals uppermost, united into an ovate lamina, obtuse, retuse, 9 × 7 mm, 6-veined, bicarinate, mottled similar to the middle sepal; petals elliptical, obtuse, 6 × 3 mm, 3-veined, the veins prominent externally and heavily marked with purple; lip suborbicular, deeply concave, 4 × 4 mm spread out, purple, yellow toward the base, broadly united to the column-foot; column terete, 3.5 mm long, with a foot 1.5 mm long.

**ETYMOLOGY:** From the Greek *exoticos*, "strange, or alien," in allusion to the unusual characteristics of the leaf and inflorescence.

**TYPE:** *ECUADOR*: without specific location, *Janet Kuhn s. n.* (HOLOTYPE: SEL), greenhouse acc. no. 25-75-188, flowered in cult. Oct. 1975.

**DISTRIBUTION:** Ecuador.

This curious species was discovered in Ecuador by Janet Kuhn of Easton, Connecticut in 1974, and she has cultivated it in Connecticut since that time. It is unusual in many morphological aspects; to my knowledge, it has no close ally. As in some other species, the secondary stems are produced in dense fascicles, the basal sheaths often embracing more than one stem. The unusual leaf is elliptical and obtuse, and coursed by prominent, elevated, longitudinal veins. The base is contracted into a long, channeled petiole. At its junction with the secondary stem, the singular raceme emerges from a large, leaf-like spathe. The stout raceme produces one flower about every two weeks, and it gradually elongates to exceed the leaf in length. The thick, tubular flower is comparatively large, white marked with purple, and with recurved apices of the sepals. The middle sepal is united basally to the lateral sepals. The petals are large, obtuse, and striped. The lip is bowl-shaped and contains a droplet of viscid fluid.

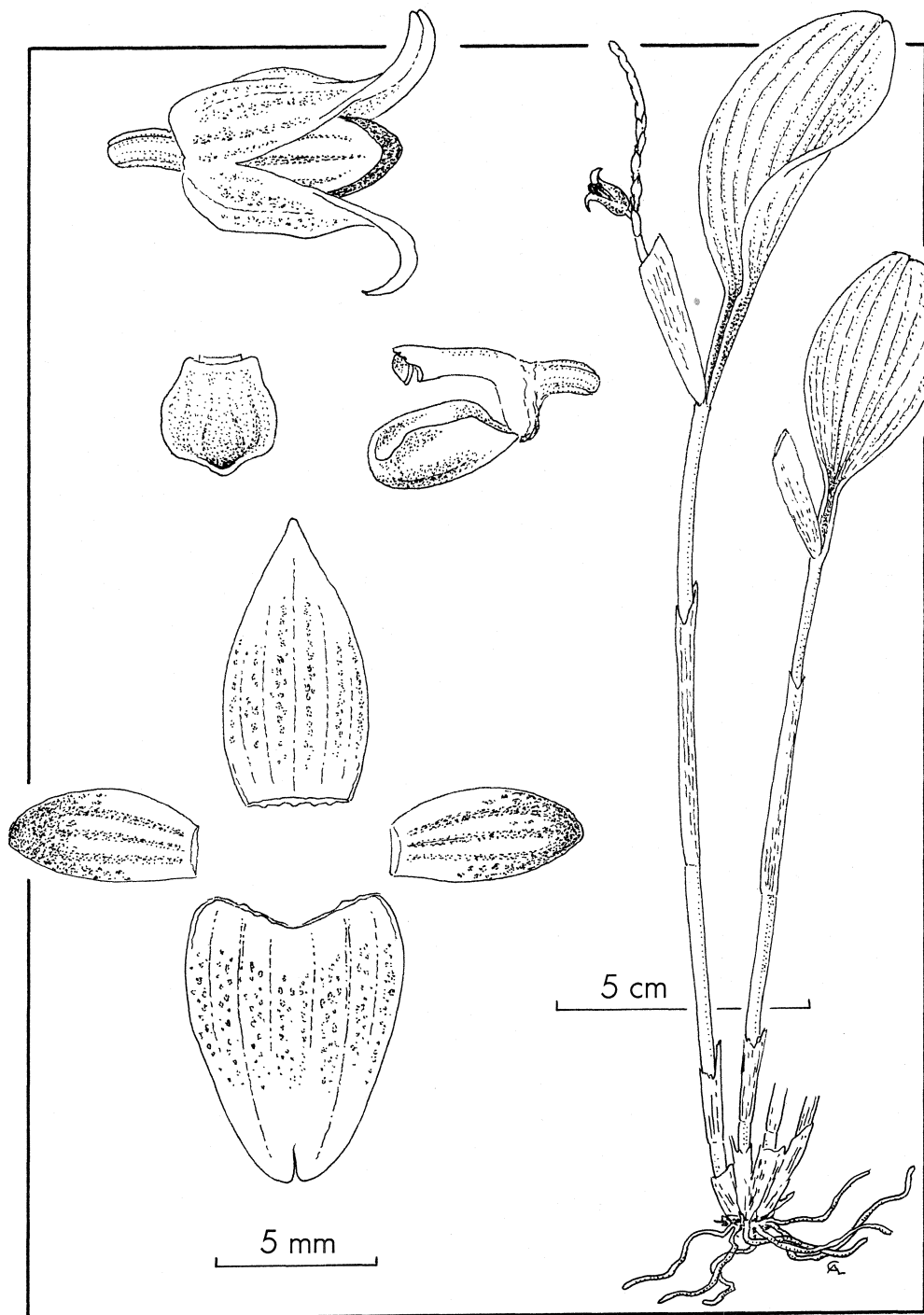


Figure 155. PLEUROTHALLIS EXOTICA C. A. Luer



**Pleurothallis fons-florum** Lindl., Folia Orchid. Pleuroth. 5. 1859.

*Humboldtia fons-florum* (Lindl.) Kuntze, Rev. Gen. Pl. 2:667. 1891.

Plant large, epiphytic, caespitose, roots slender, fasciculate, flexuous. Secondary stems stout, terete, 15-35 cm long, with a loose tubular sheath above the middle and 2-3 others toward the base, unifoliate, sometimes proliferative. Leaf coriaceous, oblong, apex obtuse to rounded or subretuse, base rounded, abruptly short-petiolate, 12-20 × 5-7.5 cm, the petiole about 1 cm long. Inflorescence racemose, numerous (10-18), densely-, many-flowered nearly to the base, about 20 cm long; flowers small, pale green tinged with purple, glabrous; peduncles crowded, from a conduplicate spathe 2.5-3 cm long at the base of the leaf; floral bract infundibular, 2 mm long; pedicel 1.5 mm long; ovary 1 mm long; sepals elliptical, subacute, 3-veined, greenish white suffused with pink, the dorsal sepal 4 × 2 mm, the lateral sepals slightly oblique, adherent only at the base, 4 × 1.75 mm; petals obovate-oblong, obtuse to rounded, 2.5 × 1.25 mm, 1-veined, overlaid with a brown stripe; lip fleshy, white tinged with purple, rhomboid, 1.5 × 1.5 mm, 3-lobed, the mid-lobe broadly triangular, obtuse, the lateral lobes broadly triangular, oblique, obtuse, upright in the natural position and not spreadable without breaking the lip, base concave below the bulbous column-foot, disc with an erect pair of blunt incurved teeth above the middle; column terete, 1 mm long, with a short but prominent foot.

ETYMOLOGY: From the Latin *fons florum*, "fountain of flowers," in allusion to the massive display of many-flowered racemes.

TYPE: ECUADOR: probably PICHINCHA: "forests on the eastern and western slopes of the Andes," Jameson s.n. (HOLOTYPE: K).

DISTRIBUTION: Ecuador and Peru.

ECUADOR: PICHINCHA: terrestrial overhanging a road cut, about 20 km east of Tandapi, alt. 2500 m, 27 Feb. 1975, C. A. Luer & R. Kent 267 (SEL); TUNGURAHUA: terrestrial in Valle de Chaupe above Baños, alt. 2200 m, 17 Mar. 1976, C. Luer, J. Luer & P. Taylor 869 (SEL).

In spite of its minute flowers, this species is a spectacular member of the genus. The blooms are produced in great showers like "fountains of flowers" gushing forth from the source within the huge spathe at the base of the leaf. A close view reveals the flowers to be greenish white suffused with pink, but at a distance in such great profusion, they appear gray-blue, an apt color for the arching fountain.

The robust plants bear large, leathery leaves. The specimens we found appeared unusually large because many of the stems were superposed, and each bore, in addition to the other stem, a great bundle of racemes. The very small flowers are distinguished by their broadly diamond-shaped lips which bear a pair of minute teeth near the middle.

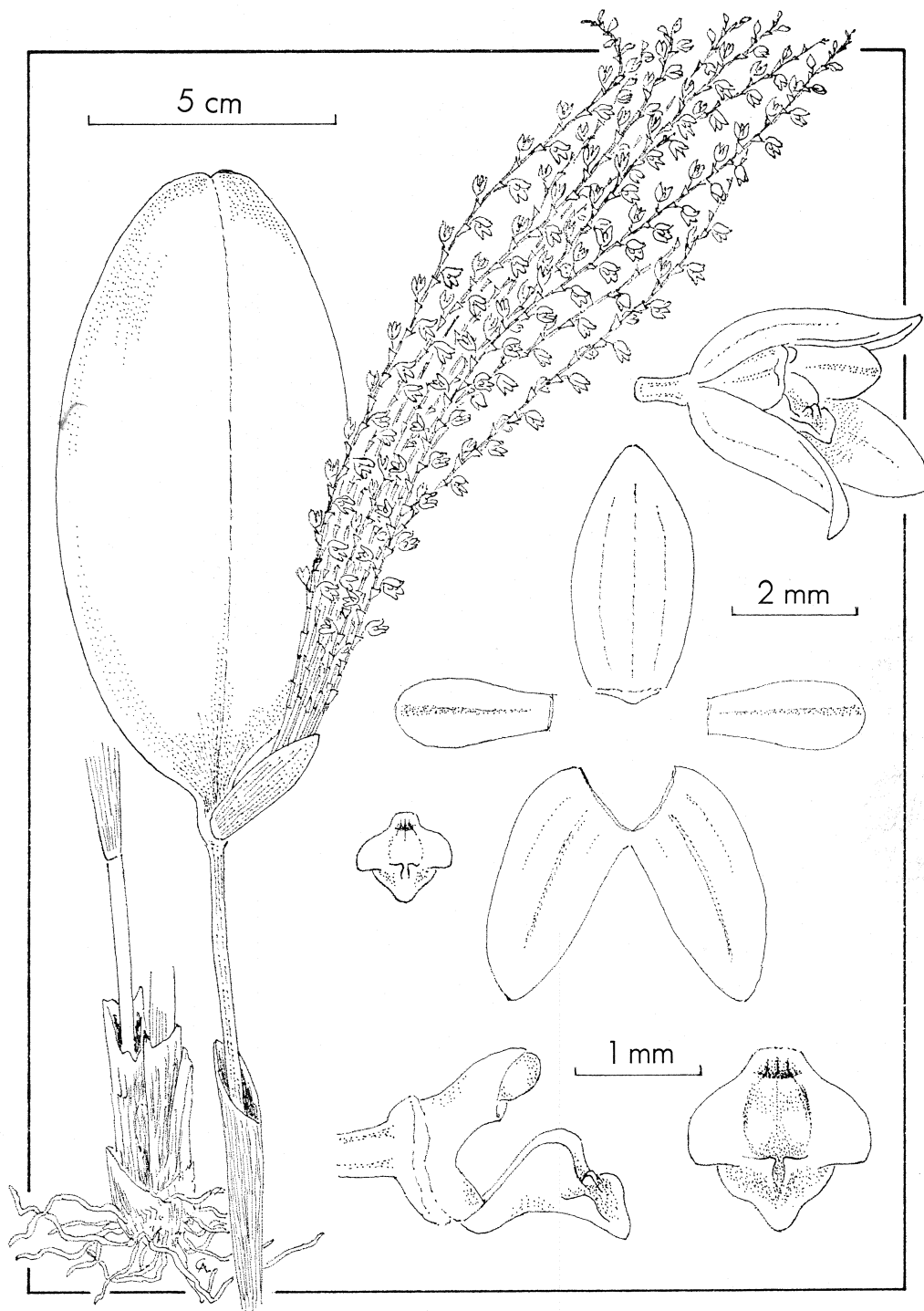


Figure 156. PLEUROTHALLIS FONSFLOREM Lindl.

**Pleurothallis furcifera** C. A. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis filiformibus teretibus unifoliatis, foliis coriaceis anguste ovatis acutis sessilibus, floribus minutissimis longipedicellatis fasciculatis solitariis successivis, sepalo dorsali et synsepalo subquadratis concavis obtusis, petalis oblongis supra medium hastatis apice late rotundatis, labello infra medium profunde concavo cupulato, supra medium furcato, lobis anticis oblongis obtusis.

Plant small, epiphytic, caespitose; roots filiform, flexuous. Secondary stems erect, capillary, terete, 5-7 cm long, with 2-3 thin, brown, tubular, basal sheaths, unifoliate. Leaf fleshy, coriaceous, spreading, narrowly ovate, acute, tridenticulate, base cuneate, sessile, 3-5 X 0.8-1 cm. Inflorescence fasciculate; flowers very small, long-pedicellate, yellow-green suffused with purple, solitary, successive, few in number, from a spathe about 5 mm long at the base of the leaf; peduncle 10-12 mm long; pedicel 8-9 mm long; floral bract infundibular, 3 mm long; ovary 2 mm long; dorsal sepal broadly oblong to subquadrate, concave, obtuse, apiculate, 2 X 1.5 mm, 3-veined; lateral sepals completely united into a broadly ovate to subquadrate synsepal, concave, obtuse, 2.25 X 2 mm, 4-veined; petals oblong, hastate above the middle, the marginal angles of the dilated apical portion acute, the tip rounded, translucent yellow-green, 2 X 1.2 mm; lip yellow, rounded and deeply concave below the middle, forked above the middle into a pair of oblong, diverging, obtuse, microscopically irregular apical lobes, 1.5 X 1 mm; column white, suffused with pink, terete, 1 mm long, with an obsolescent foot.

ETYMOLOGY: From the Latin *furca*, "a two-pronged fork," and *fero, ferre*, "to bear," in reference to the forked lip.

TYPE: PERU: HUANUCO: near Tingo Maria, 1974, *Janet Kuhn 15*. (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Peru.

This unique species is characterized by a small, fleshy, narrowly ovate leaf borne by a longer but very thin, wire-like stem. From the base of the leaf a fascicle of pin-head-sized, long-pedicellate, purplish-green flowers emerges. The dorsal sepal and the united lateral sepals (the synsepal) appear as a pair of opposing cup-shaped valves. Within, the forked lip is flanked by the petals which are expanded above their middle like blunt arrow-heads. Below the middle the microscopic lip is deeply concave, and above the middle it is bifurcated into a pair of blunt, diverging lobes.

*Pleurothallis furcifera* was discovered in Peru in 1974 by Janet Kuhn while on a trip conducted by Fred Fuchs. Since that time the plant has been successfully cultivated by her in Connecticut.

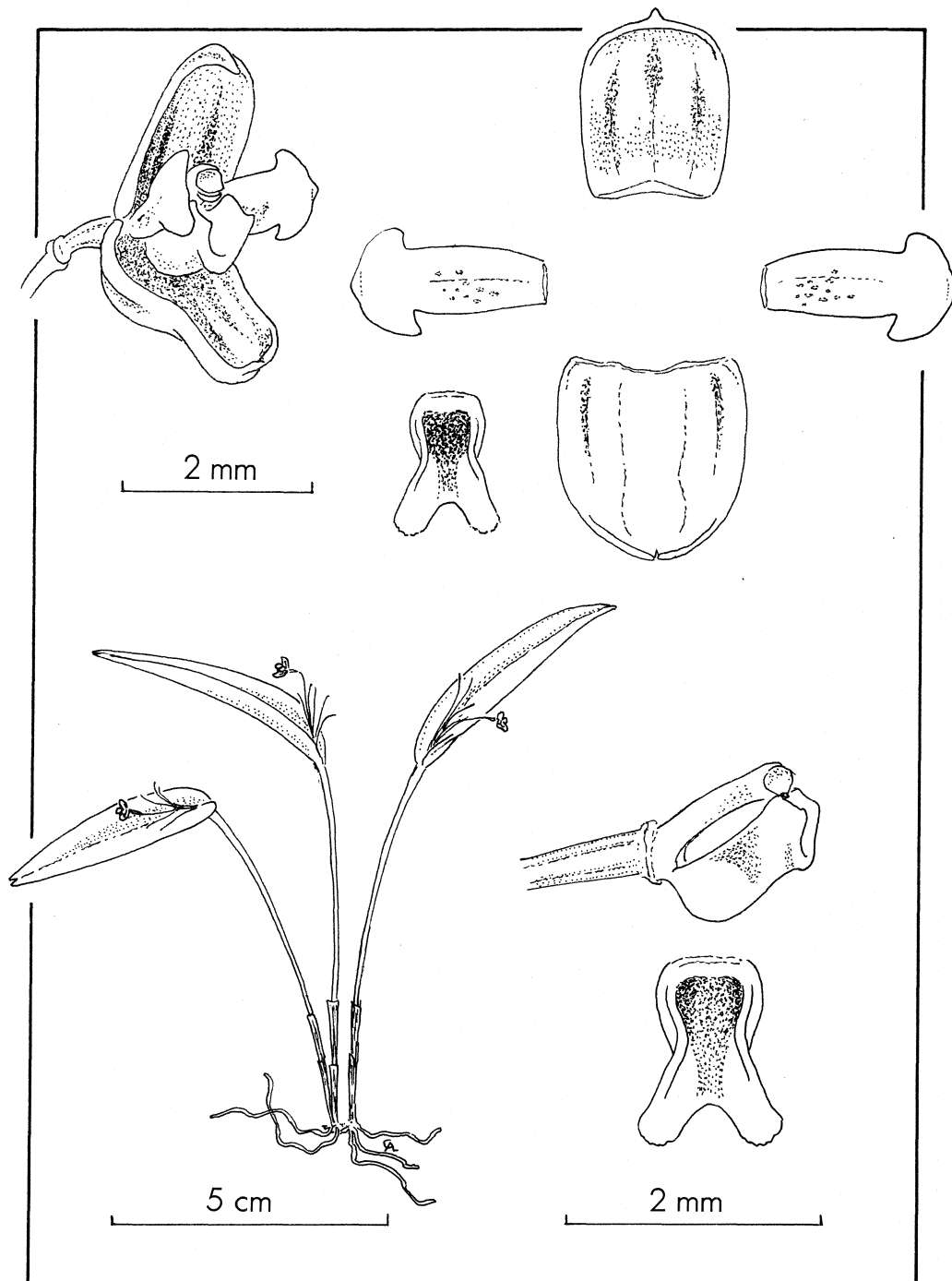


Figure 157. *PLEUROTHALLIS FURCIFERA* C. A. Luer

**Pleurothallis gnoma** C. A. Luer, sp. nov.

Planta pusilla epiphytica caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis anguste obovatis subacutis tridenticulatis basi angustissime cuneatis, floribus solitaribus successivis flavovirentibus, racemo brevissimo paucifloro, pedunculo caulem aequanti, ovario triquetro minute eroso, sepalo dorsali ovato acuto, sepalibus lateralibus libris late ellipticis obliquis breviter acuminato uncinato, petalis spatulatis supra medium rhomboideis, labello purpureo oblongo truncato marginibus incurvatis unguiculato basi minute auriculato.

Plant very small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 6-10 mm long, partially concealed by 1-2 tubular, ribbed sheaths, unifoliolate. Leaf coriaceous, narrowly obovate, subacute, tridenticulate, base very narrowly cuneate, gradually long-petiolate, 20-35 × 3 mm. Inflorescence a short, 2- to 3-flowered, raceme; peduncle about 5 mm long, from a node on the secondary stem; flowers produced singly and successively, ringent, yellow-green; floral bract 4-5 mm long; pedicel 4-7 mm long; ovary triquetrous, the angles minutely erose, 1 mm long; dorsal sepal ovate, acute, concave, 5 × 2.5 mm, 3-veined, united for 1 mm at the base with the lateral sepals; lateral sepals free except for the basal 1 mm where they form a short mentum with the column-foot, broadly elliptical, oblique, shortly acuminate, uncinata, 5 × 2 mm; petals spatulate, oblique, oblong below the middle, quadrate-rhomboid above the middle, the angles rounded, 3 × 1.5 mm, 1-veined; lip rectangular-oblong, the apex broadly rounded to truncate, with the sides turned up, abruptly unguiculate, the claw oblong, minutely auriculate at the base, 2.5 × 1 mm, red-purple on yellow-green; column 2.5 mm long, broadly winged, denticulate apically, anther cap conical and red, column-foot 1 mm long.

ETYMOLOGY: From the Latin *gnomus*, "a dwarf of fables," referring to the dwarf plant with very short stems and racemes.

TYPE: *ECUADOR*: NAPO: epiphytic in felled trees about 15 km west of Tena, alt. ca. 600 m, collected 26 July 1975, C. Luer, G. Luer & S. Wilhelm 698 (HOLOTYPE: SEL), greenhouse acc. no. 44-75-500, flowered in cult. 24 June 1976.

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: NAPO: same area, collected by Janet Kuhn s.n. (SEL), flowered in cult. 20 Oct. 1975.

DISTRIBUTION: Eastern Ecuador.

This species is one of several new species which were found in the high branches of huge rain forest trees being felled for their lumber west of Tena in the Oriente. *Pleurothallis gnoma* consists of a tiny tuft of long, narrow leaves borne on short, secondary stems. The yellow-green flowers are borne singly and successively on a 2- to 3-flowered, abbreviated raceme produced from within the little ribbed sheaths which clothe the stem. The stem may bear evidence of having borne two or three peduncles in the space of less than one millimeter. The gaping flowers expose the red-purple lip. The apices of the lateral sepals are shortly acuminate and hooked. They are united at the very base where each bears a large pink spot. The petals are spatulate, the spooned end more or less diamond-shaped with blunt corners. The lip is shaped like a rectangular paddle with a distinct handle.

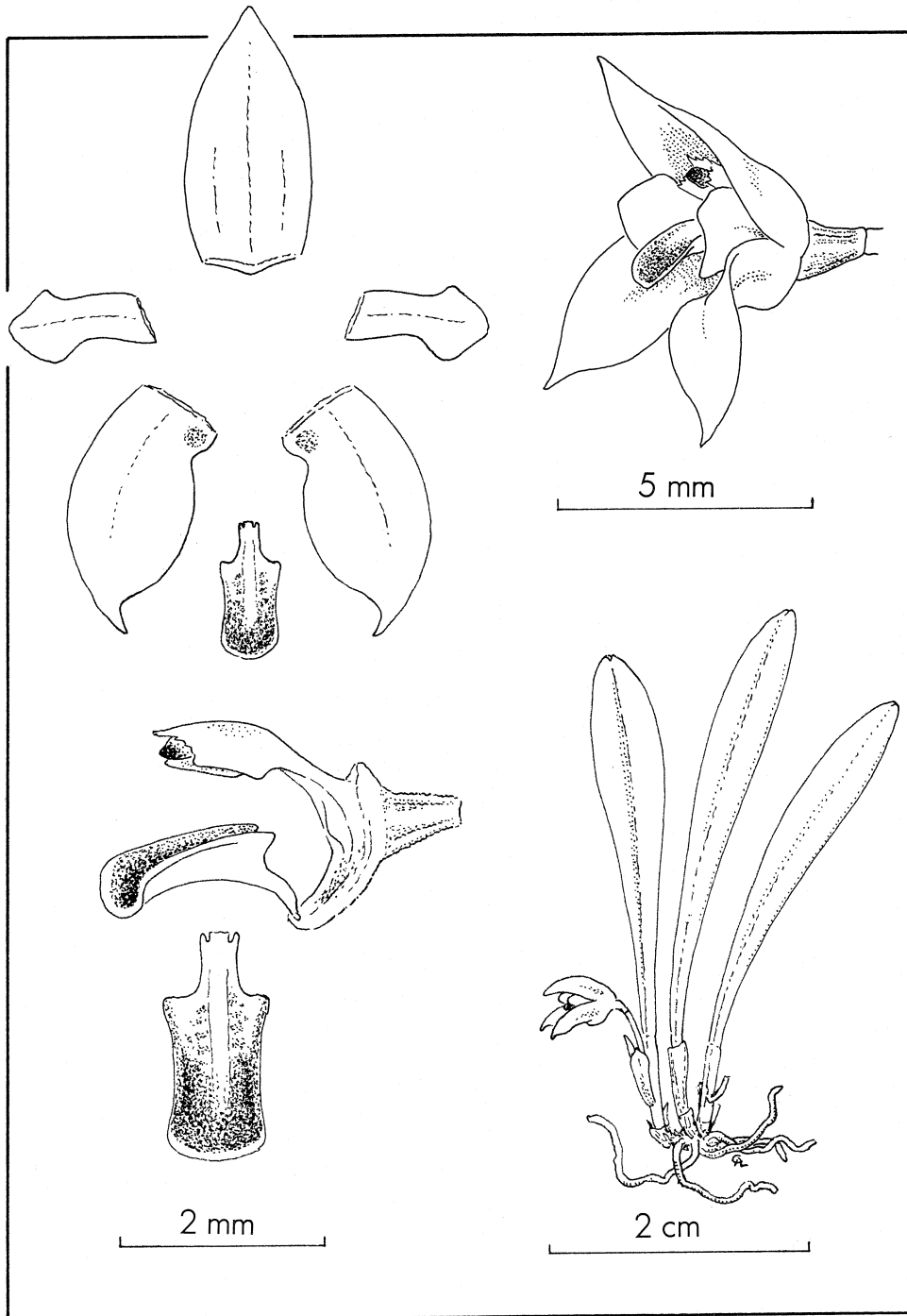


Figure 158. PLEUROTHALLIS GNOMA C. A. Luer

**Pleurothallis grandiflora** Lindle., Edward's Bot. Reg. 21: sub. t. 1979. 1836.

*Humboldtia grandiflora* (Lindl.) Kuntze, Rev. Gen. Pl., 2:667. 1891.

*Pleurothallis sarcochila* Garay, Arch. Jard. Bot. Rio de Janeiro 12:176. 1952.

Plant epiphytic to terrestrial, medium to large, caespitose; roots slender and flexuous. Secondary stem terete, slender, up to 40 cm long, with 2-3 tubular sheaths below the middle, unifoliate. Leaf narrowly ovate, apex acuminate to acute, tridentate, base cordate, sessile, 7-12 × 1.5-5 cm. Inflorescence fasciculate, a large flower borne singly and successively from a spathe 15-20 mm long from the axil of the leaf; floral bract about 5 mm long; pedicel about 15 mm long; ovary sigmoid, about 9 mm long; sepals yellowish brown with red-purple veins; dorsal sepal broadly ovate concave, acute, 24 × 15 mm; 7-veined; lateral sepals united into a narrowly ovate synsepal, subacute, 20 × 10 mm, 6-veined, sides revolute in the natural position; petals red, linear, oblique, falcate, acute, 10-13 × 2-3 mm, 1-veined, margins finely erose to minutely ciliate; lip red, yellow, to yellow-brown, broadly elliptical, obtuse, with a short conical thickening beneath the apex, base shortly concave and broadly hinged to the column-foot, 7 × 6 mm; column stout, 2 × 3 mm, with a short bulbous foot.

ETYMOLOGY: From the Latin *grandis*, "large," and *flos, floris*, "flower," in reference to the comparatively large flower of the species.

TYPE: ECUADOR: PICHINCHA: epiphytic in the valley of Lloa, alt. 8000 ft., *Hall s.n.* (HOLOTYPE: K).

DISTRIBUTION: Venezuela, Colombia, Ecuador, and Peru.

ECUADOR: PICHINCHA: terrestrial on road bank between Quito and Santo Domingo, km 25-35, alt. 2400-2800 m, 14 Mar. 1963, *C. H. Dodson & L. B. Thien 2389* (SEL); near km 70, alt. 1500 m, 10 Mar. 1975, *C. A. Luer & R. Kent 230* (SEL); terrestrial on road bank about 20 km east of Tandapi, between Quito and Santo Domingo, alt. ca. 2000 m, 1 Mar. 1975, *C. A. Luer & R. Kent 264* (SEL).

This large-flowered *Pleurothallis* was described by Lindley from material sent to him by Jameson from a collection by Hall in the valley of Lloa, which is located on the western slope of Volcán Pichincha, not far to the southwest of Quito. The accompanying figure of the species was made from a plant collected in the same general area.

Vegetatively *P. grandiflora* is similar to many others of the section *Macrophyllae-Fasciculate*. It is distinguished by its comparatively large flowers, a seemingly over-sized, concave dorsal sepal, a narrower synsepal commonly with revolute sides, ciliated, sickle-shaped petals which often curve to meet below the lip which stands away from the underlying synsepal. Pressed material of this species appears deceptively similar to that of *P. adonis* C. A. Luer, *P. bivalvis* Lindl., and *P. ignivomi* Schltr.

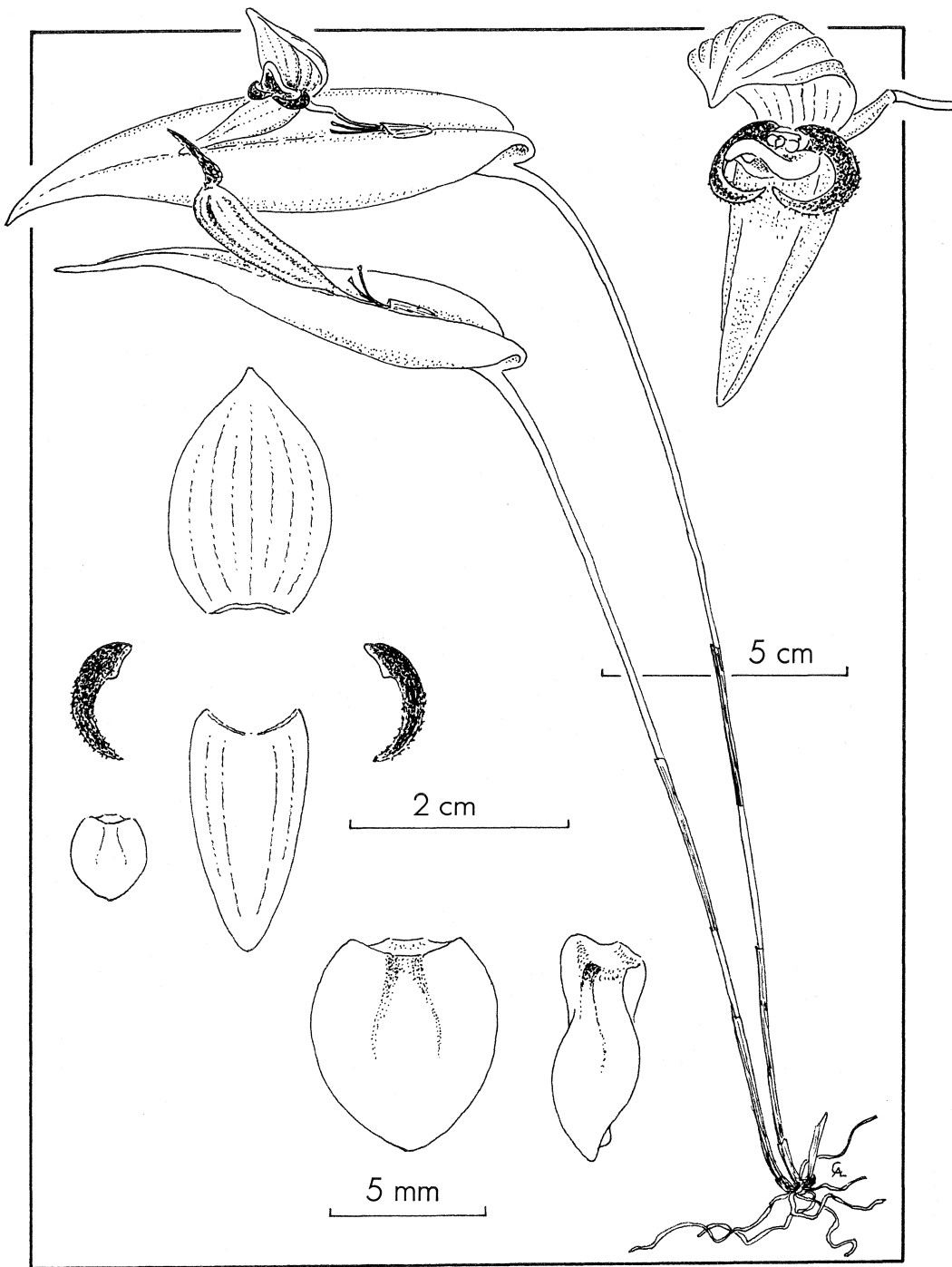


Figure 159. PLEUROTHALLIS GRANDIFLORA Lindl.



**Pleurothallis gutierrezii** Luer, sp. nov.

Planta parva epiphytica repens rhizoma crassa, caulibus secundariis gracilibus teretibus foliis aequilongis unifoliatis, foliis ellipticis subacutis cuneatis sessilibus paginis inferioribus purpureo-maculatis, racemo paucifloro folio longiore, floribus grandibus pro planta luteis ex purpureis, sepalo dorsali anguste ovato obtuso marginibus revolutis, sepalis lateralibus supra medium connatis oblongis obtusis, petalis linearibus attenuatis, labello trilobato, lobo antico ovato subacutis, lobis lateralibus prope medium erectis ovatis obliquis, disco tuberculoso.

Plant small, epiphytic, repent, the rhizome stout, producing a secondary stem every 2-4 mm; roots few, filamentous, flexuous. Secondary stems very slender, terete, 10-18 mm long, with a ribbed, tubular sheath from a joint near the base, unifoliate. Leaf erect, elliptical, subacute, tridenticulate, base cuneate to rounded, sessile, 12-20 × 6-8 mm, front surface dark green, back surface spotted with purple. Inflorescence a loose, few-flowered (2-3) raceme, up to 5 cm long; peduncle filiform, from a 4 mm spathe at the base of the leaf; flowers large for the plant, yellow, marked with purple; floral bract infundibular, 1.5 mm long; pedicel 2 mm long; ovary 1.5 mm long; dorsal sepal very narrowly ovate, narrowly obtuse, margins revolute, 12 × 2 mm, yellow, minutely streaked with purple and with 3 purple veins; lateral sepals connate to above the middle into an oblong, bifid lamina, the apices narrowly obtuse, 11 × 3 mm, bicarinate, coloration similar to the dorsal sepal; petals linear, attenuate, acute, 10 × 1 mm, translucent with a prominent purple stripe; lip purple, oblong, 3-lobed, 3.5 × 2 mm, the middle lobe ovate, subacute, the lateral lobes erect, near the middle, ovate, oblique, subacute, the base truncate, broadly hinged to the column-foot, the disc tuberculose, with a pair of low, converging lamellae near the middle; column terete, 2.5 mm long, with a pubescent foot 1 mm long.

ETYMOLOGY: Named in honor of Jorge Gutierrez, avid orchidist of Bolivia.

TYPE: *BOLIVIA*: SANTA CRUZ: epiphytic about 1 km west of Buena Vista, alt. ca. 400 m, *Fred Fuchs, Jr. s.n.* (HOLOTYPE: SEL).

DISTRIBUTION: Bolivia.

This species was collected in Bolivia by Fred Fuchs of Naranja, Florida, and Jorge Gutierrez, his long-time friend and local orchid enthusiast. A plant has been cultivated by Janet Kuhn in Easton, Connecticut.

The plant produces very fine secondary stems at short intervals from a rather stout creeping rhizome. The equally long elliptical leaves are profusely spotted with purple beneath. The hair-like peduncle produces two or three over-sized yellow flowers with purple markings. Each presents with four slender, pointed, forward projecting floral parts. The dorsal sepal and the opposite synsepal appear similar with revoluted margins even though the latter is deeply bifid. To either side protrude the long narrow petals with their single prominent stripe. The oblong lip has a pair of lateral lobes just below the middle.

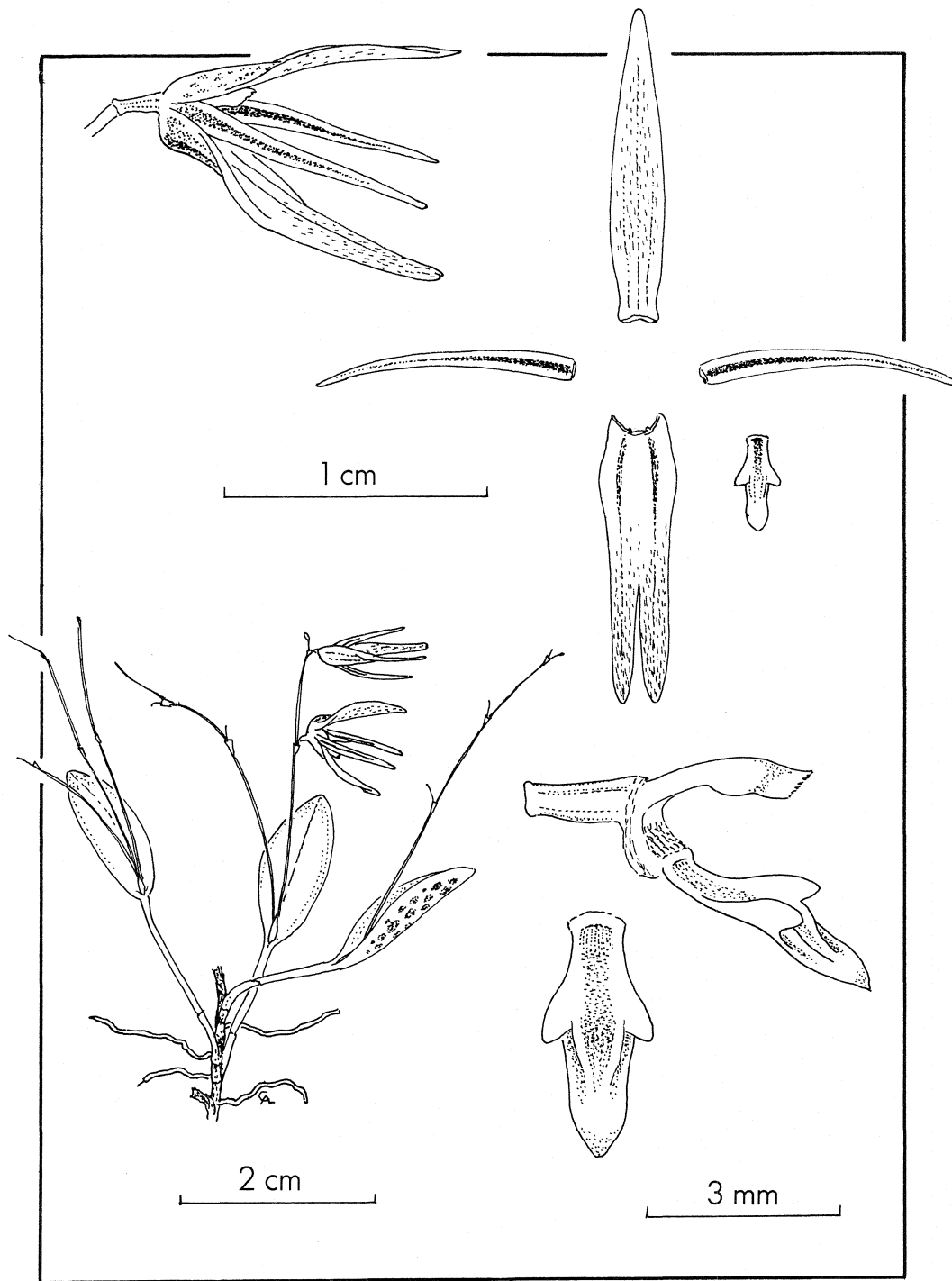


Figure 160. PLEUROTHALLIS GUTIERREZII C. A. Luer

***Pleurothallis guttata* C. Luer, sp. nov.**

Herba parva epiphytica caespitosa, caulibus secundariis brevibus vaginis absconditis unifoliatis, folio coriaceo elliptico apice rotundato emarginato base cuneato petiolato, racemo descendenti paucifloro, flores successivis, sepalis pellucidis purpureo guttatis, sepalo dorsali oblongo-ovato obtuso, synsepalo ovato cymbiformi bicarinato, petalis conspicuis purpureis obovatis acutis minute erosis, labello purpureo elliptico obtuso concavo serrato, columna longialata.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, 6-8 mm long, concealed by 1-2 tubular sheaths, unifoliolate. Leaf coriaceous, elliptical, obtuse to rounded, emarginate with a mucro in the sinus, the base cuneate into a short petiole about 1 cm long, the leaf 3-5 cm long, including the petiole, 15-22 mm wide. Inflorescence a descending, few-flowered (2-5) raceme, 3-6 cm long, the flowers produced singly and successively; peduncle slender, with a few distantly spaced bracts, from a node on the secondary stem; floral bract tubular, 2 mm long; pedicel 3 mm long; ovary green, flecked with purple, 2 mm long; sepals translucent pale yellow-green with irregular blotches of purple; dorsal sepal oblong-ovate, obtuse, concave, 9 × 4-6 mm, 3-veined; lateral sepals connate into an ovate synsepal, obtuse, emarginate, cymbiform, bicarinate, 8-10 × 5-6 mm; petals red-purple, obovate, acute, the margins minutely erose above the middle, 7-8 × 3 mm, 3-veined; lip red-purple, elliptical, navicular, the margins irregularly serrate, the apex narrowly obtuse and shortly deflexed, the base broadly hinged to the column-foot, 7-9 × 2.5-3 mm, 3-veined; column 3 mm long, with broad, long wings extending to the bottom of the short column-foot.

ETYMOLOGY: From the Latin *guttatus*, "spotted," in allusion to the conspicuously spotted sepals.

TYPE: PANAMA: PANAMA: epiphytic in the region of Cerro Jefe, alt. 1000 m, 15 Oct. 1967, *R. L. Dressler 3086* (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: PANAMA: PANAMA: epiphytic along the Altos de Pacora road, alt. 650 m, 4 March 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 1064* (SEL), flowered in cult. 16 Aug. 1976; epiphytic on Cerro Campana, alt. 1000 m, Aug. 1975, *R. L. Dressler s.n.* (SEL), flowered in cult. 2 Aug. 1976.

DISTRIBUTION: Panama.

This pretty little species grows in dense tufts of broad, blunt leaves. The inflorescence emerges from the side of the short secondary stem, rises within the sheath, if it is still intact, then immediately upon surpassing it, the apex descends and elongates to bear the flowers in slow succession either pendently or along the underlying tree bark. The purple-spotted sepals of the delicate flowers are translucent pale yellow-green so that the large maroon petals can be easily seen. Between them extends the relatively large, boat-shaped lip with serrated edges.

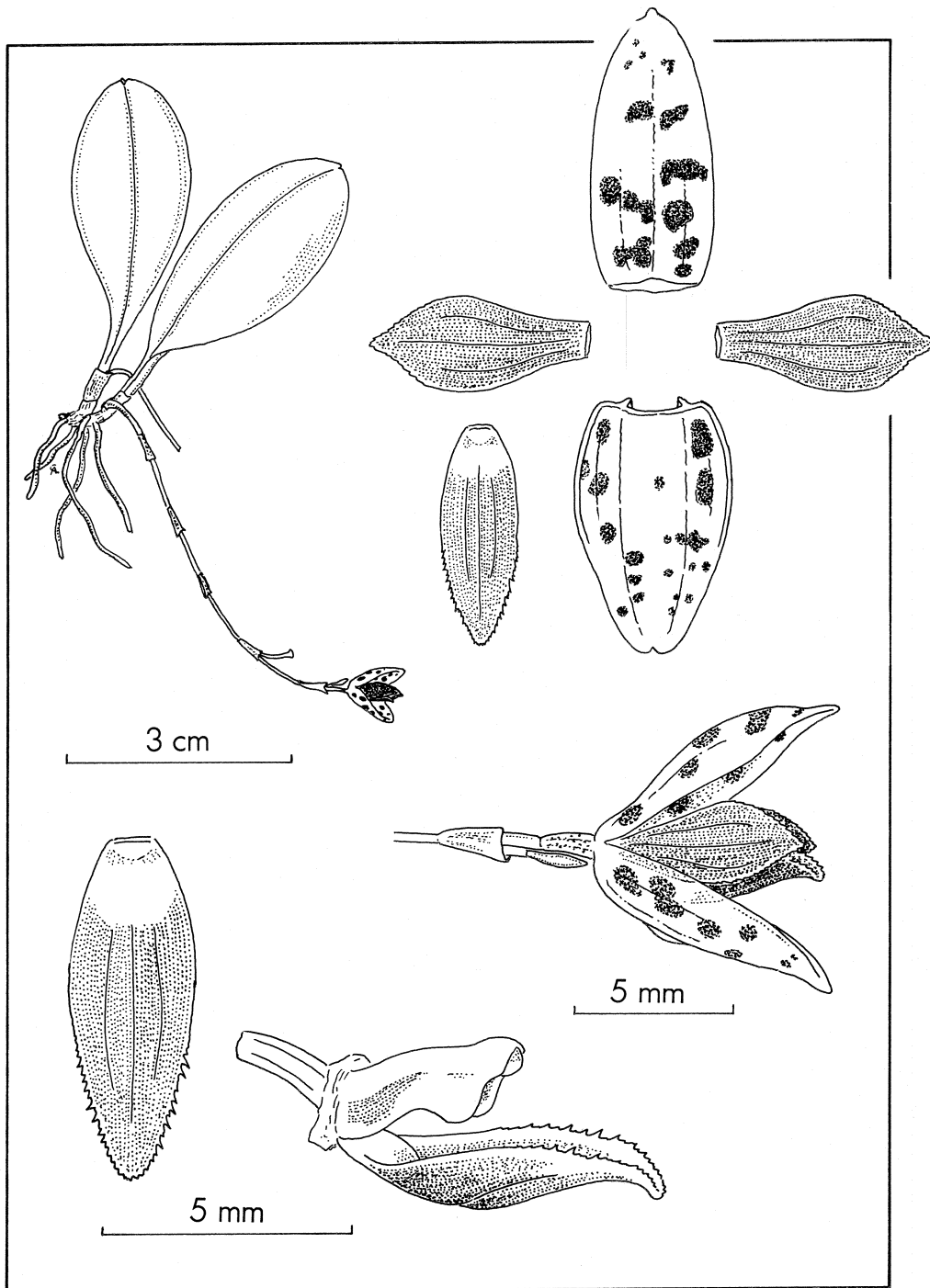


Figure 161. *PLEUROTHALLIS GUTTATA* C. A. Luer

**Pleurothallis heteropetala** C. A. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis teretibus brevibus unifoliatis, folio erecto coriaceo purpureo suffuso ovato acuminato acuto base rotundato, racemo brevissimo bi- vel trifloro, floribus carnosis chlorinis purpureo marmoratis, sepalo dorsali elliptico mucronato, synsepalo ovato bidentato denticulati-bicarinato, petalis oblongis obliquis obtusis basi unguiculatis in dimidio superiore verruculoso margine denticulato, labello crasso oblongo apice rotundato denticulato, basi late unguiculato, lobis lateralibus prope basin rotundatis lamellis crassis intramarginalibus.

Plant small, epiphytic, caespitose; roots filamentous, flexuous. Secondary stems slender, terete, 2-4 cm long, green to purple, the lower half covered by a loose sheath and a much smaller one below, unifoliate. Leaf erect, coriaceous, suffused with purple, ovate, acuminate, acute, tridenticulate, base cuneate to rounded, sessile, the mid-vein prominent dorsally, 4-6 × 1.6-2.1 cm. Inflorescence a short, 2-3-flowered raceme; flowers dull green marked with purple; peduncle 5-8 mm long, from a spathe, about 5 mm long, in the axil of the leaf; floral bract tubular, close-fitting, 2-3 mm long; pedicel 1.5 mm long; ovary green, 2 mm long; dorsal sepal elliptical, acute, 6 × 2.25 mm, 3-veined, the mid-vein prominent and slightly verrucose dorsally, mucronate; lateral sepals united to above the middle into an ovate, bidentate lamina, acute, 5.5 × 4 mm, 6-veined, bicarinate, the carinae toothed above the middle, rose within, mottled with purple toward the base; petals thick, oblong, curved, oblique, with unequal sides, apex obtuse to rounded, the base distinctly unguiculate, 3 × 1 mm, 2-veined, the upper half (opposite the lip) verrucose with a denticulate margin, yellow, marked with purple; lip green, thick, fleshy, oblong, the apex broadly rounded, minutely toothed, the base broadly unguiculate, from rounded, erect, lateral lobes just above the base, the disc thickened between, with a thick pair of intramarginal lamellae from the lateral lobes to above the middle, 3 × 2 mm, yellow, suffused with purple; column terete, red, the apex bidentate, 2.5 mm long, with a short foot. ETYMOLOGY: From the Greek *heteros*, "different, uneven," and *petalon*, "petal," in reference to the asymmetrical halves of the petals.

TYPE: *ECUADOR*: PASTAZA: epiphytic east of Río Negro in trees along the Río Pastaza, alt. ca. 1500 m, 18 March 1976, C. Luer, J. Luer & P. Taylor 675 (HOLOTYPE: SEL), flowered in cult. 1 June 1976.

DISTRIBUTION: Eastern Ecuador.

The small, stiff leaf of this distinctive species is ovate with a acuminate apex and a rounded base. The shorter stem is usually purple as well as the concave undersurface of the leaf which is coursed by a prominent mid-rib. A few small, green and purple flowers are borne successively in a very short raceme. The dorsal sepal is subcarinate, ending in a mucro. The lateral sepals are carinate and the carinae are toothed. The most distinctive feature is the asymmetrical petal which is distinctly petiolate, the contracture occurring at the expense of the upper half of the curved petal. This half is thickened and verrucose, and the margin is serrulate.

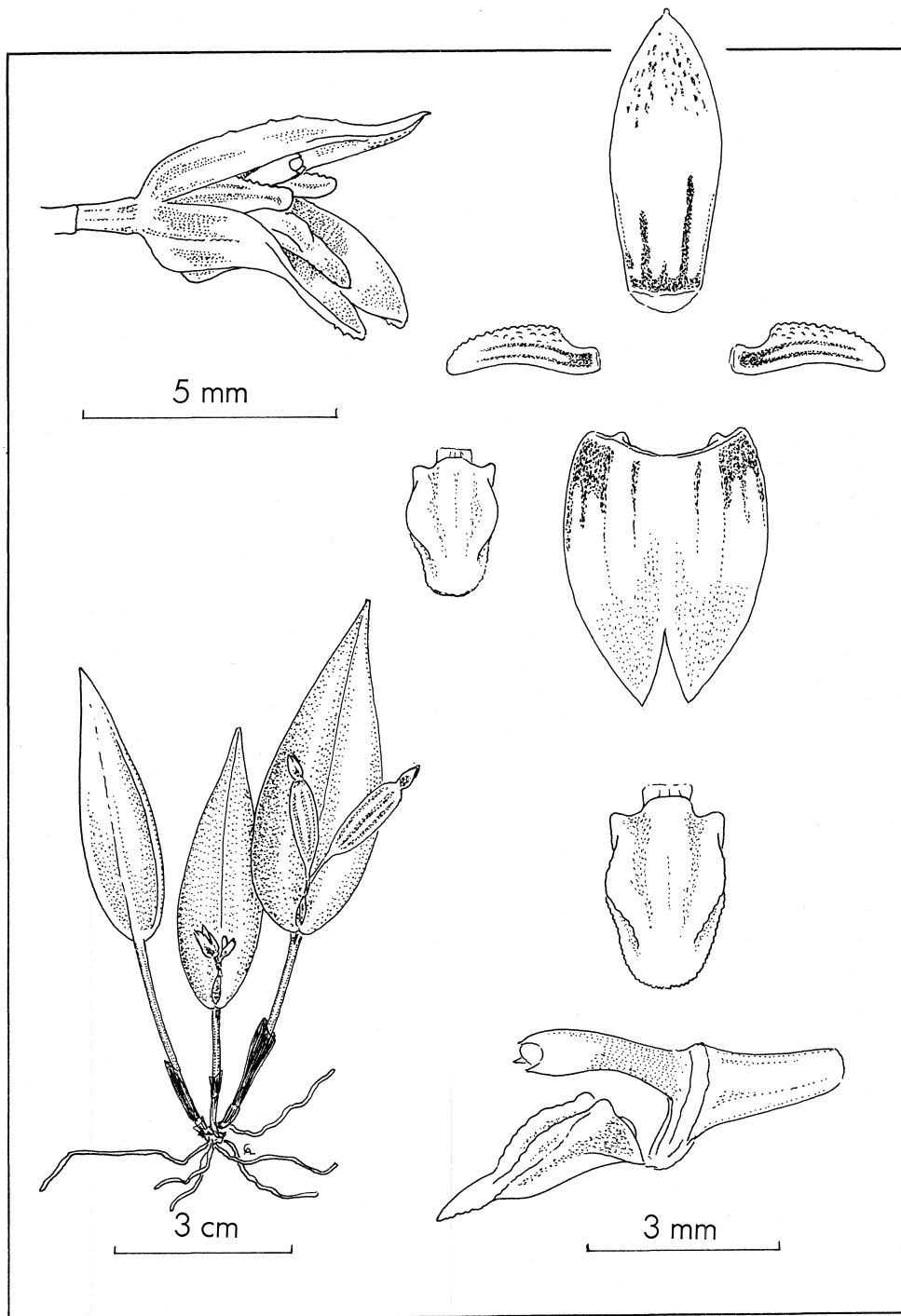


Figure 162. PLEUROTHALLIS HETEROPETALA C. A. Luer

***Pleurothallis humboldtiana*** C. A. Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis brevibus teretibus vaginis obtectis unifoliatis, foliis obovatis ellipticis obtusis anguste cuneatis petiolatis, racemo longo paucifloro, floribus atropurpureis cernuis, sepalo dorsali ovato acuminato acuto, synsepalo anguste triangulari obtuso, petalis ovatis serrulatis apicibus acuminatis anguste linearibus crassis, labello ovato indistincte trilobato, lobo antico triangulari subacuto denticulato, lobis lateralibus late rotundatis, base late unguiculata biauriculata, disco bilamellato verruculoso inter se.

Plant medium in size, epiphytic, caespitose to shortly creeping; roots filamentous, flexuous. Secondary stems ascending, terete, 2-4 cm long, largely concealed by a loose, brown, tubular sheath, with another 1-2 at the base, unifoliate. Leaf coriaceous, obovate to elliptical, obtuse, tridenticulate, base acuminate into a petiole 1-2 cm long, 6-9 cm long including the petiole and 2-2.5 cm wide. Inflorescence a loose, few-flowered (about 10), arching, distichous raceme about 20 cm long; flowers red-purple, gaping, nodding; peduncle slender, from a narrow spathe, about 1 cm long, at the base of the leaf; floral bract, pedicel, and ovary each about 5 mm long; dorsal sepal ovate, concave, acuminate, acute, 16 × 6 mm, 3-veined, mottled with red-purple below the middle, the spots confluent above the middle; lateral sepals completely connate into a narrowly triangular synsepal, obtuse, 15 × 3 mm, colored as the dorsal sepal; petals ovate below the middle, narrowed and serrate near the middle into a narrowly linear, thickened apex, 12 × 3 mm, verrucose externally; lip ovate, indistinctly 3-lobed, anterior lobe triangular, subacute, denticulate, flecked with purple, dilated below the middle into broad, rounded lateral lobes with confluent purple spots, the base broadly unguiculate, biauriculate, shortly hinged to the column-foot, disc with a pair of erect rounded lamellae near the middle, separated by transverse verrucose rows; column 4 mm long, anther bright yellow, ciliate, the column-foot pubescent, shallowly bifid.

**ETYMOLOGY:** Named in honor of Alexander von Humboldt (1769-1859), German scholar and naturalist, who with Bonpland traveled extensively in Ecuador and Peru during their exploration of the New World tropics (1799-1804), and contributed greatly to the botany of these lands.

**TYPE:** PERU: without specific location, *Fred Fuchs, Jr. s.n.* (HOLOTYPE: SEL), cultivated by Janet Kuhn.

**DISTRIBUTION:** Peru.

The secondary stem of *Pleurothallis humboldtiana* is shorter than the fleshy, obovate leaf. The long, arching raceme bears two rows of dangling, comparatively large, purple-mottled flowers. The dorsal sepal and the synsepal are acuminate and similar. The apices of the ovate, verrucose petals are thickened and linear-caudate. The ovate lip is dilated below the middle into rounded, upturned sides with a pair of curved lamellae between them. Above the middle the lip is subacute and denticulate.

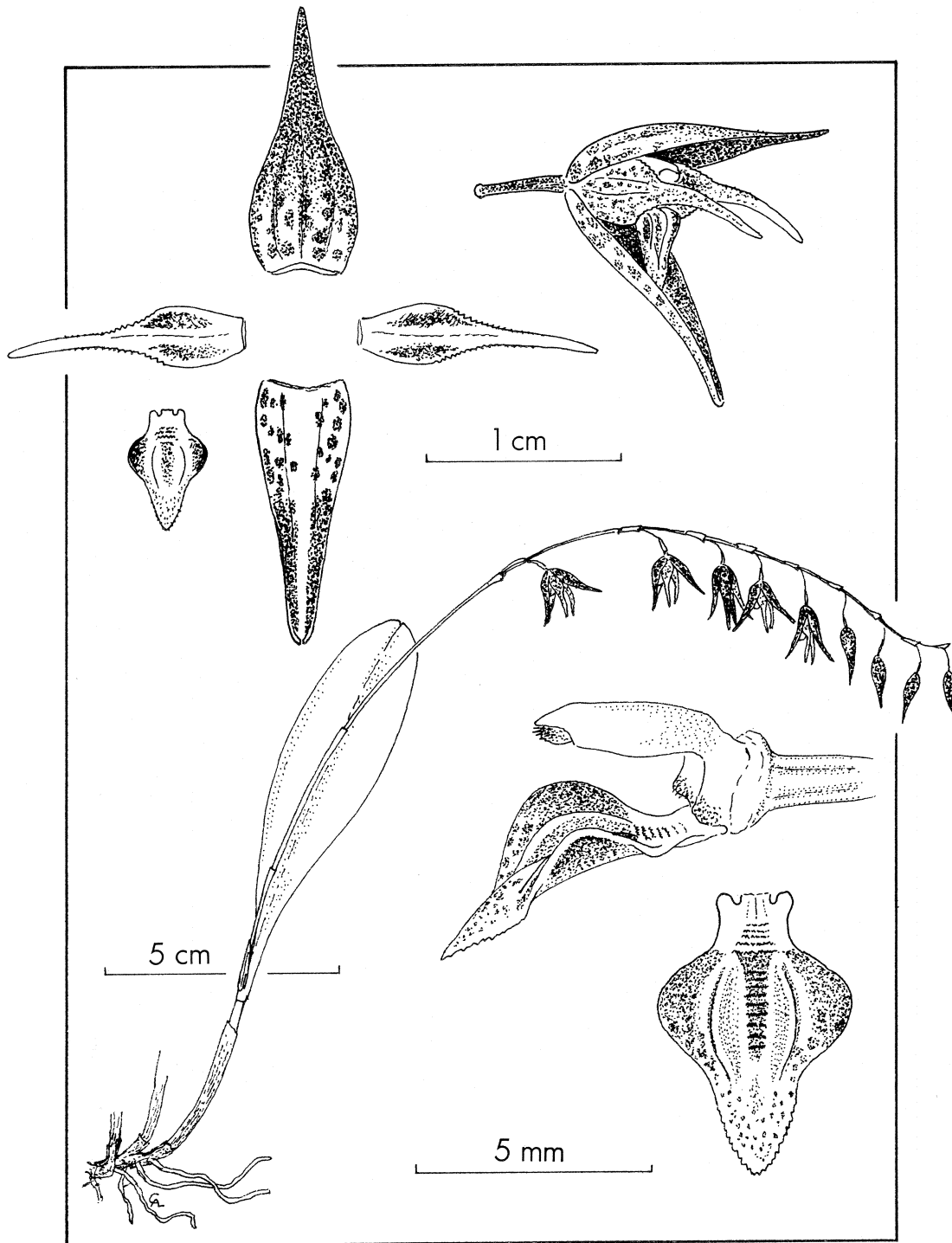


Figure 163. *PLEUROTHALLIS HUMBOLDTIANA* C. A. Luer



**Pleurothallis ignivomi** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8:129. 1921.

*Pleurothallis boliviana* Schltr., Repert. Spec. Nov. Regni Veg. 10:453. 1912; not Rchb. f.

*Pleurothallis pichincae* Schltr., l. c. 14:132. 1915; not Rchb. f.

*Pleurothallis buchtieni* Schltr., l. c. Beih. 10:66. 1922.

Plant epiphytic to terrestrial, medium to large, caespitose; roots slender, flexuous. Secondary stem slender, terete, up to 42 cm tall, with a long tubular sheath below the middle and 2 others basally, unifoliate. Leaf oblong to narrowly ovate, apex acuminate to acute, tridentate, base shallowly cordate, sessile, 10-18 × 3-4.5 cm. Inflorescence fasciculate, a large flower borne singly from a spathe up to 1.5 cm long from the axil of the leaf; floral bract tubular, 2-3 mm long; pedicel minutely pubescent, about 2.5 cm long; ovary also minutely pubescent, about 6 mm long; sepals yellow to yellow-green to yellow-brown, suffused and veined with red-brown, minutely pubescent externally; dorsal sepal elliptical, acute, 27 × 11 mm, 7-veined; lateral sepals connate into an ovate synsepal, subacute, 23 × 13 mm, 8-10 veined; petals linear-oblong, oblique, acute, 14 × 2.25 mm, 1-veined, smooth; lip red-purple, oblong, obtuse, apiculate, cellular erose above the middle, 7.5 × 4.5 mm, with a short blue ligulate depression basally, and shortly concave at the base at the attachment to the column-foot; column stout, 2 × 3 mm, with a bulbous foot 2 mm long.

**ETYMOLOGY:** From the Latin *ignivomus*, "volcanic" (from *ignis*, "fire" and *vomere*, "to vomit"), referring to the habitat (Volcan Pichincha) of the species.

**TYPE:** ECUADOR: PICHINCHA: "In sylvis occidentalibus montis Pichincha," Sept. 1899, A. Sodiro 9.

**DISTRIBUTION:** Ecuador, Peru, and Bolivia.

**ECUADOR:** PICHINCHA: terrestrial along the road cut between Quito and Santo Domingo between km 80 and 87, alt. 1500 m, 1 Nov. 1961, C. H. Dodson & L. B. Thien 1221 (SEL); 1 Feb. 1963, C. H. Dodson & L. B. Thien 2208 (SEL); 2 March 1975, C. H. Luer & R. Kent 309 (SEL); 10 March 1975, C. A. Luer & R. Kent 231 (SEL); 17 Aug. 1975, C. A. Luer, G. M. Luer, & S. Wilhelm 560 (SEL).

Schlechter's description and drawing of *Pleurothallis ignivomi* apply to this plant illustrated from Ecuador. It has been found in the same area where Sodiro collected the original material which was presumably destroyed in Berlin. Schlechter's *P. boliviana* (*P. buchtieni* Schltr.) also seems to belong here.

Although descriptions and pressed specimens of this species, *P. bivalvis* Lindl. and *P. grandiflora* Lindl. all seem deceptively similar, living plants are very distinct. Vegetatively the plants, which consist of slender stems supporting narrow, cordate leaves, are indistinguishable from many others in the section. The flowers, however, are large with broad, multi-veined sepals which vary in color from yellow-green to yellow-brown and veined with red. The narrowly oblong (not subulate) petals are smooth and yellow-green suffused with purple or brown; the oblong lip is deep red to purple.

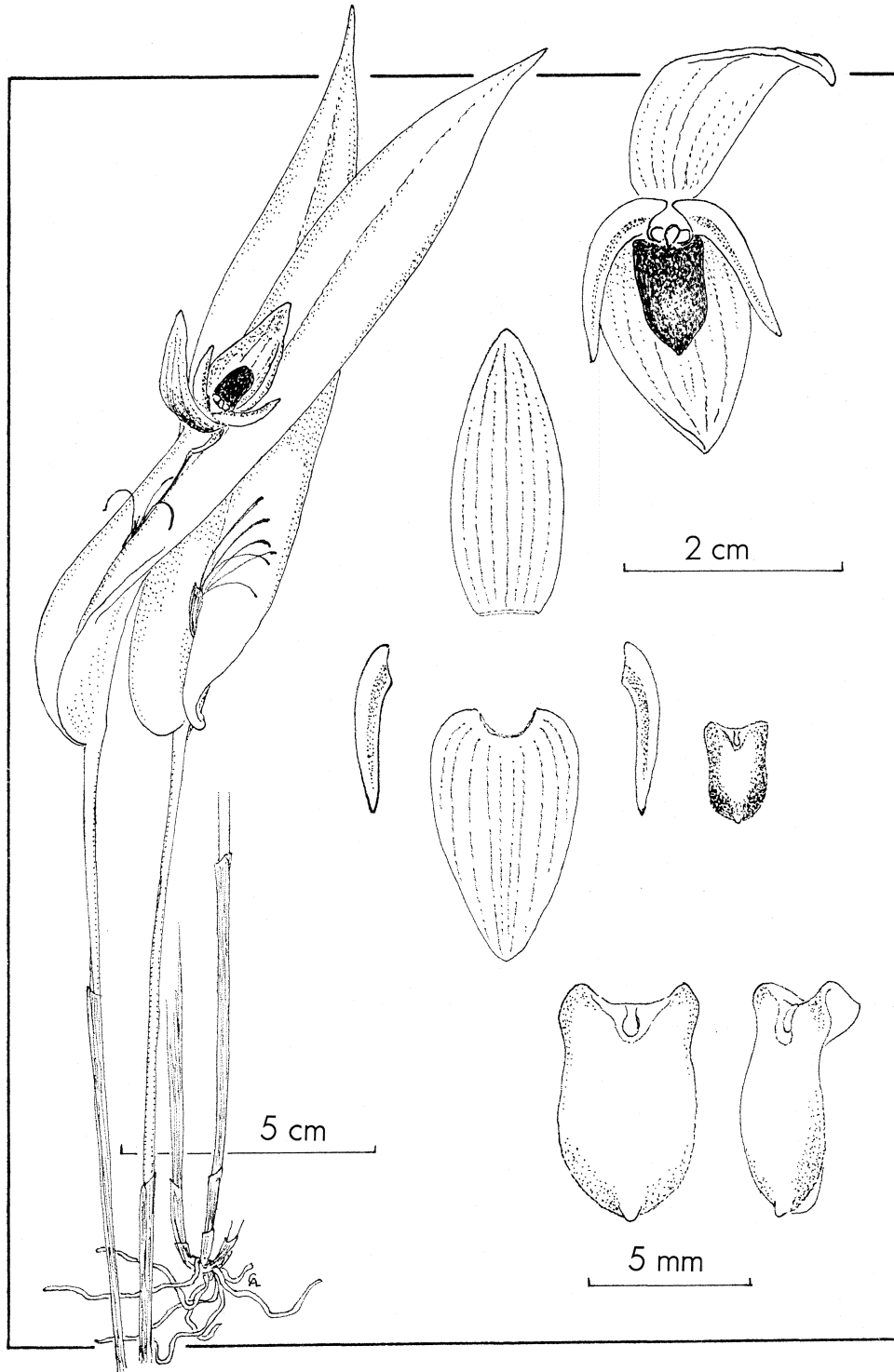


Figure 164. *PLEUROTHALLIS IGNIVOMI* Schltr.

**Pleurothallis immersa** Linden & Rchb. f., *Bonplandia* 3:224. 1855.

*Pleurothallis krameriana* Rchb. f., *Hamburger Garten-Blumenzeitung* 21:294. 1865.

*Humboldtia immersa* (Linden & Rchb. f.) Kuntze, *Rev. Gen. Pl.* 2:667. 1891.

*Humboldtia krameriana* (Rchb. f.) Kuntze, 1. c. 2:667. 1891.

*Pleurothallis lasiosepala* Schltr., *Repert. Spec. Nov. Regni Veg.* 11:43. 1912.

*Pleurothallis calerae* Schltr., 1. c. *Beih.* 19:184. 1923.

Plant large, epiphytic, caespitose; roots slender, fasciculate. Secondary stems stout, 1-4 cm long, concealed by 2 loose sheaths, unifoliate. Leaf erect, coriaceous, thick, obovate, the apex rounded to obtuse, retuse, the base cuneate, sessile, 7-15 X 3-5 cm. Inflorescence racemose, fractiflex, loosely many-flowered, to 25 cm long, the peduncle enclosed by the central sulcus of the leaf to near or above the middle of the blade; flowers orange, fleshy, gaping; floral bract tubular, 3 mm long; pedicel 5-8 mm long; ovary 2 mm long; sepals glabrous externally, pubescent within; dorsal sepal obovate, subacute, uncarinate, 12 X 4 mm; lateral sepals connate into an elliptical, concave, bicarinate, bidentate synsepal, forming a mentum with the column-foot, 11 X 6 mm; petals spatulate, thickened dorsally along the axis and protruding as a rounded, verruculose apex beyond the translucent wings, 5 X 3 mm; lip thick, yellow, oblong-ovate, the apex acute, minutely tuberculose, with broadly rounded, erect lateral lobes below the middle, the base biauriculate, the disc with a minutely verrucose thickening near the base and a pair of low calli from the lateral lobes toward the apex; column narrowly winged, denticulate, 5 mm long, with a short foot.

ETYMOLOGY: From the Latin *immersus*, "imbedded, or immersed," in reference to the peduncle which is imbedded in the central sulcus of the leaf.

TYPE: COLOMBIA: *Linden 552*.

DISTRIBUTION: Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela.

NICARAGUA: MATAGALPA: Bavaria Finca, alt. 125 m, *Heller 4088* (SEL).

PANAMA: CHIRIQUI: epiphytic in forest near the Río Chiriqui west of Volcan, alt. 1500 m, 10 Sept. 1976, *C. Luer & H. Butcher 1231* (SEL).

Although widespread from Mexico to Venezuela, this very distinctive species is infrequently encountered. Prior to this report, it had not been recorded from Nicaragua nor Panama. *Pleurothallis immersa* is a spectacular plant. The large, rigid leaves, widest and rounded at the apex, are borne on short, thick, secondary stems. The bright yellow-orange flowers are produced in a fractiflex raceme which arches well beyond the leaf.

A unique characteristic is the peduncle which originates from the apex of the secondary stem, but it is completely engulfed by the lower two-thirds of the median groove of the blade of the leaf until it finally emerges. There is no solid union because the sides of the leaf can be bent back so that the peduncle can be lifted from its encasement. This condition is not the same as that of *P. circumplexa* Lindl. and its allies in which the short peduncle also rises from near the middle of the leaf, but only because the sides of the leaf extend downward onto the secondary stem, thereby embedding the secondary stem within its substance.

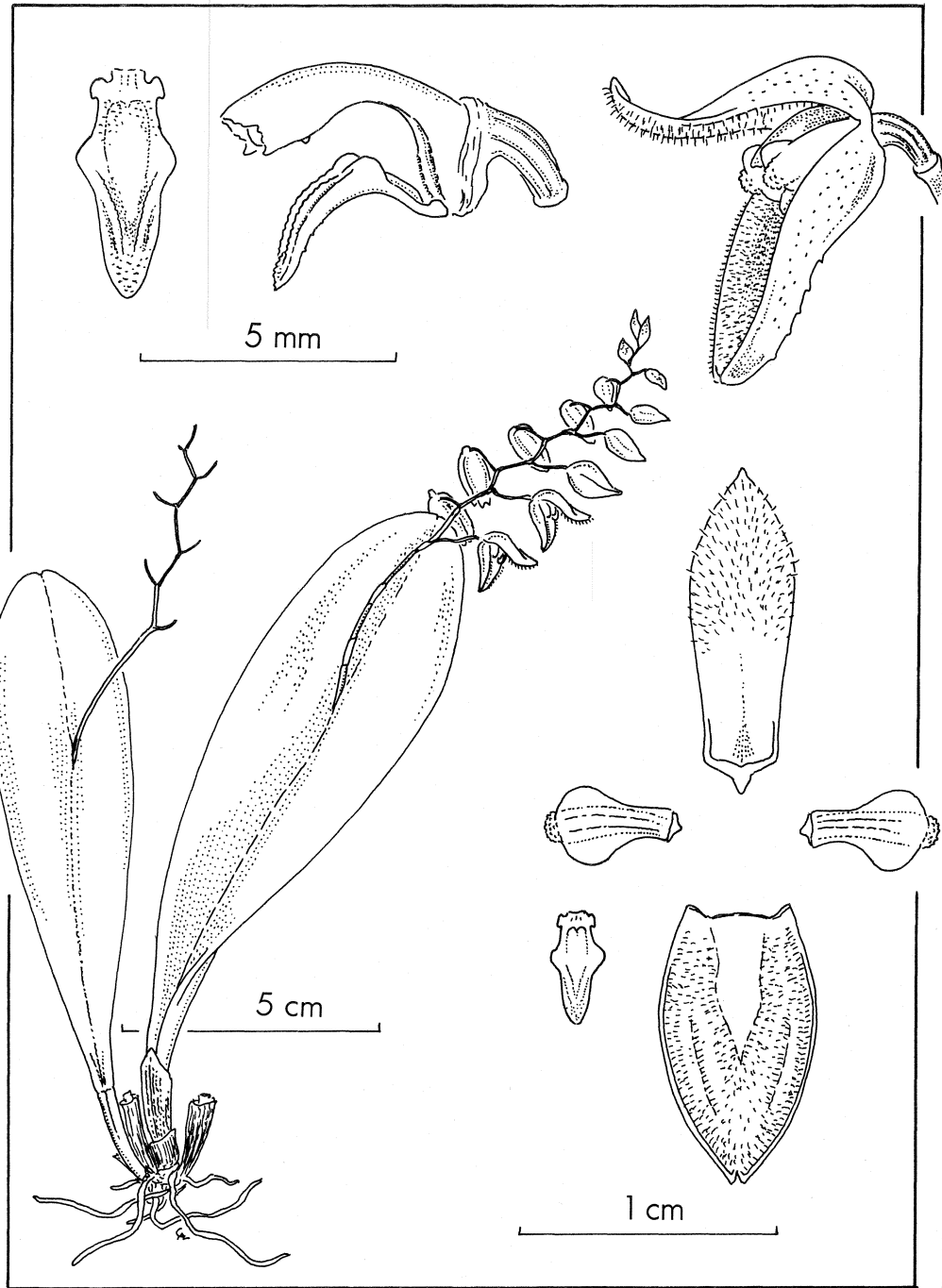


Figure 165. *PLEUROTHALLIS IMMERSA* Linden & Rchb. f.

**Pleurothallis intricata** Lindl., Orchid. Linden. 1. 1846.

*Humboldtia intricata* (Lindl.) Kuntze, Rev. Gen. Pl. 2:667. 1891.

Plant small, epiphytic, caespitose; roots filimentous, flexuous. Secondary stems slender, 10-18 mm long, concealed by about 4 imbricating, tubular costate, minutely scabrous, sheaths with dilated, acute apices, unifoliate. Leaf oblong, obtuse, tridenticulate, marginate, the base cuneate and shortly petiolate, the petiole about 2 mm long, the blade 8-10 × 3-4 mm. Inflorescence a loose flexuous, few-flowered raceme, 2-4 cm long, the peduncle from the apex of the stem; flowers widely spread, yellow-green to nearly white; floral bract about 1 mm long; pedicel 5-9 mm long; ovary 0.5 mm long; dorsal sepal ovate, concave, acuminate into a linear, subulate apex, 6.5 × 1.5 mm, 3-veined; lateral sepals very narrowly triangular, linear acuminate, connate basally, each 6 × 0.5 mm; petals elliptical, subacute, 1.75 × 1 mm, 1-veined; lip 3-lobed, 2 × 1.5 mm, middle lobe oblong, rounded, lateral lobes below the middle, erect, ovate, broadly rounded, oblique, base shortly unguiculate, disc with a minute pair of teeth near the middle; column terete 1.5 mm long with a very short foot.

ETYMOLOGY: From the Latin *intricatus*, "entangled, or intricate," probably in allusion to a tangled mass of roots, stems and racemes sometimes formed by the plant.

TYPE: VENEZUELA: MERIDA: Páramo de la Tulata, epiphytic, alt. 3300 m, August, *J. Linden 668* (HOLOTYPE: K).

DISTRIBUTION: Venezuela, Colombia, Panama, and Ecuador.

ECUADOR: TUNGURAHUA: epiphytic in mossy trees near Río Negro between Baños and Puyo, alt. 1200 m, 6 March 1963, *C. H. Dodson & L. B. Thien 2343* (SEL): PASTAZA: epiphytic in felled trees 20 km east of Puyo, alt. 500 m, 28 July 1975, *C. Luer, G. Luer & S. Wilhelm 659* (SEL).

PANAMA: PANAMA: epiphytic in vicinity of Cerro Jefe, alt. ca. 600 m, *R. L. Dressler 3557*.

*Pleurothallis intricata* is similar to several other species characterized by cauline lepanthiform sheaths. It may be recognized by its very small, sometimes proliferating habit, and illustrated as such by Foldats. The flexuous racemes of small, yellow flowers are considerably longer than the leaves, the sepals are diverging and long-attenuate, the petals are short, subacute and entire, and the 3-lobed lip has a pair of minute, inconspicuous teeth near the middle of the disc. This species may be distinguished from *P. cedralensis* Ames which has progressively proliferating stems, short racemes, and lips which lack the teeth on the disc. It may be distinguished from *P. multicuspidata* Rchb. f. which has narrower leaves, proliferating stems, and lips which also lack the microscopic teeth.

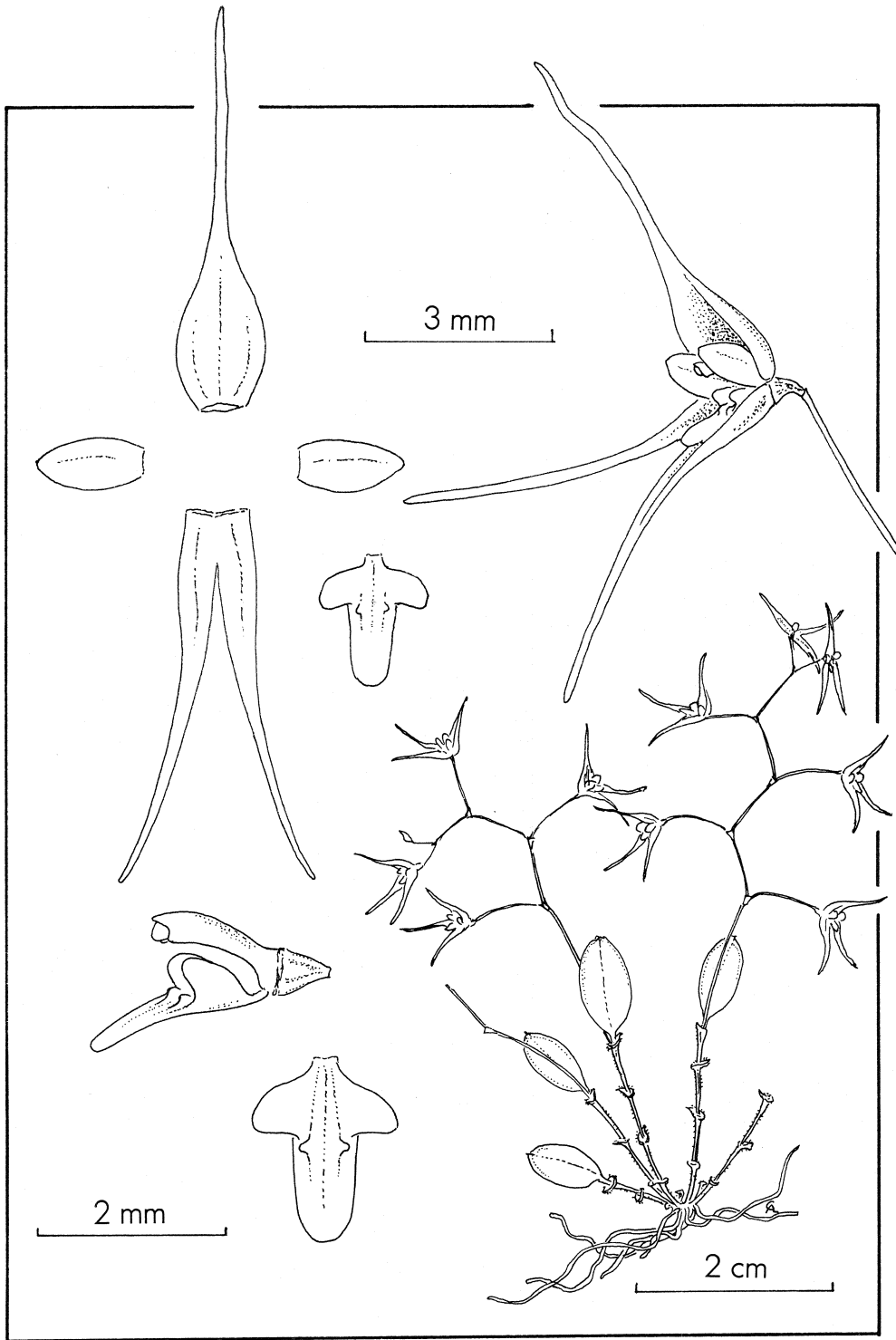


Figure 166. PLEUROTHALLIS INTRICATA Lindl.

**Pleurothallis iota** C. A. Luer, sp. nov.

Herba perparva epiphytica repens, caulibus secundariis abbreviatis unifoliatis, foliis coriaceis anguste obovatis obtusis tridenticulatis basi anguste cuneatis, racemo brevi paucifloro flexuoso floribus singularibus successivis, flore rictu aurantiaco, sepalo dorsali ovato acuto carinato, sepalis lateralibus libris ellipticis obliquis breviter acuminatis acutis, petalis ellipticis apicibus acuminatis subulatis serrulatis, labello aurantiaco purpureo limbato trilobato obovato apice breviter acuminato, lobis lateralibus infra medium erectis parvis late triangularibus obliquis, disco crassissimo.

Plant very small, epiphytic, repent, the primary stem producing a secondary stem about every 3-5 mm; roots few, slender, flexuous. Secondary stems abbreviated, 3-5 mm long, with 1-2 short, tubular, fugacious sheaths, monophyllous. Leaf coriaceous, narrowly obovate, obtuse, tridenticulate, base narrowly cuneate, subpetiolate, 15-40 X 3-5 mm. Inflorescence a solitary raceme, flexuous, few-flowered, shorter to slightly longer than the leaf, flowering singly and successively, the flower ringent, orange; peduncle from a node on the secondary stem; floral bract infundibular, 1.5 mm long; pedicel 1.5 mm long; ovary 1 mm long; dorsal sepal narrowly ovate, acute, carinate, 5.5 X 2 mm, 3-veined; lateral sepals free, elliptical, oblique, shortly acuminate, acute, 5 X 2 mm, with a red spot at the base; petals elliptical with an acuminate, subulate apex, the margins microscopically serrulate, 4 X 1 mm 1-veined; lip orange, edged in purple, 3-lobed, obovate, the apex shortly acuminate, acute, below the middle with a small pair of lateral lobes, erect, broadly triangular, oblique, acuminate, acute, the base truncate and narrowly hinged to the column-foot, disc with a parallel pair of low calli, thickened toward the base into a backward protruding callus; column terete, 2 mm long, the clinandrium denticulate, the foot 1 mm long.

ETYMOLOGY: From the Greek letter *iota*, commonly meaning something little.

TYPE: *ECUADOR*: without specific locality *Janet Kuhn s.n.* (HOLOTYPE: SEL), flowered in cult. 20 Oct. 1975.

DISTRIBUTION: Ecuador.

This dwarf species appears similar to *Pleurothallis brevipes* Focke and *P. polygonoides* Griseb., but the pointed petals are minutely serrate, and the lip is different in its obovate shape with an irregular purple border and thick posteriorly protruding callus, and without basal lobules.

A creeping, branching rhizome gives rise to the short secondary stems and the narrow leaves. From a lateral node on the stem a short few-flowered, fractiflex raceme bears the flowers singly in a slow succession as the rachis gradually lengthens.

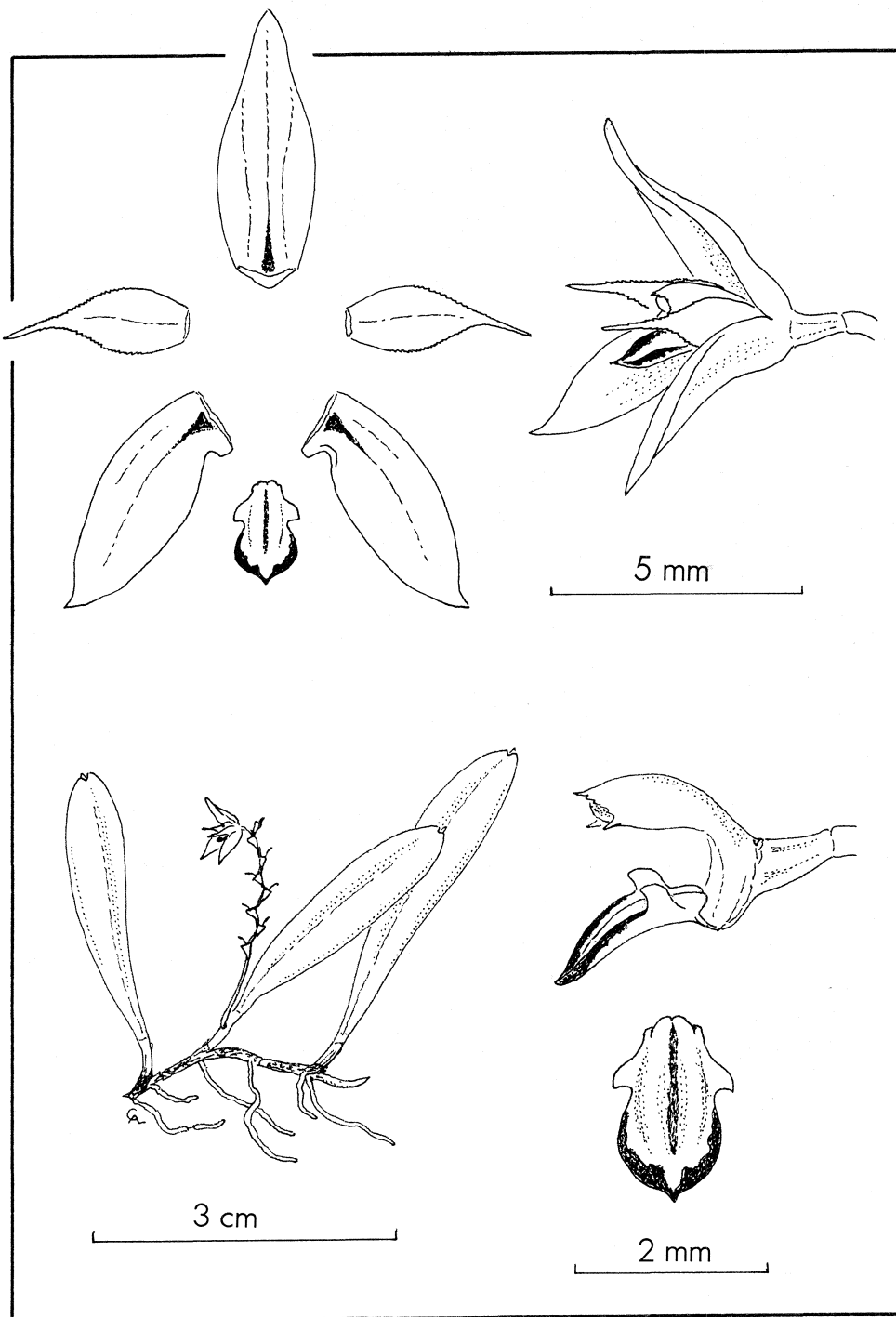


Figure 167. PLEUROTHALLIS IOTA C. A. Luer



***Pleurothallis kuhnae* C. A. Luer, sp. nov.**

Planta pusilla epiphytica caespitosa, caulibus secundariis gracilibus erectis unifoliatis vaginis longis tubulatis obtectis, foliis coriaceis ellipticis acutis cuneatis subsessilibus, racemis paucis flexuosis elongatis multifloris, floribus roseis singularibus successivis, bracteis pedicellis aequilongis, sepalis libris ovatis acutis, lobis lateralibus base connatis mentum formantibus, petalis linearibus acutis ciliatis, labello oblongo apice rotundato, infra medium ciliato, base lobulis pedunculatis, disco callo crateriformi.

Plant very small, epiphytic, caespitose; roots filiform, flexuous. Secondary stems slender, erect, 15-25 mm long, concealed by 2-3 long, tubular, longitudinally ribbed, rather loose fitting sheaths, unifoliolate. Leaf coriaceous, deep green, suffused with purple, narrowly elliptical, acute, tridenticulate, base cuneate, sessile to indistinctly short-petiolate, 23-32 × 6-7 mm. Inflorescence racemose, 1-3 elongating, flexuous racemes, 10-30 mm long; peduncles from the apex of the stem; flowers small, rose and white, produced singly and successively over a long period of time; floral bract, pedicel, and ovary each about 1 mm in length; sepals pink above the middle, white below, ovate, acute; dorsal sepal 3 × 1.5 mm; lateral sepals slightly oblique, united basally to form a mentum, 2.5 × 2.25 mm together; petals white, suffused with pink, linear, curved, acute, margins ciliate, 2.25 × 0.6 mm; lip maroon, oblong, apex rounded, yellow, microscopically pubescent, margins ciliate below the middle, the base narrowly hinged to the column-foot, flanked by a pair of pedunculated lobules, disc with a minute cup-shaped callus at the base; column pale yellow-green, broadly winged, clinandrium denticulate, 1.5 mm long, with a short, pubescent foot.

ETYMOLOGY: Named in honor of Janet Kuhn of Easton, Connecticut, who, with Fred Fuchs, collected this species on a trip to Peru.

TYPE: *PERU*: without exact locality, *Janet Kuhn s.n.*

DISTRIBUTION: Peru.

Since its discovery in Peru, this little species has been successfully cultivated in Connecticut by Janet Kuhn. It seems to be most closely related to *Pleurothallis breviscapa* C. Schweinf., which is a larger plant with short secondary stems.

The minute *P. kuhnae* is distinguished by its slender secondary stems which equal the leaves in length. The raceme is continually in flower, producing one, or occasionally two, little pink flowers in slow succession as the rhachis gradually increases in length until it surpasses the leaf. The minute floral bracts are conspicuous, which accentuates the flexuous character of the tiny rhachis. The flowers are similar to, but only half the size of those of *P. breviscapa*. The maroon and yellow lip, furnished with similar basal lobules, is destitute of lateral lobes.

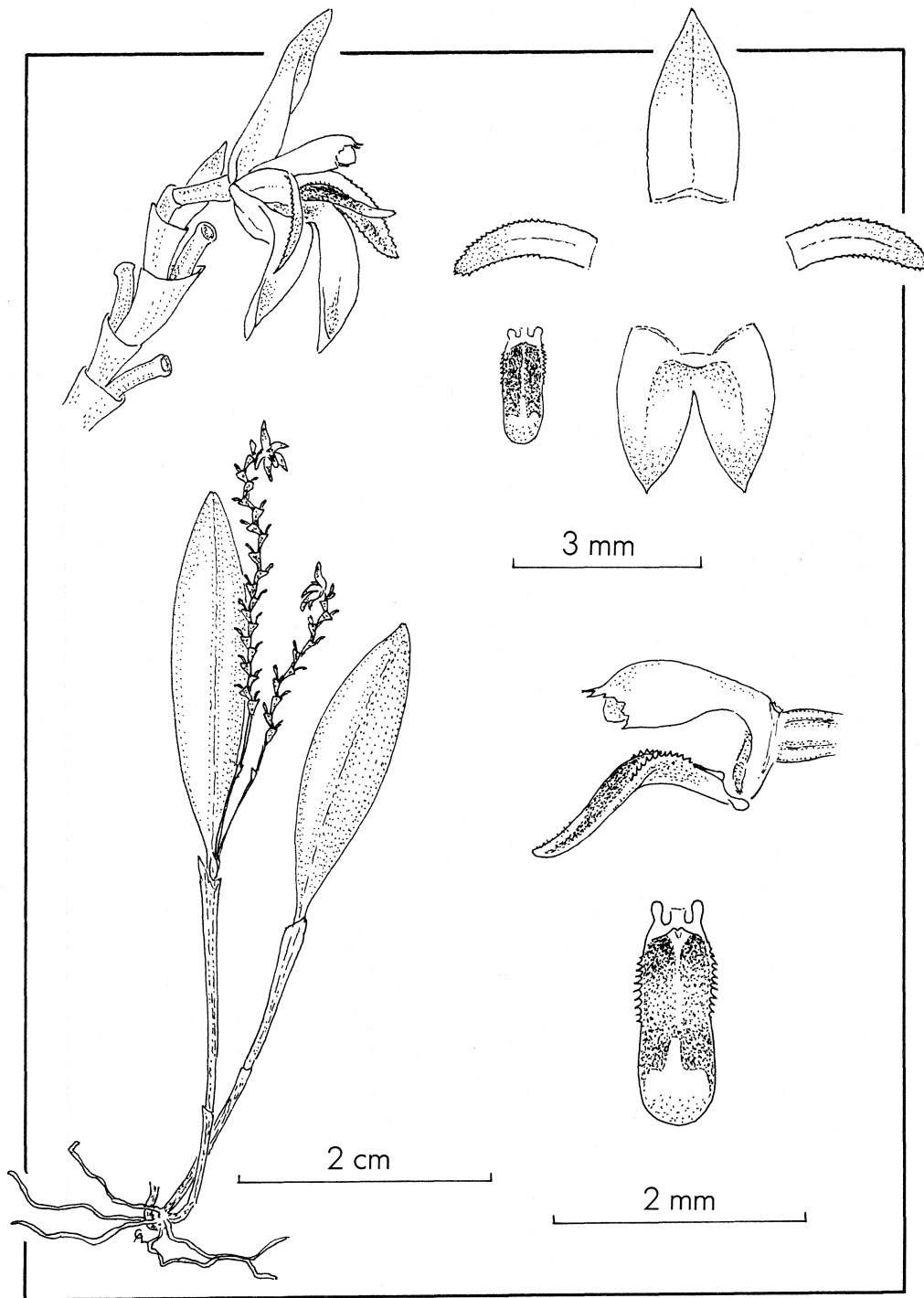


Figure 168. PLEUROTHALLIS KUHNAE C. A. Luer

**Pleurothallis lenticularis** Luer, sp. nov.

Planta parvula epiphytica caespitosa, caulibus secundariis lepanthiformibus unifoliatis prolificis, foliis peripavis crassis lenticularibus paginis inferioribus purpureis ellipticis obtusis breviter petiolatis, racemo folio plus minusve longiore laxe bi- vel trifloro, floribus roseis solitariis successivis, sepalis libris anguste longicaudatis carinatis, petalis nanis ellipticis subacutis, labello obscure trilobato, lobo antico oblongo obtuso, lobis lateralibus infra medium rotundatis, disco bilamellato.

Plant very small, epiphytic, caespitose; roots filamentous, flexuous. Secondary stems slender, erect, 1-3 cm long, concealed by 2-4 imbricating, tubular, costate sheaths with dilated, oblique, acute, ciliated ostia, unifoliate, often prolific. Leaf thick, both surfaces convex, under surface purple, elliptical, obtuse, tridenticulate, base rounded, with a short petiole about 1.5 mm long, the blade 8-12 × 5-8 mm. Inflorescence a loose, few-flowered (2-3) raceme, 1.5-2.5 cm long; flowers rose, produced singly; peduncle capillary from near the apex of the secondary stem; floral bract tubular, 1 mm long; pedicel slender, 3 mm long; ovary 0.5 mm long; sepals translucent pale pink with rose-colored stripes, acuminate, long-aristate; dorsal sepal elliptical and concave below the middle, 10 × 2 mm, tricarinate; lateral sepals narrowly triangular, united basally to form a shallow mentum with the column-foot, 10 × 2.5 mm together, bicarinate; petals elliptical, slightly oblique, subacute, 3 × 1.3 mm; lip red, the apical lobe pink, obscurely 3-lobed, anterior lobe oblong, apex rounded, the lateral lobes below the middle, rounded, curved upward, with a pair of erect, rounded lamellae near the margins, base shortly unguiculate, 3.5 × 1.5 mm; column terete, 2 mm long, with a short foot.

ETYMOLOGY: From the Latin *lenticularis*, "having the shape of a double-convex lens," in reference to the configuration of the leaf.

TYPE: ECUADOR: ZAMORA-CHINCHIPE: epiphytic near km 15 between Loja and Zamora, alt. ca. 2200 m, collected 7 Aug. 1975, C. Luer, G. Luer & Wilhelm 653 (HOLOTYPE: SEL), flowered in cult. 6 Feb. 1976, greenhouse acc. no. 44-75-442 and 437.

DISTRIBUTION: Ecuador.

This minute, lepanthiform-stemmed species inhabits the mossy twigs of the stunted trees in the cold, wind-blown pass between Loja and Zamora. Plants collected there in August, flowered the following February in the cool, air-conditioned greenhouse of the Marie Selby Botanical Gardens.

The plant is most remarkable in the appearance of the thick, little, oval leaves which, when mature, are doubly convex and purple beneath. Immature leaves are concave beneath, but they soon become inflated. The rose-pink flowers are large for the plant, the long-attenuate sepals each measuring a centimeter in length. The petals are small, blunt and entire. The anterior lobe of the obscurely three-lobed lip is ligulate, the lower pair is small and rounded with an adjacent pair of lamellae.

*Pleurothallis lenticularis* is similar to *P. intricata* Lindl., *P. roraimensis* Rolfe, and *P. scabridula* Rolfe, all of which bear simultaneously several yellow flowers that are much smaller.

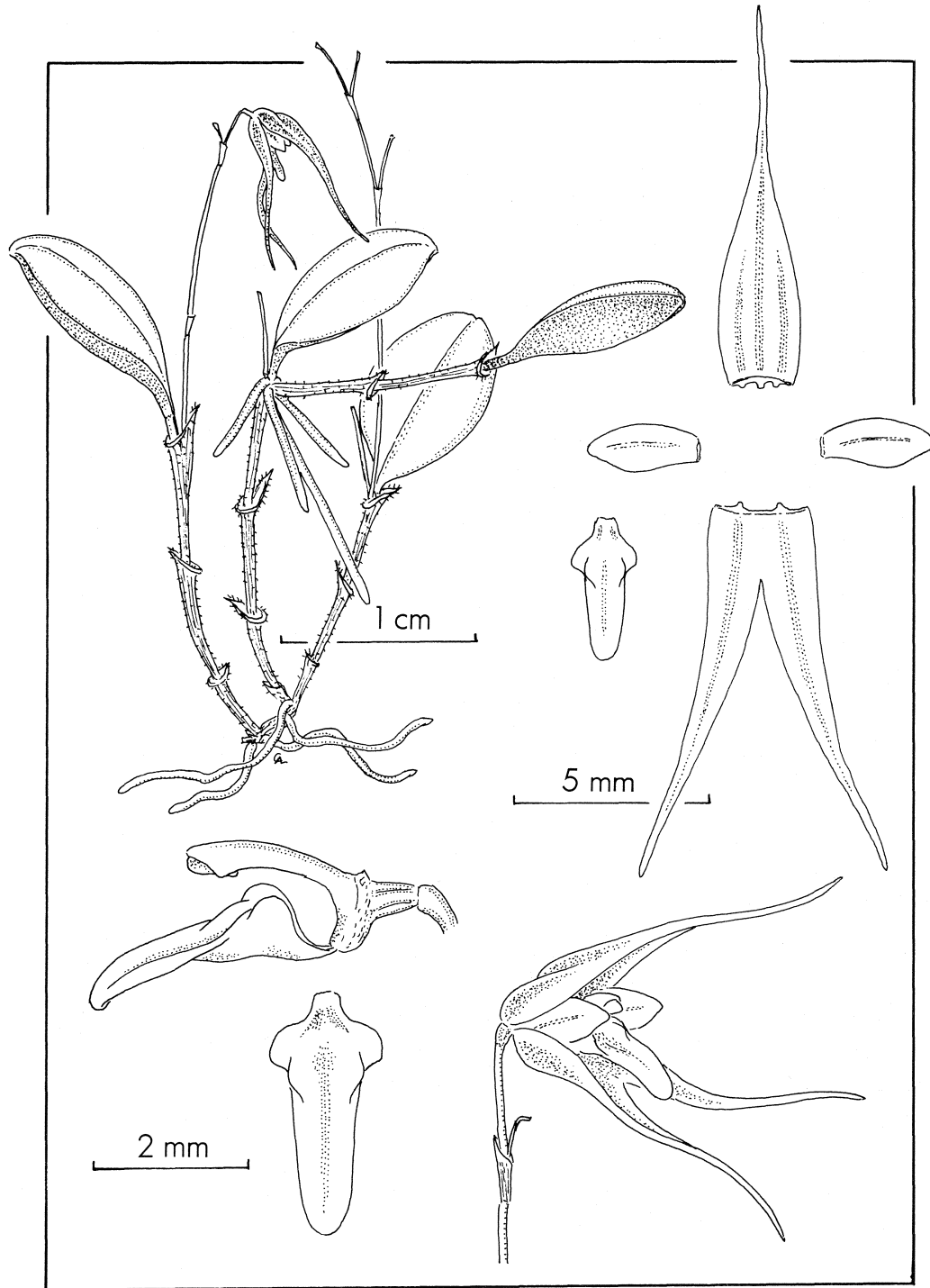


Figure 169. *PLEUROTHALLIS LENTICULARIS* C. A. Luer

**Pleurothallis linguifera** Lindl., Folia Orchid. Pleuroth. 10, 1859.

*Humboldtia linguifera* (Lindl.) Kuntze, Rev. Gen. Pl. 2:667. 1891.

*Pleurothallis sigsigensis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8:63. 1921.

*Pleurothallis fuscata* Braid, Kew Bull. 200. 1940.

*Pleurothallis juninensis* Schltr. var. *subaequisepala* C. Schweinf., Bot. Mus. Leaflet. 16:52. 1953.

Plant medium to large, epiphytic to terrestrial, caespitose; roots slender, fasciculate, flexuous. Secondary stems slender, terete, up to 35 cm tall, with a close, tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf erect to spreading, coriaceous, ovate to narrowly ovate or oblong, shortly acuminate, acute, tridenticulate, base cordate, 5-10 × 2.5-4 cm. Inflorescence fasciculate; flowers single, successive, bilabiate, glabrous, yellow and brown to red-brown, from a spathe about 1 cm long at the base of the leaf; pedicel, floral bract, and ovary each about 5 mm long; dorsal sepal elliptical, acute, 10-12 × 4-5 mm, 3-veined; lateral sepals united into an ovate, acute synsepal, 9-11 × 6-7.5 mm, 4-veined; petals linear to very narrowly ovate, acute, margins minutely erose, 4-5 × 1 mm, 1-veined; lip oblong, ligulate, apex obtuse to rounded, base shallowly concave, the margin and surface microscopically colliculate, 6 × 2.5-3 mm; column stout, 2 × 2.5 mm.

ETYMOLOGY: From the Latin *lingua*, "tongue," and *fero, ferre*, "to bear," in reference to the tongue-shaped lip borne by the flower.

TYPE: BOLIVIA: without specific locality, *Bridges s.n.* (HOLOTYPE: K).

DISTRIBUTION: Bolivia, Peru, Ecuador, Colombia, and Venezuela.

ECUADOR: AZUAY: terrestrial among scrub vegetation 10 km southeast of Sigsig, alt. 3200 m, 3 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 414* (SEL); LOJA: lithophytic near km 45 between Loja and Saraguro, alt. 2600 m, 15 Sept. 1961, *C. H. Dodson & L. B. Thien 588* (SEL); near km 12 between Loja and Zamora, alt. 2800 m, 28 Sept. 1961, *C. H. Dodson & L. B. Thien 755* (SEL); ZAMORA-CHINCHIPE: terrestrial on the roadside near km 25 between Loja and Zamora, alt. 2000 m, 5 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 650* (SEL), greenhouse no. 44-75-288; same area, *G. Kennedy s.n.* (SEL), greenhouse nos. 30-74-233 and 30-74-326.

This species enjoys a wide distribution in the Andes. *Pleurothallis linguifera* is characterized by its oblong, acuminate leaf which is borne more or less erect at the apex of the stem. The base is distinctly cordate, but not deeply so. The flowers are relatively large, but far from the largest. The sepals are narrow compared to *P. cordata* (Ruiz & Pav.) Lindl. and its allies. Lindley described the base of the slender petal as auriculate, and Foldats relies upon this feature as an important criterion for identification, but in the Ecuadorean specimens this characteristic is unreliable. Many of the allied species possess an auriculate base of the petal, which is minimal in the plant figured.

Lindley also refers to "an oblong tubercle beneath the point of the tongue-shaped lip," but this feature is present in the majority of the allied, cordate-leaved species. He calls the lip "not at all scabrous." The surface of the oblong lip is minutely colliculate, and these cells may be proliferated into a microscopically cobble-stoned surface, but this is glabrous to the naked eye.

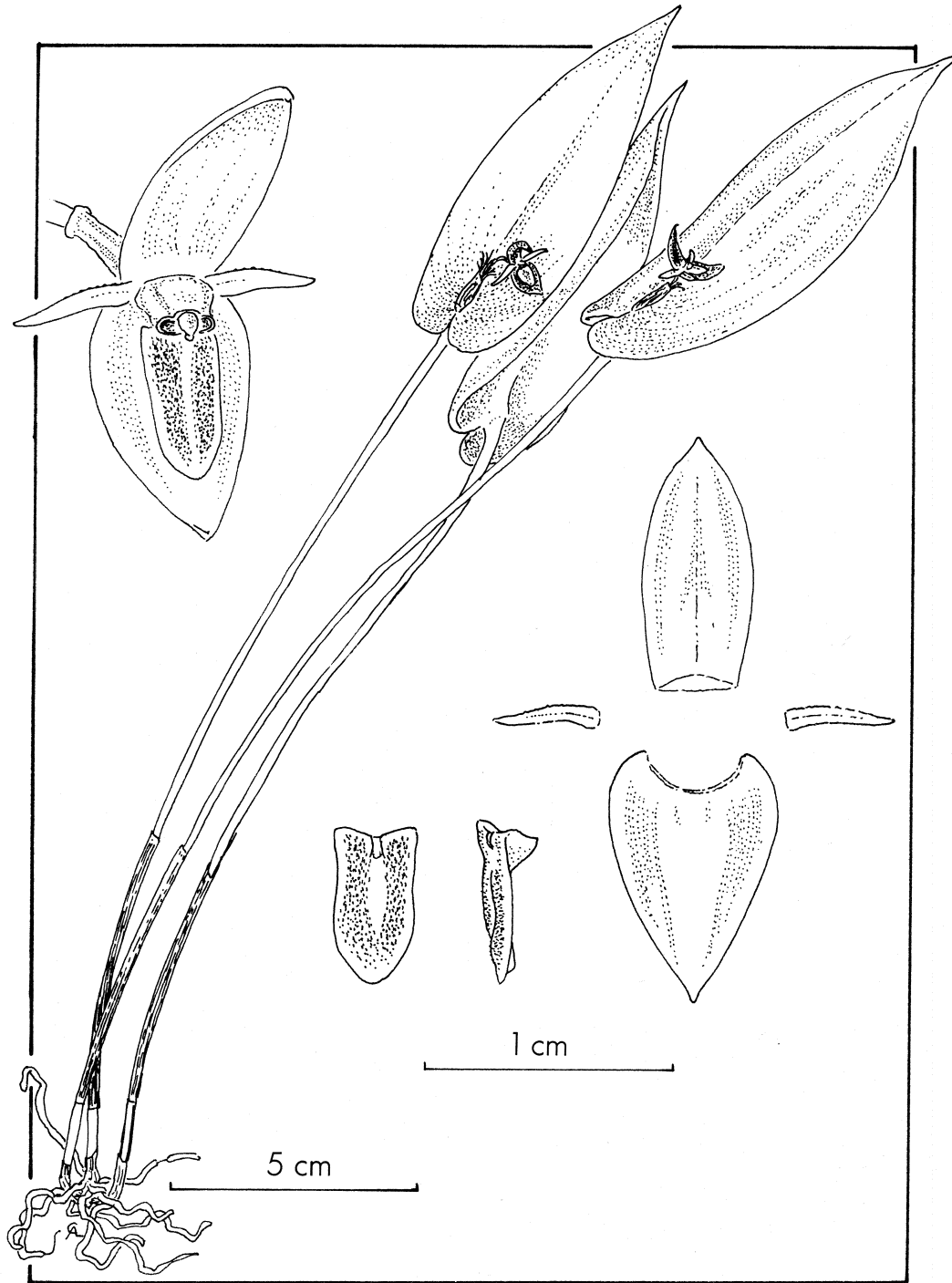


Figure 170. PLEUROTHALLIS LINGUIFERA Lindl.

**Pleurothallis luctuosa** Rchb. f., *Linnaea* 41:48. 1877.

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

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 3.5-8 cm long, with 2-3 close fitting tubular sheaths below the middle, unifoliate. Leaf very narrowly elliptical to fusiform, attenuate, acute, minutely apiculate, base narrowly cuneate, sessile, 6-10 × 0.5-1.5 cm, commonly a little longer than the stem. Inflorescence a weak, loosely-, few-flowered (2-6) raceme, slightly shorter to slightly longer than the leaf; peduncle filiform, from a narrow spathe about 8 mm long at the base of the leaf; flowers purple, widely spread; floral bract tubular 2-4 mm long; pedicel 5-7 mm long; ovary 2.5-3.5 mm long; dorsal sepal narrowly ovate, acuminate, 16-20 × 3-4 mm, 3-veined; lateral sepals united to the apex concave basally, the apex acuminate, 17-20 × 3-5 mm, 4-veined; petals oblong-ovate, slightly falcate, acute, 6-9 × 1.5-2 mm, 3-veined, margins minutely denticulate; lip fleshy, broadly triangular, 2.5-3 × 2.5 mm, 3-veined, the apex red, bluntly acute, microscopically erose, basal angles (lobes) yellow-green, broadly rounded and curved up, base broadly and shortly unguiculate and concave, disc with a shallow, circular depression near the middle; column 1.5 mm long, with a short foot.

ETYMOLOGY: From the Latin *luctuosus*, "sad, sorrowful" (from *luctus*, "sorrow"), so named by Reichenbach because, as the first flowers opened for study, he received the news of the death of his friend, the collector.

TYPE: COSTA RICA: *Endres s.n.*

DISTRIBUTION: Nicaragua, Costa Rica, Colombia, and Ecuador.

COLOMBIA: *F. L. Stevenson, s.n.* (SEL).

ECUADOR: PICHINCHA: epiphytic along the Río Palenque near km 28 between Santo Domingo and Quevedo, alt. 500 m, 27 Oct. 1961, *Dodson & Thien 1135* (SEL); epiphytic in old citrus grove, 15 km east of Santo Domingo, alt. 800 m, 16 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 528* (SEL).

NICARAGUA: RIVAS: Madera Volcano, Lake Nicaragua, alt. 1300 m, *A. H. Heller 8013* (SEL).

Reichenbach described this species from a plant cultivated in the Hamburg Botanic Garden, but the country of origin was not stated in the original description. In 1900, years after his death, the third volume of his *Xenia Orchidaceae* was published under the direction of Kränzlin. On page 16 it is acknowledged by Reichenbach that *Pleurothallis luctuosa* was cultivated from plants which had been sent to him from Costa Rica by Endres. He states that he named the plant *luctuosa* because just as the first flowers began to open, he received the news of the collector's death.

Heller found the species in Nicaragua. Recent discoveries of this species in Colombia and Ecuador extend the range of this heretofore Central American species onto the South American continent. This is also the first report of the species north of Costa Rica.

*Pleurothallis luctuosa* is a distinctive and beautiful little species characterized by its small stature and long slender leaves. The raceme of a few, widely spaced, bright purple flowers is attractive. The very slender dorsal sepal and the similar, opposite synsepal spread nearly 180° from each other. The minutely toothed petals are held down along the sides of the synsepal to either side of the little triangular lip.

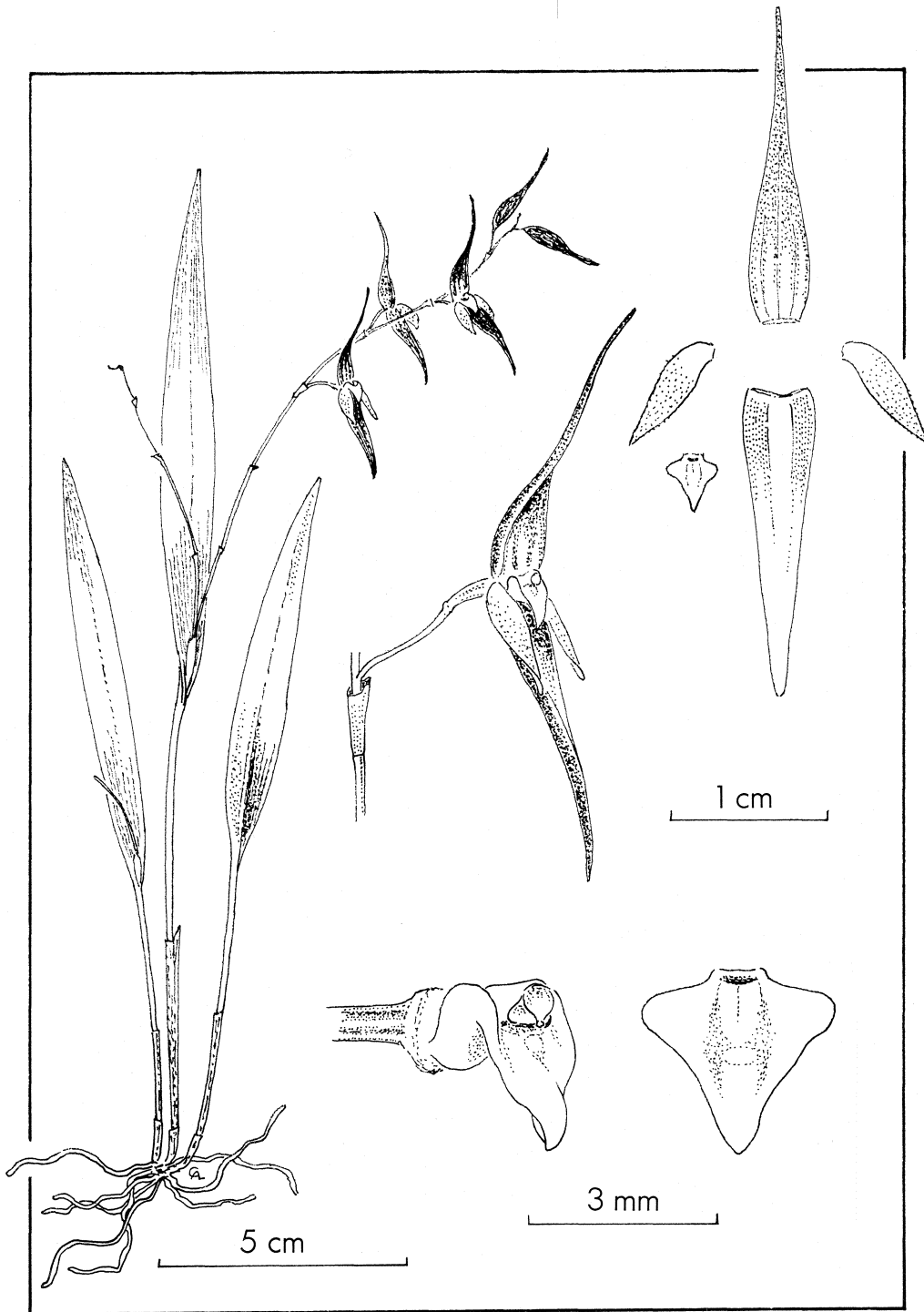


Figure 171. *PLEUROTHALLIS LUCTUOSA* Rehb. f.



**Pleurothallis mammillata** C. A. Luer, sp. nov.

Herba parva epiphytica breviter repens, caulibus secundariis gracilibus teretibus unifoliatis, foliis coriaceis anguste ellipticis acutis base cuneatis vel indistincte petiolatis, racemo debile multifloro folio longiore, floribus pallido-viridibus, sepalo dorsali ovato concavo acuminato, synsepalo ovato marginibus involutis, petalis carnosis oblongis curvatis apice crasso obtuso, labello crasso obovato obtuso ad medium geniculato, disco e basi canaliculato ad medium bimammillato.

Plant small, epiphytic, shortly creeping to subcaespitose; roots fine, flexuous, numerous. Secondary stems terete, slender, 1.5-5 cm long, with 2 ribbed sheaths below the middle, unifoliate. Leaf coriaceous, narrowly elliptical, acute, tridenticulate, the base cuneate to indistinctly short-petiolate, 3-6 cm × 9-15 mm. Inflorescence a weak, distichous, many-flowered raceme, up to 11 cm long, with up to 30 pale green, bilabiate flowers; peduncle slender, from a 4-6 mm spathe at the apex of the stem; floral bracts about 1 mm long; pedicels 2-2.5 mm long; ovary faintly verrucose, 1-1.5 mm long; dorsal sepal ovate, concave, acuminate, acute, 3-4.5 × 1-1.5 mm, 3-veined; lateral sepals united into an ovate synsepal, narrowly obtuse, the lateral margins involute, 3-4.5 × 1.5-2 mm, 4-veined; petals fleshy, oblong, curved, the apex obtuse and thickened, 1.25 × 0.4 mm; lip thick, obovate, obtuse, geniculate near the middle, the base broadly unguiculate, the disc shallowly channeled from the base to the middle where the channel disappears between a pair of small conical callosities, 1 × 0.8 mm; column stout, terete, 0.5 mm long, with a short foot.

**ETYMOLOGY:** From the Latin *mammillatus* (*mammilla*, "nipple"), "having small nipple-like tuberosities," in allusion to the callosities on the disc.

**TYPE:** PANAMA: PANAMA: epiphytic on Cerro Jefe, alt. 1000 m, 2 March 1976, C. Luer, H. Butcher, J. Luer & P. Taylor 951 (HOLOTYPE: SEL), flowered in cult. 12 April 1976.

**ADDITIONAL MATERIAL EXAMINED:** PANAMA: epiphytic along the Altos de Pacora road, alt. 650 m, C. Luer, R. Dressler, J. Luer & P. Taylor 952 (SEL); COLÓN: Santa Rita lumber road, 27 March 1968, R. L. Dressler 3464 (SEL).

**DISTRIBUTION:** Panama.

This little, inconspicuous species is apparently frequent and locally abundant in eastern Panama. It is a diminutive member of Section *Acronia*, and a relative of the spectacular *Pleurothallis phalangifera* (Presl) Rchb. f., but superficially similar to *P. pruinosa* Lindl. with which it probably has been identified in the past.

The narrow, dark green leaves are rigid in contrast to the long, slender, fragile raceme which extends beyond the end of the blade. The numerous, tiny, pale green flowers, arranged in a two sided raceme, are widely gaping with a cucullate dorsal sepal, and with the sides of the united lateral sepals rolled in. The fleshy petals are thickened at the blunt apex. The lip is deflexed near the middle, rounded and broadest above the middle and obtuse, and provided with a minute pair of nipple-like processes near the center.

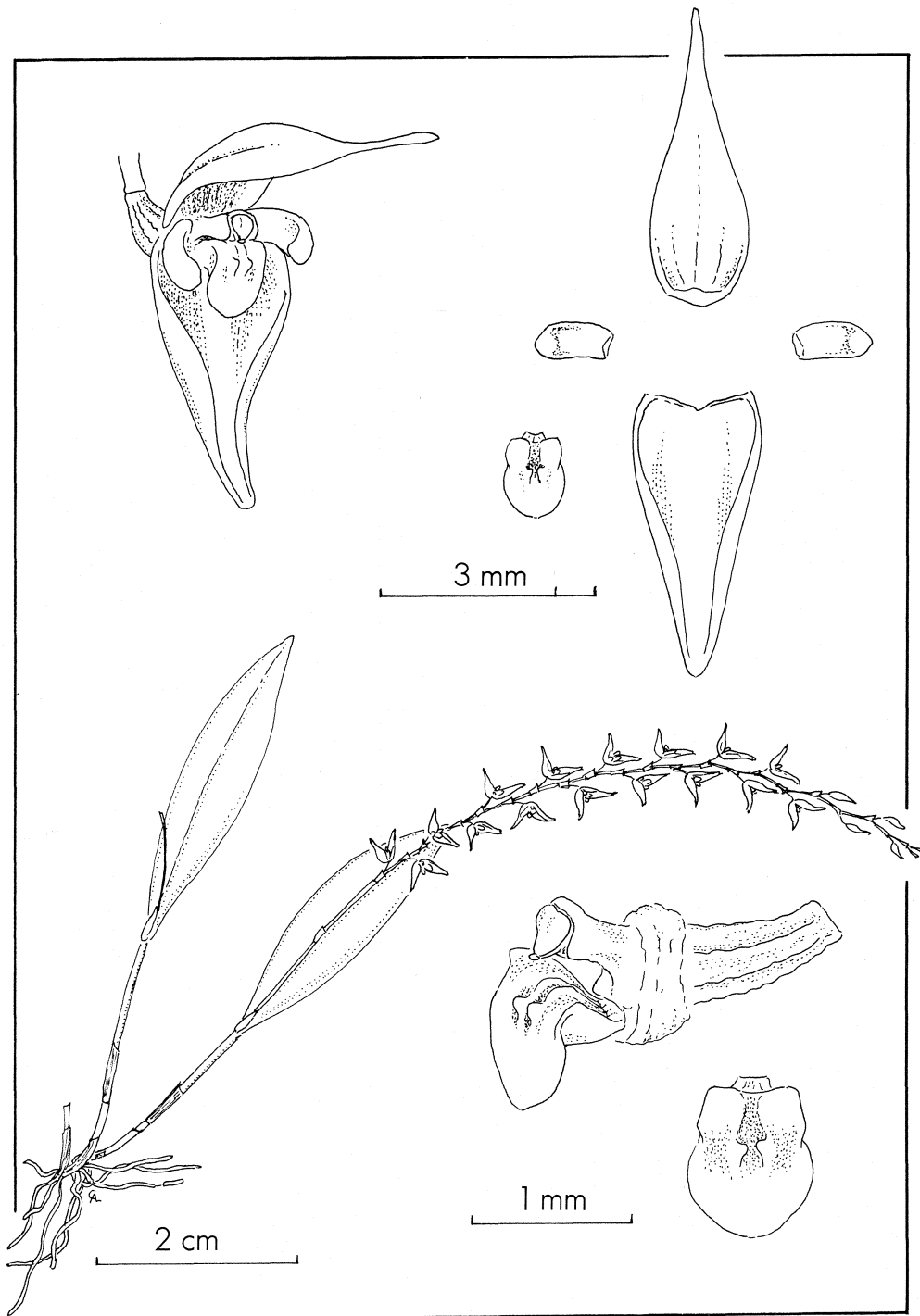


Figure 172. PLEUROTHALLIS MAMMILLATA C. A. Luer

**Pleurothallis maxima** C. Luer, sp. nov.

Planta grandis epiphytica caespitosa, caulibus secundariis fasciculatis validis longis teretibus vaginis laxis tubulatis unifoliatis, foliis coriaceis ellipticis obtusis breviter petiolatis, multiracemis multifloris foliis longioribus ex spatha magna, floribus parvis flavis purpureo vittatis, sepalis ellipticis pubescentibus intus apices versus, sepalo dorsali concavo, sepalis lateralibus basi connatis, petalis oblongo-spatulatis purpureis, labello ovato trilobato basi concavo, lobis lateralibus late ovatis obliquis leviter acuminatis, lobo antico ovato obtuso.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, terete, 25-45 cm long, fasciculate, with 2-3 loose, tubular sheaths at the base and a tubular sheath near the middle, unifoliolate. Leaves erect, coriaceous, elliptic to oblong, obtuse, shortly petiolate, 18-21 × 7-9 cm. Inflorescence a fascicle of numerous racemes, up to 26 simultaneously, densely multiflowered, up to 30 cm long, from a spathe 3-5 cm long, in the axil of the leaf; flowers small, yellowish, striped with purple; floral bract tubular, 2 mm long; pedicel and ovary each 1 mm long; dorsal sepal elliptical, subacute to obtuse, concave, pubescent within toward the apex, 3.5-4 × 2.5 mm, 3-veined; lateral sepals elliptical, subacute, connate basally, 3.5-4 × 2.5 mm, 3-veined; petals oblong-spatulate, obtuse to rounded, 2.75 × 1 mm, 1-veined, suffused with purple along the vein and on the dilated apex; lip ovate, 3-lobed, concave basally with a transverse, curved margin for the column-foot, the lateral lobes broadly ovate, oblique, with slightly acuminate, subacute, thickened apices, extending onto and overlapping the middle lobe, the apical lobe ovate, obtuse, purple, 2 × 1.75 mm; column stout, terete, 1.5 mm long, with a short, thick foot.

ETYMOLOGY: From the Latin *maximus*, "greatest" (superl. of *magnus*), referring to the very large number of flowers.

TYPE: *ECUADOR*: PICHINCHA: epiphytic near km 75, old road, Quito to Santo Domingo, alt. ca. 1500 m, 17 Aug. 1975, C. Luer, G. Luer & S. Wilhelm 651 (HOLOTYPE: SEL), greenhouse acc. no. 44-75-52, flowered in cult. 6 Feb. 1976.

DISTRIBUTION: Western Ecuador.

This large plant was rescued from the branches of a felled rain forest tree, and cultivated at the Marie Selby Botanical Gardens where it flowered six months later. Grossly it appeared to resemble *Pleurothallis fons-florum* Lindl., which previously had been found in the same general area, but a close examination proved it to be a distinct, although closely related species. The numerous racemes of little yellow and purple flowers were longer than the leaf, not just equally or barely surpassing the leaf as in *P. fons-florum*. The flowers differ from those of the latter by having oblong-spatulate petals, and by lacking the minute pair of conical callosities on the center of the lip.

The largest stem that flowered produced 26 racemes, most of which were 30 cm long. Each bore between 60 and 92 flowers. If the racemes averaged 75 flowers, the plant produced nearly 2000 flowers, perhaps more, if I would take the time to count them.

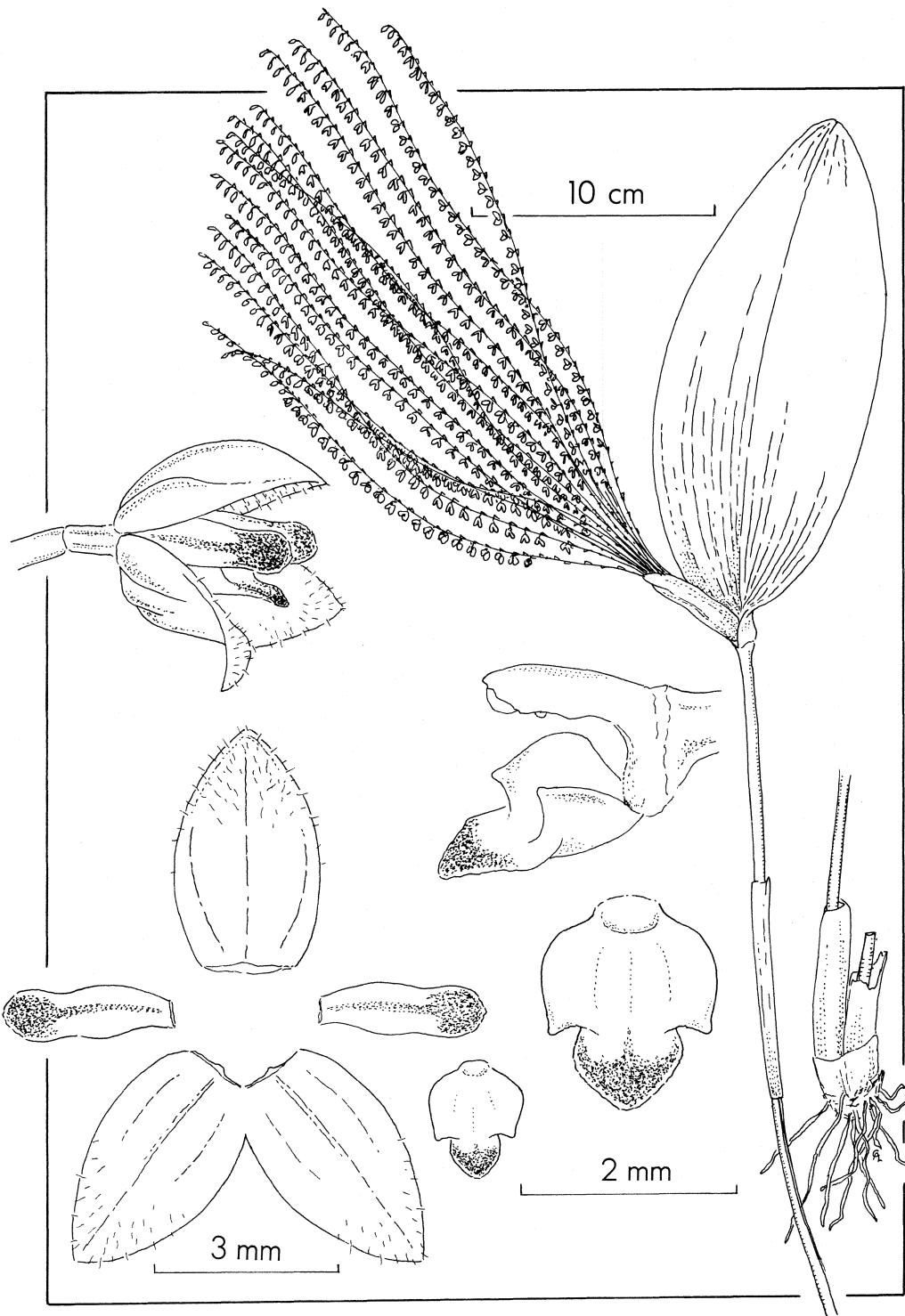


Figure 173. PLEUROTHALLIS MAXIMA C. A. Luer

**Pleurothallis mentosa** Cogn., *Flora Brasiliensis* 3(4):400. 1896.

*Lepanthes yauaperyensis* Barb. Rodr., *Vellozia* 2(1):117. 1891: not *Pleurothallis yauaperyensis* Barb. Rodr.

Plant epiphytic, small, caespitose; roots slender, flexuous. Secondary stem up to 1 cm long, concealed by 1-2 scarious sheaths, monophyllous. Leaf coriaceous, broadly elliptical to obovate, apex obtuse, tridenticulate, base cuneate, shortly petiolate, margins demarcated, 2.5-4 cm X 12-15 mm. Inflorescence a loosely few-flowered (3-12) fractiflex raceme exceeding the leaf, producing flowers singly; peduncle slender, from the apex of the secondary stem within a sheath. Flower yellow-green to light brown, flecked with purple; floral bract about 2 mm long; pedicel about 1 cm long; ovary about 4 mm long; dorsal sepal oblong, acute, 9 X 3 mm, 3-nerved; lateral sepals loosely adherent into an oblong lamina, subacute to bidentate and acute, 10 X 6 mm, forming a pronounced mentum with the column-foot; petals oblong-obovate, apex rounded, 4 X 1.5 mm, 3-nerved and prominently striped with purple; lip white flecked with purple, cuneate, apex broadly truncate, base narrowly hinged to the column-foot, 5.5 X 2.5 mm; column 4 mm long with a reflexed, 3 mm column-foot.

**ETYMOLOGY:** From the Latin *mentum*, "chin" referring to the pronounced structure formed by the lateral sepals and the column-foot.

**TYPE:** BRAZIL: AMAZONAS: "supra arbores in sylvis ad Rio Yauapery prope Chichiuahu," *Barbosa Rodrigues s.n.*

**DISTRIBUTION:** Venezuela, Bolivia, and Brazil.

**BOLIVIA:** SANTA CRUZ: 5 km north of Zamapata near the Cascades de Agua, *Fred Fuchs, Jr. s.n.* (SEL), greenhouse acc. no. 26-74-64, flowered in cult. 5 Nov. 1974.

This species was recently discovered in Bolivia for the first time by Fred Fuchs. It was originally collected and described by Barbosa Rodrigues in 1891 as *Lepanthes yauaperyensis*. The same year he also described a *Pleurothallis* with the same specific epithet. Therefore, when Cogniaux transferred the former to *Pleurothallis*, a new name was necessary.

This species is recognized by its cluster of dark green, broadly elliptical, short-stemmed leaves with a distinctly marked rim around the edge. The long zig-zag raceme bears a succession of yellowish flowers flecked with purple and about a centimeter in size. The obvious mentum is created by the union of the broad-based lateral sepals to the long, posteriorly directed column-foot. The lip is wedge-shaped with a broadly truncate apex.

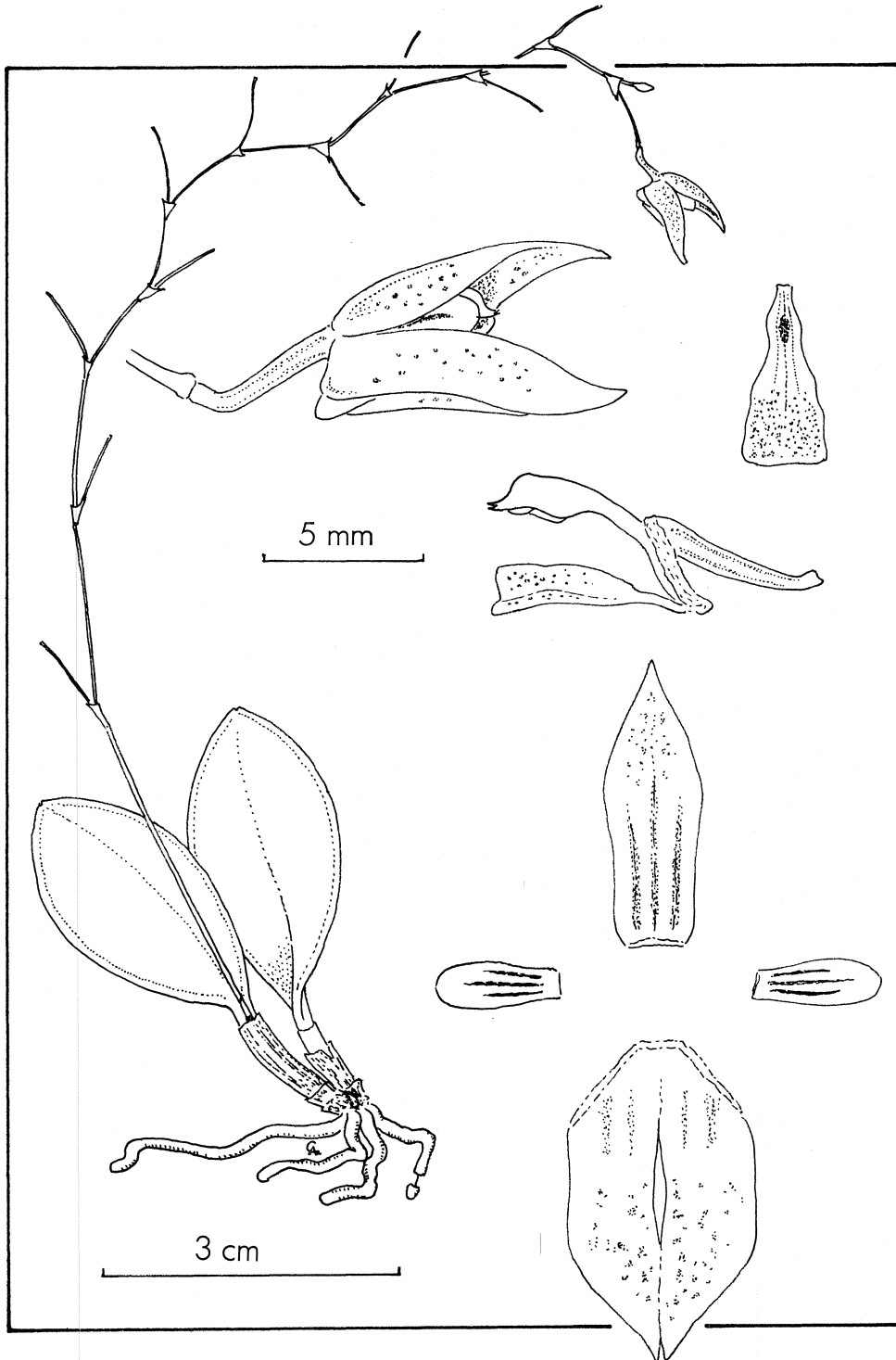


Figure 174. *PLEUROTHALLIS MENTOSA* Cogn.

**Pleurothallis merae** C. A. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis erectis gracilibus unifoliatis vaginis pubescentibus, foliis coriaceis angustissime ovatis acuminatis base anguste cuneatis sessilibus, floribus flavis purpureo dilute suffusis rubra pubescentia fasciculatis singularibus, sepalis oblongo-ovatis subacutis, petalis membranaceis supra medium anguste linearibus, labello rubro ovato obscure trilobato marginibus minute erosis, apice rotundato, lobis lateralibus late rotundato, basi minute biauriculato, disco supra medium bilamellato.

Plant small, caespitose, epiphytic; roots filamentous, flexuous. Secondary stems slender, terete, 5-14 cm long, with 4 or 5 tubular, tight-fitting, brown, hispid sheaths, unifoliolate. Leaf coriaceous, very narrowly ovate, acuminate, acute, tridenticulate, base very narrowly cuneate, obscurely petiolate to sessile, 8-10 cm X 5-7 mm. Inflorescence fasciculate, few-, single-flowered, from the base of the leaf, often accompanied by several old peduncles and pedicels; peduncle about 2 mm long; floral bract pubescent, 3-4 mm long; pedicel pubescent, 4-5 mm long; ovary with short red hairs, 2 mm long; sepals with red pubescence externally, especially toward the bases, yellowish, faintly marked with purple, the margins revolute; dorsal sepal ovate, subacute, 5 X 2 mm, 3-veined; lateral sepals oblong, subacute, 5 X 1.25 mm, united basally to form a mentum with the column-foot; petals thin, membranous, pale yellow-green, 5 X 1.5 mm, 1-veined, contracted from just below the middle into a narrow apical half with thin revolute margins; lip red, ovate, obscurely 3-lobed, 2.25 X 1.25 mm spread, middle lobe rounded, the margins microscopically denticulate, apiculate, lateral lobes broadly rounded, minutely erose, the base shortly unguiculate, with a minute pair of membranous auricles, the disc with a low, smooth longitudinal callus down the center below the middle, with a pair of low crests just above the middle; column stout, denticulate apically, 2 mm long, with a short foot.

ETYMOLOGY: Named for the town of Mera near which the species was discovered.

TYPE: *ECUADOR*: PASTAZA: epiphytic a few km east of Mera, alt. 1000 m, 20 March 1976, C. Luer, J. Luer & P. Taylor 682 (HOLOTYPE: SEL), flowered in cult. 9 June 1976.

ADDITIONAL MATERIAL EXAMINED: *MORONA-SANTIAGO*: epiphytic in wet montane forest, Cordillera de Cutucú, 25 km SE of Logroño, alt. 950 m, 16 Jan. 1976, M. T. Madison & F. R. Coleman 1707 (SEL), greenhouse acc. no. 23-76-12, flowered in cult. 6 July 1976.

DISTRIBUTION: Eastern Ecuador.

This slender, delicate species is closely related to *Pleurothallis ephelis* C. Luer, which was found approximately 40 km farther east in the Oriente. With its pubescent cauline sheaths it is vegetatively similar, but the leaves are slenderer and more tapered. The flowers are also similar, but they are covered with a sparse red pubescence. The most distinctive feature is the petal which is contracted into a long, thin, membranous apical half with longitudinally revolute margins. In the related species the apical portion of the petals is thickened. The lip is obscurely three-lobed without a central channel.

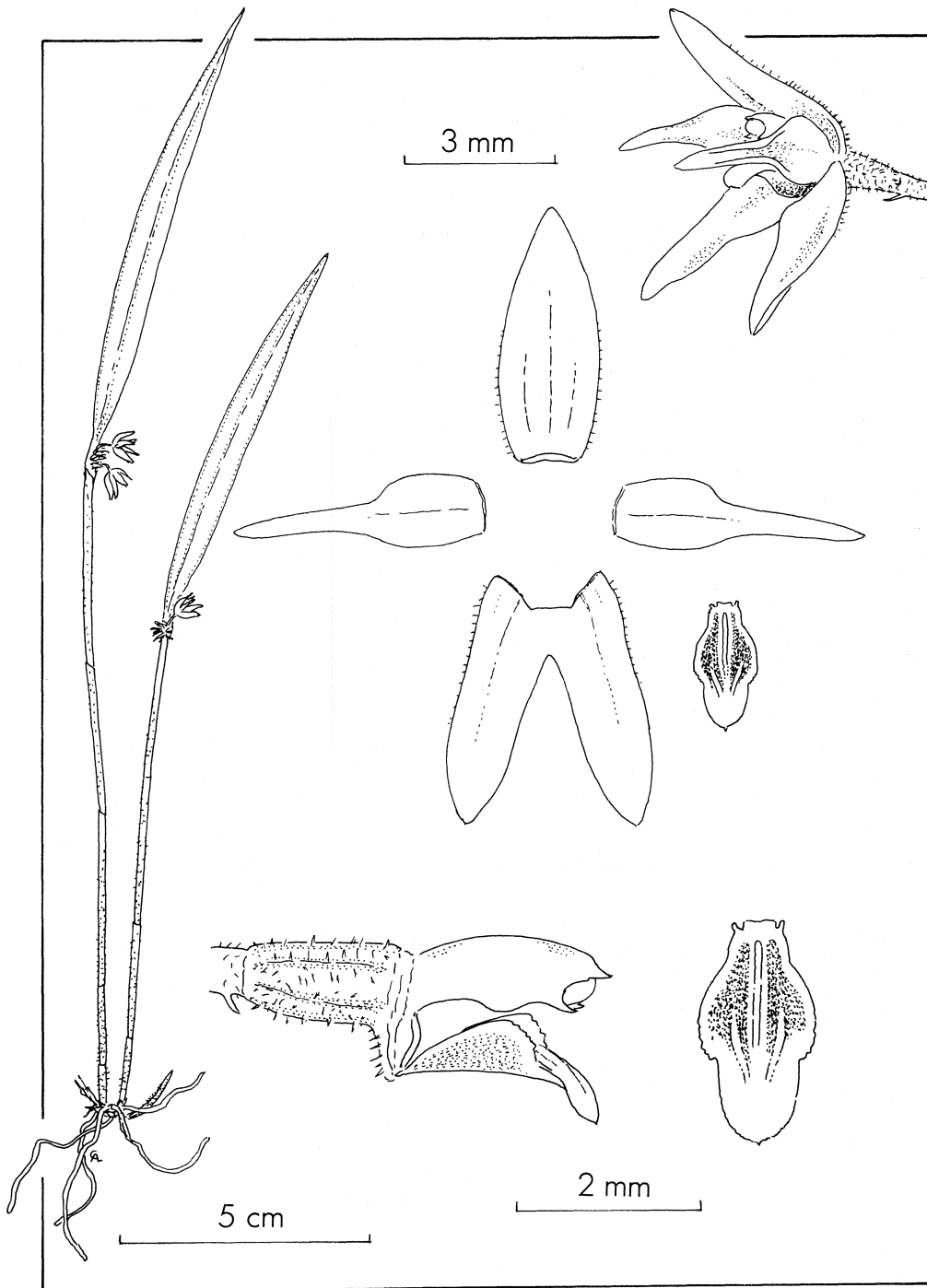


Figure 175. PLEUROTHALLIS MERAЕ C. A. Luer



***Pleurothallis mystax* C. A. Luer, sp. nov.**

Planta parva epiphytica caespitosa, caulibus secundariis costatis vaginatis unifoliatis, foliis late ellipticis vel suborbiculatis, racemo folio longiore bifloro floribus successivis grandibus ringentibus late vittatis purpureo et albo, sepalo dorsali ovato acuminato carinato, sepalis lateralibus linearibus acutis basi connatis carinatis prope medium divergentibus, petalis ovatis unguiculatis, labello rubiginoso spatulato supra medium ovoideo infra medium unguiculato marginibus involutis.

Plant small, epiphytic, caespitose; roots filiform, flexuous. Secondary stems slender, ribbed, 1-2.5 cm long, with a loose tubular sheath extending above the middle and 1-2 others basally, unifoliate. Leaf broadly elliptical, suborbicular, obtuse, tridenticulate, base rounded, sessile, 16-21 × 12-15 mm. Inflorescence racemose, single, few (2)-flowered, successive, the flowers large, gaping, broadly striped with purple and white; peduncle capillary, about 2.5 cm long, from a 2 mm spathe at the base of the leaf; floral bract 2-3 mm long; pedicel 5-8 mm long; ovary 2-3 mm long; dorsal sepal ovate, acuminate to acute, 14 × 4 mm, 3-veined, unicarinate, the carina 0.5 mm high; lateral sepals linear, acute, united for the basal 3-4 mm, then abruptly angled and diverging, 14 × 3.5 mm together, each unicarinate, the carinae 1 mm high; petals brown, ovate, with a short claw, subacute, 4 × 2 mm, 3-veined; lip red-brown, spatulate, 8 × 2.75 mm, above the middle ovoid, convex, rounded, below the middle unguiculate, the claw 4 mm long, tubular, the margins involute, with a small transverse callus at the base; column stout, 1.5 mm long, anther cap nearly as large, red and yellow, the foot obsolescent.

ETYMOLOGY: From the Greek *mystax*, "moustache," in allusion to the fancied resemblance of the diverging sepals to a moustache.

TYPE: PANAMA: VERAGUAS: epiphytic in cloud forest near the continental divide above Santa Fe, alt. 650-750 m, 5 Sept. 1976, C. Luer & R. L. Dressler 1261 (HOLOTYPE: SEL); Dec. 1974, R. L. Dressler 4835, cultivated by F. L. Stevenson 9575-3 (SEL).

DISTRIBUTION: Panama.

*Pleurothallis mystax* is apparently endemic in the mountains of central Panama where it is quite frequent. It is without any near allies.

The little secondary stems are longitudinally ribbed, but more than half the length is covered by a loose sheath which originates near the base. The little leaf is nearly circular, and from a minute spathe at the base the fine peduncle emerges to bear an oversized flower. The flowers are dark purple with a broad white stripe down the center of the keeled sepals. The petals overlap above the long, channeled claw of the lip, and the rounded apical half of the lip protrudes from the center of the flower. At this point the underlying lateral sepals suddenly diverge in opposite directions like a handle-bar moustache beneath a bulbous nose.

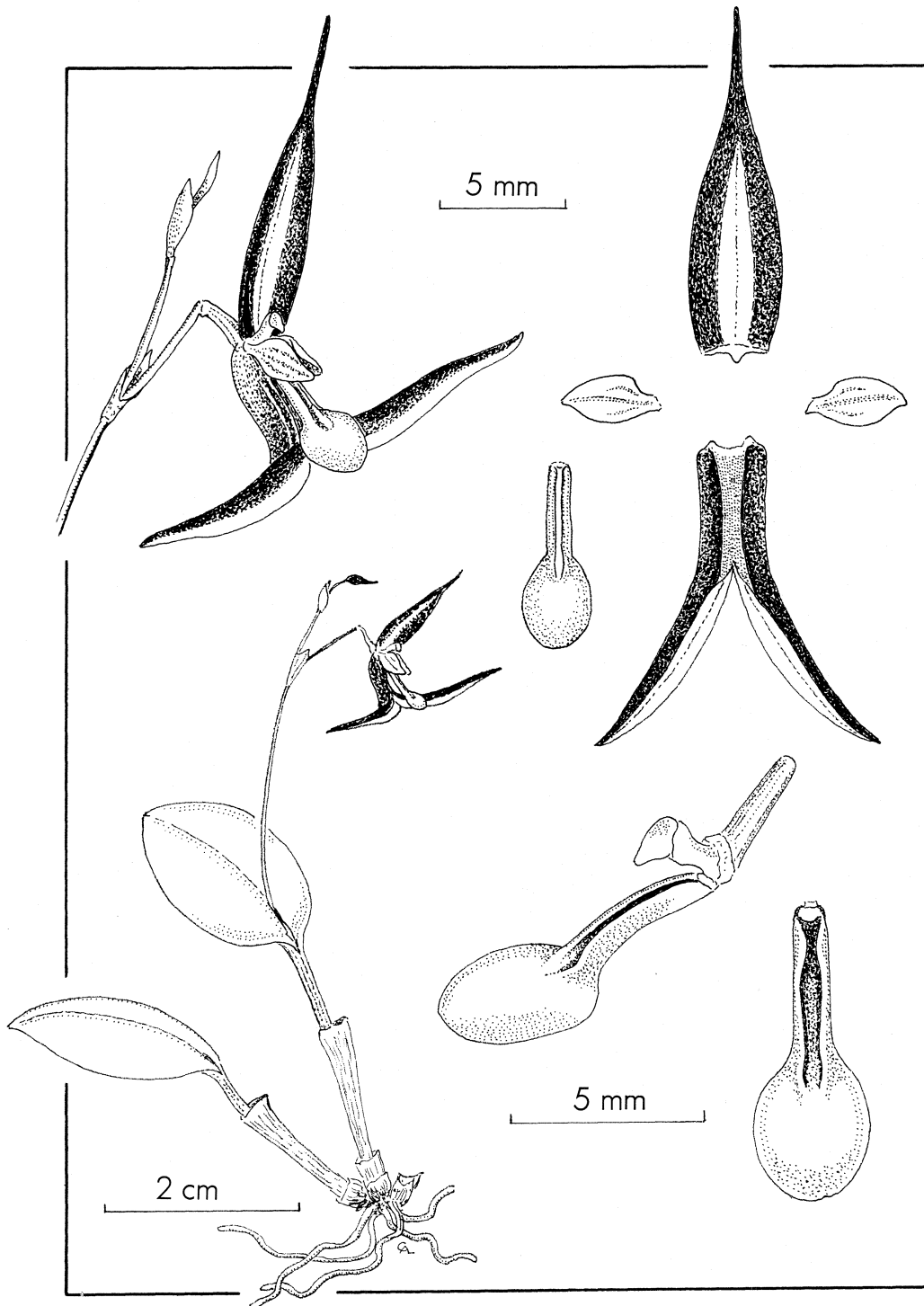


Figure 176. *PLEUROTHALLIS MYSTAX* C. A. Luer

***Pleurothallis nipterophylla* Luer, sp. nov.**

Planta epiphytica mediocris caespitosa, caulibus secundariis ascendentibus teretibus unifoliatis, foliis patentibus rigidis profunde cordatis concavis, floribus fasciculatis singularibus parvis marroninis, spatha conspicua conduplicata, ovario crasso papilloso, sepalo dorsali synsepaloque carnosus late ovatis concavis extra verruculosus, petalis linearibus acutis laevibus, labello ovato obtuso profunde concavo laevigato base cordato bicalloso.

Plant epiphytic, medium-sized, caespitose; roots fasciculate, filiform, flexuous. Secondary stems ascending, slender, terete, 7-12 cm long, with a rather loose, longitudinally wrinkled, non-verrucose sheath below the middle and 1-2 others at the base, unifoliate. Leaf spreading, rigid, coriaceous, ovate, concave, deeply cordate at the sessile base with incurved, overlapping auricles, the apex acuminate, tridentate, 5-5.5 × 3.2-3.8 cm. Inflorescence a fascicle of 3-8 single flowers from a brown, conduplicate spathe, 10-12 mm long at the base of the leaf; flowers small, maroon, not wide-spreading; floral bract and pedicel hidden within the spathe, the pedicel slightly verrucose, about 8 mm long; ovary maroon, papillose, thick, 1.5 × 1.5 mm; sepals fleshy, smooth within, verruculose externally; dorsal sepal broadly ovate, concave, subacute, 4 × 3 mm, 3-veined; lateral sepals united into a transversely ovate, deeply concave, obtuse synsepal, 3.5 × 4 mm spread out, 4-veined; petals linear, acute, smooth, 3 × 0.8 mm; lip ovate, obtuse, deeply concave, smooth within, 2.5 × 2.25 mm not spread, the base cordate, broadly and firmly united with the column-foot, with a pair of flattened callosities within the concavity at the attachment with the column-foot; column stout, 1 × 1.5 mm, with a foot 1.5 mm long.

ETYMOLOGY: From the Greek *nipter*, "a basin," and *phyllon*, "leaf," referring to the concave, bowl-shaped leaf.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic beside the road near km 35 between Loja and Zamora, alt. ca. 1500 m, collected 5 Aug. 1975, C. Luer, G. Luer & S. Wilhelm 656, (HOLOTYPE: SEL), greenhouse acc. no. 44-75-174, flowered in cult. 14 Feb. 1976.

DISTRIBUTION: Ecuador.

One plant of *Pleurothallis nipterophylla*, consisting of about eight stems and leaves, was found out of flower growing epiphytically in the valley of rain forest between Loja and Zamora. It has grown well in cultivation in the "cool" house at the Marie Selby Botanical Gardens. The unique leaves are thick, rigid, and remarkably concave so that the lobes of the deeply cordate base curve up and overlap. The bowl-shaped concavity will hold 7 ml of water. It cannot be spread without fracturing.

The little, deep red-purple flowers are produced in a cluster from a well-developed spathe. The stout ovary is studded with maroon, clavellate papillae. The dorsal sepal and united lateral sepals are broadly ovate, deeply concave, and verruculose externally. The tub-shaped lip is filled with a clear nectar. Below the nectar level at the base of the lip a pair of shelf-like calli nearly meet in the center.

This species is closely allied to *P. canaligera* Rehb. f., but it is easily distinguished by its concave leaf and maroon flowers with papillose ovaries and smooth petals and lip.

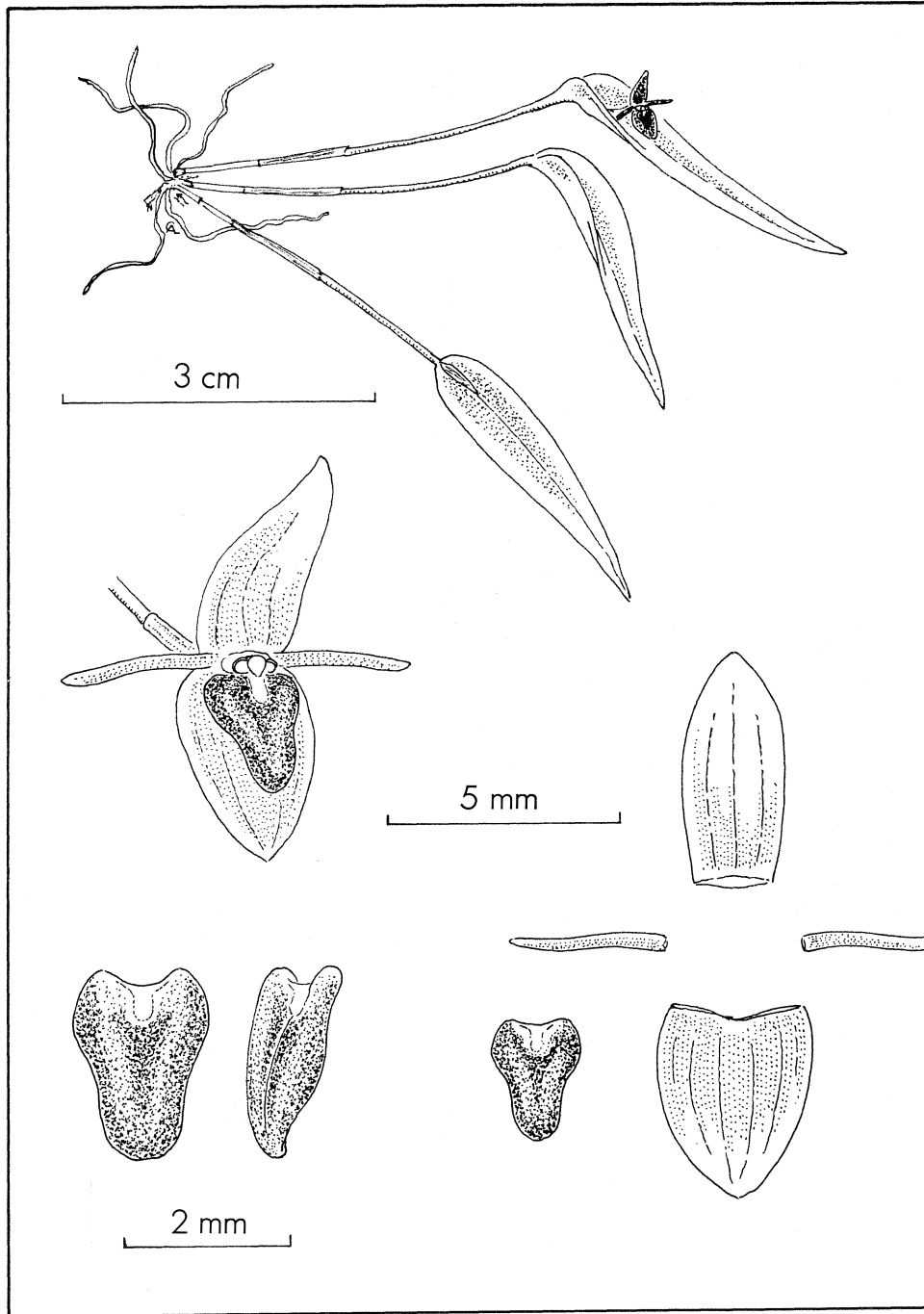


Figure 178. *PLEUROTHALLIS OBPYRIFORMIS* C. A. Luer

**Pleurothallis omoglossa** Luer, sp. nov.

Planta epiphytica caespitosa mediocris, caulibus secundariis gracilibus teretibus unifoliatis, foliis coriaceis anguste ovatis acutis cordatis, floribus mediocris singularibus successivis rubris vel brunneis glabris, sepalo dorsali et synsepalo late ovatis obtusis, petalis oblongis obtusis microscopice erosis, labello oblongo apice convexo rotundato base breviter concavo angulis basis prominentibus.

Plant epiphytic, caespitose, medium to large; roots slender, fasciculate, flexuous. Secondary stems slender, terete, up to 37 cm tall, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, erect to spreading, narrowly ovate, apex acuminate, acute, tridenticulate, base cordate, sessile, 5-11 × 2-4 cm. Inflorescence fasciculate; flowers single, successive, bilabiate, red, red-brown to yellow-brown, glabrous, from a spathe, about 1 cm long, at the base of the leaf; floral bract, pedicel and ovary each about 5 mm long; dorsal sepal broadly elliptical, obtuse, 7-8 × 5-6 mm, 3-veined, the veins prominent externally; lateral sepals united into an ovate synsepal, obtuse to subacute, 6-7 × 6-7 mm, 4-veined; petals linear-oblong, slightly falcate, obtuse to subacute, the margins glabrous to minutely erose, 4-6 × 1.5 mm, 1-veined; lip red to brown, oblong, the apex rounded and convex with microscopically erose margins, the base distinctly angled at the corners, obtuse to rounded, to either side of the short, basal concavity; 3-4.5 × 3 mm; column stout, 1 × 2 mm.

ETYMOLOGY: From the Greek *omos*, "shoulder," and *glossa*, "tongue," in allusion to the shoulder-like angles of the basal corners of the lip.

TYPE: ECUADOR: ZAMORA-CHINCHIPE: epiphytic near km 50 between Loja and Zamora, alt. 1000 m, collected 5 August 1975, C. Luer, G. Luer & S. Wilhelm 639 (HOLOTYPE: SEL), greenhouse acc. no. 44-75-106.

ADDITIONAL MATERIAL EXAMINED: near same area, C. Luer, G. Luer & S. Wilhelm, greenhouse acc. no. 44-75-292; probably same area, F. L. Stevenson 111974-4 (SEL), flowered in cult. 19 Nov. 1974; PASTAZA: epiphytic along the Rio Negro, alt. 1500 m, 18 March 1976, C. Luer, J. Luer, & P. Taylor 673 (SEL).

DISTRIBUTION: Ecuador.

The flowers of *Pleurothallis omoglossa* closely resemble those of *P. cordata* (Ruiz & Pav.) Lindl. and *P. monocardia* Rchb. f. Perhaps this species has been identified with them in the past. The leaves, however, are narrower and not deeply cordate at the base. The color of the flowers varies from red, rose with red veins, yellow, to rich golden brown. The sepals are broadly ovate and obtuse, and the petals are linear-oblong. The proportionately large, oblong lip readily distinguishes this species. It is convex above the middle and the apex is rounded. The corners of the base are distinctly angled (like shoulders), either obtusely or rounded, to either side of the usual concavity which accommodates the column-foot.

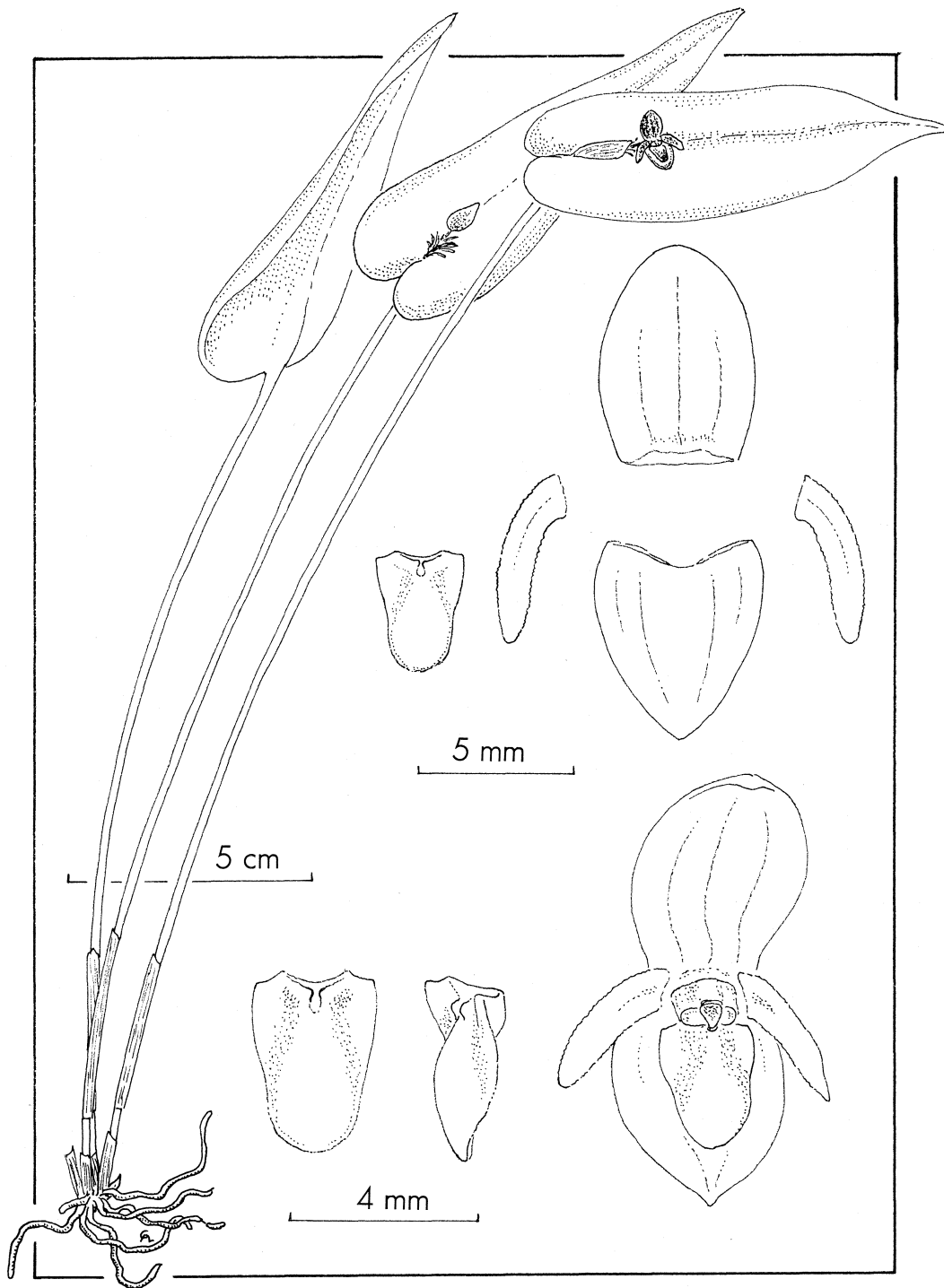


Figure 179. *PLEUROTHALLIS OMOGLOSSA* C. A. Luer

**Pleurothallis oscitans** Ames, Bot. Mus. Leaflet. 2:25. 1934.

Plant medium sized, epiphytic, caespitose; roots filamentous, flexuous. Secondary stems slender, terete, suffused with brown or purple, commonly descending, 6-16 cm long, with 2 close-fitting tubular sheaths at the base, unifoliate. Leaf thick, coriaceous, suffused with purple, narrowly ovate, acuminate, acute, tridentate, the base rounded, sessile, 6-12 × 1.8-3 cm. Inflorescence a pendent, few-flowered raceme, about 10 cm long; peduncle slender, arcuate, from a spathe 7-8 mm long at the base of the leaf; floral bract oblique, acute, 4 mm long; pedicel 1.5 mm long; ovary 2 mm long; dorsal sepal linear-oblong, arcuate, the apex shortly acuminate, acute and held by a pocket formed by the tips of the lateral sepals, unicarinate, the sides revolute, villous within, intensely mottled with purple, 14 × 2.5 mm; lateral sepals united to the apex into an ovate lamina, acuminate, acute, the sides revolute, nearly meeting behind and surrounding the rachis, villous within, 12 × 7 mm spread; petals ovate, acute, translucent white, the mid-vein marked with purple, the margins lacinate, 2 × 1 mm; lip narrowly ovate, acute, pink marked with purple, the margins fimbriate, the segments branching or glandulose, the disc thickened with a pair of longitudinal calli near the base, 6 × 2 mm; column 2.5 mm long, with denticulate wings, the rostellum trifold, the foot short, glandular.

ETYMOLOGY: From the Latin *oscitans*, "gaping," (from *oscitare*, "to yawn, or to be drowsy"). in allusion to some quality Ames saw in the plant.

TYPE: HONDURAS: CORTES: Santa Cruz de Yojoa, epiphytic in open mountain forest, alt. 700 m, 26 Aug. 1933, *J. B. Edwards 515* (HOLOTYPE: AMES).

DISTRIBUTION: Honduras and Panama.

PANAMA: COCLÉ: epiphytic in old orange trees in the hills above El Valle, alt. 1000 m, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 681* (SEL); same area, 2 Sept. 1976, *C. Luer & H. Butcher 1123* (SEL).

Although apparently rare, this strange species is locally abundant in Panama. This is the first report of the species outside Honduras. The long purplish stems of the few-stemmed plants grow outward or descending from the branches of the host trees. The heavy leaf commonly grows more or less horizontally or ascends slightly. The raceme of relatively large purplish flowers droops over the side of the leaf and dangles loosely. The sides of the villous lateral sepals curve backward around the rachis, and the apex of the synsepal forms a tiny trap to hold the apex of the narrow arching dorsal sepal. The fringed lip lies upon the convex synsepal, as upon a canopied bed. The petals are deeply lacerate. The rostellum is three-pronged.

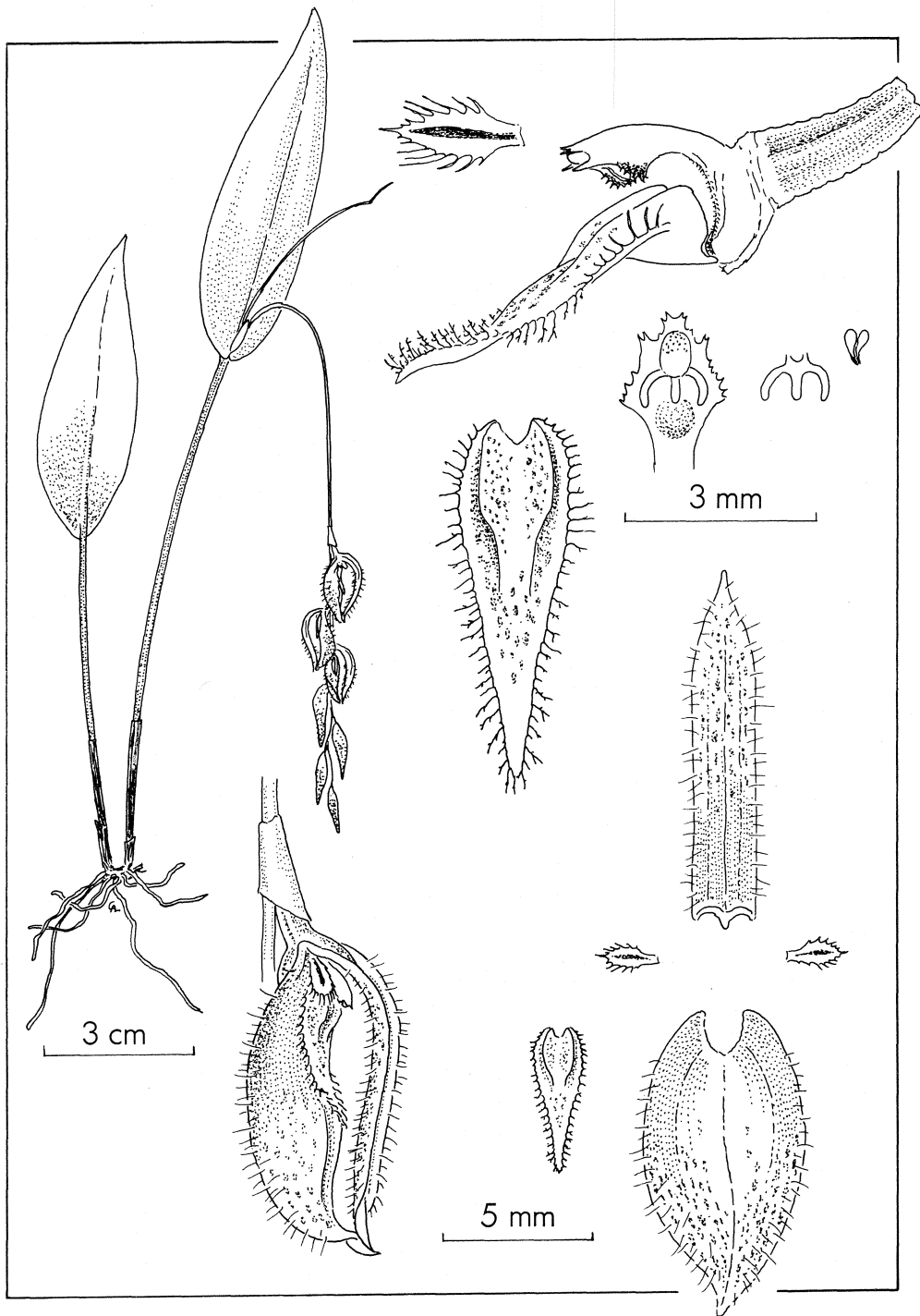


Figure 180. PLEUROTHALLIS OSCITANS Ames



**Pleurothallis pastacensis** C. Luer, sp. nov.

Habitu *P. alexandrae* Schltr. similis sed differt rhizoma repenti foliis latioribus floribus pluribus pedunculis brevioribus pubescentia caespitosa petalis oblongis lobo antico labelli verrucoso.

Plant large, epiphytic, shortly repent; rhizome thick, about 1 cm long between secondary stems; roots slender, flexuous. Secondary stems stout, terete, slightly compressed above, 15-23 cm long, concealed by 4-5 loose, scarious sheaths, frequently torn or shed, unifoliate. Leaves coriaceous, rigid, oblong to narrowly elliptical, subacute to obtuse, the base cuneate, sessile, 18-25 × 5-6.5 cm, longitudinally veined. Inflorescence fasciculate, the flowers dark purple, fleshy, usually 4-5 produced simultaneously, from a spathe 3-4 cm long, sometimes shed, in the axil of the leaf; peduncle 1-1.5 cm long; floral bract shortly pubescent, 6 mm long; pedicel pubescent, 3-4 mm long; ovary pubescent, 3 mm long; sepals pubescent externally, the hairs arranged in tufts, glabrous within; dorsal sepal obovate, subacute, intensely suffused and spotted with purple on yellowish within, 17 × 6 mm, 5-veined; lateral sepals lightly connate to near the middle, together obtuse to rounded, 14 × 9 mm, each 3-veined; petals fleshy, oblong, obtuse, 6 × 2 mm, with 3 purple veins on yellow; lip elliptical with acuminate, forward projecting, uncinately lateral lobes below the middle, the middle lobe rounded and verrucose, the base bilobed and broadly hinged to the column-foot; disc with a high, inverted U-shaped callus near the base and extending forward between the lateral lobes as a pair of keels with a channel between, and a thick pair of toothed lamellae extending from the lateral lobes onto the middle lobe, 5.5 × 3 mm; column broadly winged, spotted with purple on yellow, 4.5 mm long, anther red, with a patch of bristles along the upper margin.

ETYMOLOGY: Named for the Province of Pastaza of Ecuador where the species was found.

TYPE: *ECUADOR*: PASTAZA: epiphytic in felled tree 20 km east of Puyo, alt. 500 m, 19 March 1976, C. Luer, J. Luer & P. Taylor 949 (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

This species from the Oriente of Ecuador is closely related to *Pleurothallis alexandrae* Schltr. known from Costa Rica to Venezuela, but *P. pastacensis* differs in the following features. The stout rhizome is shortly but distinctly repent, mature leaves are proportionately wider, several flowers are produced simultaneously on short peduncles (instead of singly and successively on long peduncles), the pubescent hairs of the purple flowers are arranged in tufts or patches, the petals are oblong, and the lip, which is very similar, is broad and not constricted in front of the hooked lateral lobes, and the anterior lobe and its calli are verrucose.

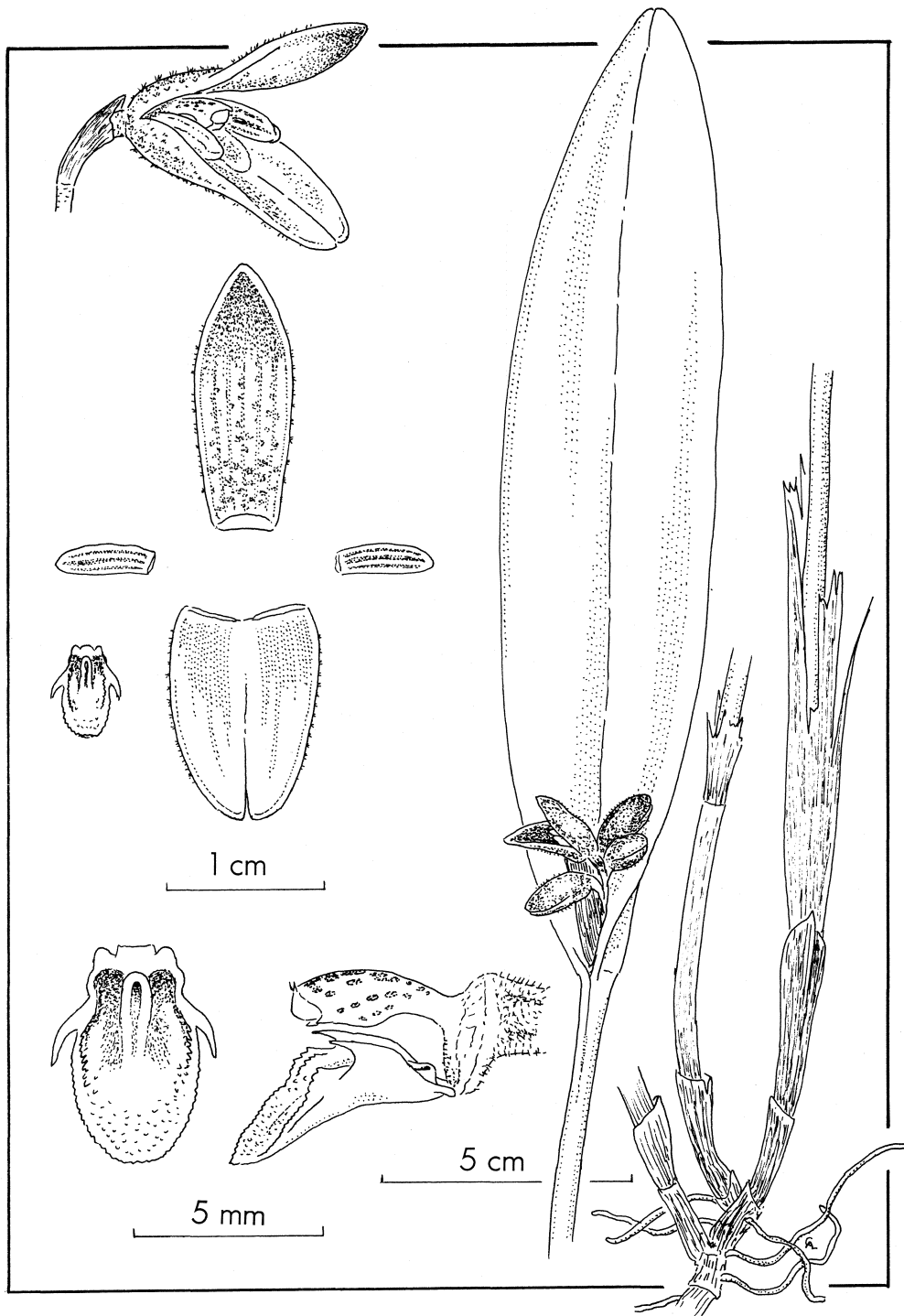


Figure 181. *PLEUROTHALLIS PASTACENSIS* C. A. Luer

**Pleurothallis peculiaris** C. Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis gracilibus teretibus unifoliatis, folio deflexo maculato rigido concavo attenuato acuto base profunde cordato, spathe erecta conspicua, flore solitario successivo inverso atrorubro, sepalis petalisque obtusis hirsutis, labello subrhomboideo apice rotundato verruculoso minute eroso, lobis lateralibus triangularibus acutis erectis, disco papilloso.

Plant medium to large in size, epiphytic, caespitose, roots slender, flexuous. Secondary stems slender, terete, 15-38 cm long, with a closely vested tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf deflexed, coriaceous, narrowly ovate, rigidly concave and curved, attenuate, acute, tridenticulate, the base deeply cordate with overlapping auricles, suffused and indistinctly blotched with dull purple, 12-15 × 3-3.75 cm. Inflorescence fasciculate, a single, inverted, widely spread, red flower produced successively from an erect, conduplicate spathe, 11-15 mm long, at the base of the leaf; floral bract about 5 mm long, and the pedicel, about 12 mm long, both hidden within the spathe; ovary 7 mm long; middle sepal broadly ovate to suborbicular, obtuse, pilose along the margins and near the apex, 9 × 8 mm; lateral sepals connate into an obovate, rounded, retuse lamina, minutely papillose and pilose within, 8 × 5 mm; petals obovate-spatulate, obtuse, minutely papillose, hirsute near the margins, 6 × 3.5 mm; lip uppermost, subrhomboid, the apex round, minutely verrucose with a minutely erose margin, lateral lobes just below the middle, erect, triangular, acute, the base concave on the end, with a pair of mammillate callosities flanking a short median groove, the disc papillose, 3.5 × 5 mm between the spread lateral lobes; column stout, 2 × 2 mm, footless.

**ETYMOLOGY:** From the Latin *peculiaris* in reference to the many features not held in common with other members of the section.

**TYPE:** PANAMA: VERACUAS: epiphytic in the cloud forest near the continental divide above Santa Fe, alt. ca. 700 m, Sept. 1976, C. Luer & R. L. Dressler 1142 (HOLOTYPE: SEL); Dressler 5433 (SEL).

**DISTRIBUTION:** Panama.

Although obviously a member of the cordate-leaved section, this species has digressed considerably down its own evolutionary paths. Almost every feature is peculiarly modified from the usual forms.

Juvenile leaves are erect and narrowly ovate with attenuated bases. Mature leaves are acutely deflexed and rigidly concave with overlapping basal lobes and a long, tapering apex gradually curving upward. The dull green is irregularly mottled with purple. From a prominent spathe emerge the non-resupinate, dark red flowers. A dense matting of hairs grows on the sepals and petals. The warty lip is furnished with a pair of erect, pointed lateral lobes, a most unusual feature for the section.

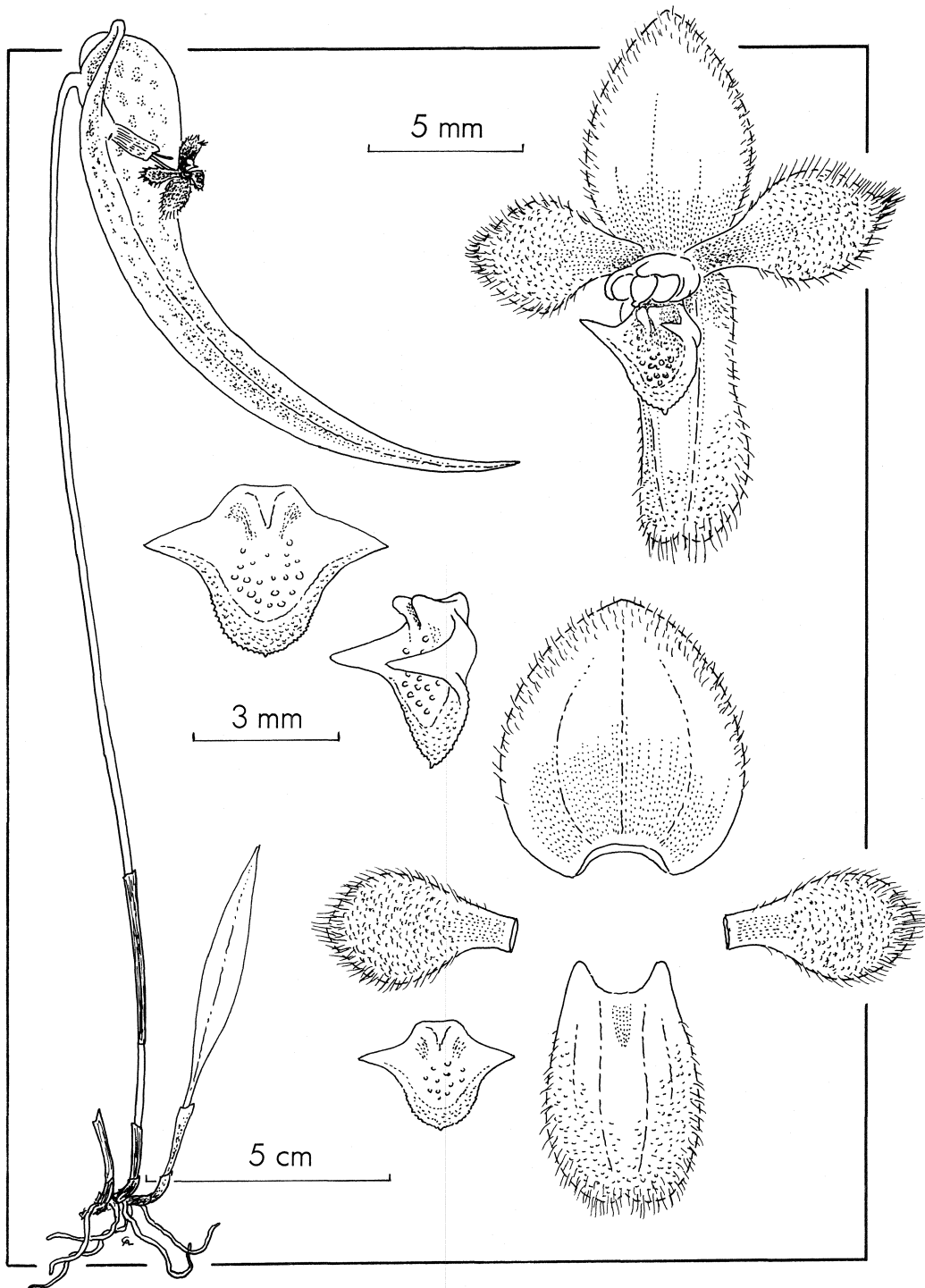


Figure 182. PLEUROTHALLIS PECULIARIS C. A. Luer

**Pleurothallis pennellia** C. A. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis brevibus gracilibus unifoliatis vaginis scaberulis, foliis coriaceis caulibus longioribus angustissime fusiformibus acuminatis base anguste cuneatis sessilibus, floribus fasciculatis singularibus flavis purpureo lentiginosis glabris extra, sepalis oblongis obtusis, sepalis lateralibus basi connatis pubescentibus, petalis ovatis obliquis marginibus serratis apice incrassatis, labello purpureo ovato trilobato apice rotundato minute eroso, lobis lateralibus late ovatis obliquis subacutis, basi biauriculato, disco incrassato bicarinato.

Plant small epiphytic caespitose; roots filamentous flexuous. Secondary stems short, slender, terete, 1.5-5 cm long, with 3-4 close-fitting, tubular, scabrous sheaths, the lowest ones densely pubescent, unifoliate, frequently prolific. Leaf coriaceous, narrowly fusiform, acuminate, acute, tridenticulate, base very narrowly cuneate, sessile, 4-7 cm X 3-5 mm. Inflorescence fasciculate, a single flower produced intermittently from the base of the leaf; spathe pilose, 3 mm long; peduncle 3.5 mm long; floral bract and pedicel each 1.5-2 mm; ovary 1.5 mm long, studded with purple cells; sepals glabrous externally, oblong, obtuse, with revolute margins, yellow-green lightly speckled with purple; dorsal sepal 4.5 X 2.25 mm, 3-veined; lateral sepals slightly oblique, each 4 X 2 mm, united basally to form a mentum with the column-foot, pubescent internally toward the base; petals translucent yellow, ovate, oblique, shortly obtuse at the apex, the margins minutely serrate, slightly contracted above the middle into a thickened apex, 4 X 1.5 mm, 1-veined; lip purple, edged in white, ovate, 3-lobed, apical lobe obovate, rounded, apiculate, margins minutely serrate, lateral lobes broadly ovate, oblique, subacute, erose, erect in the natural position, the base shortly unguiculate, with a pair of minute, membranous auricles, the disc thickened, yellowish along the center, not channeled, with a pair of low carinae above the middle; column thick, the apex dentate, 2 mm long, with a short foot.

ETYMOLOGY: From the Latin *penna*, "quill, or pen," *-ellus*, the diminutive, and *-ius*, resembling, hence "resembling a small quill," in reference to the appearance of the plant.

TYPE: ECUADOR: PASTAZA: epiphytic in felled trees about 20 km east of Puyo, alt. ca. 600 m, 28 July 1975, C. Luer, G. Luer & S. Wilhelm 687 (HOLOTYPE: SEL), greenhouse acc. no. 44-75-243, flowered in cult. 11 June 1976.

DISTRIBUTION: Ecuador.

This diminutive species is related to the twice larger *Pleurothallis ephelis* C. Luer and *P. merrae* C. Luer, all of which are found more or less sympatrically in the Oriente in the Province of Pastaza. Vegetatively it is similar to *P. scandens* Ames, except for being much less prolific.

The little, long, narrow, tapered, thick leaf is borne by a secondary stem less than half the length of the leaf. It resembles a small quill. The stem is largely concealed by a few, snug, minutely scabrous bracts, but the lower ones are densely pilose. The little yellow-green flower, produced singly at intervals, spreads widely. The petals are minutely serrated, and thickened apically. The purple lip is three-lobed with a pair of minute basal auricles.

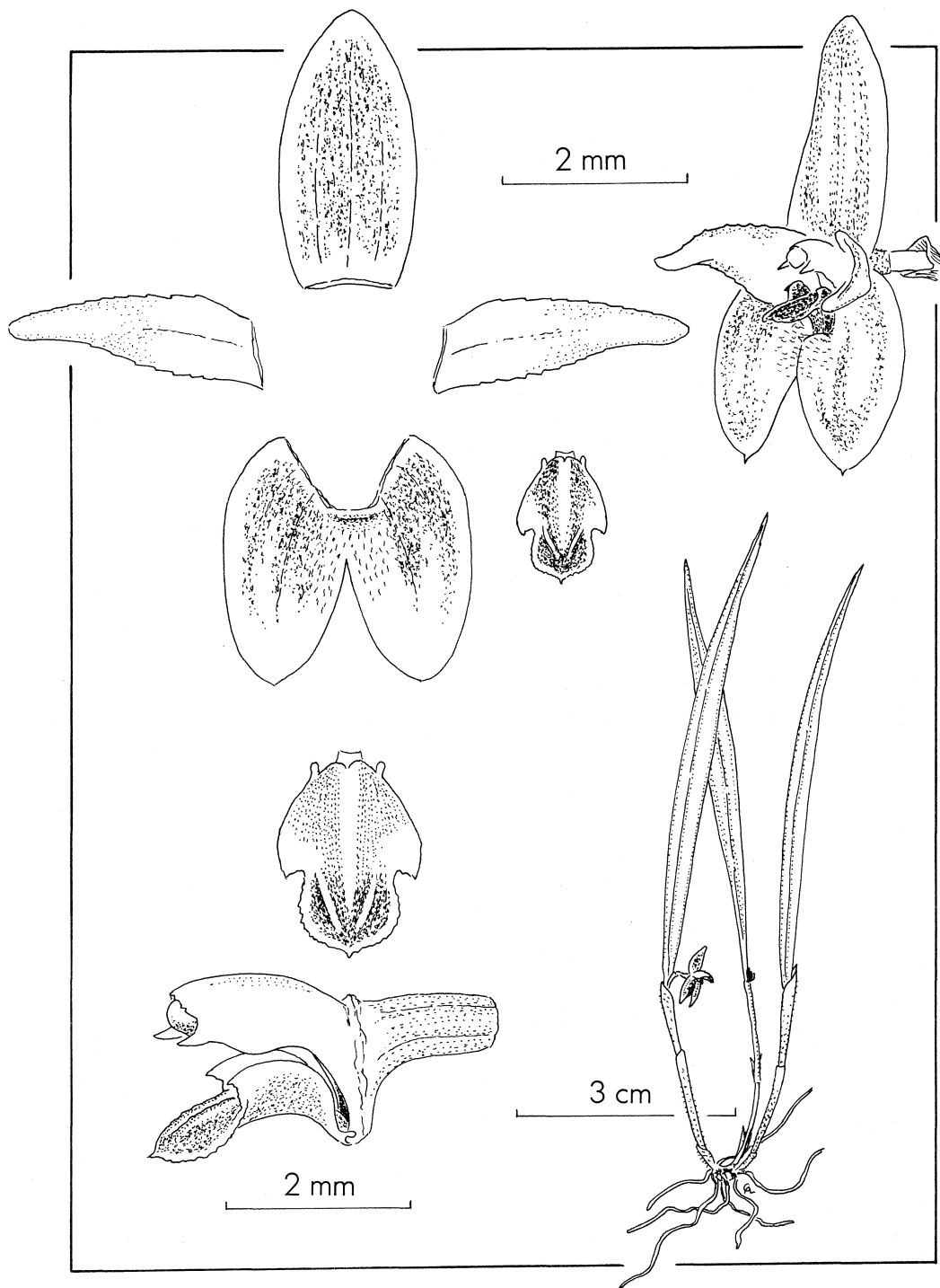


Figure 183. *PLEUROTHALLIS PENNELLIA* C. A. Luer

*Pleurothallis perangusta* C. A. Luer, sp. nov.

Planta pusilla epiphytica caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis peranguste linearibus obtusis, racemo paucifloro longissimo filiformi floribus successivis, sepalis infra medium ellipticis carinatis apicibus longissimis attenuatis, petalis oblongis serratis inferne fimbriatis, labello subpandurato carnosio apice ovoideo fimbriato infra medium bicalloso canaliculato base auriculato.

Plant very small, epiphytic, caespitose; roots slender, flexuous. Secondary stems abbreviated, 2-4 mm long, mostly concealed by 1-2 ribbed sheaths, unifoliate. Leaf coriaceous, very narrowly linear, subacute to obtuse, 2.5-4 cm long, 2 mm wide. Inflorescence a few-, distantly-flowered raceme, up to 15 cm long, the long-pedicellate flowers produced successively; peduncle capillary, from a node on the secondary stem; floral bract 1 mm long; pedicel 15-20 mm long; ovary 2.5 mm long; dorsal sepal oblong and 3-carinate below the middle, yellow with brown veins, the apex long-attenuate 11 × 1.5 mm; lateral sepals ovate and bicarinate below the middle, united basally to form a shallow mentum, the apices long-attenuate, purple, the caudae yellow, 12 × 4.5 mm together; petals linear-oblong, acute, 3.5 × 0.5 mm, translucent, 2-veined, serrate above the middle, fimbriate along the labellar margin below the middle; lip fleshy, oblong to subpandurate, 3.25 × 1.5 mm, apical portion purple, ovoid, rounded, convex, with a fringed margin, thickened below the middle into a pair of pyramidal calli, the sides of which touch over a deep median channel to create openings in front and behind, base broadly hinged to the column-foot and flanked by a pair of minute auricles; column terete, 3 mm long, with a bilobed, shortly-pubescent foot.

ETYMOLOGY: From the Latin *perangustus*, "very narrow," referring to the narrowly linear leaves, filiform peduncle, and the long-attenuate sepals.

TYPE: ECUADOR: NAPO: epiphytic 15 km west of Tena, alt. 600 m, 26 July 1975, J. Brenner 14 (HOLOTYPE: SEL), flowered in cult. 22 March, 1976. Also flowered in cult. by Janet Kuhn 21 Oct. 1975.

DISTRIBUTION: Ecuador.

This species was one of many which were gathered from mossy twigs near the tops of felled trees in the eastern foothills of the Andes. It is distinguished from most of the other dwarf, caespitose species with abbreviated stems by its long, linear leaves and exceedingly long, hair-like flower-stem. The flowers are comparatively large, produced singly in a slow succession, and they dangle some distance from the minute plant which bears them. The apices of the sepals are long-tailed, and the labellar margin of the transparent petals is long-fimbriate. The lip is ovoid and fringed above the middle, and a channel below the middle is partially covered by a pair of pyramidal calli which meet to form a roof.

*Pleurothallis perangusta* is closely allied to *P. aristata* Hook. (or *P. divexa* Ames), but vegetatively it is easily distinguished by its twice longer and half as broad leaves, and by the thick pair of touching calli on the lip.

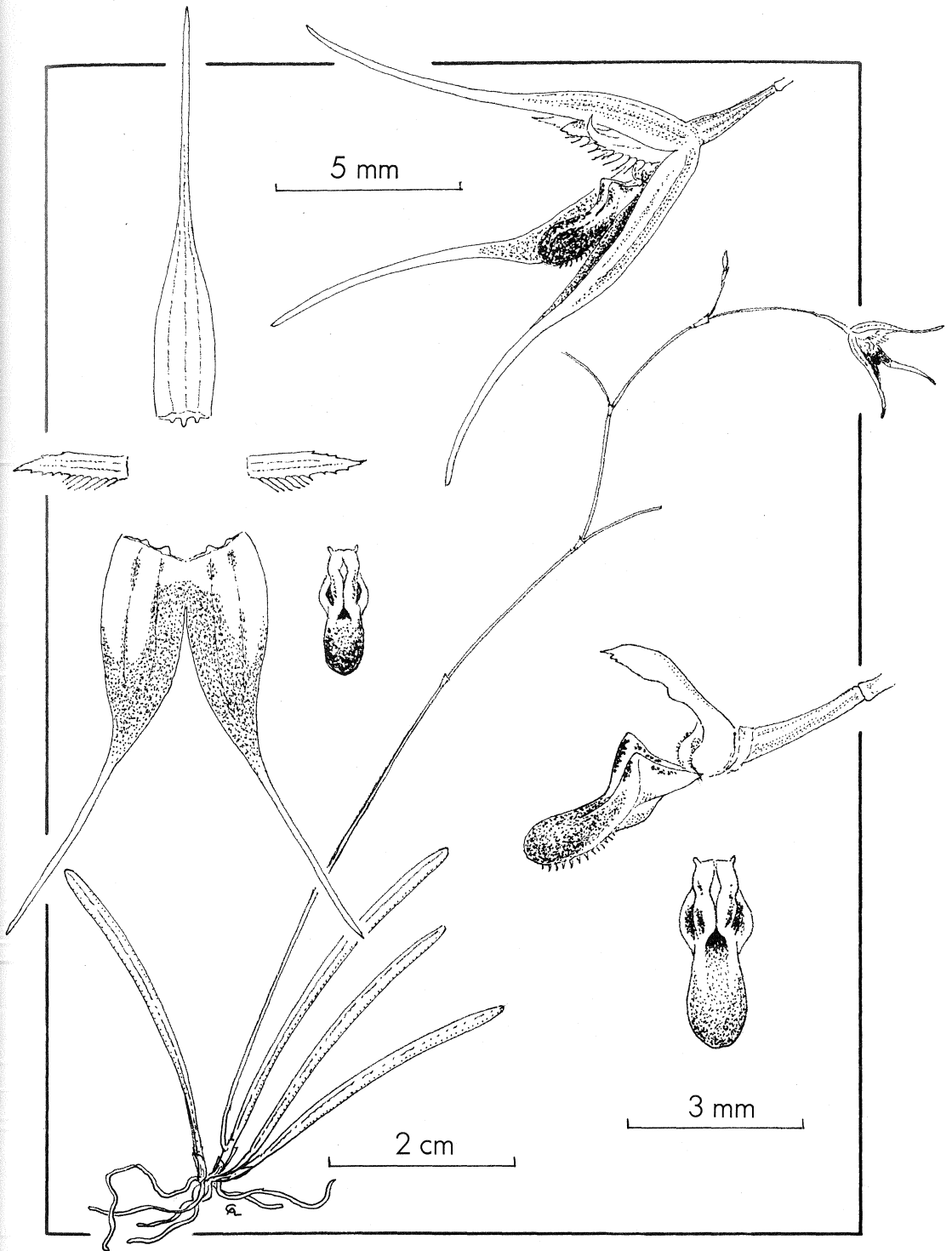


Figure 184. PLEUROTHALLIS PERANGUSTA C. A. Luer



**Pleurothallis periodica** Ames, Sched. Orchid. 7:21, t. 4. 1924.

Plant small, epiphytic, densely caespitose; roots filamentous. Secondary stems abbreviated, 2-4 mm long, mostly concealed by 2-3 short, thin, ribbed sheaths, unifoliate. Leaf coriaceous, narrowly obovate, subacute, tridenticulate, base gradually narrowed into a channeled petiole, 2-3.5 cm long, 3-5 mm wide. Inflorescence a fascicle, or a very contracted raceme, of single, successive flowers, from the apex of a filiform peduncle, 4-5 cm long, from a lateral node on the secondary stem; floral bracts acute, 2-3 mm long; pedicel 5-6 mm long; ovary 2 mm long; sepals narrowly ovate, acute, more or less longitudinally revolute, yellow, prominently striped with purple along the 3 veins; dorsal sepal  $8.5 \times 2.25$  mm; lateral sepals adherent to near the middle,  $8 \times 4$  mm together; petals elliptical, acute, the labellar margin slightly swollen,  $3 \times 1.25$  mm, 3-veined, striped with purple; lip oblong, apex rounded with a microscopically erose margin, with a pair of broad angles below the middle, the base very shortly unguiculate, with a pair of small, broad auricles, the disc minutely glandulose, with a pair of minutely dentate lamellae extending from the lateral angles to above the middle,  $3.75-4 \times 1.25$  mm; column terete, 3 mm long, with a short foot.

ETYMOLOGY: From the Latin *periodicus*, "recurring at intervals of time," in reference to the flowering habit of the species.

TYPE: COSTA RICA: CARTAGO: Peralta, 13 July 1923, C. H. Lancaster 463 (HOLOTYPE AMES).

DISTRIBUTION: Costa Rica and Honduras.

HONDURAS: DIST. FED: Cerro El Tigre, alt. ca. 1700 m, F. Matthews s.n. (SEL), flowered in cult. continuously, greenhouse acc. no. 20-74-12.

Ames described this species from Costa Rica where it had been considered endemic. Matthews has recently discovered it for the first time in Honduras. Heller apparently did not find it in intervening Nicaragua.

This species is closely related to the common and considerably more widespread *Pleurothallis brighamii* S. Wats. *Pleurothallis periodica* is characterized by a dense tuft of narrow, delicate, little leaves with nearly invisible secondary stems. The slender flower stem protrudes about twice the height of the leaves, and bears in a contracted raceme a continuous, slow succession a solitary flower from the apex. The flower is as large as that of *P. brighamii* and basically very similar, yet immediately recognizable. The yellowish sepals, conspicuously striped with purple, are gracefully revolute. The sides of the dorsal sepal roll upward and the sides of the narrow lateral sepals twist outward. The petals are indistinguishable from those of some of *P. brighamii*: three-striped and slightly ventricose. The lips of both species are also very similar, the only difference being the presence of minute denticulations of the lamellae forward of the lateral angles in *P. periodica*. Although Ames claimed the absence of the lateral angles to be one of the differentiating features, they are clearly shown in the drawing of the type.

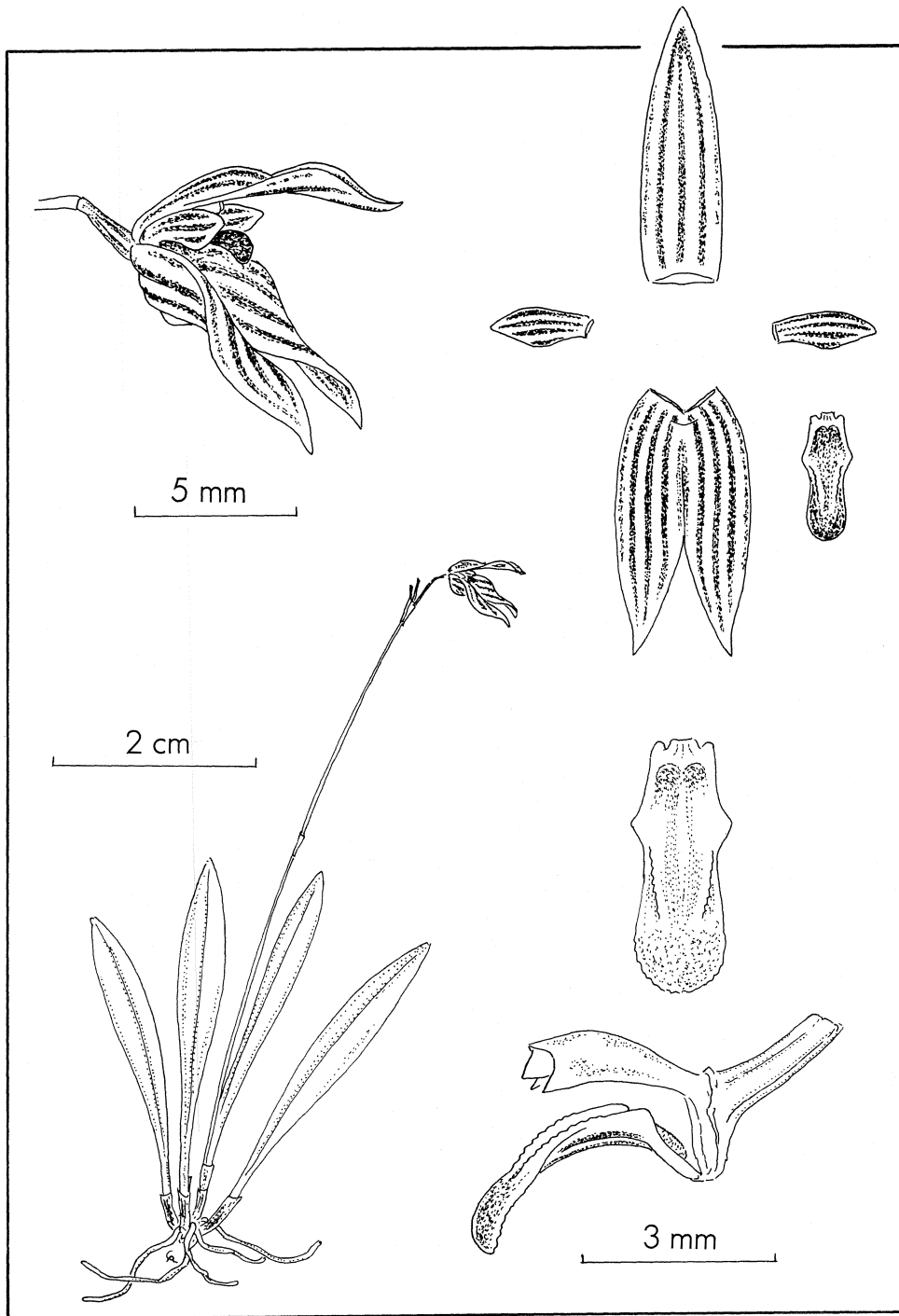


Figure 185. PLEUROTHALLIS PERIODICA Ames





**Pleurothallis phyllocardia** Rchb. f., Beitr. Orchid. Centr. Amer. 97. 1866.

*Pleurothallis triangulabia* C. Schweinf., Ann. Missouri Bot. Gard. 24:183. 1937.

Plant large, epiphytic, caespitose; roots slender, fasciculate. Secondary stems slender, terete, purplish, 10-27 cm long, with a loose, brown sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, deflexed, ovate, concave, the apex acuminate, acute, tridenticulate, the base deeply cordate with overlapping auricles, 5-16 × 3-7 cm. Inflorescence fasciculate, the flowers produced singly and successively from an erect spathe, 2-2.5 cm long, from the base of the leaf; flowers deflexed, deep purple; floral bract tubular 3-5 mm long; pedicel 1-1.5 cm long; ovary 6-7 mm long; dorsal sepal ovate, the sides revolute, the apex acuminate, acute, 11-14 × 6-8 mm, 3-veined; lateral sepals united into an ovate synsepal, acuminate, 11-15 × 6-7 mm, 6-veined; petals linear-oblong, acute, the margins minutely denticulate, 7-10 × 2 mm; lip subcordate to subtriangular, fleshy, subacute, the base reflexed and concave, the glenion well-developed, flanked by a pair of circular, smooth, concave areas, the remainder of the surface minutely tuberculose, the margin minutely sinuate, 3.5 × 3.5 mm; column stout, 1 × 2 mm with a foot 1.5 mm long.

ETYMOLOGY: From the Greek *phyllon*, "leaf," and *cardia*, "heart," in reference to the heart-shaped leaf.

TYPE: COSTA RICA: ALAJUELA: Desengaño, 31 May 1858, *Wendland 973* (HOLOTYPE: W).

DISTRIBUTION: Costa Rica and Panama.

PANAMA: CHIRIQUI: epiphytic at Bajo Grande above Cerro Punta, alt. 2200 m, 10 Sept. 1976, *C. Luer & H. Butcher 1178* (SEL); epiphytic a few km above Guadalupe, alt. 2500 m, 13 Sept. 1976, *C. Luer & H. Butcher 1209* (SEL).

Originally described from neighboring Costa Rica, this large, handsome species is locally abundant in the cloud forests above Cerro Punta in the Province of Chiriqui of western Panama. It is easily recognized by its large, deflexed, cordate leaf and the widely spread maroon flower which faces downward from a conspicuous, projecting spathe. Although the sides of the dorsal sepal are revolute, it is broader than the united lateral sepals, the sides of which are similarly revolute. The denticulate petals project from either side of the cordate-triangular lip which is minutely papillose.

Although Reichenbach described the lip as "cordato oblongo apiculato utrinque medio sinuato," *Pleurothallis phyllocardia* certainly includes Schweinfurth's *P. triangulabia*. Reichenbach's sketch from a dried flower is very close. For the flower, he quotes the collector, "Hülle dunkelroth, abwärts nach innen gekehrt" (. . . dark red, turned downward and inward - the typical appearance). The huge spathe is present on the type-specimen.

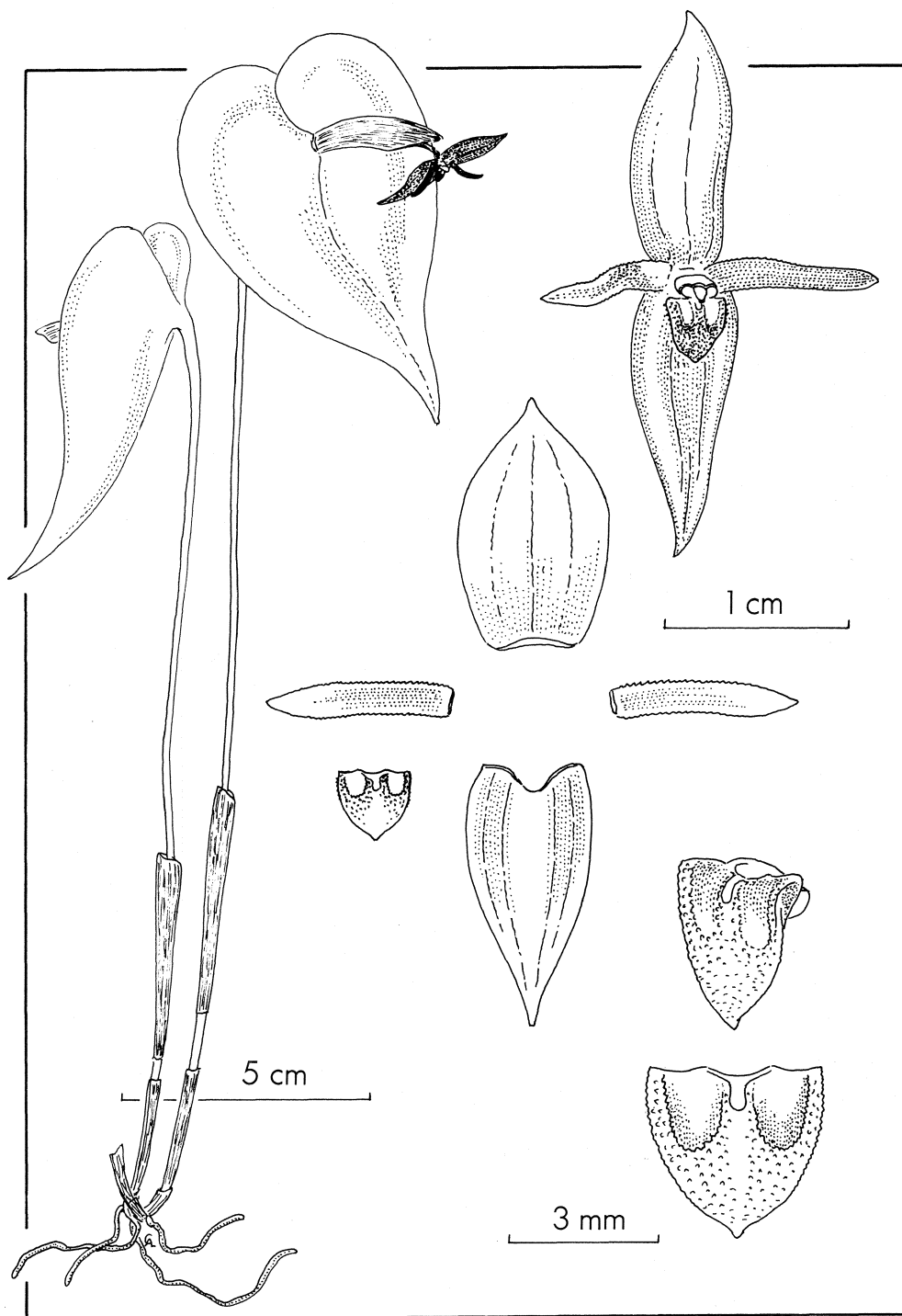


Figure 187. PLEUROTHALLIS PHYLLOCARDIA Rehb. f.







**Pleurothallis pilifera** Lindl., Folia Orchid. Pleuroth. 9. 1859.

*Humboldtia pilifera* (Lindl.) O. Ktze., Rev. Gen. Pl. 2:668. 1891.

Plant epiphytic to terrestrial, caespitose, medium to large; roots numerous, flexuous. Secondary stems slender, terete, 10-30 cm long, with a close, tubular sheath near the middle and 2 others basally, monophyllous, sometimes prolific. Leaf ovate, acute, base cuneate, petiolate, 8-15 × 3-5 cm, excluding the petiole, 1.5-3 mm long. Inflorescence racemose (1-2), densely many-flowered, exceeding the leaf, to 30 cm long; peduncle slender, from a 10-15 mm spathe at the apex of the stem; floral bract infundibular, acute, 5 mm long; pedicel 4 mm long; ovary 2.5 mm long; flowers ringent, yellow suffused with purple to maroon; sepals ovate, obtuse to subacute, glabrous externally, pubescent internally, 6.5 × 3 mm, lateral sepals slightly oblique and united in their basal third; petals ovate to obovate, obtuse to subacute, 3 × 2 mm, 3-veined; lip oblong-ligulate, suffused with maroon, apex obtuse to rounded and thickened, with a pair of erect, obtuse, triangular elevations below the middle which, if spread, appear as lateral lobes, channeled centrally, base concave at the attachment to the column-foot, 3.5 × 1.5 mm; column terete, 1.5 mm long, with a foot 1 mm long.

ETYMOLOGY: From the Latin *pilifer*, "bearing hairs" (from *pilus*, "hair," and *ferre*, "to bear"), in allusion to the pubescent interior of the sepals.

TYPE: ECUADOR: PICHINCHA: (not Peru) Valley of Lloa, alt. 2500 m, 1854, *Jameson s.n.* (HOLOTYPE: K).

DISTRIBUTION: Ecuador.

ECUADOR: PICHINCHA: terrestrial on road cut near km 85, old road between Quito and Santo Domingo, alt. 1500 m, 2 March 1975, *C. Luer & R. Kent 306* (SEL); near km 40, alt. 2000 m, 10 March 1975, *C. Luer & R. Kent 222* (SEL); about 8 km west of Nono, alt. 2800 m, 9 March 1976, *C. Luer, J. Luer & P. Taylor 795* (SEL).

The numerous purplish flowers of *Pleurothallis pilifera* are borne on one or two long, slender, wand-like racemes from the base of the petiolate leaf. One of our specimens bore superposed stems which created a plant 50 cm tall. The flowers are small with the inner surfaces of the sepals pilose. The lateral sepals are largely free, the petals are broad and blunt, and the labellum is oblong and obtuse. On the basal third of the lip there is an erect pair of thickened calli which, if forcibly spread to either side, would break the lip in the middle.

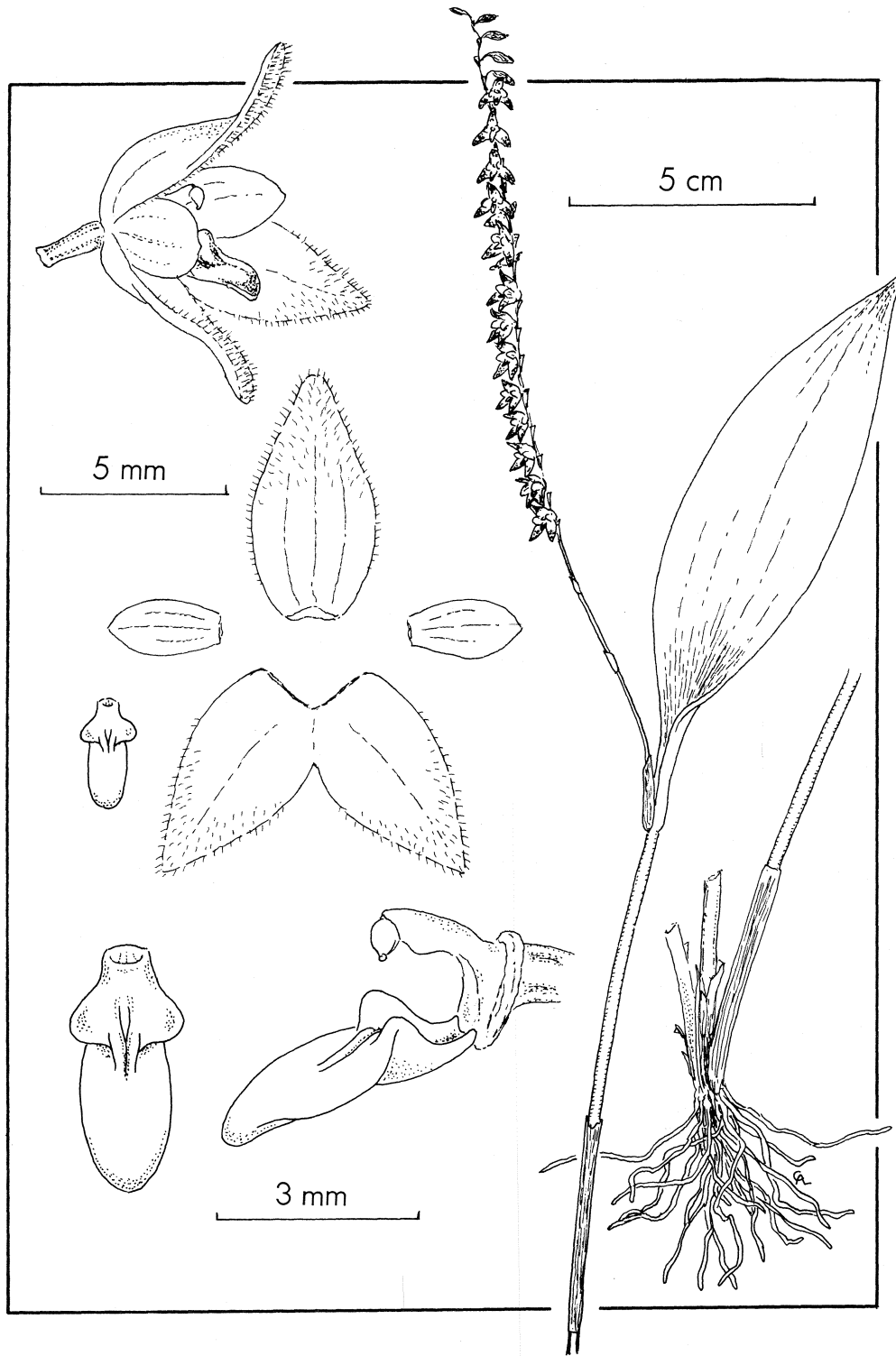


Figure 188. PLEUROTHALLIS PILIFERA Lindl.





**Pleurothallis producta** C. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis obsolescentibus unifoliatis, foliis coriaceis rigidis anguste obovatis obtusis conduplicatis, racemo solitario producto paucifloro, pedunculo filiformi erecto, floribus viridibus illis *P. grobyi* Batem. ex Lindl. simulantibus longipedicellatis, sepalo dorsali ovato acuminato, synsepalo ovato bidentato bicarinato, petalis obovatis subacutis, labello oblongo-ligulato rotundato bilamellato, columna alata pede bituberculato.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems obsolescent, 1-3 mm long, enclosed by 1-2 thin sheaths, unifoliate. Leaves coriaceous, rigid, narrowly obovate, subacute to obtuse, tridenticulate, conduplicate, channeled, the base narrowly cuneate and indistinctly petiolate, 2.5-5 cm long, 5-6 mm wide. Inflorescence a solitary raceme, elongated, distantly few-flowered, to 24 cm long; peduncle filiform, erect, from a node on the secondary stem; flowers green, similar to those of *P. grobyi* Batem. ex Lindl.; floral bract tubular, 2 mm long; pedicel 5-7 mm long; ovary 2 mm long, lightly verrucose; dorsal sepal ovate, concave, acuminate, acute, 5.5 × 2.5 mm, the 3 nerves prominent dorsally; lateral sepals united to near the apex into an ovate, bidentate lamina, bicarinate, 5.5 × 3.5 mm; petals obovate, subacute, 2 × 1 mm, 1-veined; lip oblong-ligulate to slightly obovate, the apex rounded, the base shortly hinged to the column-foot, disc with a pair of low, parallel lamellae, 2 × 1 mm, green, marked with red; column broadly winged, 2 mm long, with a short, concave foot with a pair of tubercles.

ETYMOLOGY: From the Latin *productus*, "elongated," in reference to the long, slender inflorescence.

TYPE: *ECUADOR*: PICHINCHA: epiphytic in trees along a stream beside the new road between Quito and Santo Domingo, about 15 km below the summit, alt. ca. 2000 m, 1 March 1975, C. Luer & R. Kent 572 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: without known locality, collected by Janet Kuhn and given to the Marie Selby Botanical Gardens, greenhouse acc. no. 25-75-100.

DISTRIBUTION: Ecuador.

The little green flowers of this species are very similar to those of the variable *Pleurothallis grobyi* Batem. ex Lindl. to which it is undoubtedly closely related. Although there is no distinct floral characteristic to separate this species clearly from *P. grobyi*, it is easily recognized by its habit. The narrow leaves are rigid and more or less conduplicate. The inflorescence is greatly elongated to about five times the length of the leaves. The few, long-pedicellate flowers are borne distantly in a very slender, flimsy raceme.

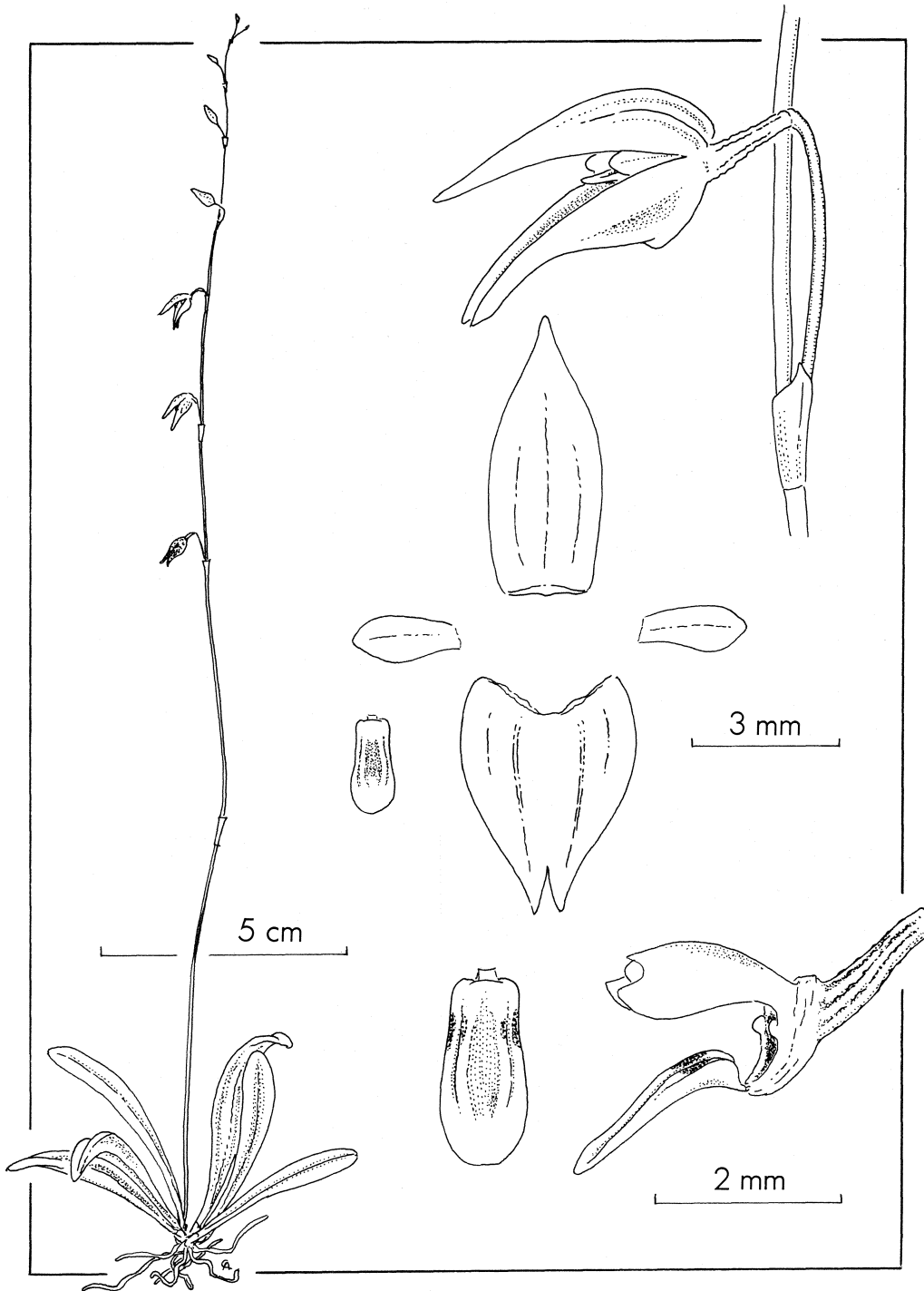


Figure 190. PLEUROTHALLIS PRODUCTA C. A. Luer

**Pleurothallis ramulosa** Lindl., Folia Orchid. Pleuroth. 33. 1859.

*Humboldtia ramulosa* (Lindl.) Kuntze, Rev. Gen. Pl. 2:668. 1891.

*Pleurothallis superposita* Schltr., Repert. Spec. Nov. Regni Veg. 14:386. 1916.

Plant scandent, terrestrial to epiphytic, up to a meter high; roots slender, flexuous, fasciculate from the bases of the superposed stems. Secondary stems erect, slender to stout, terete, unifoliate, proliferative, 5-12 cm long, with a close tubular sheath below the middle and 2 more at the base. Leaf coriaceous, elliptical-oblong, subacute, tridentate, base cuneate, petiolate, 3-6 × 1.5-2.5 cm, the petiole 0.5-1 cm long. Inflorescence racemose, to 25 cm long, arching, many-flowered, nearly to the base, peduncle from a spathe 8-12 mm long, from the apex of the secondary stem, often adjacent to a proliferated stem; floral bract about 5 mm long; pedicel 3 mm long; ovary 4 mm long; flowers yellow, spreading; sepals very narrowly ovate, the apices long-attenuate, 18-20 × 2 mm, 3-veined, unicarinate, externally, finely pubescent internally, the lateral sepals free, forming at the base in a shallow mentum; petals oblong-obovate, obtuse, 2.5 × 1 mm, translucent white, with 1 vein appearing as a purple stripe; lip oblong, apex obtuse and papillose, base rounded, very shortly unguiculate, disc with a pair of low, longitudinal calli; column 2 mm long.

ETYMOLOGY: From the Latin *ramulosus*, "with many small branches" (dim. of *ramus*, "branch"), referring to the branching habit of the species.

TYPE: *ECUADOR*: (not Peru): PICHINCHA: "Quito, W. Andes," *Jameson s.n.* (HOLOTYPE: K).

DISTRIBUTION: Ecuador.

*ECUADOR*: PICHINCHA: terrestrial on the road embankment near km 29 between Quito and Santo Domingo, alt. 2900 m, 22 Oct. 1961, *C. H. Dodson & L. B. Thien 1033* (SEL); terrestrial near Guayumo between Quito and Nanegal, alt. 2000 m, 26 Oct. 1961, *C. H. Dodson & L. B. Thien 1103* (SEL); terrestrial about 15 km from the pass between Quito and Santo Domingo, alt. 2500 m, 16 Aug. 1975, *C. A. Luer, G. M. Luer & S. Wilhelm 541* (SEL).

This species is very closely allied to the widespread *Pleurothallis sclerophylla* Lindl., from which it differs in its scandent habit of growth, smaller leaves, and flowers with lips which are oblong without basal dilation. It may be a relatively recent evolutionary product.

*Pleurothallis ramulosa* is distinguished by its remarkable proliferation. Long, branching series of relatively short secondary stems, one upon the other, are produced in loosely rooted bundles as tall as a meter in height. Under optimal conditions the height probably increases further. Long racemes of spindly, yellow flowers are borne beside rooted, superposed stems as well as from the terminal stem. The racemes appear identical to those of *P. sclerophylla*, only minor differences of the flowers separating the two.

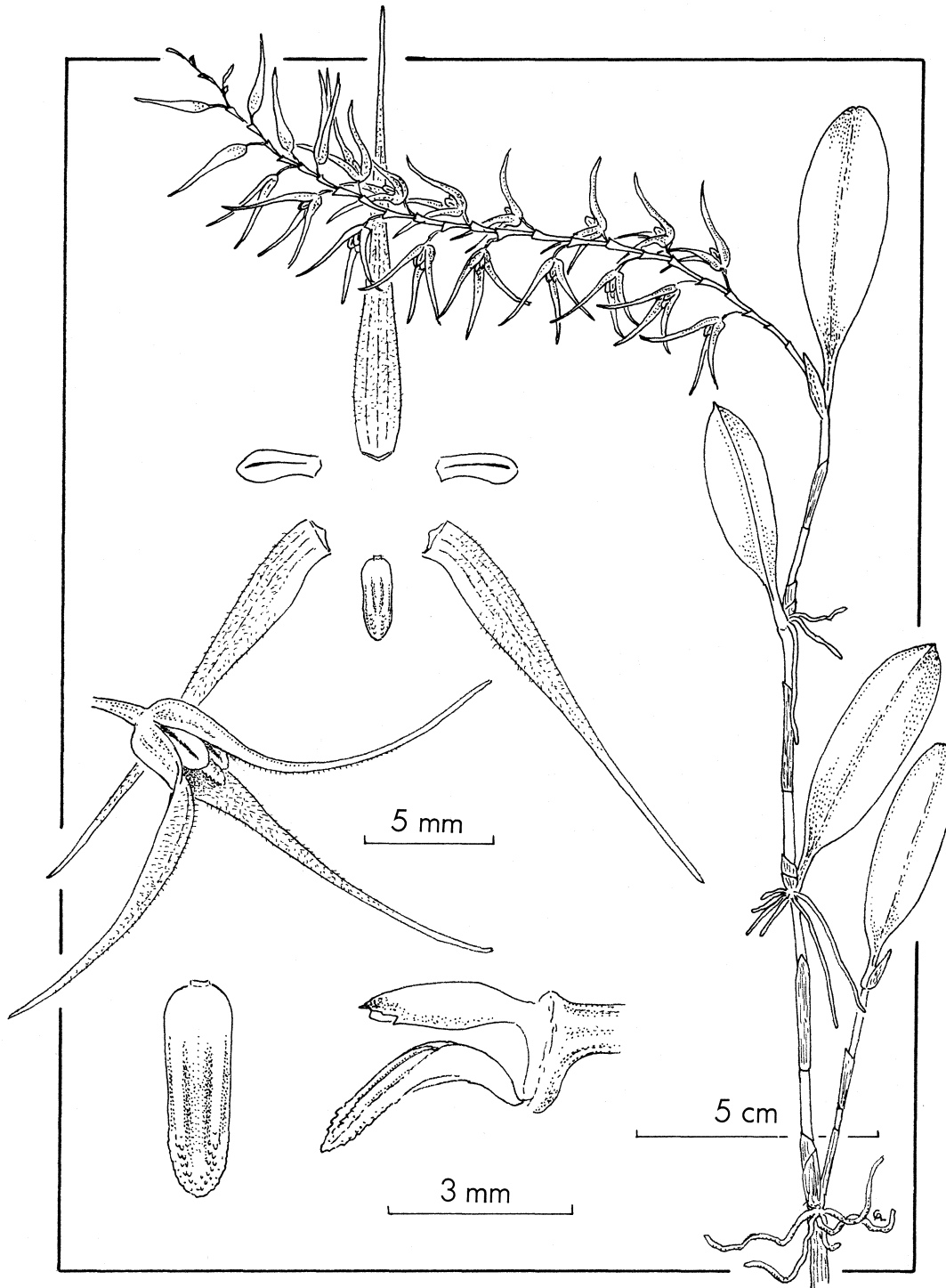


Figure 191. PLEUROTHALLIS RAMULOSA Lindl.



**Pleurothallis scandens** Ames, Sched. Orchid. 5:18 1923.

Plant epiphytic, small but freely branching and scandent, caespitose at intervals; roots filamentous, flexuous. Secondary stems slender, terete, 2-35 cm long, with 2-7 closely fitting tubular sheaths, minutely scabrous or pubescent, often shed, unifoliate, prolific. Leaf coriaceous, narrowly elliptical, acute, the base narrowly cuneate, indistinctly short-petiolate, 3-9 cm  $\times$  3-6 mm. Inflorescence fasciculate, the flowers produced singly and successively, from a spathe 1-3 mm long, at the apex of the secondary stems; floral bract with a red pubescence, 4-5 mm long, pedicel 2 mm long; ovary purple, 1.5 mm long; sepals ovate, subacute, dull yellowish flecked with purple-brown, 3-veined, the dorsal sepal 4.5-5  $\times$  2.25 mm, the lateral sepals connate to near the middle slightly oblique, each 4  $\times$  2 mm; petals narrowly ovate, translucent yellow and 3-veined below the middle, thickened yellow-brown, obtuse, above the middle, obscurely serrulate, 4  $\times$  1.5 mm; lip purple, oblong, the apex rounded, subretuse, with a pair of short, obtuse, lateral lobes just below the middle, the base with a pair of minute auricles, the disc fleshy thickened at the base progressing into a pair of low, longitudinal calli near the middle, 2  $\times$  1 mm; column white, thick, the apex bidentate, 2 mm long, with a concave foot.

ETYMOLOGY: From the Latin *scandens*, "climbing," in reference to the scandent habit of the species.

TYPE: COSTA RICA: CARTAGO: La Estrella, C. H. Lankester & Alfredo Sancho 401 (HOLOTYPE: AMES).

DISTRIBUTION: Costa Rica, Panama, and Ecuador.

PANAMA: PANAMA: epiphytic on Cerro Jefe, alt. 1000 m, 15 Oct. 1967, R. L. Dressler 3078 (SEL); epiphytic along the El Llano-Carti road, alt. 300 m, 4 March 1976, C. Luer, J. Luer, P. Taylor & R. L. Dressler 1018 (SEL).

ECUADOR: NAPO: epiphytic in cloud forest near Santa Rosa between Baeza and Lago Agrio, alt. 1700 m, 19 Oct. 1971, B. MacBryde 737 (SEL).

Heretofore reported only from Costa Rica, this species has been found recently in several locations in Panama, and as far as the Oriente of Ecuador. Obviously, the spindly, climbing species is easily overlooked. From a cluster of small secondary stems, one (or more, believed by Ames to be the primary stem) grows much longer than its fellow, and at the base of the leaf it bears, another clump of secondary stems with roots develops. Lengths of proliferating growth nearly a meter in length have been seen. The cauline sheaths, especially those near the base, bear minute bristles. The little, single flowers are borne intermittently from the bases of the secondary stems. They vary in color from yellowish to brown or purple.

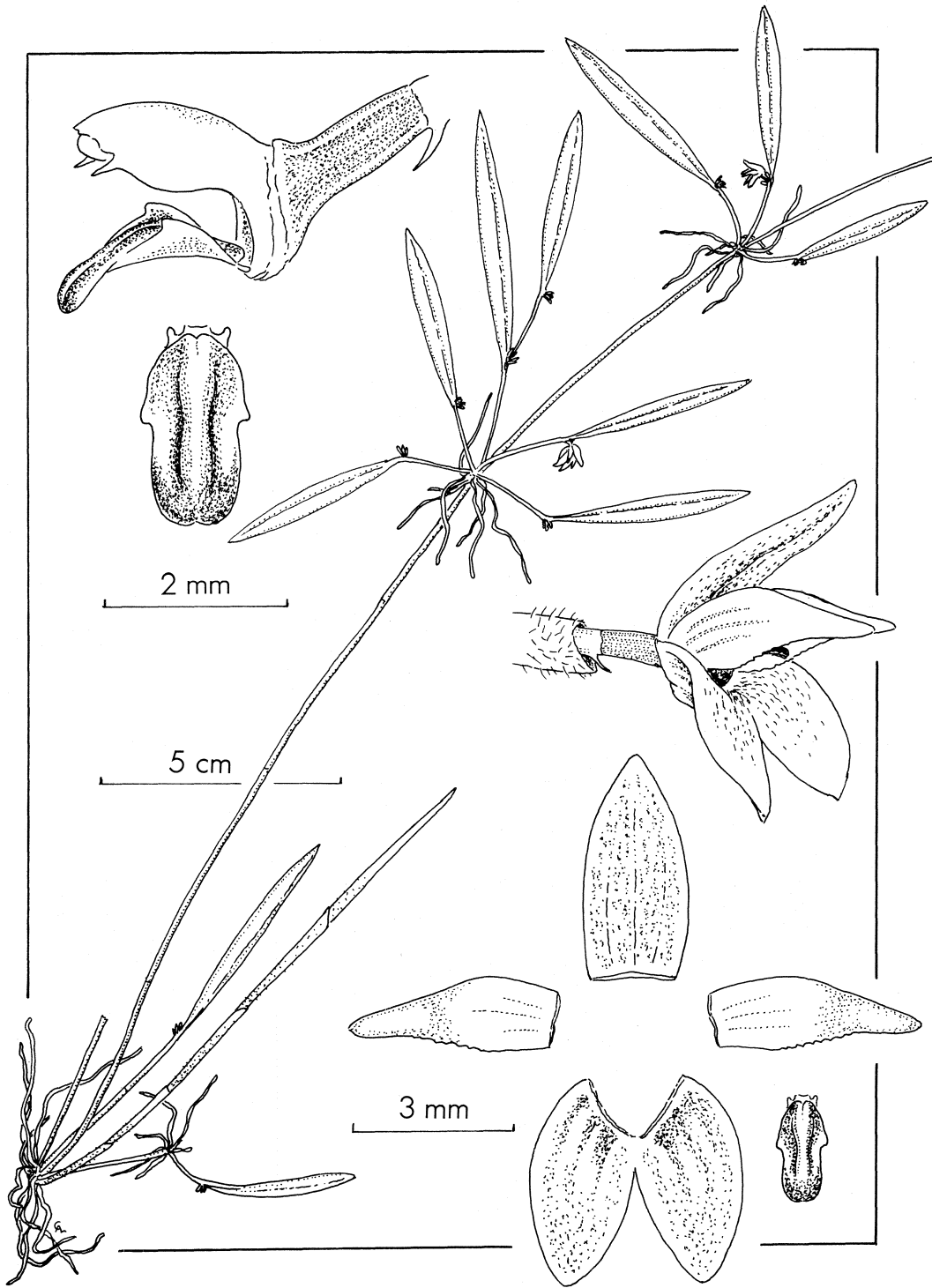


Figure 192. PLEUROTHALLIS SCANDENS Ames

**Pleurothallis scurrula** C. A. Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis gracilibus teretibus unifoliatis, folio ovato acuto cordato sessili, inflorescentia fasciculata, flore solitario inverso, sepalo mediano anguste triangulari acuto marginibus recurvatis, synsepalo transverse ovato apice rotundato basi cordato, petalis obscure panduriformibus oblongis acutis reflexis, labello bicolore oblongo rotundato basi late cuneato et reflexo, disco tuberculato canaliculato.

Plant medium in size, epiphytic, caespitose; roots filiform, flexuous. Secondary stems slender, terete, 5-12 cm long, with a tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf spreading, ovate, acuminate, acute, tridenticulate, base cordate, sessile, 5-8 × 2-3 cm. Inflorescence fasciculate, flowers single, successive, from a fugacious spathe at the base of the leaf; flowers widely spread, inverted; floral bract tubular, 6-8 mm long; pedicel slender 12-15 mm long; ovary 4-5 mm long; middle sepal lowermost, pale yellow-green, narrowly triangular, acuminate to acute, margins recurved, 11 × 5 mm, 3-veined; lateral sepals pale yellow-green, connate to the apex into a transversely ovate lamina, apex obtuse to rounded, minutely emarginate, base cordate, 7 × 9 mm, 4-veined, concave centrally, the margins recurved; petals green or red, oblong to obscurely pandurate, acute, 7 × 3 mm, reflexed, the margins recurved; lip uppermost, red with yellow margin, oblong, 3 × 2 mm, apex rounded, base very broadly cuneate before being sharply reflexed upon its back side, disc tuberculate and channeled centrally; column stout, 1 × 1.5 mm, with a foot 1.5 mm long.

**ETYMOLOGY:** From the Latin *scurrula*, "a little clown," in allusion to the appearance of the little inverted flower seemingly balanced upon the leaf by the middle sepal.

**TYPE:** PERU: without specific location, *Fred Fuchs, Jr. s.n.* (HOLOTYPE: SEL), cultivated by Janet Kuhn, flowered in cult. 18 Oct. 1975.

**ADDITIONAL MATERIAL EXAMINED:** PERU: without specific location, cultivated by H. P. Jesup.

**DISTRIBUTION:** Peru.

This little species is readily recognizable by its medium-sized, long-pedicellate, inverted flowers with a very broadly rounded synsepal behind the uppermost labellum. The apex of the oblong lip is rounded and the disc is verrucose. The petals curve back from either side. Below, the long middle sepal points downward and the apex commonly comes to rest on the surface of the leaf. The heart-shaped leaf and slender secondary stem are very similar to those of the great horde of other cordate-leaved species.

*Pleurothallis scurrula* was discovered in Peru by Fred Fuchs of Naranja, Florida and cultivated by Janet Kuhn of Easton, Connecticut. A more colorful specimen from an undetermined source in Peru is cultivated by H. Phillips Jesup of Bristol, Connecticut.

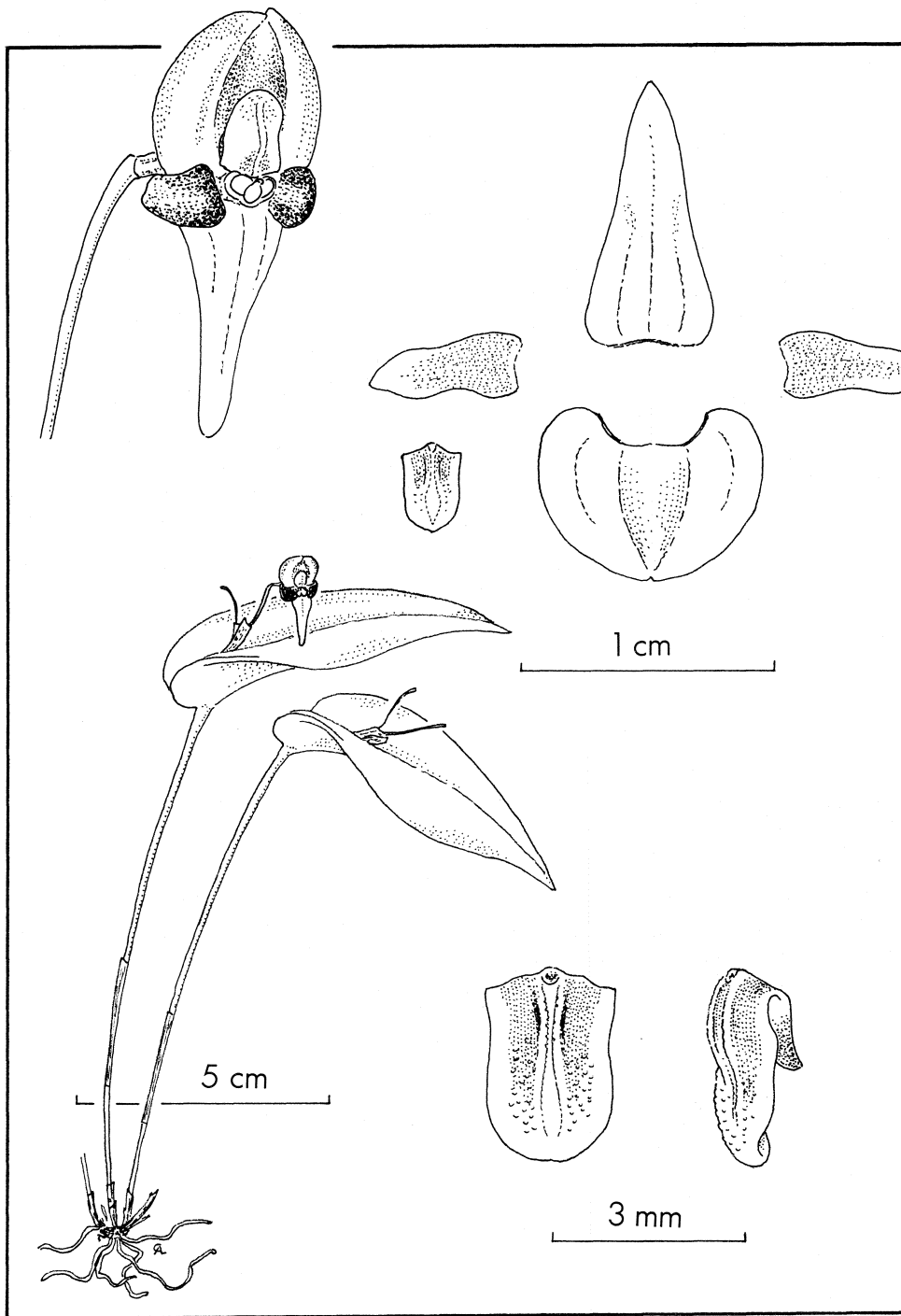


Figure 193. *PLEUROTHALLIS SCURRULA* C. A. Luer

**Pleurothallis semilunata** C. A. Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis gracilibus unifoliatis vaginis lepanthiformibus, foliis oblongis obtusis tridenticulatis breviter petiolatis, racimis paucis brevibus paucifloris, floribus luteolis tricaudatis, sepalis libris anguste ovatis apicibus acuminatis attenuatis crassibus, petalis ellipticis obtusis, labello ovato obtuso infra medium dilatato lateribus incurvis disco semilunato calloso.

Plant small, epiphytic, caespitose; roots filiform, flexuous. Secondary stems ascending to erect, slender, 2-6 cm long, clothed by 3-6 tubular, imbricating, ribbed, scabrous sheaths, with the apices dilated and acute, unifoliate. Leaf gray-green, oblong to obovate, obtuse, tridenticulate, base cuneate, shortly petiolate, 15-27 mm long including the 3-4 mm petiole, and 6-9 mm wide. Inflorescence a few (2-3), short (less than 1 cm), few-flowered (2-3) racemes from the apex of the stem; floral bract and pedicel each about 1 mm long; ovary 0.5 mm long; sepals free, pale yellow-green, narrowly ovate, the apices long-acuminate, acute, slightly thickened, 4-6 × 1-1.25 mm, 3-veined, the lateral sepals oblique; petals translucent pale yellow, elliptical, obtuse, 2 × 0.75 mm, faintly 1-veined; lip translucent yellow-green, ovate, apex obtuse, the margins recurved, dilated below the middle with incurved sides, base subcordate with obtuse or rounded angles, disc with a pair of erect thick, semilunate callosities near the middle, 2 × 1.25 mm spread; column stout, 1 mm long, with a foot 0.5 mm long.

ETYMOLOGY: From the Latin *semilunatus*, "crescent-, or half-moon shaped," in reference to the rounded, erect lamellae on the disc of the lip.

TYPE: *ECUADOR*: EL ORO: epiphytic on the mossy twigs of a tree between Piñas and Santa Rosa, alt. ca. 1500 m, 9 Aug. 1975, C. Luer, G. Luer & Wilhelm 523 (HOLOTYPE: SEL).

DISTRIBUTION: Southwestern Ecuador.

Numerous plants of this species were found growing on low branches of a scrubby moss-covered tree on the relatively dry western slopes of El Oro Province. Dense clumps of the little lepanthiform stems showed no signs of the proliferative habit often seen in related species. A few, short, 2-, 3-flowered racemes of little, pale yellow-green, three-parted flowers were borne by nearly every stem. Flowers have continued to appear intermittently in cultivation at the Marie Selby Botanical Gardens. The sepals are caudate, the petals are elliptical and obtuse, and the lip is distinguished by the erect pair of semilunate keels near the center.

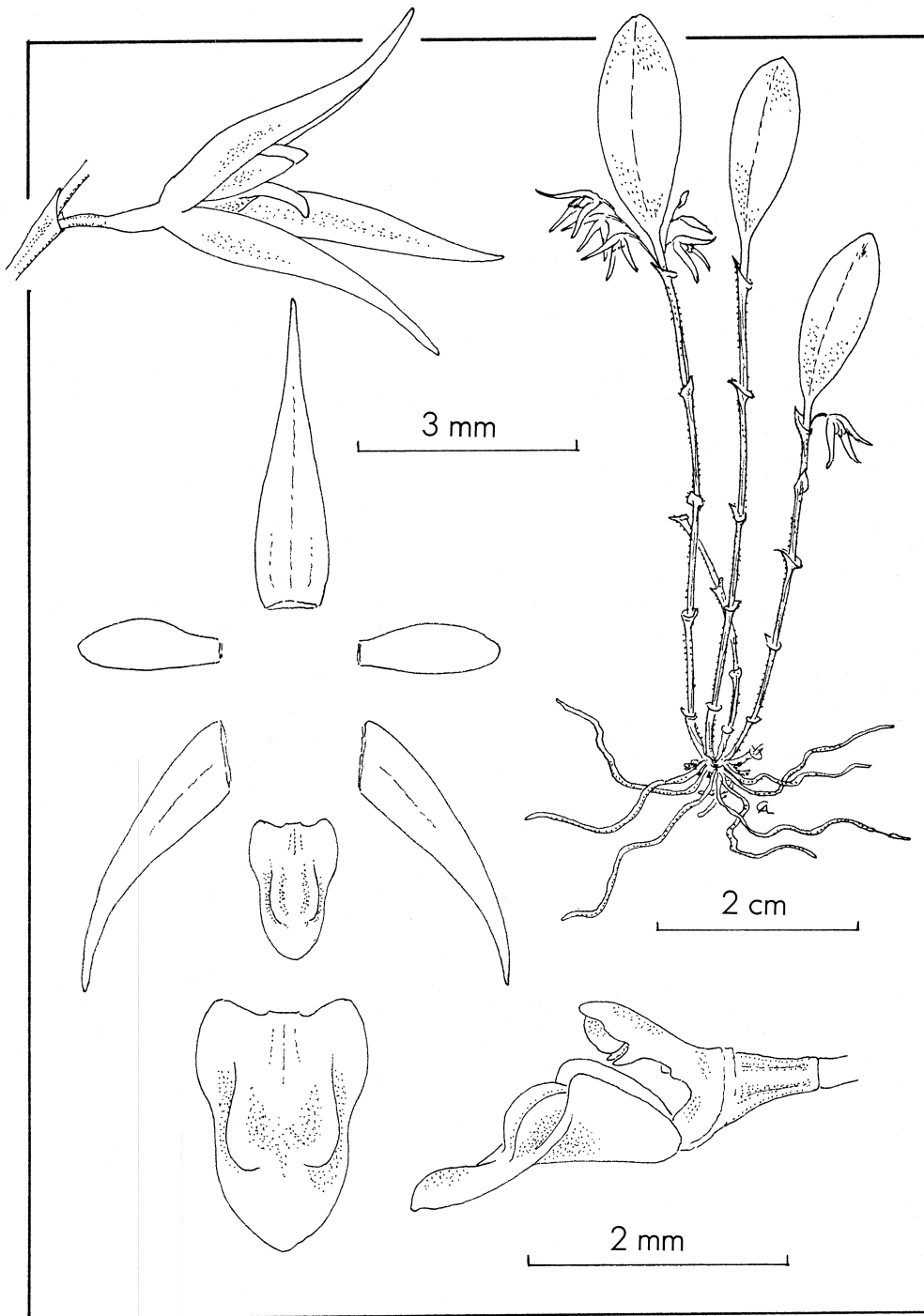


Figure 194. *PLEUROTHALLIS SEMILUNATA* C. A. Luer

**Pleurothallis sigynes** C. Luer, sp. nov.

Planta mediocris epiphytica vel terrestris caespitosa, caulibus secundariis teretibus gracilibus unifoliatis, foliis erectis coriaceis anguste ovatis acuminatis base rotundatis sessilibus, floribus brunneolis fasciculatis, sepalo synsepaloque ovato subacuto, petalis anguste triangularibus obliquis acutis marginibus denticulatis, labello oblongo rotundato base concavo.

Plant medium in size, caespitose, epiphytic to terrestrial; roots numerous, fine, flexuous. Secondary stems slender, terete, 10-30 cm long, with a tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, erect, narrowly ovate, acuminate, acute, tridentate, the base sessile, rounded to shortly cordate. Inflorescence fasciculate, several single flowers often produced simultaneously, the flowers bilabiate, orange-brown to red-brown, from a spathe about 1 cm long at the base of the leaf; floral bract 2-3 mm long; pedicel minutely pubescent, 10 mm long; ovary minutely pubescent, 4 mm long; dorsal sepal ovate, subacute,  $9 \times 3.5-4$  mm, 5-veined; lateral sepals completely united into an ovate synsepal, subacute,  $8-9 \times 5$  mm, 6-veined; petals narrowly triangular to oblong, oblique, acute, the margins minutely cilio-denticulate,  $3-4 \times 1$  mm, 1-veined; lip oblong, the apex rounded, minutely cilio-denticulate, the base truncate, concave,  $3 \times 2$  mm, yellow to orange, minutely speckled with brown or purple; column stout,  $1 \times 1.5$  mm.

ETYMOLOGY: From the Greek *sigynes*, "a spear," in allusion to the appearance of the narrow, erect leaf borne by a straight, slender stem.

TYPE: *ECUADOR*: PICHINCHA: terrestrial on the road embankment near km 85 on the old road from Quito to Santo Domingo, alt. 1500 m, 2 March 1975, C. Luer & R. Kent 295 (HOLOTYPE: SEL).

OTHER MATERIAL EXAMINED: terrestrial on the road embankment near Chiriboga, alt. 1600 m, 3 July 1967, C. H. Dodson, N. H. Williams & R. Adams 3726, 3728 (SEL); same area, collected March 1975, C. Luer & R. Kent 645 (SEL), greenhouse acc. no. 15-75-198, flowered in cult. 11 Jan. 1976.

DISTRIBUTION: Western Ecuador.

Although readily recognizable in living material, this species is similar to many others in the cordate-leaved group. Vegetatively it is extremely similar to *Pleurothallis harlingii* Garay, from a much higher elevation, and with twice larger flowers. The long, narrow leaves are slightly acuminate apically, and shallowly cordate or merely rounded at the sessile base.

The flowers are usually produced 2 to 5 at a time. The color is basically brown, ranging from orange-brown to red-brown or purple-brown. Externally the sepals are minutely colliculate, that is, the cells are large and visible, approaching a short pubescence, and internally the surface is like "velvet." The dorsal sepal has 5 instead of 3 veins as seen in the flowers of most other related species of similar size.

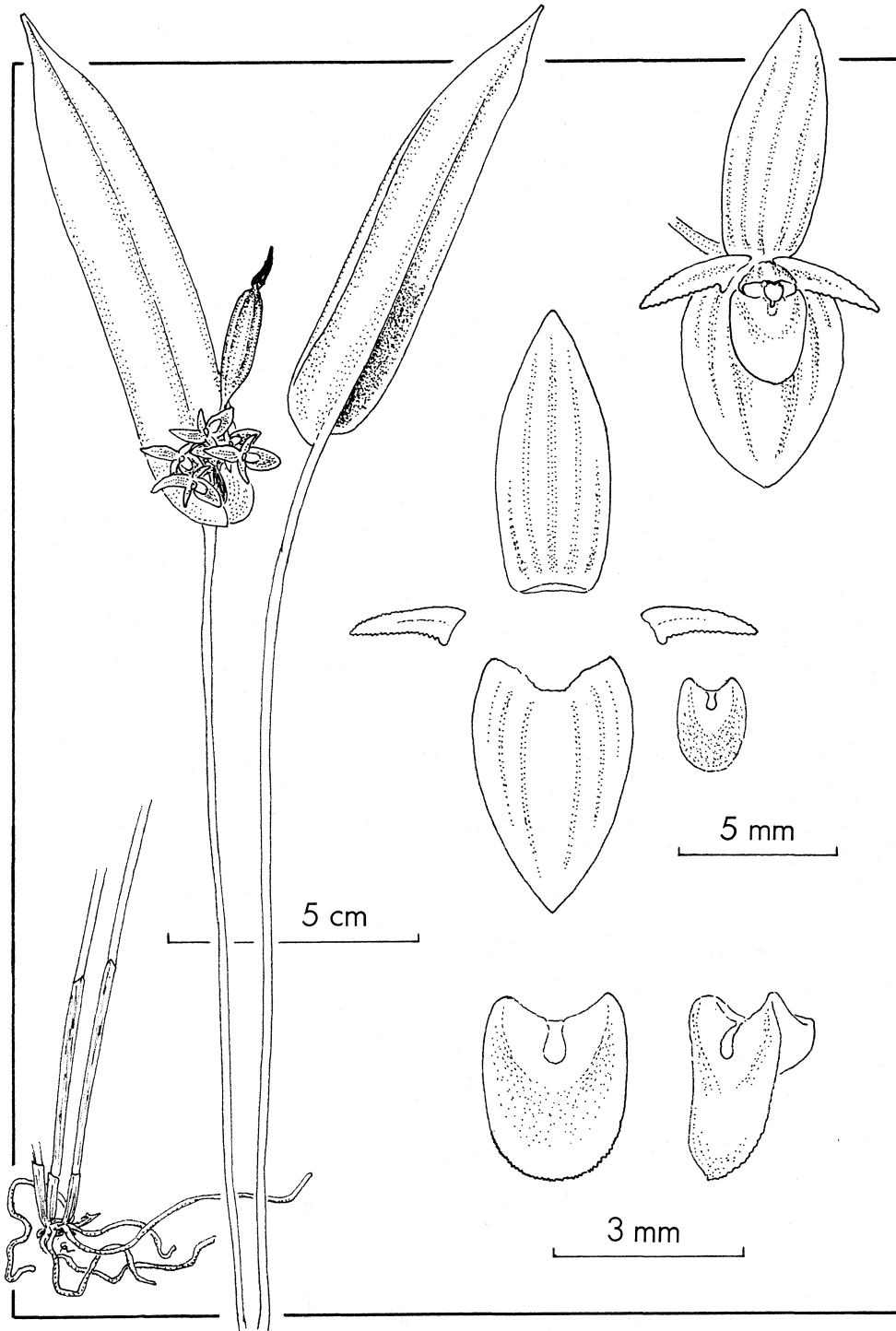


Figure 195. PLEUROTHALLIS SIGYNES C. A. Luer



**Pleurothallis simulans** L. O. Wms., Ann. Missouri Bot. Gard. 27:281, t. 33. 1940.

Plant, small, epiphytic, caespitose; roots filiform, flexuous. Secondary stems slender, terete, 2-5 cm long, with 2 closely fitting, tubular sheaths at the base, unifoliate. Leaf erect, coriaceous, suffused with purple, narrowly oblong to elliptical, obtuse, retuse, the base cuneate, sessile, 3-4 cm  $\times$  7-9 mm. Inflorescence fasciculate, the maroon flowers inverted, produced singly and successively from a spathe 5-6 mm long, in the axil of the leaf; peduncle 4 mm long; floral bract 3 mm long; pedicel 4 mm long; ovary 3 mm long; middle sepal ovate, acuminate, acute, the surface minutely tuberculose, 7  $\times$  4 mm, 3-veined; lateral sepals connate into an ovate, concave, acuminate, acute synsepal, 7  $\times$  5 mm, 4-veined; petals elliptical, acuminate, acute, the margins serrated, 6  $\times$  2 mm; lip rose, subcordate, acuminate, apiculate, the apical margins yellow, thickened and papillose, with shortly lacerated edges, the basal margins rounded and curved up, the disc concave with a well developed glenion, 2.5  $\times$  2.5 mm; column stout, 1  $\times$  1 mm, with a broad, minutely tuberculose foot.

ETYMOLOGY: From the Latin *simulans*, "resembling," in allusion to the author's impression that the column and lip suggested the genus *Stelis*.

TYPE: PANAMA: COCLÉ: epiphytic, north rim of El Valle, 9 July 1939, Allen 1912 (HOLOTYPE: MO).

DISTRIBUTION: Panama.

PANAMA: VERAGUAS: epiphytic in the cloud forest near the continental divide above Santa Fé, alt. ca. 700 m, 5 Sept. 1976, C. Luer & R. L. Dressler 1156 (SEL).

Although the leaves of this small species do not resemble the typically cordate leaves of the *Macrophyllae-Fasciculatae* section, the flowers indicate that it is, nevertheless, closely related. The little, narrow, oblong leaves are suffused with purple along the margins and especially on the back. The deep purple flower hangs with the lip uppermost. The warty middle sepal extends below. The margins above the middle of the short, broad lip are thickened and papillose with fringed edges.

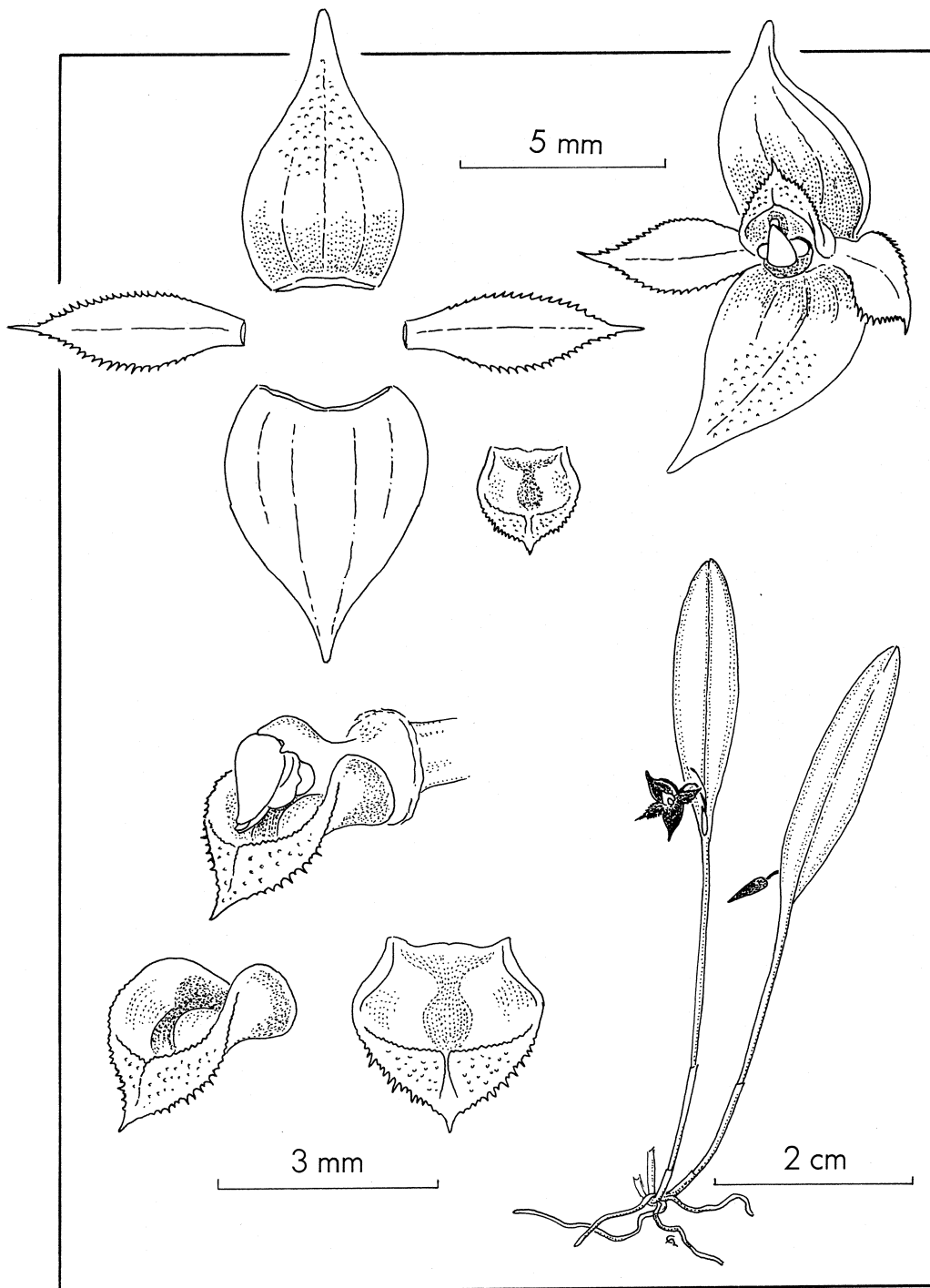


Figure 196. PLEUROTHALLIS SIMULANS L. D. Wms.

**Pleurothallis tonduzii** Schltr., Beih. Bot. Centralbl. 36 (2) :397. 1918.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, often purplish, 8-20 cm long, with 2-3 closely fitting, tubular sheaths at the base, unifoliate. Leaf erect, coriaceous, thick, often suffused with purple, narrowly ovate, acute, tridenticulate, the base shortly cordate, sessile, 10-18 × 2-3.8 cm. Inflorescence fasciculate, the flowers produced singly and successively from a spathe 1-1.5 cm long, in the axil of the leaf; floral bract tubular, about 5 mm long; pedicel about 1 cm long; ovary 4 mm long; sepals yellowish with brownish veins and suffused with brown or dull purple; dorsal sepal broadly ovate, obtuse, concave, 11-13 × 8-9 mm, 7-veined; lateral sepals connate into an ovate synsepal, acute, 10-12 × 7-8 mm; petals red-brown, oblong, acute, the margins serrulate, 8 × 2 mm; lip deep purple, thick, rigid, erect, the sides and subacute apex revolute to give a panduriform shape with a retuse apex, the margins denticulate, the surface verrucose, 5 × 4 mm unspread; column broad, 1 × 2 mm, with a flattened foot 1.5 mm long.

ETYMOLOGY: Named in honor of its discoverer, A. Tonduz.

TYPE: *COSTA RICA*: ALAJUELA: forests of San Ramon, alt. 1500-1600 m, May 1913, A. Tonduz 17646 (CR).

DISTRIBUTION: Costa Rica and Panama.

PANAMA: CHIRIQUI: epiphytic in the forest near the Río Chiriqui west of Volcán, alt. 1500 m, 12 Sept. 1976, C. Luer & H. Butcher 1200 (SEL); epiphytic in trees along an arroyo, llanos del Volcán, alt. 1500 m, 13 Sept. 1976, C. Luer & H. Butcher 1229 (SEL).

Although reported only from Costa Rica, this distinctive species is common and widespread in the region around Volcán in the Province of Chiriqui, Panama. Dense clusters of smooth, purplish stems bear erect, rigid, narrow leaves which are shallowly cordate at the base. The large, yellowish brown flowers possess a unique lip. The sides near the middle are rolled under and the apex is acutely deflexed, so that a deep purple, warty, violin-shaped structure projects from beneath the column in the center of the flower.

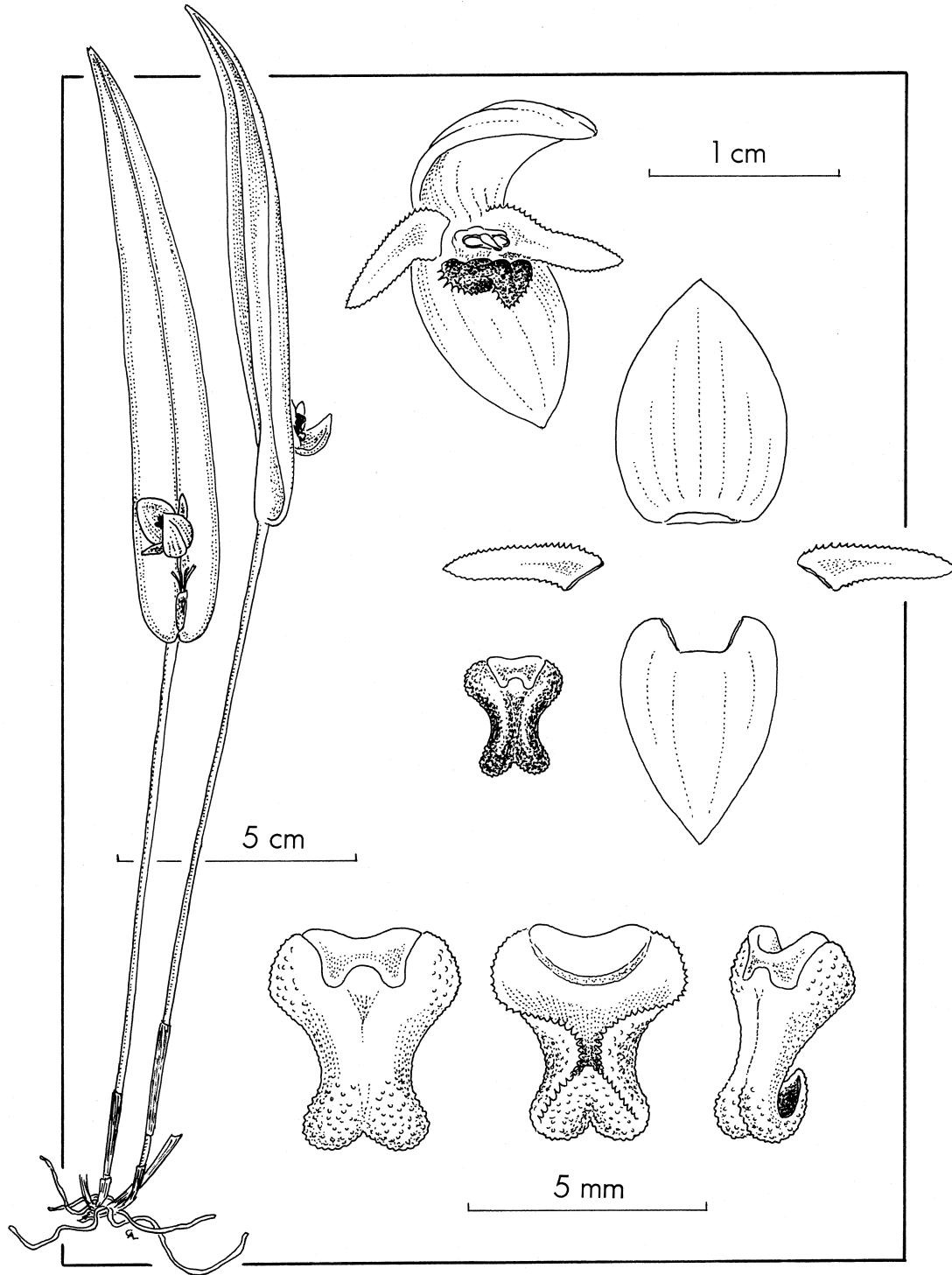


Figure 197. *PLEUROTHALLIS TONDUZII* Echltr.

**Pleurothallis trachychlamys** Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17:23. 1922.

Plant small, epiphytic, repent, the primary stem coarse, branching, covered by hispid sheaths, producing a secondary stem every 0.5-3 cm; roots filiform, flexuous. Secondary stems slender, terete, 2-4.5 cm long, concealed by 2-4 tubular, scabrous to hispid sheaths, unifoliate. Leaf coriaceous, narrowly elliptical, acute, tridenticulate, base narrowly cuneate, sessile, 5-7 X 0.7-1 cm. Inflorescence fasciculate, the flower pale yellow-green, ringent, glabrous, usually produced singly, occasionally doubly, from the base of the leaf; floral bract untidy villous, 1-2 mm long; pedicel and ovary each about 1.5 mm long; dorsal sepal ovate, obtuse, 6 X 2 mm, 1(3)-veined; lateral sepals free, elliptical, subacute, oblique, forming a mentum below the column-foot, 6 X 1.5 mm, 1(2)-veined; petals elliptical below the middle, linear, fleshy, convex above the middle, obtuse, 6 X 1.5 mm, 1(3)-veined; lip oblong, 2 X 1 mm, apex obtuse to rounded, base subtruncate, shortly hinged to the column-foot, with a lateral pair of short, erect, falcate teeth near the middle, disc greatly thickened toward the base into a broad protruding callus; column 2 mm long, with a pair of apical teeth, winged, the foot concave, 1 mm long.

ETYMOLOGY: From the Greek *trachys*, "rough," and *chlamys*, "a mantle, or cloak," referring to the scabrous sheaths of the stems.

TYPE: PANAMA: PANAMA: "auf Hügeln bei Panama-City," C. W. Powell 215.

DISTRIBUTION: Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, and Peru.

ECUADOR: PASTAZA: probably in the environs of Puyo, alt. circa 750 m, Fred Fuchs, Jr. s.n. (SEL), greenhouse acc. no. 26-74-118, flowered in cult. Nov. 1975; PICHINCHA: near km 85, old road between Quito and Santo Domingo, 15 Aug. 1975, C. Luer, G. Luer & S. Wilhelm 1098 (SEL).

NICARAGUA: RIVAS: Madera Volcano, Lake Nicaragua, A. H. Heller 8308 (SEL).

PANAMA: PANAMA: El Llano-Carti highway, 10-12 km north of El Llano, 18 Sept. 1974, R. L. Dressler 4756 (SEL); COCLE: cloud forest above El Valle, alt. 1000 m, 5 Mar. 1976, C. Luer, J. Luer, P. Taylor & R. L. Dressler 1250 (SEL).

This dwarf relative of the widespread *Pleurothallis peduncularis* Lindl. occurs locally from Nicaragua, where Heller found it in several locations, south through the rest of Central America and into South America as far as Venezuela and Peru. This is the first report of the species from intervening Ecuador, and Nicaragua.

*Pleurothallis trachychlamys* is easily recognized by its hispid, creeping rhizome, and ascending secondary stems clothed by rough sheaths. The narrow leaves are erect and commonly longer than the stems that bear them. Usually only one little pale green flower is borne from the base of each leaf, but often all the leaves bear their flowers simultaneously. The floral bracts are shaggy, but the flowers are glabrous. The sepals are blunt, free, and the apices of the petals are long, thickened, and convex. The lip is oblong with an upright, pointed tooth on either side near the middle, and from the base a thick, backward protruding callus reaches into the hollow of the column-foot. Sometimes the lateral lobes are reduced to indistinct lobules.

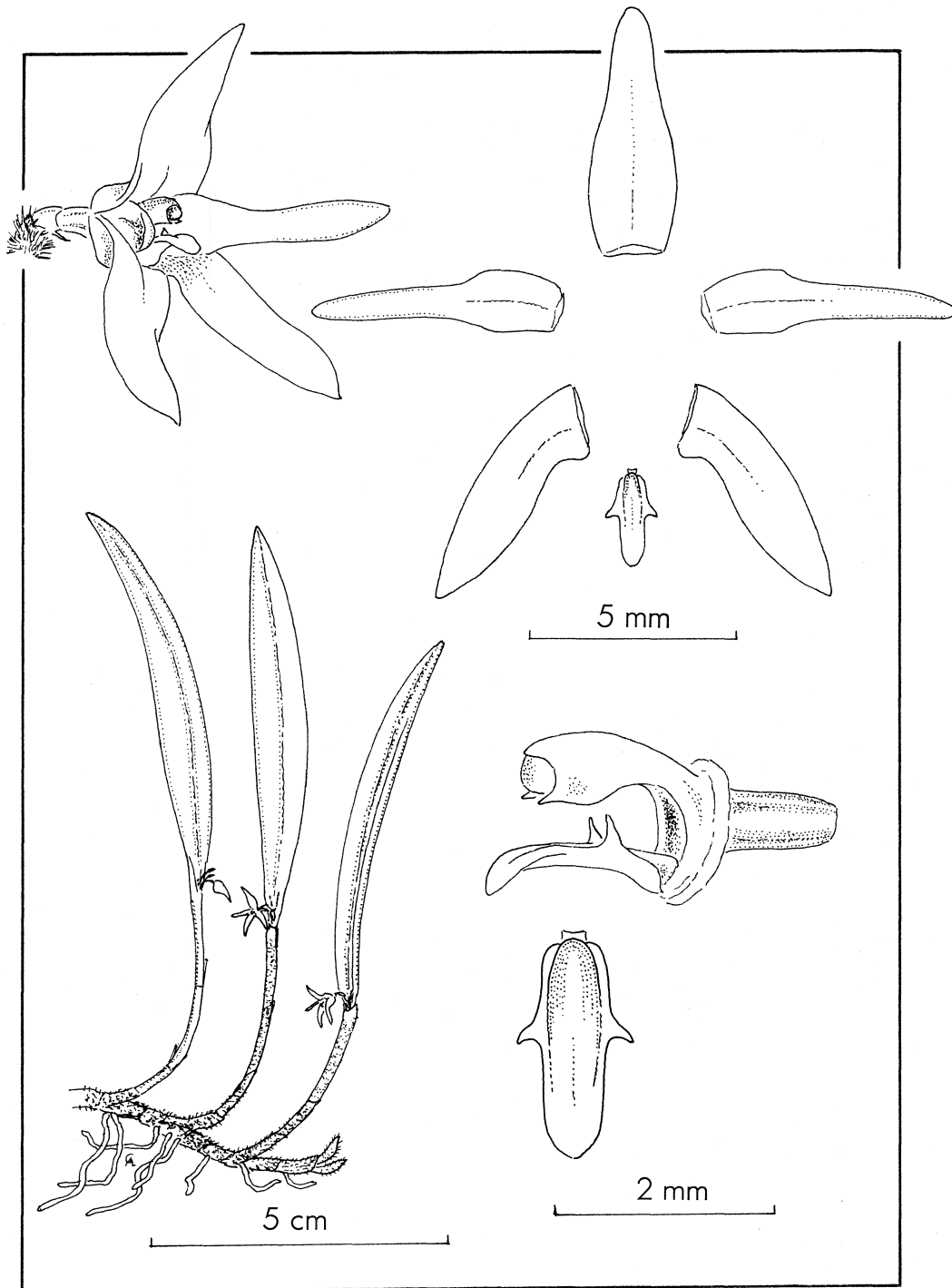


Figure 198. PLEUROTHALLIS TRACHYCHLAMYS Schltr.

**Pleurothallis uncinata** Fawc., J. Bot. 33:12. 1895.

Plant medium to large, epiphytic, shortly repent to caespitose; rhizome thick; roots slender, flexuous. Secondary stems stout, terete, slightly compressed above, 5-15 cm long, concealed by 4-5 loose, scarious sheaths frequently shed, unifoliate. Leaf coriaceous, thin, oblong to narrowly elliptical, subacute, tridentate, base cuneate, sessile, 8-18 × 2-3.5 cm. Inflorescence fasciculate, the flowers fleshy, produced singly and successively from a conduplicate spathe about 1.5 cm long; peduncle 15-18 mm long; floral bract pubescent, subacute, 1 cm long; pedicel 5 mm long; ovary pubescent, 3 mm long; dorsal sepal oblong, elliptical, obtuse, pubescent externally, cream to yellow marked with purple mostly along the veins, 13 × 5.5 mm, 5-veined; lateral sepals loosely united to near the middle, subacute, similar to the dorsal sepal, 12 × 9 mm together, 6-veined; petals fleshy, yellow marked with purple, narrowly obovate, subacute, 6 × 2 mm, 3-veined; lip oblong, 3-lobed, 6 × 4 mm spread, mid-lobe rounded to truncate, the upper surface minutely verrucose, the lateral lobes uncinata, directed forward, the base broad with broad basal auricles, disc with a low, smooth, rounded, broadly and shallowly concave, red callus above the base, and with a pair of thick lamellae extending from the lateral lobes onto the middle lobe, yellow-green marked with purple; column curved, terete, 5 mm long, anther with a few minute bristles along the margin adjacent to the upper edge of the clinandrium.

ETYMOLOGY: From the Latin *uncinatus*, "hooked" (*uncus*, "hook"), referring to the hook-like lateral lobes of the lip.

TYPE: JAMAICA: epiphytic near Vinegar Hill in Woodcutter's Gap, alt. 13-1400 m, *W. Harris 10092*.

DISTRIBUTION: Jamaica, Nicaragua, Costa Rica, and Panama.

NICARAGUA: CHONTALES: Pistacho Peak, alt. 700 m, *Heller 6855* (SEL).

PANAMA: PANAMA: epiphytic along the El Llano-Carti road, alt. 300 m, 3 March 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 973* (SEL).

This species, first described from Jamaica, was not reported from Central America until identified by Ames from a Costa Rican collection by Standley in 1924. Heller discovered it in several localities in Nicaragua and it is now known to occur across Panama to east of the Canal Zone.

*Pleurothallis uncinata* is a large, robust species. The stout secondary stem is usually clothed by a series of long, loose, brown sheaths, and the stem is commonly shorter than the long, blunt leaf it bears. A large, fleshy, shortly pubescent flower, heavily marked with red-purple, is usually borne singly on a peduncle about 2 cm long. The lip is characterized by the forward pointing hook-like lateral lobes which are separated by a smooth, rounded-edged, shallowly concave, plate-like callus.

A very similar species, *P. alexandrae* Schltr., is sometimes included in the synonymy of *P. uncinata*. Schlechter's species has a different, although overlapping distribution, and is distinguished by a high U-shaped callus on the lip.

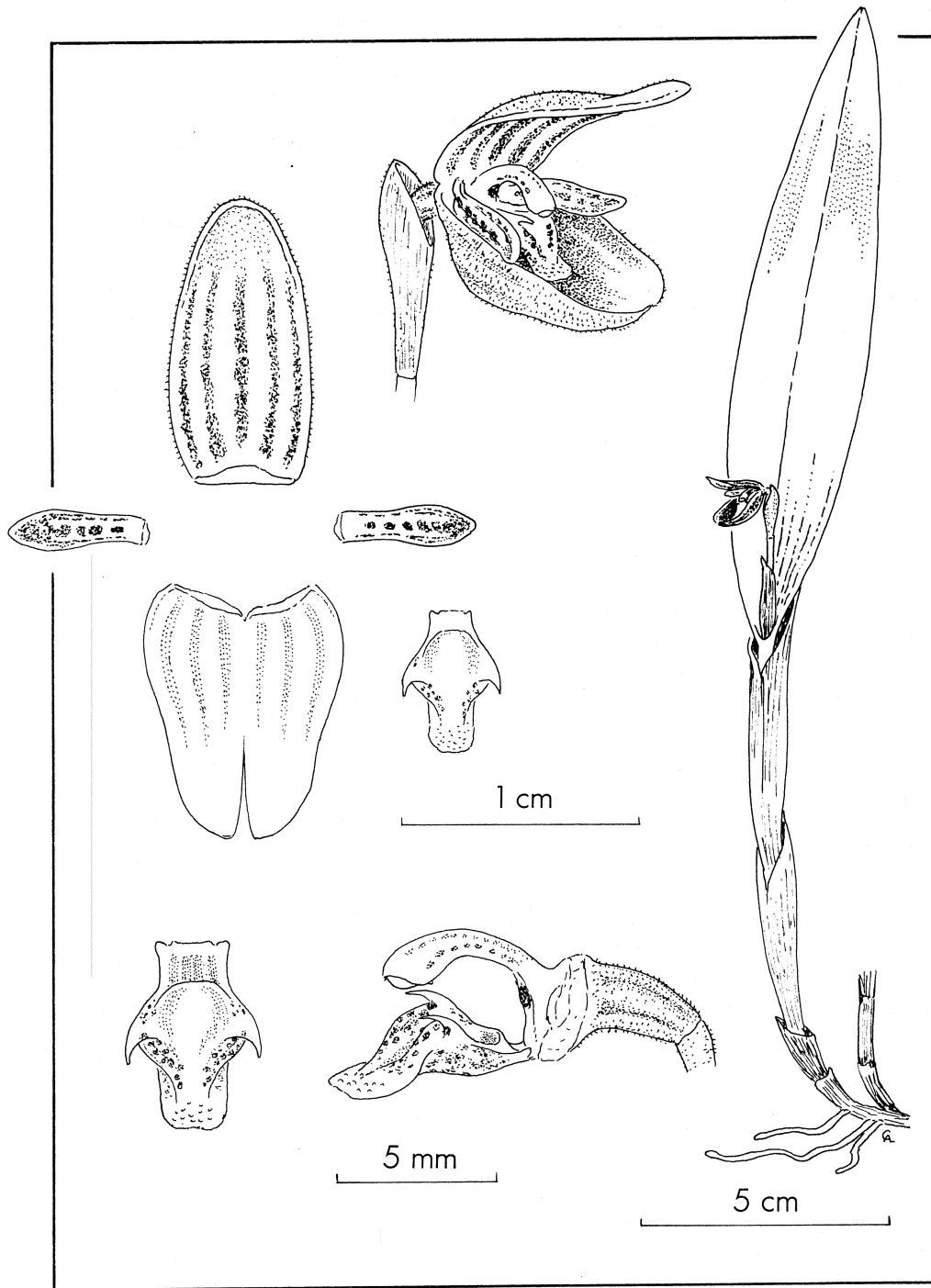


Figure 199. *PLEUROTHALLIS UNCINATA* Fawc.



**Pleurothallis ventricosa** Lindl., Folia Orchid. Pleuroth. 16, 1859.

*Pleurothallis rhomboglossa* Rchb. f., Flora 71:154. 1888; not Rchb. f. 1865.

*Humboldtia ventricosa* (Lindl.) Kuntze, Rev. Gen. Pl. 2:668. 1891.

Plant large, caespitose, terrestrial to epiphytic; roots numerous, fasciculate. Secondary stems slender, terete, 20-55 cm long, with a loose tubular sheath near the middle and 1-2 others at the base, unifoliate. Leaf ovate, acuminate, acute, tridentate, base more or less rounded and shortly petiolate, 10-30 X 7-13 cm, including the petiole, 1-3 cm long. Inflorescence fasciculate; flowers numerous, yellow, from the base of the petiole; peduncles up to 1 cm long; floral bracts infundibular, oblique, acute, about 4 mm long; pedicel slender, up to 1 cm long; dorsal sepal ovate, concave, acuminate, acute, 7 X 4 mm, 3-veined, the veins prominent dorsally; lateral sepals united into an ovate lamina, bidentate, 7 X 3 mm, 4-veined; petals linear, oblong, acute, 4 X 1 mm, 3-veined; lip ovate, reflexed near the middle, the apex acuminate, acute, with finely denticulate margins, the sides of the base rounded and incurved, shortly unguiculate, disc shallowly concave; column 1 mm long, with a short foot.

ETYMOLOGY: From the Latin *ventricosus*, "swollen, especially on one side" (from *venter*, "belly"), in allusion to the shape of the sepals.

TYPE: ECUADOR: PICHINCHA: "on trees, western flank of the Andes," alt. 1700 m, *Jameson s.n.* (HOLOTYPE: K).

DISTRIBUTION: Ecuador and Costa Rica.

ECUADOR: PICHINCHA: terrestrial on the road embankment between km 80-90 between Quito and Santo Domingo, alt. ca. 1400 m, 1 Nov. 1961, *C. H. Dodson & L. B. Thien 1219* (SEL); same area, 31 Jan. 1963, *C. H. Dodson & L. B. Thien 2204* (SEL); same area, 3 March 1975, *C. Luer & R. Kent 253* (SEL); same area, 17 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 558* (SEL).

Lindley compared this species to a very large *Pleurothallis ruscifolia* (Jacq.) R. Br. It is also very similar to his *P. chloroleuca* Lindl. from Colombia, but the latter is distinguished by a pair of lamellae on the lip.

*Pleurothallis ventricosa* is a robust plant which produces a dense, glomerate inflorescence of yellow flowers at the base of the stout petiole of the large leaf blade. Each flower is supported on a pedicel about 1 cm long and it in turn is supported by a peduncle also about 1 cm long. The dorsal sepal is concave below the middle to produce the ventricose appearance. The petals are linear and three-veined, and the ovate lip is deflexed near the middle with a rounded base.

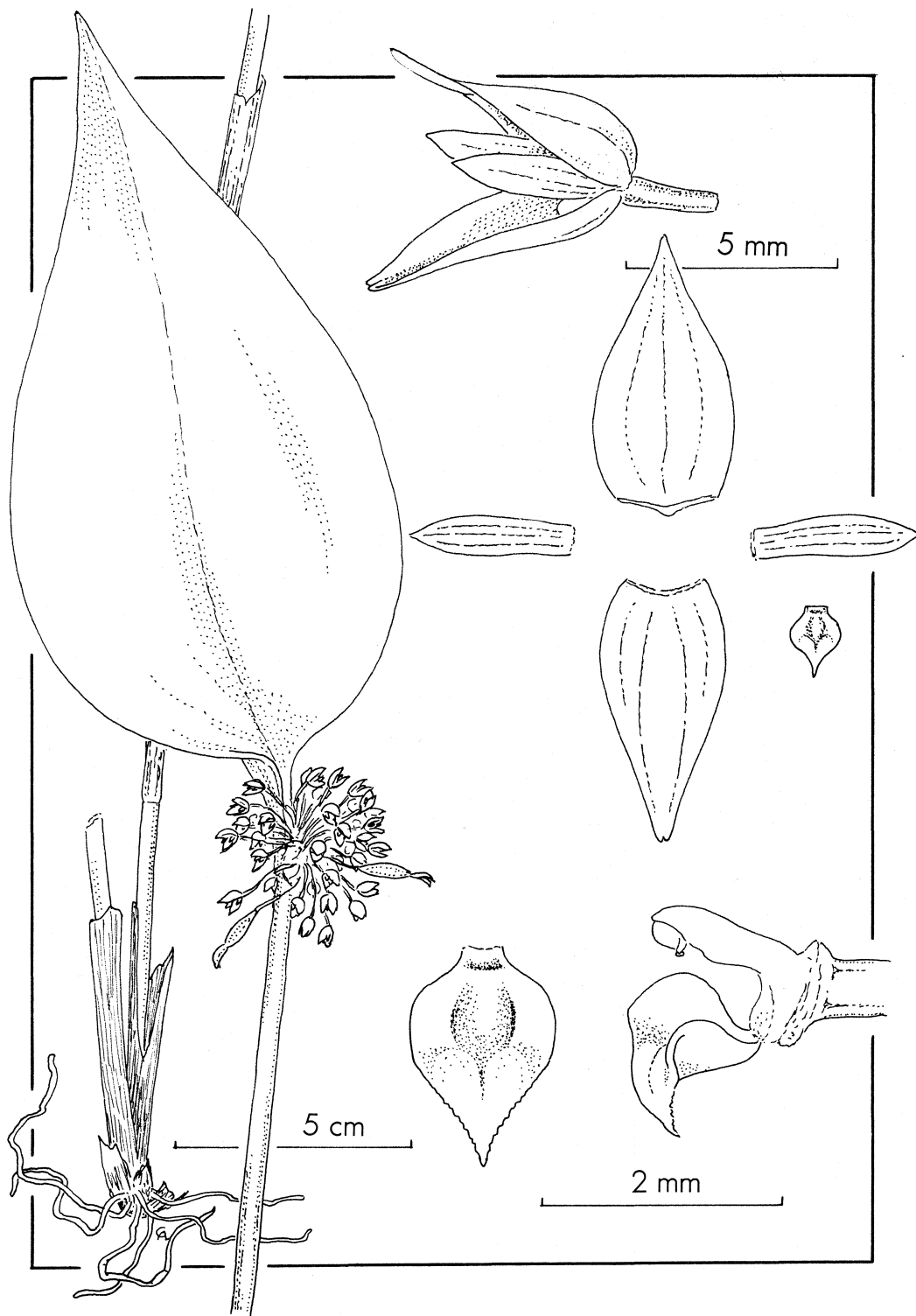


Figure 200. PLEUROTHALLIS VENTRICOSA Lindl.

**Pleurothallis verecunda** Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 17:24. 1922.

Plant medium in size, epiphytic, shortly creeping to caespitose; roots slender, flexuous. Secondary stems purple, terete, slender, shallowly channeled toward the apices, 8-18 cm long, with a tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf thick, coriaceous, heavily suffused with purple, elliptical, with margins more or less revolute, with a prominent mid-rib beneath, acute, tridenticulate, the base rounded, sessile, 8-14 X 2-4 cm. Inflorescence a short, 3-5 cm long, loosely few-flowered raceme from a narrow spathe, 8-10 mm long at the base of the leaf; flowers gaping, fleshy, glabrous, intensely mottled with purple on green; floral bract tubular, 1.5 mm long; pedicel less than 1 mm long; ovary 1.5 mm long; dorsal sepal oblong-obovate, acute, 8 X 2.25 mm, 3-veined; lateral sepals elliptical, connate to near the middle into a bifid lamina, acute, bicarinate, 7 X 6 mm together; petals obovate-spatulate, the apical portion fleshy, convex, subacute, minutely denticulate, purple, edged in white; lip speckled with purple, thick, oblong-elliptical, minutely erose above the middle, obtuse, bilobed below the middle, the lateral lobes small, erect, triangular, oblique, acute, the disc thick, with a pair of ridges extending forward from the lateral lobes, the base biauriculate; column stout, 3 mm long, with a foot 2 mm long.

**ETYMOLOGY:** From the Latin *verecundus*, "bashful, or modest," without obvious reason.

**TYPE:** PANAMA: PANAMA: on hills near Panama City, *C. W. Powell 91*.

**DISTRIBUTION:** Nicaragua, Costa Rica, Panama, and Ecuador.

**ECUADOR:** BOLIVAR: epiphytic in coffee trees 2 km east of Montalvo, alt. 220 m, May 1976, *C. H. Dodson, H. H. Morgan & H. Morgan 6126* (SEL); LOS RIOS: Río Palenque science center, alt. 200 m, Oct. 1976, *C. H. Dodson s.n.* (SEL).

This species may be recognized by its slender, sturdy, purple stems, and thick, reddish purple leaves. The short raceme produces a few, fleshy, purplish flowers with minutely denticulate spatulate petals, and a thick lip with a small pair of erect lobes below the middle. Heller discovered this species in Nicaragua and this is the first report of *Pleurothallis verecunda* from Ecuador.

Some of the plants from Ecuador are apparently more robust than those originally described from Panama. The leaves of some stems are 4 cm wide with a broadly cuneate base, and up to six flowers are produced on the short raceme. Smaller plants with narrowly cuneate leaves are more typical.

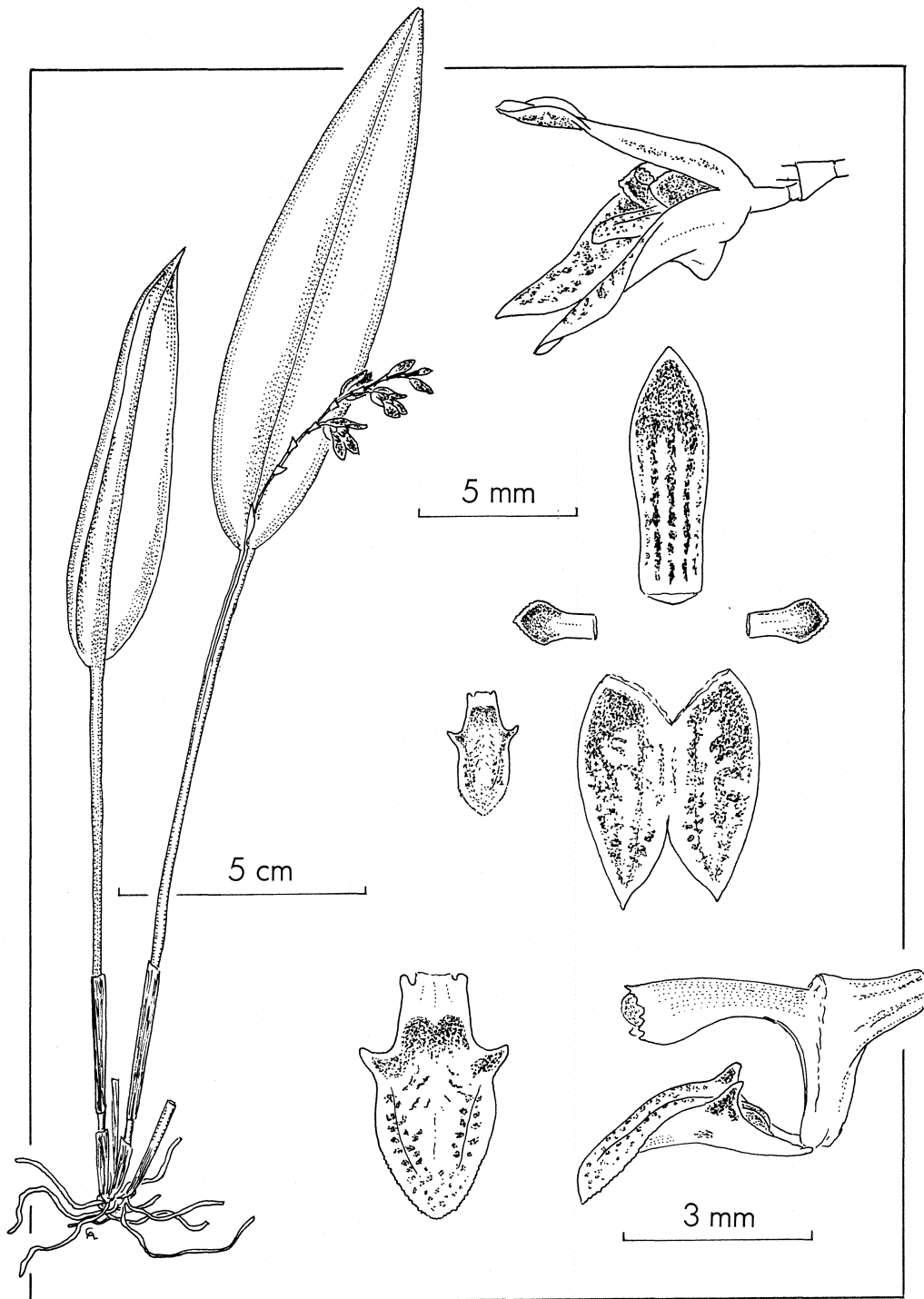


Figure 201. PLEUROTHALLIS VERECUNDA Schltr.

**Pleurothallis xanthochlora** Rchb. f., *Linnaea* 22:823. 1849.

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

*Pleurothallis huanucoensis* Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 9:75. 1921.

*Pleurothallis dolichocaulon* Schltr., *l. c.* 10:43. 1922.

Plant epiphytic to terrestrial, large, repent; rhizome terete, 2-3 cm long between secondary stems; roots slender, densely fascicled at the base of each secondary stem. Secondary stem terete, to 40 cm long, with a close tubular sheath above the middle and 1-2 short sheaths at the base, monophyllous. Leaf coriaceous, erect, elliptical, acute to shortly acuminate, base cuneate, sessile, 15-19 × 7-8 cm. Inflorescence racemose (1-5), densely many-flowered, as long as, to longer than the leaf; peduncles from a conduplicate spathe, 8-10 mm long, in the axil of the leaf; flowers small, bilabiate, pale green; floral bract acute, infundibular, 3-4 mm long; pedicel also about 3-4 mm long; ovary 2 mm long; dorsal sepal ovate acuminate, concave, 5 × 2.5 mm, 3-veined; lateral sepals completely united into an ovate, acuminate synsepal, concave, 5 × 3 mm; petals narrowly linear, acute, 4 × 0.6 mm, 1-veined; lip green, rigid, fleshy, ovate, shortly acuminate, sides rounded and curved up in the natural position, base thickened before a short claw, apex finely tubercled and denticulate; column terete, 1.75 mm long, with a short foot.

ETYMOLOGY: From the Greek *xanthos*, "yellow," and *chloros*, "green," in allusion to the color of the flowers.

TYPE: VENEZUELA: MERIDA: Medira, *Moritz s.n.*

DISTRIBUTION: Venezuela, Colombia, Ecuador, Peru, and Bolivia.

ECUADOR: PICHINCHA: terrestrial on road cut about 20 km from the summit between Quito and Santo Domingo, alt. 2000 m, 15 Aug. 1975, *C. Luer, G. Luer & Wilhelm 549* (SEL); epiphytic west of Tandapi, alt. 1500 m, 13 March 1976, *C. Luer, J. Luer & P. Taylor 986* (SEL).

This species is somewhat morphologically variable and widespread in the Andes. At least in Ecuador the plants are distinctly repent. The cylindrical primary stem produces a tall secondary stem with a dense fascicle of roots about every three centimeters. A collection of a single stem would fail to reveal this character.

Several long racemes of numerous, small, light green flowers spring simultaneously from a short spathe at the base of a rather large elliptical leaf. The concave dorsal sepal and the synsepal are similar, the petals are long and narrow, and the labellum, which has been described as trowel-shaped, is fleshy with upturned lateral lobes and a forwardly directed middle lobe.

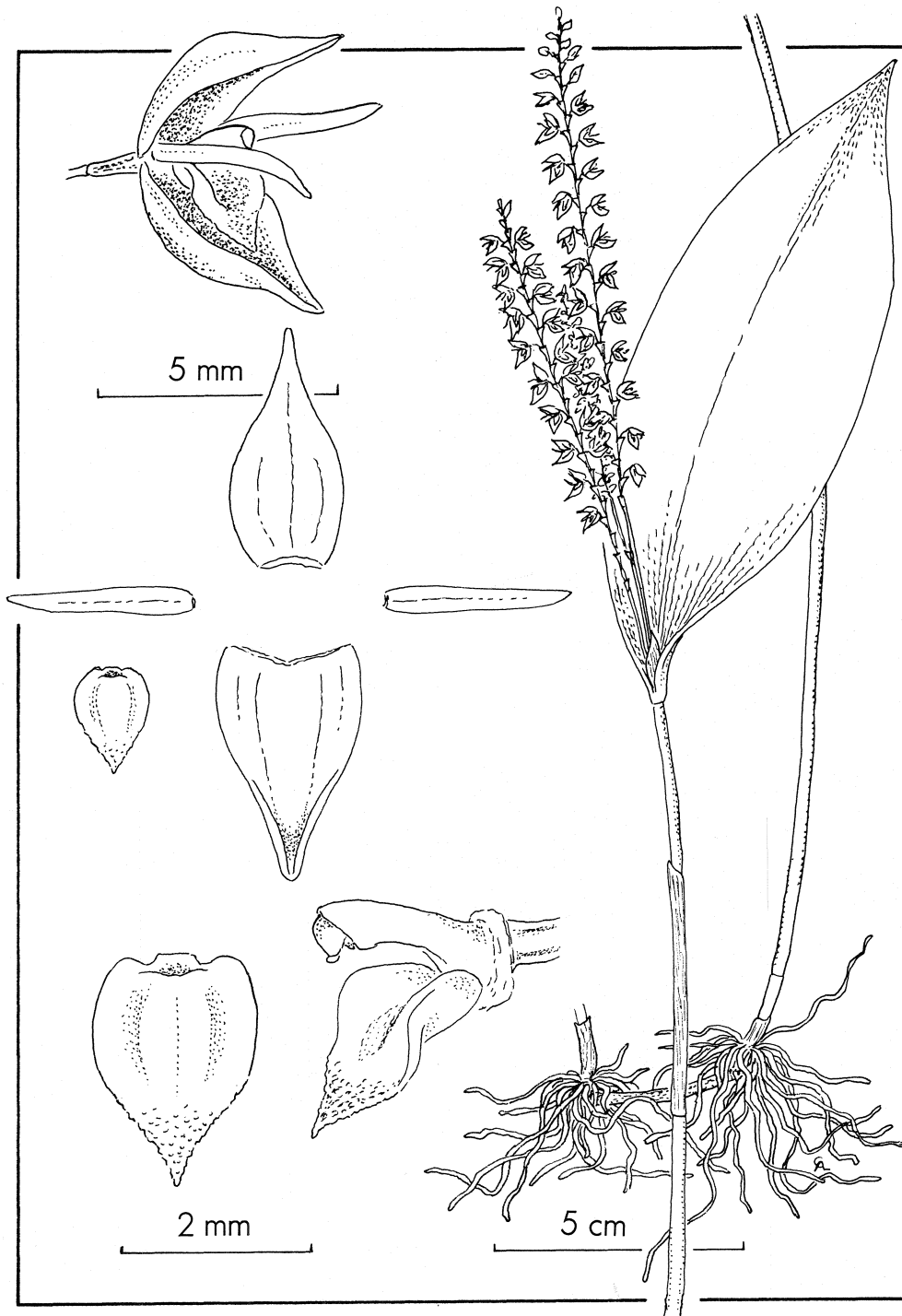


Figure 202. PLEUROTHALLIS XANTHOCHLORA Rehb. f.