

Figure 248. PLEUROTHALLIS EPHEMERA Lindl.

Pleurothallis excelsa Garay, *Caldasia* 10:232. 1968.

Plant large, robust, epiphytic to terrestrial, caespitose; roots numerous, fasciculate, flexuous. Secondary stems terete, stout, 6-7 mm thick, 23-35 cm long, with a close-fitting tubular sheath below the middle and another at the base, unifoliate. Leaf erect, coriaceous, rigid, elliptical, acute, tridenticulate, the base cuneate, sessile, 28-33 cm long, 6.5-8.5 cm wide. Inflorescence an arching, few-flowered (8-9), secund raceme to 60 cm long, the flowers very large, gaping, nutant; peduncle stout, purplish, from a spathe 2.5 cm long at the base of the leaf; floral bract tubular, 1-1.5 cm long; pedicel flexible, slender, 2-3.5 cm long; ovary 1.5 cm long; sepals glabrous, soft, yellow-green, diffusely mottled with dull purple, the dorsal sepal narrowly ovate, acute, 47 (to 60) mm long, 13 mm wide, 3-veined, the lateral sepals connate to near the apex into an ovate, bidentate lamina, 45 (to 60) mm long, 17 mm wide, 4-veined; petals fleshy, maroon, obovate, acuminate, acute, 16 (to 20) mm long, 8 mm wide, 3-veined, with a short, linear callus along the middle of the upper vein; lip fleshy, light green, 37 (to 43) mm long, 10 mm broad across the elliptical, concave basal third, the base broadly adherent to the column-foot, the sides of the upper two-thirds revolute, forming a linear tube 4 mm wide, obtuse, with a pair of short lamellae at the junction; column slender, subsigmoid, 10 mm long, with a short foot.

ETYMOLOGY: From the Latin *excelsus*, "tall, lofty, noble, exalted," in allusion to the grand size of the plant and flowers.

TYPE: *COLOMBIA*: without locality, cult. in Medellin by Sr. Alvaro Mejia s.n. (HOLOTYPE: AMES).

DISTRIBUTION: Colombia and Ecuador.

COLOMBIA: without locality, cult. by R. Escobar s.n. (SEL).

ECUADOR: PICHINCHA: from the vicinity of Santo Domingo, cult. in Puyo by J. Brenner s.n. (SEL), greenhouse acc. no. 43-76-228, flowered in cult. 31 Dec. 1976.

This huge species, described from Colombia, also occurs locally in Ecuador. It is related to *Pleurothallis restrepioides* Lindl. It may be surpassed in size vegetatively by plants of *P. batillacea* Luer, *P. imperialis* Luer, *P. praegrans* Ames, *P. secunda* Poepp. & Endl., and *P. univaginata* Lindl., but the flowers of *P. excelsa* are probably the largest known in the genus. A large, sturdy stem and leaf produce a flaccid, arching raceme consisting of a row of immense, dangling, purplish flowers with a protruding, light green tubular lip. The basal third of the lip is concave and flanked by the waxy, maroon petals which are provided with a short lamella on the inner surface along the upper vein.

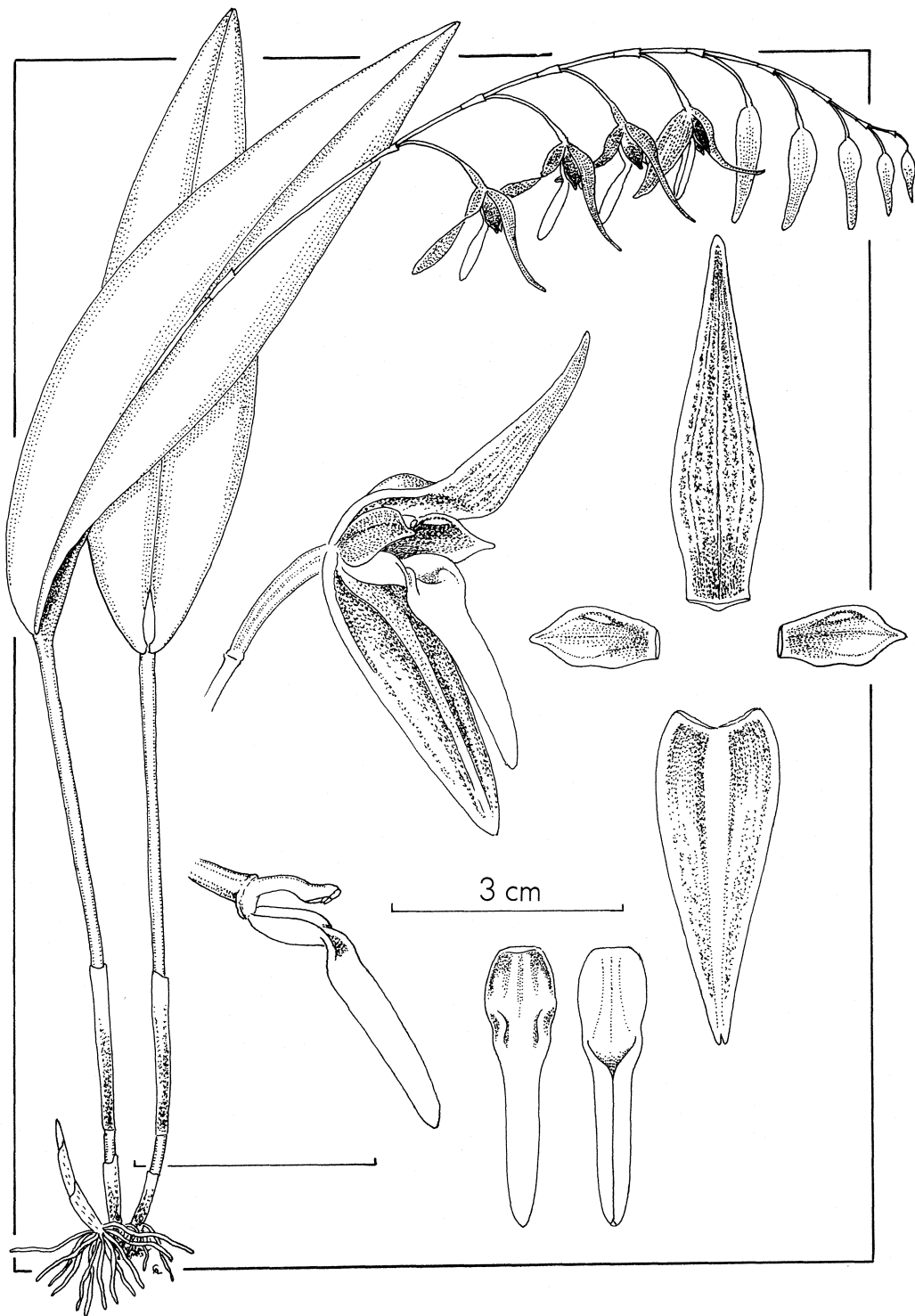


Figure 249. PLEUROTHALLIS EXCELSA Garay

Pleurothallis fastidiosa Luer, sp. nov.

Habitu et floribus *P. loranthophyllae* Rchb. f. et *P. navicularis* Lindl. similis, differt petalis subulatis galbrisque et labello crasso sine lateribus incurvatis.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 4-11 cm long, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, thin, narrowly ovate, acute to acuminate, tridenticulate, the base cuneate into a channeled petiole, 6-11 × 2-3.5 cm, including the 1 cm petiole. Inflorescence racemose, solitary (occasionally 2), arcuate, loosely few-to many-flowered (5-16), 10-20 cm long, the flowers pale yellow-green, spotted with red-purple; peduncle slender, weak, from a foliaceous spathe, 4-5.5 cm long, 6 mm broad, from the base of the leaf-petiole; floral bract infundibular, acute, 2-3 mm long; pedicle 2-3 mm long; ovary spotted with purple, 4 mm long; dorsal sepal narrowly ovate, acute to acuminate, 10-11 × 2.5-3 mm, 3-veined, yellow-green, spotted with purple; lateral sepals united into an ovate lamina, subacute, 10-11 × 4.5-5 mm, 4-veined, similar to the dorsal sepal; petals very narrowly triangular, attenuate, acuminate, acute, 9-11 × 1 mm, 3-veined at the base, maroon or spotted with purple; lip thickened, narrowly ovate, acute, convex, dilated slightly below the middle, the sides not incurved, the base broadly and firmly adherent to the column-foot; column stout, 1.5 mm long, with a broad, short foot.

ETYMOLOGY: From the Latin *fastidiosus*, "sensitive, delicate," in allusion to the delicate, fragile flowers.

TYPE: *ECUADOR*: NAPO: epiphytic in felled trees ca. 14 km north of Archidona, alt. ca. 500 m, 27 July 1975, C. Luer, G. Luer & S. Wilhelm 670 (HOLOTYPE: SEL), cultivated at SEL, greenhouse acc. no. 44-75-432. *PASTAZA*: epiphytic in felled trees 20 km east of Puyo, alt. ca. 500m, 28 July 1975, C. Luer, G. Luer & Wilhelm 1266 (SEL), cultivated at SEL, greenhouse acc. no 44-75-252.

DISTRIBUTION: Eastern Ecuador.

ADDITIONAL MATERIAL SEEN: *ECUADOR*: *PASTAZA*?: without definite locality, Janet Kuhn 10 (SEL).

Vegetatively this species is similar to *Pleurothallis loranthophylla* Rchb. f. and *P. navicularis* Lindl. At the base of the narrowly ovate (instead of elliptical-oblong), petiolate leaf, the arching raceme emerges from a long, obliquely raised spathe. The spotted flowers are also similar to those of the latter two species, except for the petals and lip. The petals are narrowed above the base into a narrowly linear, acuminate apex. The lip is thickened and rigid, slightly dilated toward the base, but the surface is flat or convex without incurved, membranous sides.

The short-lasting, delicate flowers are very fragile, and they begin to wilt soon after the plant is removed from the greenhouse.

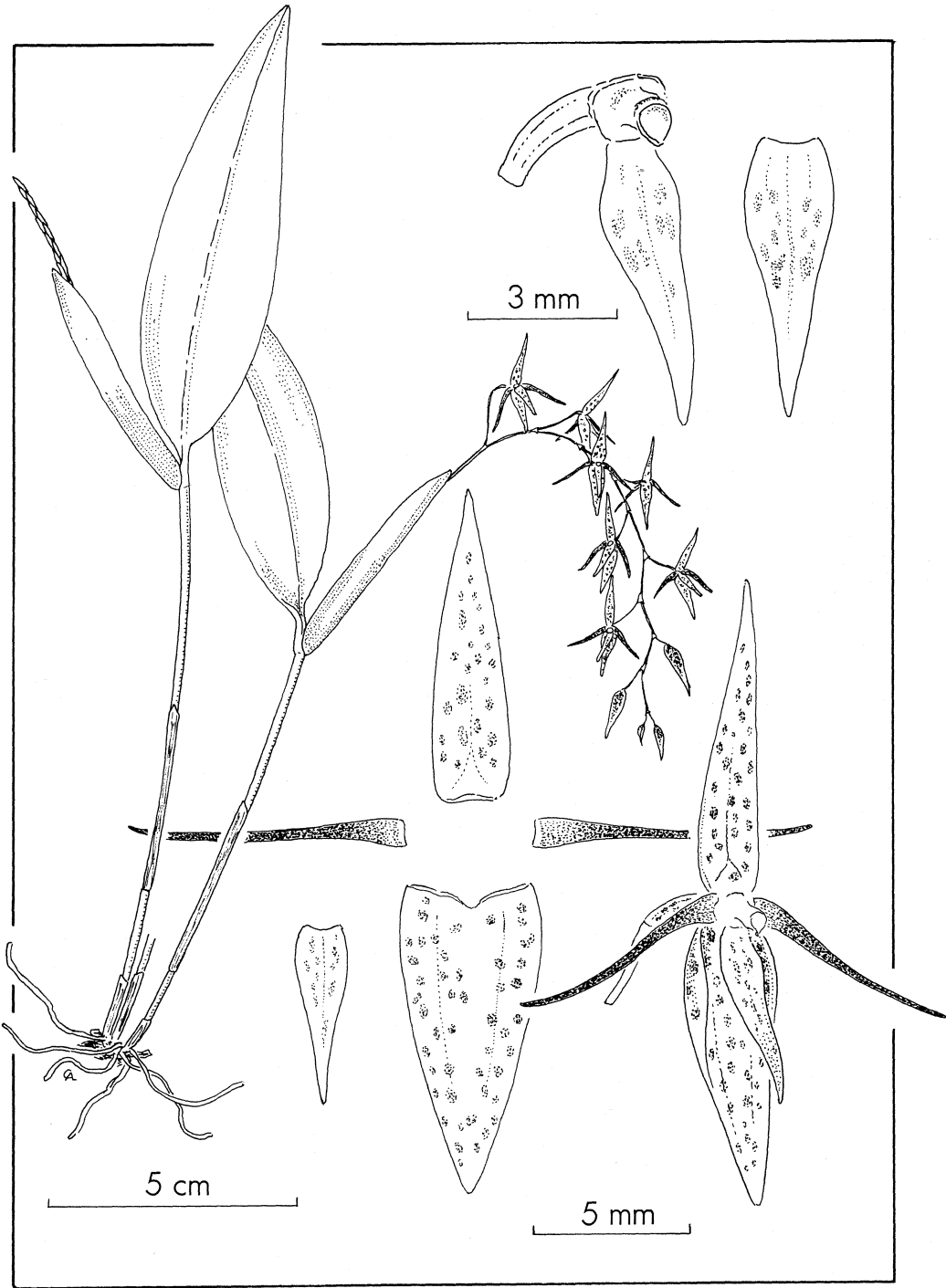


Figure 250. PLEUROTHALLIS FASTIDIOSA Luer

Pleurothallis florosa Luer, sp. nov.

Planta parva epiphytica caespitosa florosa, caulibus secundariis crassis supra medium compressis unifoliatis, folio erecto crasso elliptico acuto base cuneato sessili, recemo brevi paucifloro, floribus carnosus glabris flavovirentibus purpureo suffusis vittatisque, sepalis oblongis obtusis sepalis lateralibus semiconnatis, petalis spatulatis subacutis serrulatis diaphinis unistriatis, labello crasso late elliptico marginibus infra medium erectis rotundatis, apice obtuso verruculoso, callo disci ad basim plano utrinque concavo.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, terete below, compressed above, 3-4 cm long, 3 mm deep above, with a basal, tubular sheath and 1-2 shorter ones below, unifoliate. Leaf erect, thick, coriaceous, elliptical, acuminate, acute, tridenticulate, the base cuneate, sessile, 4-5.5 cm long, 1.5-2 cm wide. Inflorescence a short (2-2.5 cm), crowded, few-flowered (4-6) raceme, produced in continuous succession, from a spathe about 5 mm long, at the base of the leaf; floral bract 2 mm long; pedicel 1 mm long; ovary glabrous, spotted with purple, 1.5 mm long; flowers fleshy, glabrous, yellowish green suffused and striped with red-purple; dorsal sepal oblong, obtuse, 7 mm long, 2 mm wide, 3(5)-veined, the lateral sepals similar to the dorsal sepal, connate to above the middle, slightly oblique, each 6 mm long, 2 mm wide, 3-veined; petals spatulate, subacute, serrate above the middle, 2 mm long, 1 mm wide, 1-veined; lip thick, broadly elliptical, with erect, rounded margins below the middle which cannot be spread, the apex obtuse, with callously thickened, verruculose margins above the middle, the base shortly unguiculate, the disc with a smooth, flat callus from the base to above the middle, flanked by shallow concavities between the callus and the erect margins of the lip, 2.5 mm long, 1.5 mm wide; column winged, 2.5 mm long, with a short foot.

ETYMOLOGY: From the Latin *florosus*, "abounding in flowers," in reference to the continuous procession of racemes.

TYPE: *ECUADOR*: MANABI?: purchased by Roberto Estrada of Guayaquil from a collector who probably obtained the plant in Manabi, cult. in Guayaquil, 24 Feb. 1977, *C. Luer 1573* (HOLOTYPE: SEL).

According to Roberto Estrada, who has had the plant in cultivation in Guayaquil, Ecuador, for several years, this little species is never without flowers. Each short, long-lasting raceme is replaced by another in continuous succession.

Pleurothallis florosa is similar to the Costa Rican *P. brunnescens* Schltr., but the flowers of the latter are a little smaller with acuminate petals, and apparently the lip lacks the flat callus flanked by the shallow depressions.

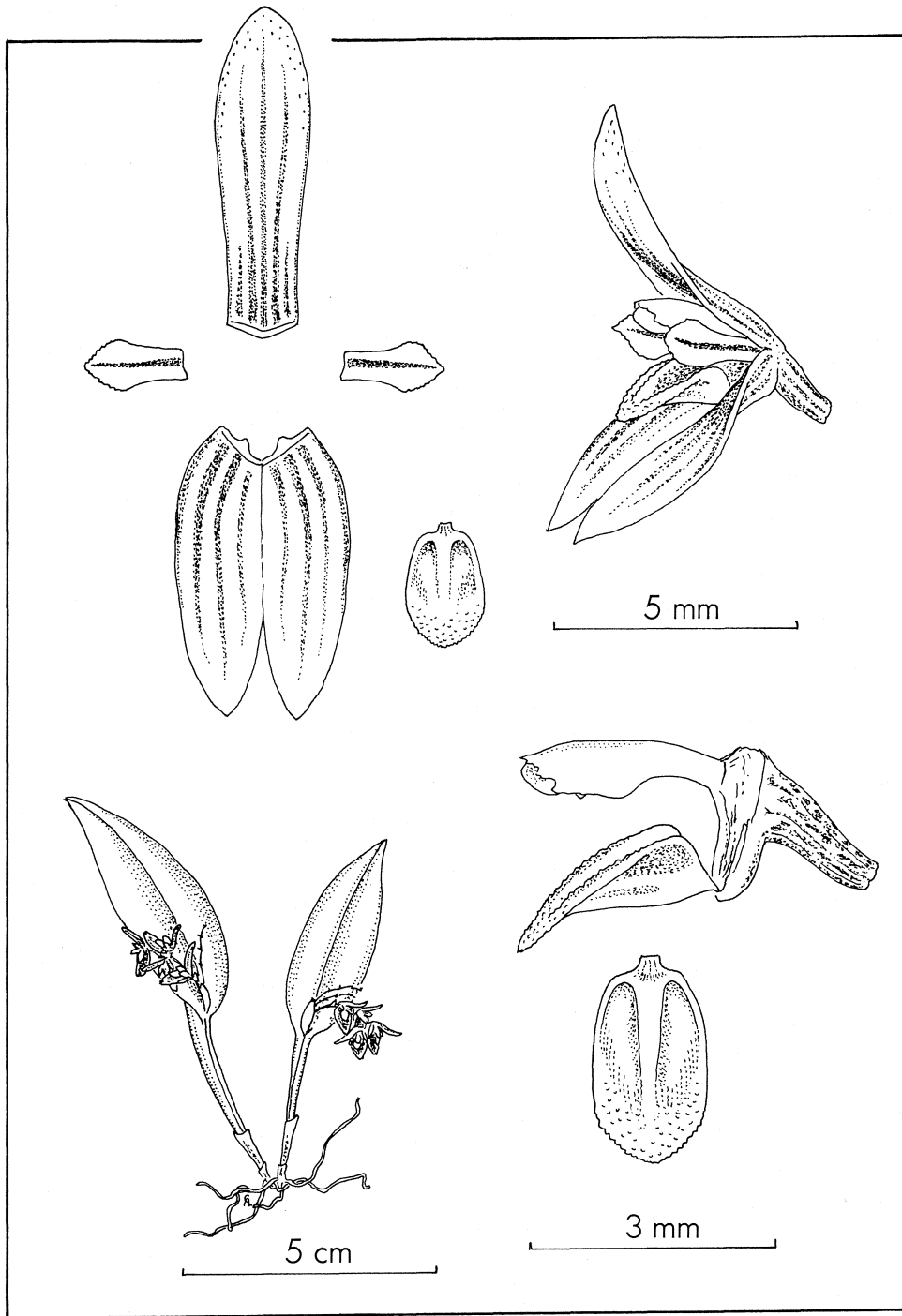


Figure 251. PLEUROTHALLIS FLOROSA Luer

Pleurothallis fulgens Rchb. f., Gard. Chron. 4:516. 1875.

Pleurothallis pyrsodes Rchb. f., Gard. Chron. 6:385. 1876.

Pleurothallis brenesii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19:182. 1923.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, 1.5-2 cm long, with 1-2 tubular sheaths, unifoliate. Leaf light green, coriaceous, narrowly elliptic to obovate, subacute, tridenticulate, base narrowly cuneate and indistinctly petiolate, 5-8 × 1.5-2 cm. Inflorescence fasciculate, few-flowered, the flowers usually borne singly and successively, from the apex of the peduncle; peduncle filiform, 8-10 cm long, from a node on the secondary stem; flowers ringent, brown to orange; floral bract tubular, about 5 mm long; pedicel 4-6 mm long; ovary 2 mm long; dorsal sepal narrowly elliptical, subacute, apiculate, thickened and convex toward the apex, 12 × 4.5 mm, 3-veined, the veins prominent dorsally, dark orange on orange; lateral sepals united to near the middle, narrowly ovate, acute, forming a shallow mentum with the column-foot, 13 × 5 mm, bicarinate; petals elliptical, acuminate to acute, the labellar margin dilated, 5 × 1.5 mm, orange, the apex yellow; lip orange, fleshy, oblong, 3-lobed, 5 × 1.5 mm, middle lobe ovate, obtuse, with a fleshy prominence below, the lateral lobes near the middle, erect, oblique and broadly falcate, acute, continuing onto the apical lobe as low, irregular crests, base truncate, shortly hinged to the column-foot; column terete, yellow, 4.5 mm long, column-foot 2 mm long.

ETYMOLOGY: From the Latin *fulgens*, "shining, bright-colored" (pres. part. of *fulgere*, "to flash, or shine"), either in allusion to the shiney, orange color of the flowers, or to the shining leaves.

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

DISTRIBUTION: Costa Rica and Panama.

PANAMA: without definite information, cultivated by *P. Jesup s.n.* (SEL).

Reichenbach recognized a close affinity of this species and its allies to *Masdevallia*. Although he honestly believed his new species to belong to the "despised" pleurothallids, he mused that the species would become immediately popular if he were to name it as a "coveted" *Masdevallia*.

Pleurothallis fulgens is characterized by its abbreviated secondary stem, a shining, light green, narrowly obovate leaf, and an elongated peduncle bearing in a fascicle, or rather, in a very contracted raceme, a relatively large, fleshy, orange flower. Fresh flowers are brownish or greenish orange which become progressively brighter orange with age. The petals are swollen along the labellar margin. The lip is oblong, bluntly lobed near the middle with a low pair of scabrous lamellae.

Most likely Reichenbach's *P. pyrsodes* with its orange flower belongs to this species.

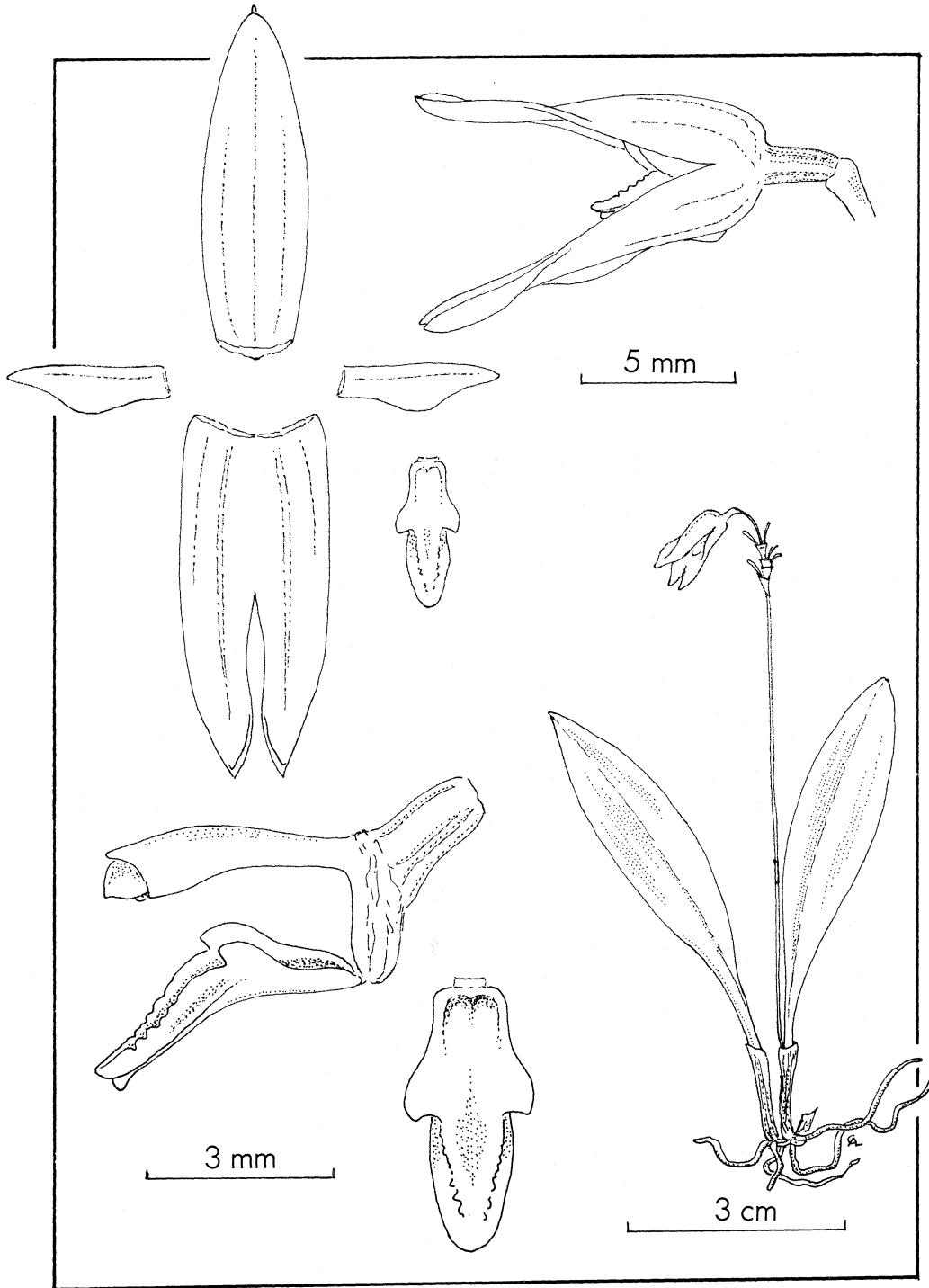


Figure 252. *PLEUROTHALLIS FULGENS* Rchb. f.

- Pleurothallis gelida* Lindl., Edward's Bot. Reg. 27:misc. 91. 1841.
Pleurothallis polylyria Endres & Rchb. f., Gard. Chron. 1483. 1871.
Anathallis hebesepala Barb. Rodr., Gen. Spec. Orchid. Nov. 2:75. 1882.
Humboldtia gelida (Lindl.) Kuntze, Rev. Gen. Pl. 2:667. 1891.
Humboldtia polylyria (Endres & Rchb. f.) Kuntze, l. c. 2:668. 1891.
Pleurothallis hebesepala (Barb. Rodr.) Cogn., Flora Brasiliensis 3(4):568. 1896.
Pleurothallis tenuispica Schltr., Repert. Spec. Nov. Regni Veg. 14:133. 1915.

Plant epiphytic to terrestrial, medium to large, caespitose; roots numerous, fine, flexuous. Secondary stems fascicled, stout to slender, terete, 5-25 cm long, with a loose tubular sheath below the middle, and 2-3 at the base, the lowermost including 1 or more stems, unifoliate. Leaf coriaceous, shiny, elliptical-oblong, the apex obtuse to rounded, retuse, the base cuneate into a channeled petiole 1.5-4 cm long, often twisted, the leaf 7-27 cm long including the petiole, 2.5-7.5 cm broad. Inflorescence 1-5 distichous, few- to many-flowered racemes, 8-20 cm long, from a spathe 5-25 mm long at the base of the petiole; floral bract transparent, tubular, 3 mm long; pedicel and ovary curved, each 2 mm long; flowers translucent yellow-green, nodding, sweetly fragrant; sepals elliptical, subacute to obtuse, glabrous externally, pilose within above the middle, the dorsal sepal 5-8 mm long, 3 mm wide, the lateral sepals connate to near the middle, with a well-developed mentum below the column-foot, 5-7 mm long, 5 mm wide together; petals obovate, oblique, the apex obtuse to rounded, sometimes emarginate, 3.5 mm long, 2 mm wide, with 3 close, parallel veins, prominent externally; lip arcuate in the natural position, panduriform to cuneate and only slightly dilated below the middle, the apex truncate to broadly rounded, the disc with an erect pair of thin, rounded lamellae near the middle, 2.5 mm long, 1-1.25 mm wide; column stout, 2.5 mm long, with a foot 1.5 mm long.

ETYMOLOGY: From the Latin *gelidus*, "frosty," probably in fancied allusion to the appearance of the flowers.

TYPE: JAMAICA: without locality, cult. Nov. 1841 by *Loddiges s.n.* (HOLOTYPE: K).

DISTRIBUTION: U.S.A. (Florida), Cuba, Jamaica, Hispaniola, Puerto Rico, Honduras, Nicaragua, Costa Rica, Panama, Colombia ?, Venezuela, Ecuador, Peru, to southern Brazil.

U.S.A.: FLORIDA: Collier Co., epiphytic in the Fahkahatchee Swamp, April 1976, *C. Luer 1284* (SEL), greenhouse acc. no. 69-76-4, flowered in cult. 5 Dec. 1976.

NICARAGUA: JINTOEGA: Vulcan Grande, alt. 1200 m, *A. H. Heller 1292* (SEL).

ECUADOR: CARCHI: along crest of mountain behind Rio Blanco, between Ibarra and San Lorenzo, alt. 1400 m, 14 Dec. 1961, *C. H. Dodson & L. B. Thien 1594* (SEL); PICHINCHA: terrestrial on road embankment, new road between Quito and Santo Domingo, alt. ca. 2000 m, 1 March 1975, *C. Luer & R. Kent 272* (SEL); ZAMORA-CHINCHIPE: epiphytic between Loja and Zamora, alt. ca. 1500 m, 5 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 1369* (SEL), greenhouse acc. no. 44-75-177, flowered in cult. 2 Feb. 1977.

This widespread, robust species is the northernmost member of the genus, and the only member of the genus known to occur in Florida. It is not self-pollinating.

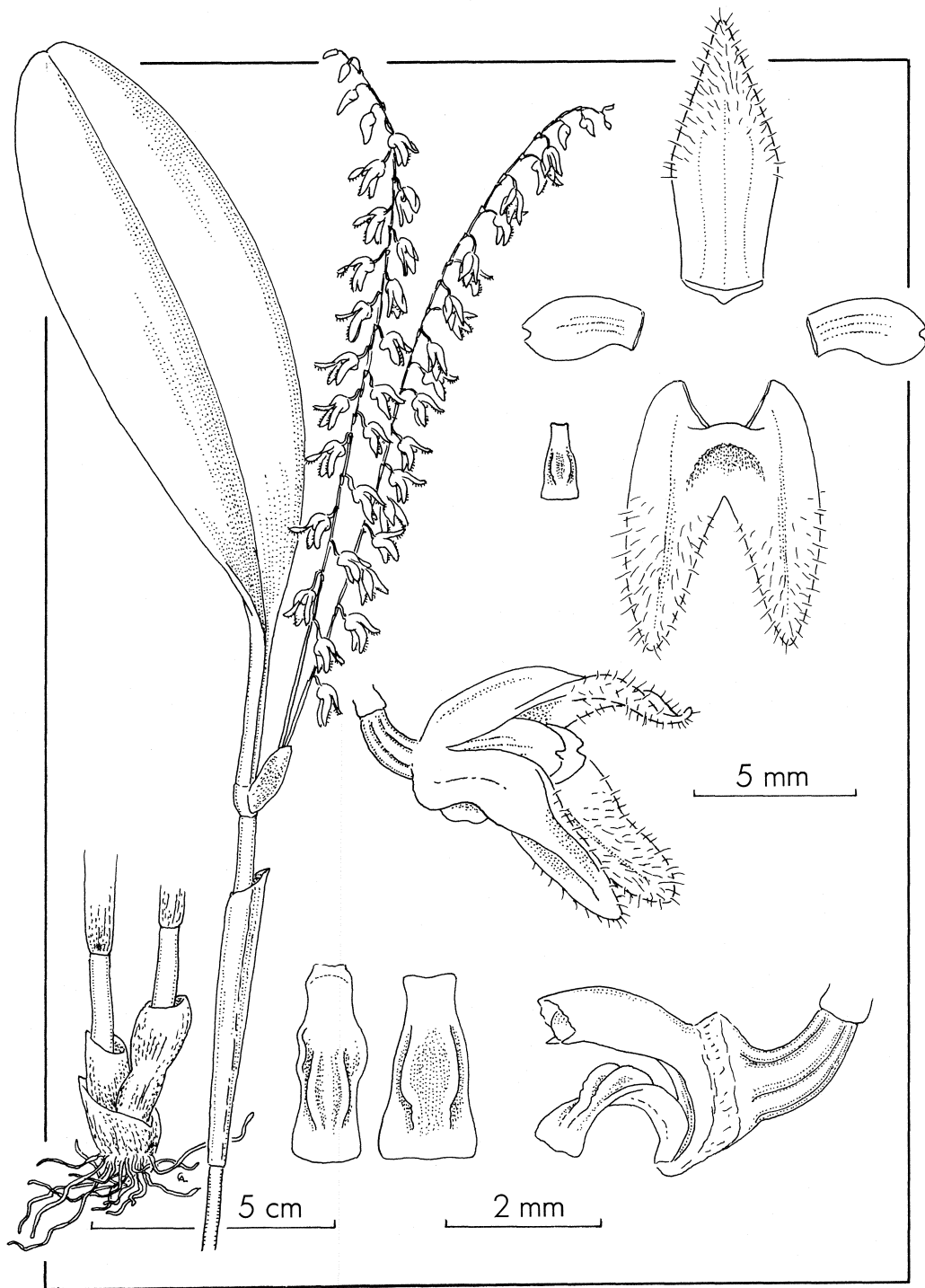


Figure 253. PLEUROTHALLIS GELIDA Lindl.

The fascicled stems, often wrapped by a common, papery sheath, bear a large, loose sheath near the middle. Several two-ranked racemes of white flowers emerge from a prominent spathe at the base of the grooved petiole of the slick, green, oblong leaf. The flowers emit a strong, sweet fragrance in the evening. The petals are obtuse but vary from entire to emarginate or erose. The small more or less truncate lip is commonly slightly dilated near the middle where it bears a distinct pair of thin, fin-like lamellae.

Pleurothallis geminiflora Ames, Hub. & Schweinf., Bot. Mus. Leafl. 3:39 1934.

Pleurothallis biflora Schltr., Beih. Bot. Centralbl. 36(2):395. 1918; not Focke.

Plant minute, epiphytic, repent, the rhizome slender, branching; roots comparatively thick, flexuous. Secondary stems abbreviated, 1-2 mm long concealed by 1-2 thin, tubular sheaths, unifoliate. Leaf orbicular to elliptical, the apex rounded to obtuse, emarginate with an apiculum in the sinus, the base rounded to cuneate, shortly petiolate, 4-6 mm long 2-4 mm wide, including the 1 mm petiole. Inflorescence a slender, 2-flowered raceme to 3 cm tall, the peduncle capillary, 2 cm long, from a node on the secondary stem, the flowers glabrous, greenish white; floral bract 1 mm long; pedicel 1.5 mm long; ovary 0.5 mm long; dorsal sepal ovate, acuminate, the apex obtuse, thickened, convex, 4 mm long, 1.5 mm wide, 3-veined; lateral sepals free, oblong, oblique, obtuse, 4 mm long, 1 mm wide, 1-veined, forming a shallow mentum below the column-foot; petals obovate, subacute, 1.25 mm long, 0.5 mm wide; lip oblong, arcuate, the apex and base rounded, the disc with a parallel pair of low, inconspicuous calli above the middle, 2 mm long, 0.8 mm wide; column broadly winged, 1.5 mm long, with a short foot.

ETYMOLOGY: From the Latin *geminus*, "twinned," and *-flora*, "flowered," in reference to the two-flowered inflorescence, originally suggesting the name *biflora*.

TYPE: COSTA RICA: ALAJUELA: epiphytic near San Ramon, alt. 1025 m, Nov. 1921, A. M. Brenes 176.

DISTRIBUTION: Costa Rica and Panama.

PANAMA: PANAMA: epiphytic along the Altos de Pacora road, alt. ca. 650 m, 4 March 1976, C. Luer, J. Luer, P. Taylor & R. L. Dressler 1287 (SEL), flowered in cult. 26 Oct. 1976.

Without the aid of a microscope, this minute species, even when in full flower, cannot easily be distinguished from *Pleurothallis calyptrastele* Schltr. Both species from dense mats of tiny leaves on fragile, creeping and branching rhizomes. In bud or full flower both species resemble at a distance a club-moss. Both species were found growing sympatrically in eastern Panama. Although the differences are slight, the two are distinguishable. The sepals of *P. calyptrastele* are acuminate and acute; the apices of the sepals of *P. geminiflora* are broad, obtuse, and even convex. The petals of *P. calyptrastele* are slender, narrowly obovate, narrowly unguiculate, and as long as the lip; the petals of *P. geminiflora* are obovate, subacute, and only half the length of the lip. The lips of both species are simple and oblong.

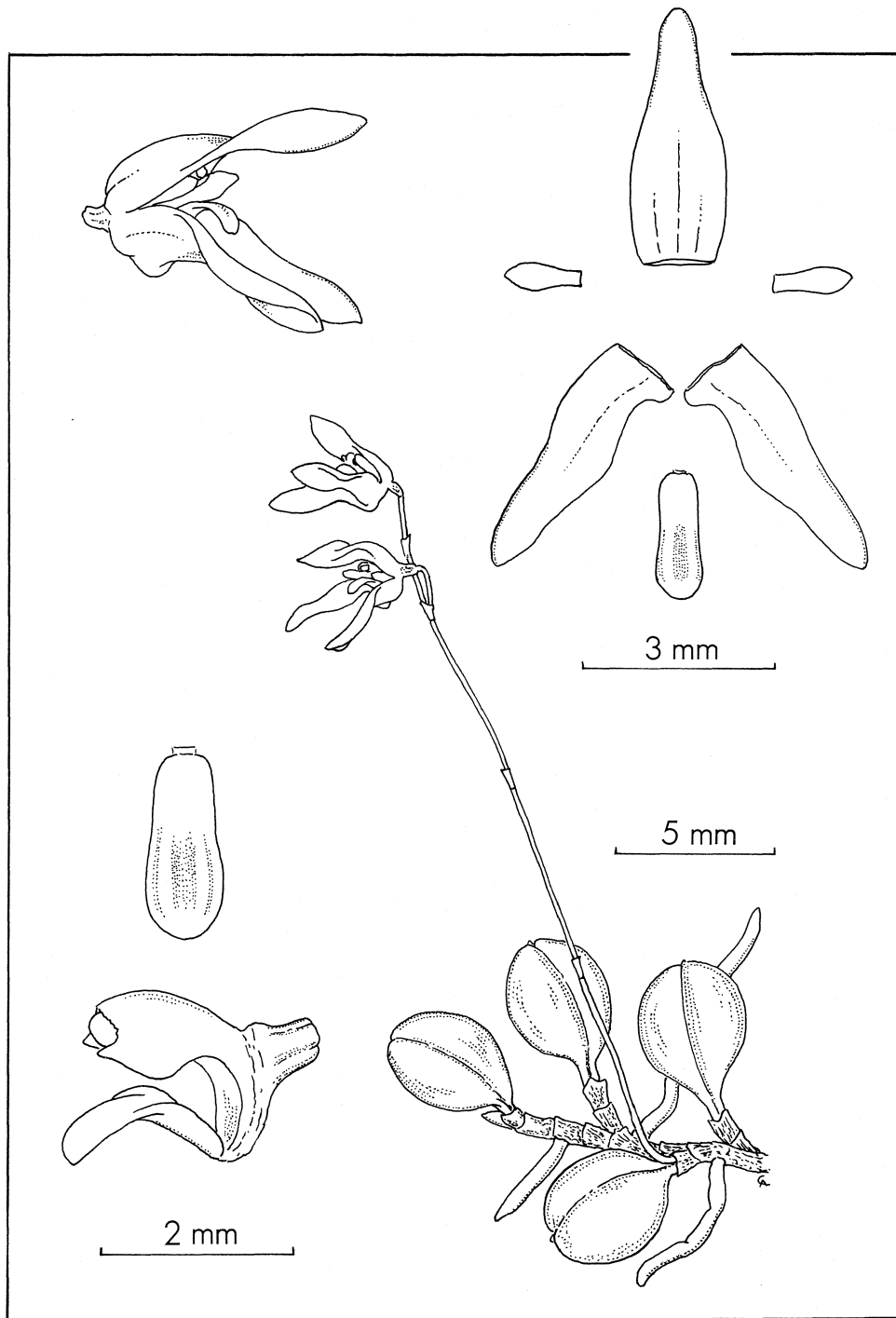


Figure 254. *PLEUROTHALLIS GEMINIFLORA* Ames, Hub. & Schweinf.

Pleurothallis geographica Luer, sp. nov.

Planta mediocris epiphytica caespitosa, caulibus secundariis gracilibus teretibus unfoliatis, foliis patentibus coriaceis ovatis acuminatis tridenticulatis base cordatis sessilibus, floribus singularibus successivis sepalis petalisque flavis labello purpureo, sepalo dorsali late elliptico obtuso, synsepalo late ovato obtuso, petalis linearis acutis glabris, labello carnosio ovato obtuso base truncato, disco leviter concavo glebuloso.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect, slender, terete, 10-15 cm long, unifoliate, with 2-3 closely fitting, tubular sheaths near the base. Leaf spreading, coriaceous, rigid, ovate, slightly acuminate, acute, tridenticulate, the base cordate, sessile, 5.5-7 cm long, 2-2.4 cm wide. Inflorescence fasciculate, the flowers bilabiate, produced singly and successively from a spathe about 1 cm long, often shed or shredded, at the base of the leaf; floral bract 6-7 mm long; pedicel 7-8 mm long; ovary 4.5 mm long; sepals and petals light yellow; dorsal sepal broadly elliptical, obtuse, 8 mm long, 5 mm wide, 3-veined; lateral sepals united into a broadly ovate synsepal, obtuse, suffused with pink, 7 mm long, 6 mm wide, 4-veined; petals linear, acute, glabrous, 5 mm long, 1 mm wide, 1-veined; lip red-purple, fleshy, ovate, obtuse, the base truncate with rounded corners, concave on the end, the disc slightly sulcate-concave, the surface minutely rugose to glebulose, 3.5 mm long, 2.5 mm wide; column stout, green, 1.5 mm long, 1.5 mm wide.

ETYMOLOGY: From the Latin *geographicus*, "geographic" (from the Greek *geo-*, "earth-," and *graphos*, "something drawn or written"), in allusion to the surface of the lip.

TYPE: *ECUADOR*: LOJA: epiphytic near the road ca. 25 km north of Loja, alt. ca. 2000 m, 5 March 1977, C. Luer, J. Luer & K. Cordoba 1579 (HOLOTYPE: SEL), greenhouse acc. no. 77-1805, flowered in cult. 5 April 1977.

DISTRIBUTION: Southern Ecuador.

This species is basically similar to many others in the great horde of the cordate-leaved species of *Pleurothallis*. The rather small, rigid leaves spread horizontally from slender stems. The red-purple lip is conspicuous in the proportionately large, light yellow flowers. The narrow petals spread widely to either side. The most distinguishing feature of the plant is the surface of the blunt, ovate lip. The glenion is well-formed and the center of the lip is slightly sulcate. Radiating toward the margins are minute, irregular, branching rows of shallow rugae and glebulae with larger tuberosities toward the apex, resembling a geographic surface.

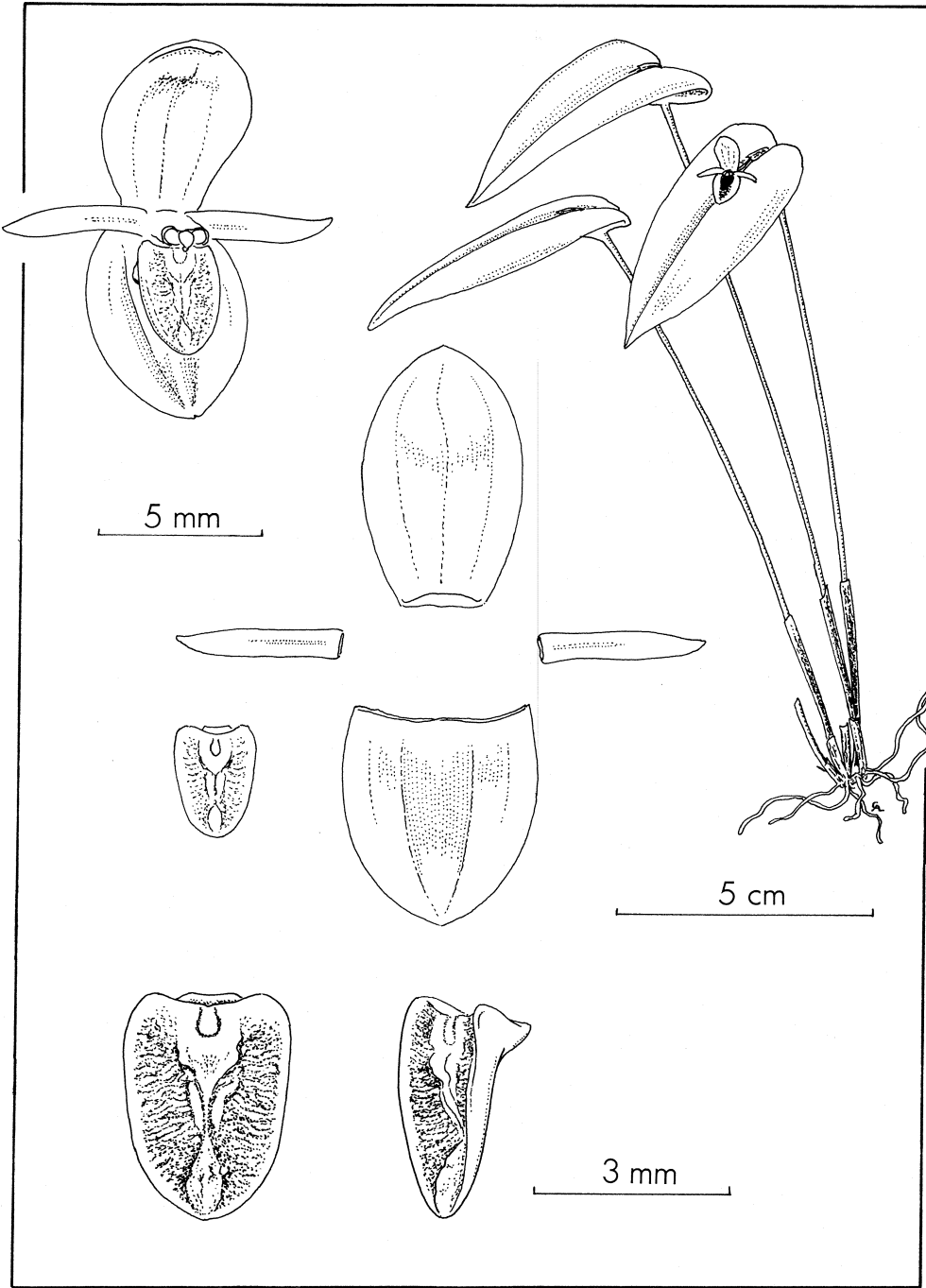


Figure 255. PLEUROTHALLIS GEOGRAPHICA Luer

Pleurothallis guanacastensis Ames & Schweinf., Sched. Orchid. 10:27 1930.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, 1-1.5 cm long, with 1-2 thin, ribbed, fugacious sheaths, unifoliate. Leaf narrowly obovate, subacute to obtuse, tridenticulate, base narrowly cuneate and indistinctly petiolate, 5-8 × 1.5-2 cm. Inflorescence a few-flowered fascicle, the flowers borne 1-2 at a time, from the apex of the peduncle; peduncle filiform, 2-3 cm long, shorter than the leaf, from a node on the secondary stem; flowers ringent, orange; floral bract tubular, 3-5 mm long; pedicel 5 mm long; ovary 1.5-2 mm long; dorsal sepal oblong-ovate, acute, 10 × 3 mm, 3-veined, the veins prominent dorsally, orange on yellow; lateral sepals connate in the basal half, the lamina obovate, the apices acuminate, acute, produced into a mentum basally, 9 × 4.5 mm, bicarinate; petals orange, obovate acute, the labellar margin slightly dilated, 4.5 × 1.5 mm; lip orange, oblong, the apex rounded and finely tuberculate, the margin finely lacerate, the sides slightly dilated and curved up in the natural position, base shortly hinged to the column-foot, biauriculate; column terete, 3.5 mm long, the clinandrium dentate, the foot 1 mm long and concave.

ETYMOLOGY: Named for the Province of Guanacaste, Costa Rica, where the species was first collected.

TYPE: COSTA RICA: GUANACASTE: Quebrada Serena, southeast of Tilarán, alt. 700 m, 27 Jan. 1926, *Paul C. Standley & Juvenal Valerio 46304* (HOLOTYPE: AMES).

DISTRIBUTION: Costa Rica and Nicaragua.

NICARAGUA: without definite locality, cultivated by Janet Kuhn, flowered in cult. 20 Oct. 1975, *Janet Kuhn s.n.* (SEL); ZELAYA: 10 miles west of Rama along Río Mico, alt. 500 m, *A. H. Heller 3579* (SEL).

Heretofore, this species had been recorded only from Costa Rica, but Heller found it plentiful in one remote area of Nicaragua; this is the first report from that country.

The plant appears similar to *Pleurothallis fulgens* Rchb. f., sharing with it short secondary stems, narrow, obovate leaves, and orange flowers of a similar size and shape. The peduncle, however, is much shorter than the leaf and it often produces two flowers simultaneously. Although biauriculate at the base, the lip lacks lateral lobes.

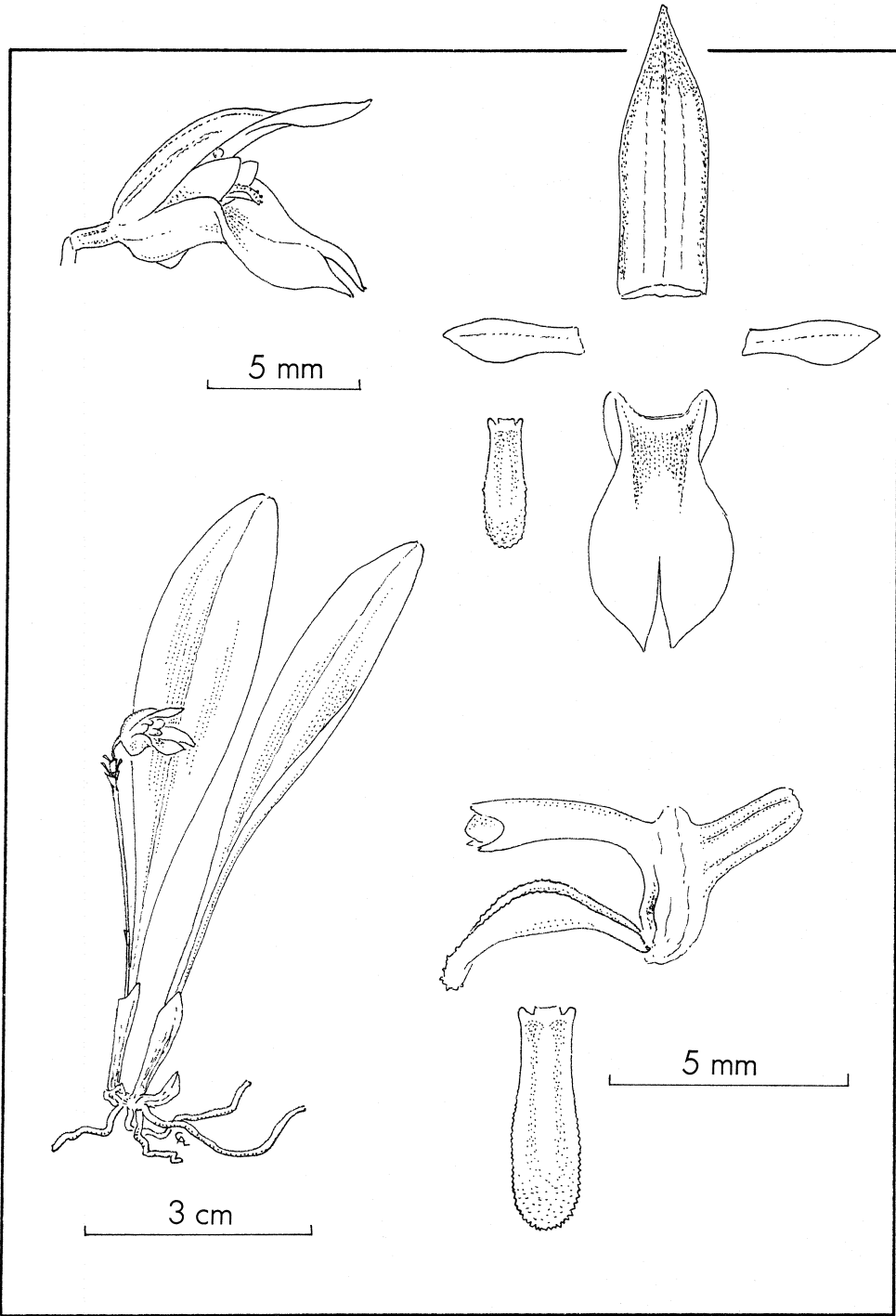


Figure 256. PLEUROTHALLIS GUANACASTENSIS Ames & Schweinf.

Pleurothallis hirsuticaulis Ames & Schweinf., Sched. Orchid. 10:29. 1930.

Plant large to medium in size, epiphytic, caespitose; roots thick, coarse, flexuous. Secondary stems slender, terete, 7-24 cm long, tightly clasped by 4-8 spiculate, scabrous, invaginating sheaths, the uppermost enclosing the base of the leaf, unifoliate. Leaf erect, rigid, coriaceous, narrowly elliptical-ovate, acuminate, acute, tridenticulate, the base narrowly cuneate, sessile, 10-17 cm long, 1.2-1.9 cm wide. Inflorescence fasciculate, the flower produced singly and successively, from a scabrous spathe, 4-5 mm long, at the base of the leaf; floral bract pubescent, 5 mm long; pedicel green with red pubescence, 5 mm long; ovary purple, minutely pubescent, 2 mm long; sepals pale yellow-green veined and marked with purple, glabrous; dorsal sepal elliptical, subacute, 9 mm long, 5 mm wide, 5-veined; lateral sepals connate into a suborbicular, obtuse to rounded lamina, minutely emarginate, forming a mentum with the column-foot, with a pubescent convexity just in front of the column-foot, 7 mm long, 5.5 mm wide, 4-veined; petals obliquely falcate, 9 mm long, dilated and membranous below the middle, 3.5 mm broad, linear, semi-terete, fleshy, deep purple, above the middle, the apex obtuse, minutely apiculate, 1.5 mm wide; lip subquadrate, arcuate, deep purple, the margins white and finely fimbriate, the apex rounded-truncate, the base delicately hinged to the column-foot, with a pair of thin, minute, pedunculate appendages, the disc with a pair of rounded lamellae near the middle, 2.5 mm long, 1.5 mm wide; column stout, 3 mm long, toothed apically, the foot with a pair of lamellae and concave at the distal end.

ETYMOLOGY: From the Latin *hirsutus*, "covered with coarse, stiff hairs," and *caulis*, "stem," in reference to the sheaths of the secondary stems.

TYPE: COSTA RICA: CARTAGO: vicinity of Pejivalle, alt. ca. 900 m, 7-8, Feb. 1926, *Paul C. Standley & Juvenal Valerio 47052* (HOLOTYPE: AMES).

DISTRIBUTION: Costa Rica and Panama.

PANAMA: VERAGUAS: 15-20 km NW of Santa Fé, between Escuela Agrícola Alto Piedra and the continental divide, alt. 650-800 m, 8 Sept. 1974, *R. L. Dressler 4747* (SEL); same locality, 4 Sept. 1976, *C. Luer & R. L. Dressler 1258* (SEL), greenhouse acc. no. 123-76-33, flowered in cult. 20 Oct. 1976.

This Central American species, reported here for the first time outside Costa Rica, is related to the Andean *Pleurothallis hystrix* Rchb. f. and *P. reymondii* (Karst.) Rchb. f., and the Brazilian *P. warmingii* Rchb. f. The tightly fitting sheaths of the slender secondary stems are diffusely covered with rows of minute, downward-pointing bristles. The erect leaves are very narrow, and from their bases appears the solitary, fierce-looking flower. The conspicuous, nearly black petals protrude like a pair of thick, curved arms from between the purple-mottled sepals. The minute, deep purple lip is delicately fringed in white.

Pleurothallis homalantha Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 106. 1923.

Plant epiphytic, medium in size, caespitose; roots slender, flexuous. Secondary stems erect, slender, terete, 10-25 cm long, unifoliate, with a closely fitting tubular sheath below the middle and 1-2 others basally. Leaf spreading, coriaceous, ovate, acuminate, acute, tridenticulate, the base deeply cordate, sessile, 6-9 cm long, 3-4.5 cm wide. Inflorescence fasciculate, the flow-

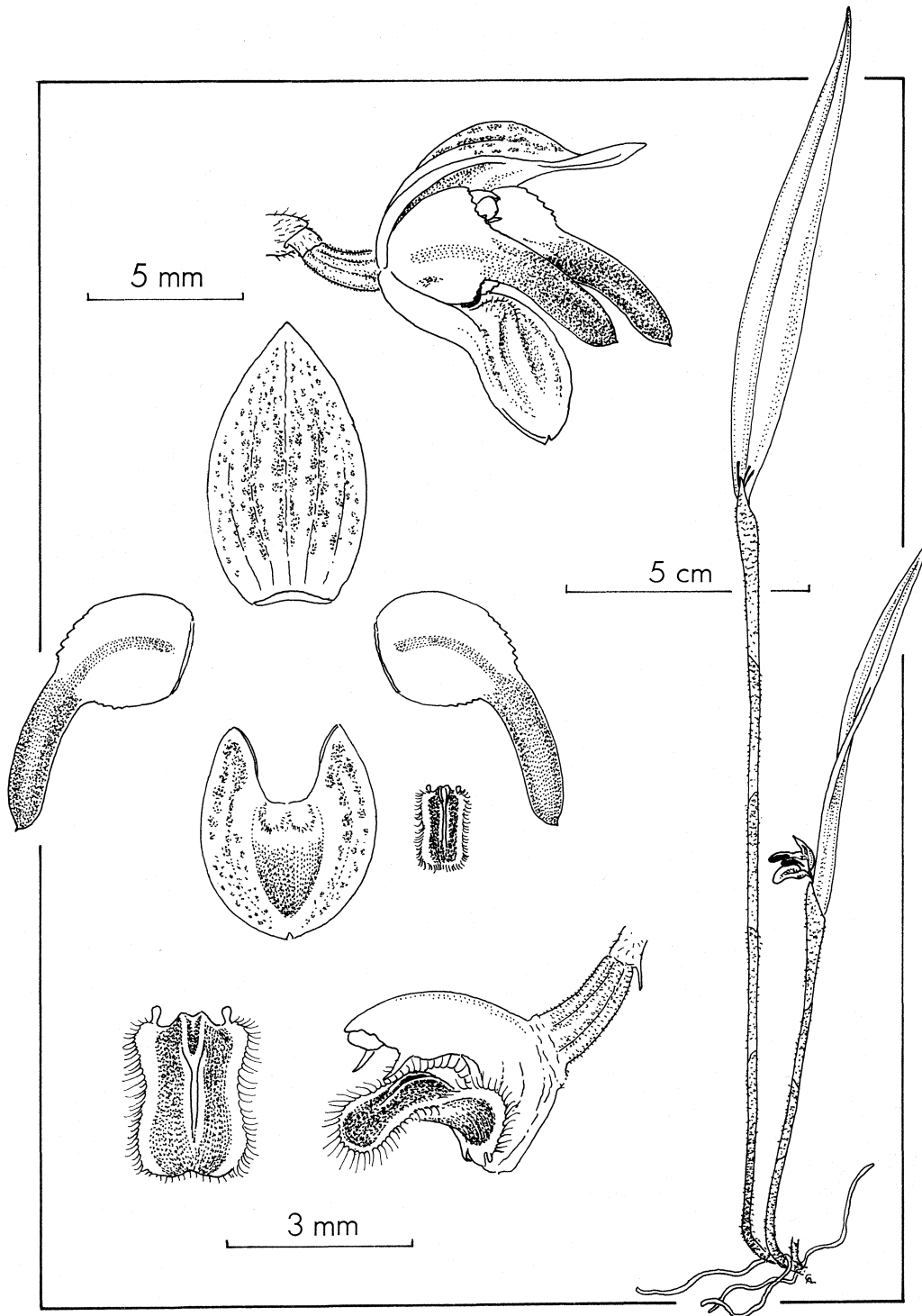


Figure 257. PLEUROTHALLIS HIRSUTICAULIS Ames

ers light red-brown, borne singly and successively from a 10-11 mm spathe at the base of the leaf; floral bract and pedicel each about 6 mm long, concealed within the spathe; ovary 3.5 mm long; dorsal sepal elliptical-ovate, subacute, 8-9 mm long, 4 mm wide, 5-veined; lateral sepals united into an ovate synsepal, acute, 8-9 mm long, 5 mm wide, 6-veined; petals linear-subfalcate, acute, glabrous, 6 mm long, 1 mm wide, 1-veined; lip orange to brown, ovate, acute, the base shallowly concave on the end, the basal angles obtuse, the disc with a well-developed glenion, glabrous, 3 mm long, 2 mm wide; column pink, stout, 1.5 mm long, 1.5 mm wide, with a short, thick foot.

ETYMOLOGY: From the Greek *homalos*, "even, level," and *anthos*, "flower," probably in allusion to the widely spread, somewhat flattened flower against the blade of the leaf.

TYPE: COSTA RICA: SAN JOSE: Tablazo, alt. ca. 1900 m, July 1909, A. & C. Brade 1160.

DISTRIBUTION: Costa Rica and Panama.

PANAMA: CHIRIQUI: epiphytic in cloud forest on Cerro Hornito, alt. ca. 1700 m, 15 Dec. 1976, C. Luer, A. Luer, R. L. Dressler, N. H. Williams & F. L. Stevenson 1363 (SEL).

Pleurothallis homalantha is similar to many others in the section *Macrophyllae-Fasciculatae*, but it may be distinguished by the horizontal, medium-sized, cordate leaves, and widely spread, medium-sized, red-brown flowers. The dorsal sepal is five-veined. The narrow petals are neither denticulate, ciliate, nor pubescent, and the ovate lip is equally glabrous.

***Pleurothallis ichthyonekys* Luer, sp. nov.**

Planta parva epiphytica dense caespitosa, caulibus secundariis brevibus unifoliatis, foliis crassis spatulatis obtusis longipetiolatis, racemo longo repentis, floribus purpureis singularibus successivis, sepalo dorsali anguste triangulari tricarinato, sepalis lateralibus late ovatis semiconnatis brevicaudatis bicarinatis, petalis anguste ovatis ciliatis longicaudatis leviter clavellatis, labello rubro trilobato unguiculato, lobo antico transverse obovato rotundato plano, lobis lateralibus oblongis obtusis, disco bicarinato.

Plant small, epiphytic densely caespitose; roots numerous, fine, flexuous. Secondary stems short, terete, channeled, 5-10 mm long, unifoliate, with 1-2 thin, basal sheaths. Leaves thick, dark green, obovate-spatulate, obtuse, tridenticulate, the base long-petiolate, sulcate, 20-35 mm long, 6-9 mm wide. Inflorescence a long (to 12 cm), repent, successively flowering raceme, the peduncle filiform, flexible, descending from a node on the secondary stem; floral bract 1 mm long; pedicel 2.5-3 mm long; ovary 1.5 mm long; sepals dark red-purple, the dorsal sepal narrowly triangular, acuminate into a slender tail, 7 mm long, 1.5 mm wide, tricarinate, the lateral sepals broadly ovate, concave and connate below the middle, the apices narrowed into short (2 mm) tails, each lateral sepal bicarinate, 6.5 mm long, 3 mm wide; petals translucent white with a purple vein, narrowly ovate, with filiform, sometimes branching cilia below the middle, the apex attenuated into a slender, slightly clavellate tail, 5 mm long, 0.5 mm wide excluding the cilia; lip red, 3-lobed, the anterior lobe transversely obovate, rounded, flat, the lateral lobes below the middle, oblong, obtuse, oblique, erect, about 1 mm long, the base thickly unguiculate, narrowly sulcate, the disc with a pair of serrate, rounded calli near the middle between the apical and lateral lobes, 4.5 mm long, 3 mm across the anterior lobe, 4 mm across the lateral lobes spread out; column yellow, suffused with red, winged, 2.75 mm long, with a broad, concave foot.

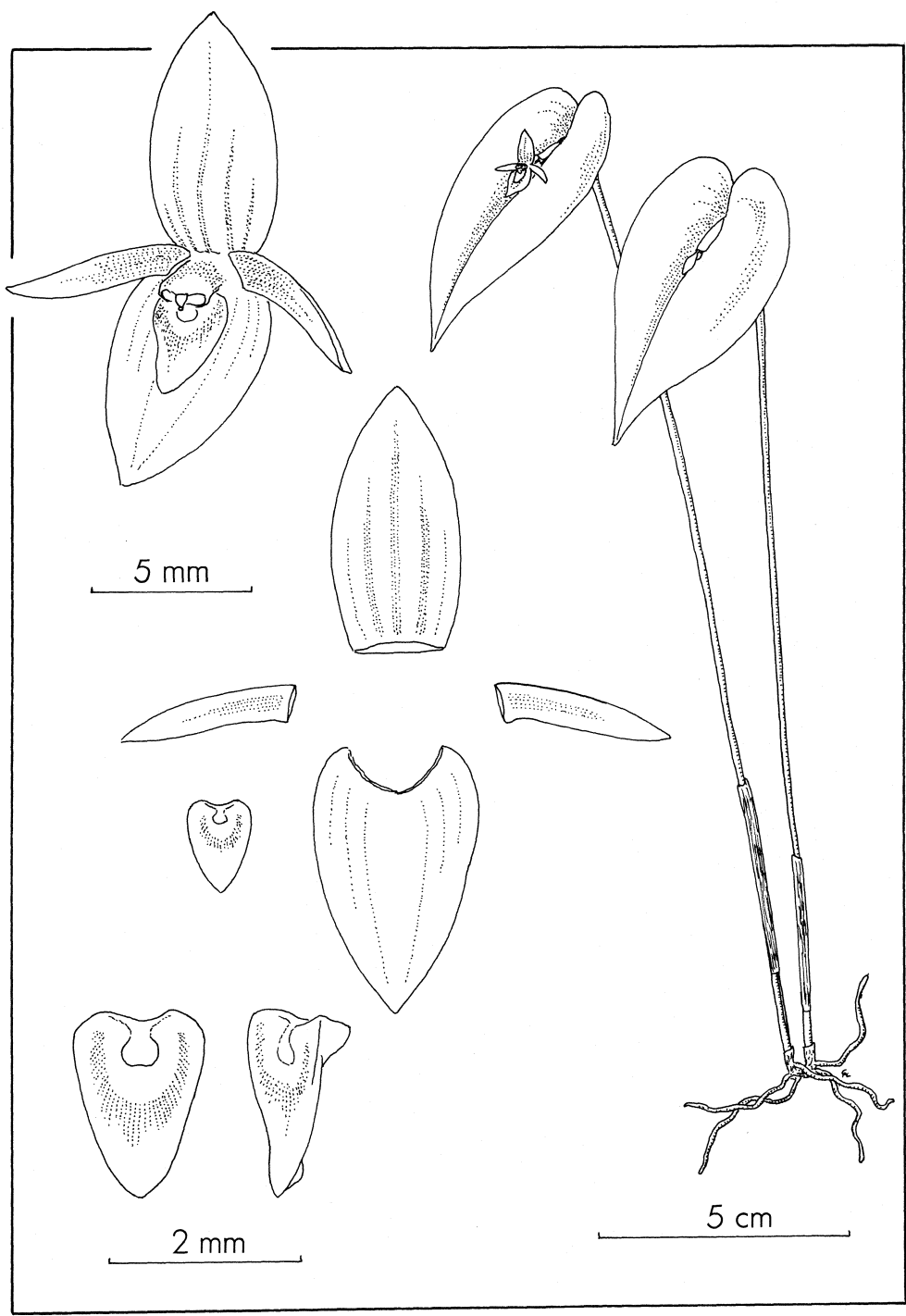


Figure 258. PLEUROTHALLIS HOMALANTHA Schltr.

ETYMOLOGY: From the Greek *ichthys*, "fish," and *nekys*, "carcass," in allusion to the fanciful resemblance of the petals to the bony skeleton of a fish.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in stunted trees below the cold, wet, windswept pass east of Loja, near km 14, alt. 2800 m, 6 March 1977, C. Luer, J. Luer & K. Cordoba 1571 (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

This little species forms large clumps of tightly packed spatulate leaves which cling to the mossy branches of stunted host trees. The hair-like racemes creep through the moss and bear their deep purple flowers in slow succession a short distance from the plant. The sepals and petals are caudate, and the petals are ornamented with extremely fine, long cilia. The red lip is relatively large with a broad, rounded anterior lobe and long, narrow basal lobes. The ciliate petals and three-lobed lip indicate a relationship to *Pleurothallis cestrochila* Garay, found nearby at lower elevations, which may be distinguished by the black lip with short, scabrous basal lobes.

***Pleurothallis imago* Luer, sp. nov.**

Figure 36.

Habitu et floribus *P. excavatae* Schltr. et *P. concaviflorae* C. Schweinf. similis, sed foliis latioribus et floribus flavidis brunneo punctatis amplitudine intermediis differt.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems suberect to horizontal, slender, terete, 2.5-7 cm long, with 1-2 basal, tubular sheaths, monophyllous. Leaf thick, coriaceous, shiny, broadly elliptical, obtuse, tridentate, the base rounded, sessile, 2.5-4 cm long, 1.5-2.5 cm wide. Inflorescence a solitary flower borne in succession from a slender spathe about 1 cm long at the base of the leaf; flower yellowish, flecked with purple or brown, nonresupinate; floral bract tubular, 4-5 mm long; pedicel 5-7 mm long; ovary 4 mm long; middle sepal fleshy, scabrous internally, broadly elliptical, subacute, 4.5-6 mm long, 3.25-4 mm wide, 3-nerved, lightly carinate; lateral sepals united into a deeply concave synsepal, broadly ovate, obtuse, 4.5-5 mm long, 5-6 mm expanded; petals fleshy, subcarinate, oblong, the apex abruptly acute and incurved, 2 mm long, 0.75 mm wide; lip ovate, deeply concave, 3-3.5 mm long, 2 mm wide, the apex abruptly acuminate, the base broadly affixed to the column-base, with slender basal auricles surrounding the column, disc with a converging pair of smooth lamellae behind the concavity; column stout, 1 mm long, with an indistinct foot.

ETYMOLOGY: From the Latin *imago*, "likeness, a copy," in allusion to the similarity of the species to *P. excavata* Schltr. and *P. concaviflora* C. Schweinf.

TYPE: *PANAMA*: PANAMA: epiphytic along the Altos de Pacora road, alt. 650 m, 4 March 1976, C. Luer, J. Luer, R. L. Dressler & P. Taylor 732 (HOLOTYPE: SEL).

DISTRIBUTION: Panama.

ADDITIONAL MATERIAL EXAMINED: *PANAMA*: PANAMA: epiphytic on Cerro Jefe, alt. 1000 m, 17 Dec. 1974, R. L. Dressler 4888 (SEL); same area, F. L. Stevenson 1-476-5 (SEL); COCLE: cloud forest above El Valle, 15 Aug. 1971, H. Wiehler 71297a (SEL).

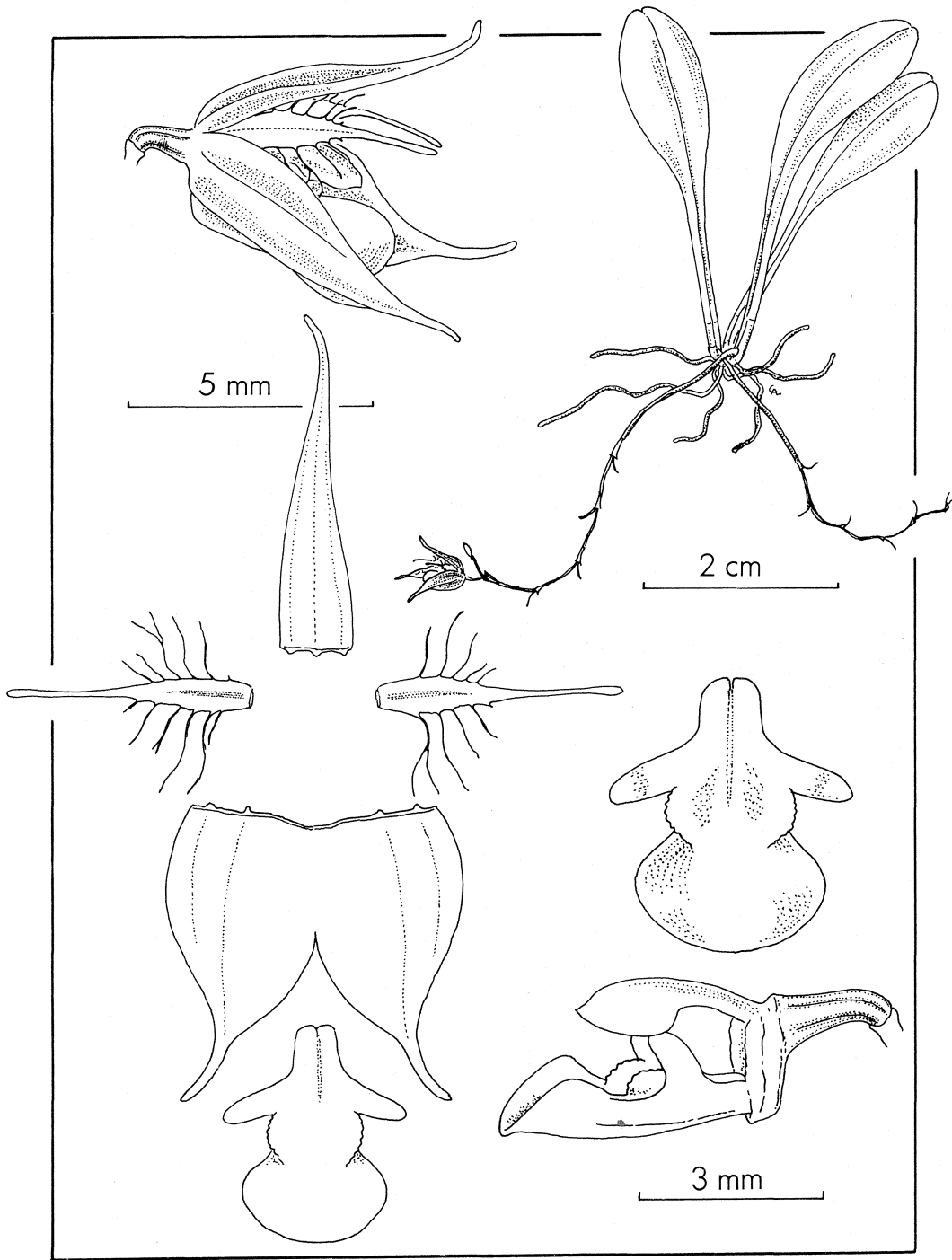


Figure 259. PLEUROTHALLIS ICHTHYONEKYS Luer

Pleurothallis imago is one of three very closely allied species. I erroneously lumped the three together in SELBYANA 1:200, 1975. The first of them to be described was *P. excavata* Schltr. from near San Ramon, Costa Rica. It is characterized by narrow leaves (5-6.7 cm long, 1.1-1.3 cm wide) and relatively large, deep purple flowers (dorsal sepal nearly 8 mm long, lip 4 mm long). It is not yet known to occur outside Costa Rica.

Schweinfurth described *P. concaviflora* also from near San Ramon, Costa Rica. It is distinguished by longer stems, shorter leaves (to 3.5 cm long), and smaller flowers (dorsal sepal 4 mm long, lip 2.5 mm long). It occurs also in western Panama.

Pleurothallis imago from eastern Panama, mistakenly identified as *P. excavata* in SELBYANA 1:200, may be identified by the wider leaves and intermediate-sized, yellowish flowers dotted with purple-brown. The caption for SELBYANA 1:201 should read: Figure 36. PLEUROTHALLIS IMAGO Luer.

***Pleurothallis instar* Luer, sp. nov.**

Pleurothallis eumecocaulo Schltr. affinis sed statura florequae parviore partibus florum purpureis proportione latioribusque et disco labelli ecalloso notabilis.

Plant small, epiphytic, caespitose; roots fine, flexuous. Secondary stems slender, terete, 2-6 cm long, unifoliate, with 1-2 basal sheaths. Leaf erect, coriaceous, narrowly ovate, acute, tridenticulate, the base rounded, sessile, 3-4 cm long, 0.9-1.2 cm wide. Inflorescence a fascicle of single, long-pedicellate, small, red-purple flowers, produced successively from a thin, 5 mm spathe at the base of the leaf; peduncle about 2 cm long, pedicel 10-15 mm long, floral bract 3 mm long; ovary 3 mm long; dorsal sepal broadly ovate, acute, deeply concave, 4.5 mm long, 3 mm wide, 3-veined, heavily suffused and speckled with red-purple; lateral sepals completely connate into a synsepal similar to the dorsal sepal, the apex minutely bidentate, 4 mm long, 3 mm wide, 4-veined; petals narrowly ovate, acute, thick, minutely papular, spotted with dark purple, 4.75 mm long, 1.5 mm wide; lip thick, ovate, shortly acuminate, acute, minutely serrulate, the base broadly united to the column-foot, the disc slightly convex below the middle, shallowly concave at the middle, flat without callosity above the middle, 3 mm long, 1.75 mm wide, suffused and marked with deep purple; column stout, 1 mm long, with a short, thick foot.

ETYMOLOGY: From the Latin *instar*, "image, likeness," in reference to the similarity of the plant to *Pleurothallis eumecocaulon* Schltr.

TYPE: PANAMA: CHIRIQUI: epiphytic in cloud forest on Cerro Hornito, alt. ca. 1700 m, 15 Dec. 1976, C. Luer, A. Luer, R. L. Dressler, N. H. Williams & F. L. Stevenson 1389 (HOLOTYPE: SEL), greenhouse acc. no. 155-76-80a, flowered in cult. 8 April 1977.

DISTRIBUTION: Panama.

This little species is obviously closely allied to *Pleurothallis eumecocaulon* Schltr., but it is immediately distinguishable by the smaller stature and smaller purple flowers. The flower parts are proportionately wider, and the disc of the lip is flat, lacking any callus above the middle. The flowers of *P. eumecocaulon* are white, only occasionally spotted with purple, and the lip is convex or callously thickened above the middle. *Pleurothallis instar* occurs sympatrically with *P. eumecocaulon*. No intermediate forms have been observed.

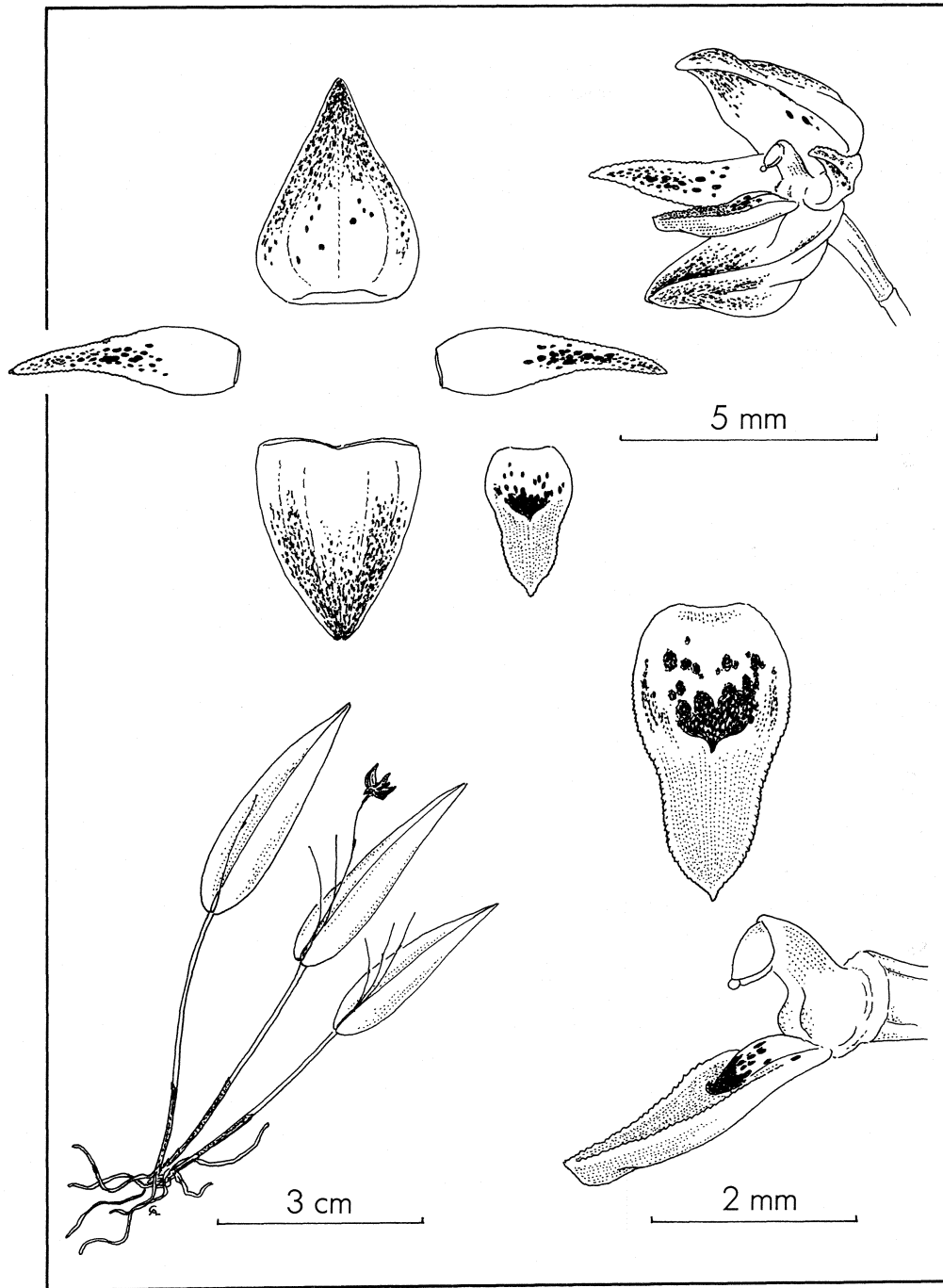


Figure 260. PLEUROTHALLIS INSTAR Luer

***Pleurothallis isthmica* Luer, sp. nov.**

Planta epiphytica parva mediocrisve caespitosa, caulibus secundariis gracilibus teretibus unifoliatis, foliis crassis coriaceis anguste ellipticis acutis base rotundatis sessilibus, floribus fasciculatis singularibus successivis luteis glabris, sepalo synsepaloque ovatis subacutis, petalis oblongis integris, labello oblongo-ovato glabro integro apice crasso obtuso ochraceo.

Plant small to medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 4-17 cm long, with a closely fitting tubular sheath below the middle and another at the base, unifoliate. Leaf suberect, thick, coriaceous, rigid, narrowly elliptical, acute, tridenticulate, the base cunneate to rounded, sessile, 3-11 × 1.2-2 cm. Inflorescence a fascicle of successive flowers, produced 1 to 2 at a time, from a spathe 5-10 mm long at the base of the leaf; pedicel 5-10 mm long; floral bract 3-5 mm long; ovary 3 mm long; sepals and petals glabrous, light yellow-green to pale yellow; dorsal sepal elliptical, subacute, 5.5-8 × 3-4 mm, 3-veined; lateral sepals connate into an elliptical lamina, subacute, 5.5-7 × 3.5-4 mm, 4-veined; petals linear-oblong, slightly falcate, acute, entire, 2.5-4 × 0.75-1 mm, 1-veined; lip oblong-ovate, the apex thickened, orange to yellow-orange, rounded to obtuse, the end of the base concave, the disc slightly concave, with a narrow glenion; column stout, 1 × 1 mm, with a short foot.

ETYMOLOGY: From the Greek *isthmos*, "isthmus," and *-icus*, hence, "of the Isthmus (of Panama)".

TYPE: PANAMA: VERAGUAS: epiphytic in the cloud forest near the continental divide above Santa Fe, alt. ca. 750 m, 4 Sept. 1976, C. Luer & R. L. Dressler 1140 (HOLOTYPE: SEL).

DISTRIBUTION: Panama and Costa Rica.

ADDITIONAL MATERIAL EXAMINED: PANAMA: CHIRIQUI: epiphytic at the Fortuna dam site, alt. ca. 1000 m, October 1976, R. L. Dressler s.n. (SEL), greenhouse acc. no. 131-76-13, flowered in cult. 5 Nov. 1976. COSTA RICA: without specific location, F. L. Stevenson 71174-5 (SEL), flowered in cult. 11 July 1974.

This species is apparently widespread and fairly frequent in western Panama. Vegetatively and florally it is similar to, but larger than, the widespread *Pleurothallis discoidea* Lindl. and its allies, and the Guatemalan *P. leucantha* Schltr. and its allies. *Pleurothallis isthmica* may be identified by its narrowly oblong, thick leaves, and medium-sized flowers with a 3-veined dorsal sepal. The dorsal sepal is 5-veined in *P. homalantha* Schltr. and its relatives. The petals are entire, and the apical half of the simple lip is thickened and orange.

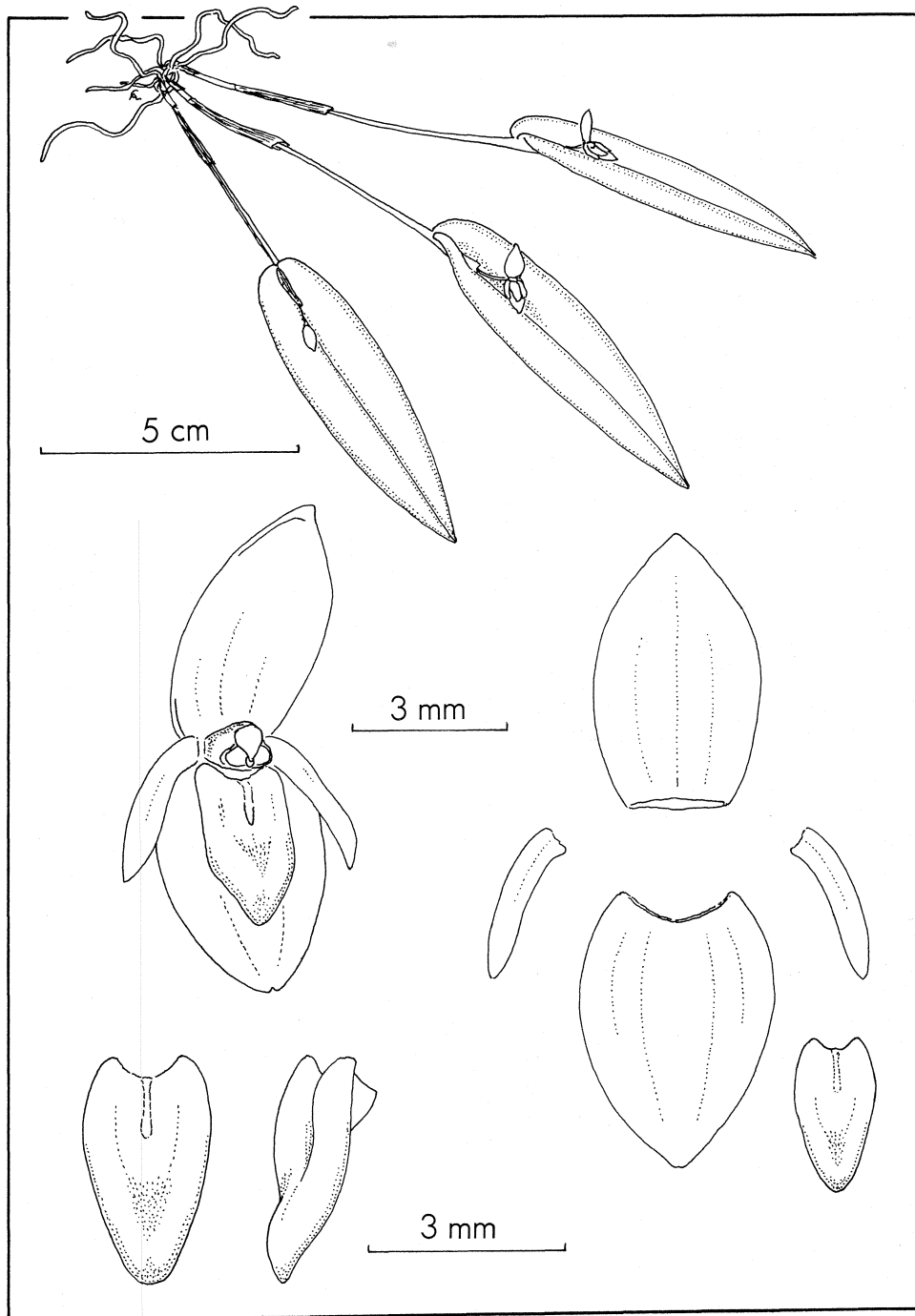


Figure 261. *PLEUROTHALLIS ISTHMICA* Luer

Pleurothallis johnsonii Ames, Sched. Orchid. 2:21. Jan. 1923.

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

Pleurothallis lateralis L. O. Wms., Ceiba 5:84. 1956.

Plant medium in size, epiphytic, caespitose to shortly repent, the primary stem stout, sometimes thickly swollen to 1 cm in diameter, producing a secondary stem every 3-5 mm; roots few, flexuous. Secondary stems stout, terete, lightly channeled, 3-13 cm long, partly concealed by a loose, tubular sheath near the middle, often shed, and another 2 toward the base, unifoliate. Leaf coriaceous, thick, rigid, dull green or bluish green elliptical, subacute to obtuse, the base cuneate, conduplicate, sessile, 6-15 cm long, 3-7 cm wide. Inflorescence a short (3-5 cm), few-flowered raceme, produced either from a narrow 5 mm spathe in the axil of the leaf, or from the rhizome at the base of a secondary stem; flowers fleshy, deep red purple, not widely spread; floral bract infundibular, 2-6 mm long; pedicel thick, 2 mm long; ovary 3-5 mm long; sepals fleshy, elliptical, acute, apiculate, the margins and external surface minutely pubescent, echinate within, the lateral sepals oblique and connate only at the base where they form a mentum below the column-foot, 10-14 mm long, 4-5 mm wide; petals fleshy, narrowly elliptical, subacute, ciliate, 8-9 mm long, 1.8-2.5 mm wide; lip thick, yellow, heavily marked with purple, ovate, subacute, dilated below the middle into ill-defined, rounded, erect, lateral lobes, the base shortly unguiculate, the disc with an elevated, curved callosity near the base, tuberculate near the middle, and with a pair of verrucose lamellae extending forward from the lateral lobes, 6 mm long, 3 mm wide; column red, terete, 4 mm long, with a 2 mm long foot.

ETYMOLOGY: Named in honor of Harry Johnson, its discoverer.

TYPE: GUATEMALA: ALTA VERAPAZ: Chamá to Cobán, alt. 1000 m, 15 Aug. 1920, *Harry Johnson 901* (HOLOTYPE: AMES. ISOTYPE: US).

DISTRIBUTION: Guatemala, Salvador, Honduras, Costa Rica, and Panama.

HONDURAS: without specific locality, *J. Nepple s.n.* (SEL), cult. by H. H. Morgan, flowered in cult. Oct. 1975; without locality, *G. Kennedy s.n.* (SEL), greenhouse acc. no. 97-75-4, flowered in cult. 5 Aug. 1976.

COSTA RICA: without specific locality, *John Hall s.n.* (SEL), greenhouse acc. no. 96-75-3 flowered in cult. 26 June 1976.

PANAMA: COCLÉ: epiphytic in cloud forest above El Valle, alt. 1000 m, 6 March 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 1053*, greenhouse acc. no. 43-76-222, flowered in cult. 8 Aug. 1976.

This is the only known species of *Pleurothallis* that may produce a raceme from the primary stem (rhizome) as well as from the apex of the secondary stem. Although the four living specimens cultivated at SEL produce the inflorescence either one way or the other, rarely both terminal and lateral inflorescences are known to occur simultaneously on the same plant. This fact eliminates any consideration of a second species or a second genus, as previously proposed. Comparison of living flowers produced on apical and lateral racemes reveals only minor differences.

The terminal raceme ascends to lie along the mid-vein of the large, coarse, blue-green leaf. The lateral raceme descends. The dark red-purple, fleshy flowers do not open widely to expose the minutely spinous interior.

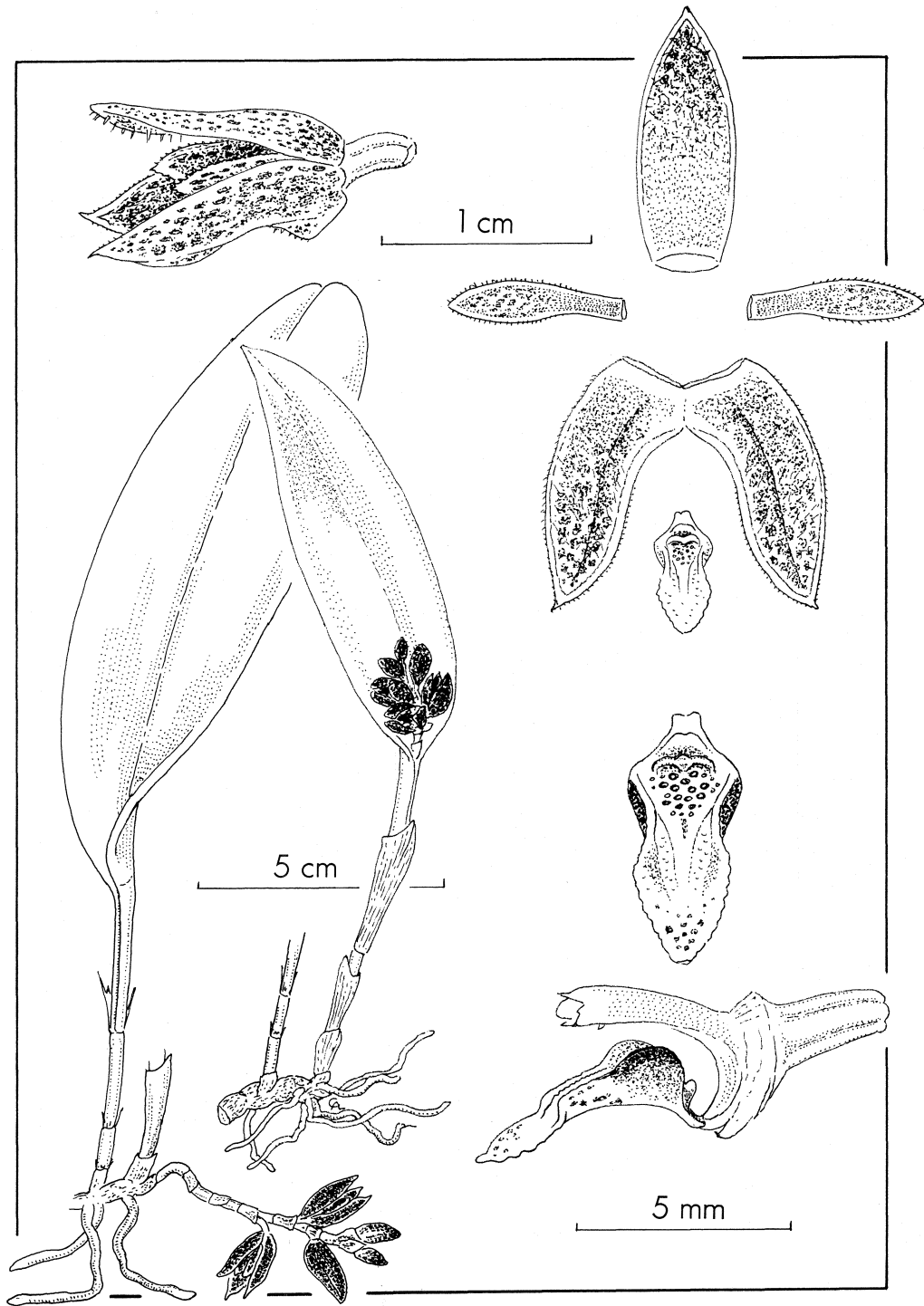


Figure 262. PLEUROTHALLIS JOHNSONII Ames

The specimen discovered in Panama produces the raceme from the rhizome.

Pleurothallis kennedyi Luer, sp. nov.

Planta perparva epiphytica caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis crassis ellipticis obtusis subpetiolatis, racemo laxo paucifloro folia superanti, flore singulari successivo longipedicellato, sepalis carnosiss flavis purpureo guttatis ellipticis carinis serrulatis brevicaudatis, caudis crassis aurantiacis, sepalis lateralibus infra medium connatis, petalis ellipticis laciniatis apice acutis crassis, labello carnoso atropurpureo oblongo trilobato verruculoso subter carinato, lobo antico rotundato, lobis lateralibus rotundatis erectis.

Plant very small, epiphytic, caespitose; roots fine, flexuous. Secondary stems abbreviated, terete, 3-5 mm long, unifoliate, with 1-2 thin, basal sheaths. Leaves thick, coriaceous, suberect, elliptical, marginate, obtuse, tridentate, the base cuneate, subpetiolate, 9-14 mm long, 3-4 mm wide. Inflorescence a loose, few-flowered raceme to 4 cm long, the flowers produced singly and successively, peduncle filiform, erect, from a node on the secondary stem; floral bract minute, up to 1 mm long; pedicel 6 mm long; ovary 1.5 mm long; sepals fleshy, yellow, marked and striped with purple, with serrulate carinae along the veins, sparsely short-pubescent externally, glabrous within, elliptical-ovate, with short, thick, orange tails about 1 mm long, the dorsal sepal 5 mm long, 3 mm wide, 3-veined, the lateral sepals connate below the middle, each 4 mm long, 2 mm wide, 2-veined; petals broadly elliptical, lacerate, yellow with purple markings, the apex thickened, acute, 2.5 mm long, 1.5 mm wide, the single vein thickened; lip dark purple, fleshy, oblong, 3-lobed, with a toothed keel beneath, the anterior lobe oblong, rounded, the lateral lobes broadly obtuse to rounded, erect, the base broadly hinged to the column-foot, the disc with a pair of central calli, the entire upper surface verruculose, 2 mm long, 1.5 mm wide spread; column winged, bidigitate, 1.75 mm long, with a short purple foot.

ETYMOLOGY: Named in honor of its discoverer, Dr. George Kennedy of Los Angeles, California.

TYPE: *PERU*: SAN MARTIN: near La Divisoria, *G. Kennedy s.n.* (HOLOTYPE: SEL), greenhouse acc. no. 86-75-5, flowered in cult. 11 Feb. 1977.

DISTRIBUTION: Peru.

This tiny species, vegetatively very similar to many other related species, may be recognized by the few-flowered raceme which produces a slow succession of single flowers. The fleshy yellow sepals, marked with purple, are terminated by short, thick, orange tails. Externally the sepals are denticulate-carinate along the veins. The lacerate petals also possess thick, orange apices. The obtusely three-lobed, deep purple lip is minutely verruculose.

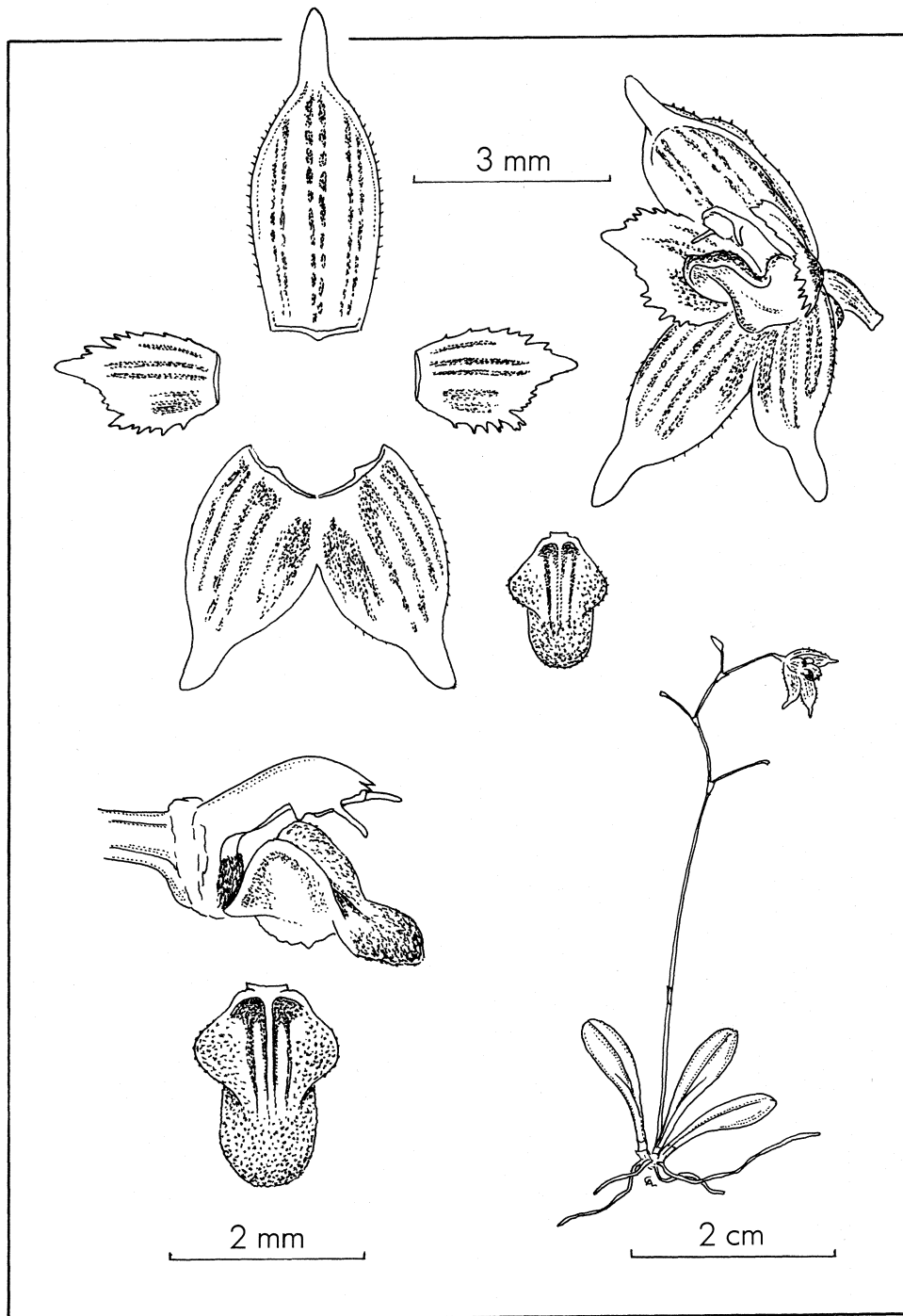


Figure 263. PLEUROTHALLIS KENNEDYI Luer

Pleurothallis lamprochlamys Schltr., Repert. Spec. Nov. Regni Veg. 14:130. 1915.

Plant large, epiphytic to terrestrial, caespitose; roots slender, flexuous. Secondary stems stout, terete, 8-30 cm long, fascicled, more than one stem enclosed in common basal sheaths, with a loose, tubular sheath above the middle, unifoliate. Leaf erect, coriaceous, elliptical-oblong, obtuse, retuse, tridentate, the base cuneate, sessile, 10-15 cm long, 3-4 cm wide. Inflorescence racemose, 1-6 racemes to 18 cm long, densely many-flowered, produced simultaneously from a large spathe, 3-5 cm long, in the axil of the leaf; floral bract infundibular, oblique, 5-6 mm long; pedicel 2 mm long; ovary red-brown, 2 mm long; flowers gaping, the sepals and petals pale yellow striped with purple-brown; dorsal sepal broadly elliptical, obtuse, concave, 8 mm long, 6 mm wide, 3-veined, with a few hairs along the margin; lateral sepals connate to near the middle, each oblong, obtuse, more or less convex, 8 mm long, 3 mm wide, 3-veined; petals broadly elliptical, obtuse, 4 mm long, 3 mm wide, 3-striped; lip broadly ovate-subcordate, concave, the apex and basal lobes rounded, broadly hinged to the column-foot, disc with a parallel pair of short, semi-lunate lamellae near the middle, marked with purple-brown on yellow-green, 3.5 mm long, 3.5 mm wide; column stout, white, 2 mm long, with a short foot.

ETYMOLOGY: From the Greek *lampros*, "bright," and *chlamys*, "cloak, or sheath," referring to the large, smooth, shining sheaths.

TYPE: *ECUADOR*: COTOPAXI: in forests of Mt. Corazon near Rio San Lorenzo, July 1874, A. S. Sodiño 8.

DISTRIBUTION: Ecuador.

ECUADOR: PICHINCHA: terrestrial on the road embankment of the new road between Quito and Santo Domingo, alt. ca. 3000 m, 10 March 1976, C. Luer, J. Luer & P. Taylor 800 (SEL); *MORONA-SANTIAGO*: terrestrial on the road cut through cloud forest below Ave Maria Pass E of Gualaceo, alt. ca. 3000 m, 3 March 1977, C. Luer, J. Luer & K. Cordoba 1512 (SEL).

This very pretty species is found on both slopes of the Andes of central Ecuador. The fascicled secondary stems are sheathed below by large, loose, thin, parchment-like sheaths. From a large foliaceous spathe at the base of the rigid leaf, a showy display of several many-flowered racemes of comparatively large, purple-striped flowers emerges. The yellowish, obtuse to rounded floral parts are prominently marked. A small pair of rounded lamellae protrudes from the center of the blunt lip.

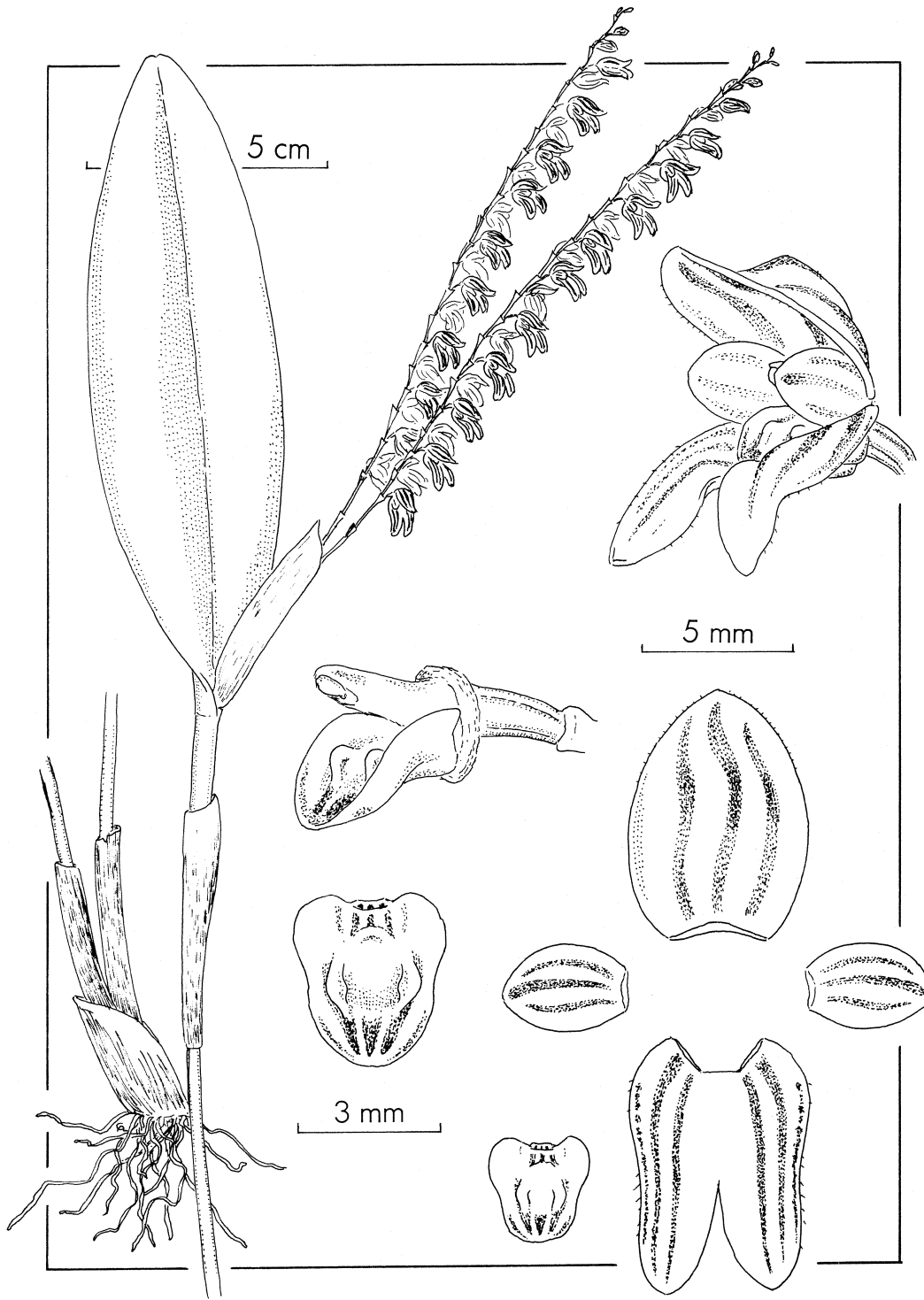


Figure 264. PLEUROTHALLIS LAMPROCHLAMYS Schltr.

Pleurothallis lappiformis A. H. Heller & L. O. Wms., *Fieldiana, Bot.* 31:42. 1964.

Plant medium-sized, epiphytic, repent, the primary stem stout, creeping, with short internodes with shredded, ribbed sheaths, producing a secondary stem about every 1 cm, and a sessile flower from the axils; roots few, flexuous, branching. Secondary stems terete, lightly channeled above, 4-5 cm long, with 3 loose, tubular, invaginating sheaths, often fragmented, unifoliate. Leaf coriaceous, erect, elliptical, subacute, tridentate, the base cuneate, sessile, 10-13 cm long, 3-3.5 cm wide. Inflorescence a solitary flower borne from the rhizome in the axils of the secondary stems, the short-stemmed flowers bur-like, inverted, inflated, dark red, covered by a villous pubescence; peduncle green, covered by a red pubescence, 3 mm long; floral bract loose, dilated, brown, tomentose, 7 mm long, 7 mm wide; pedicel thick, pubescence red, 2 mm long; ovary pyramidal, pilose, 3 mm long, 4 mm wide; middle sepal narrowly triangular, acute, verrucose within, 16 mm long, 3 mm wide, the apex trapped by the apex of the synsepal; lateral sepals united into a broadly obovate, obtuse, concave, uppermost synsepal with involute margins, the inner surface tuberculate and coarsely rugose, 19 mm long, 13 mm wide; petals oblong, acute, papillose on both surfaces, 9 mm long, 2 mm wide; lip red-purple, oblong, 3-lobed near the middle, the apical lobe rounded, minutely verrucose, the lateral lobes oblique, obtuse, 0.5 mm long, the base broadly hinged to the column-foot, the disc transversely rugose toward the base, with a pair of low, verrucose calli above the middle, 5.5 mm long, 3 mm wide; column red, terete, 4 mm long with a thick, broad foot.

ETYMOLOGY: From the Latin *lappa*, "a bur," and *-formis*, "in the form of," in allusion to the appearance of the flowers.

TYPE: NICARAGUA: CHONTALES: epiphyte, Pistacho Peak near Babilonia mine, alt. 650 m, July 1962, *Heller 6620* (HOLOTYPE: F).

DISTRIBUTION: Nicaragua and Panama.

PANAMA: PANAMA: epiphytic along the El Llano-Carti road, alt. 350 m, collected 3 March 1976, cult. at SEL, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 1034* (SEL), greenhouse acc. no. 43-76-224, flowered in cult. 30 July 1976.

Although the plant described above varies somewhat from the description supplied by Heller and Williams, it must certainly be the same species. There are several features that I interpret differently. The leaves are sessile (not long-petiolate) and borne by well-developed secondary stems up to 5 cm in length (not inconspicuous). The large, red, hairy, bur-like flowers, borne on the rhizome, are not rotated (not resupinate). The opening of the inflated, concave synsepal faces downward, the wide opening divided into two halves by the narrow middle sepal, the tip of which is held securely by the cupped apex of the synsepal. Although the petals of Heller's plant undoubtedly bore transverse, verrucose keels, the petals of the Panamanian plant are simply papillose. The three-lobed lips appear to be the same.

Five flowers were borne in July by the single plant collected in Panama in March. All originated from the axil of a secondary stem with the rhizome. Heller described one of his flowers (out of many) as appearing on a secondary stem 7 mm from the rhizome. He interpreted this as at the apex of the secondary stem (below the presumed petiolate leaf), but this flower very well may have arisen from a branched primary stem, or at most, from a lowermost node on a secondary stem.

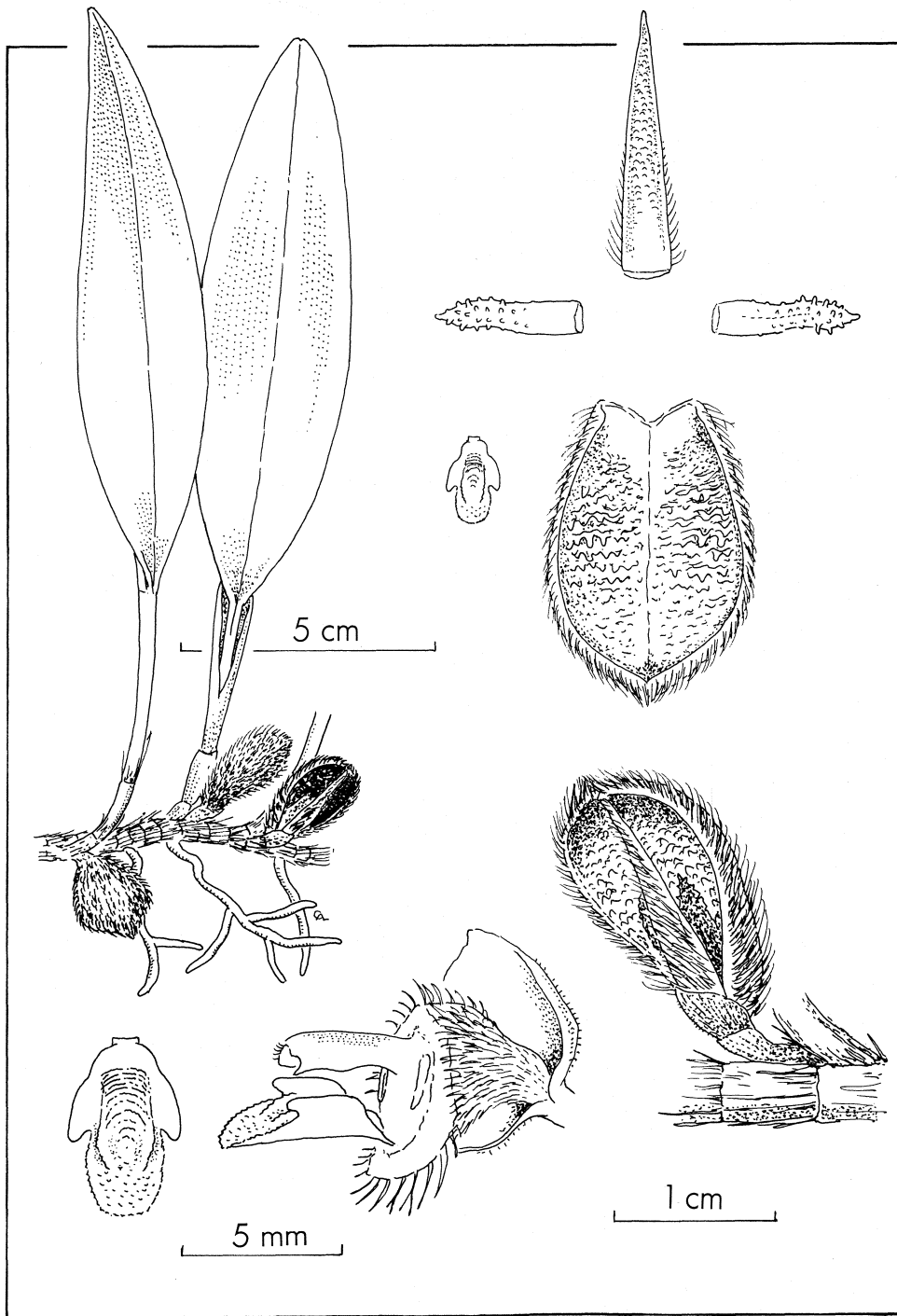


Figure 265. PLEUROTHALLIS LAPPIFORMIS Heller & L. O. Wms.

Pleurothallis lepidota L. O. Wms., Ann. Missouri Bot. Gard. 27:279, t. 32. 1940.

Plant epiphytic, medium in size, caespitose, pendulous; roots fine, ascending, flexuous. Secondary stems fasciculate, slender, weak, terete, suffused with purple, 7-15 cm long, the basal two-thirds enclosed by 2-3 loose, tubular sheaths, unifoliate. Leaf dependent, coriaceous, elliptical-obovate, acuminate, acute, tridenticulate, the margins sharp-edged, the base cuneate to rounded, sessile, 9-13 cm long, 3-4.4 cm wide, the back suffused with purple, the front green, with 7-9 purplish stripes. Inflorescence a short (5-6 cm), pendent, few-flowered (8-12), distichous raceme, the peduncle abbreviated, from a 10-16 mm spathe at the base of the leaf; the flowers fleshy, not widely spread, green with maroon stripes; floral bract transparent, oblique, 3-4 mm long, pedicel thick, 2 mm long; ovary minutely puberulent, 1 mm long, 1 mm wide; dorsal sepal linear, acuminate, acute, constricted below the middle, the basal third thick, unicarinate, 14 mm long, 1.5 mm wide, 3-striped; lateral sepals united into an ovate, concave synsepal, subacute, bidentate, bialate toward the base, 13 mm long, 8 mm wide unspread, 6-striped; petals narrowly linear, acute, translucent, 3.5 mm long, 0.3 mm wide; lip 3-lobed, 7 mm long, 3 mm wide unspread, the anterior lobe oblong, acute, verrucose, purple, the lateral lobes green, broadly rounded, erect, rigid, the margins and surface serrulate-scabrous, the base unguiculate, the claw narrow, acutely angled; column 4 mm long, with a slender foot, 3 mm long.

ETYMOLOGY: From the Latin *lepidotus*, "covered with small scales" (from the Greek *lepis*, *lepidos*, "scale"), in allusion to the scabrous lip.

TYPE: PANAMA: CHIRIQUI: epiphytic, Llanos del Volcán, alt. ca. 1300 m, 23 Jan. 1939, *Allen 1552* (HOLOTYPE: AMES).

DISTRIBUTION: Panama.

PANAMA: CHIRIQUI: epiphytic in trees along Río Macho Monte near Volcán, alt. ca. 1400 m, 14 Sept. 1976, *C. Luer & H. Butcher 1263* (SEL), greenhouse acc. no. 123-76-10, flowered in cult. 29 Oct. 1976.

This unusual species is similar in habit to *Pleurothallis butcheri* L. O. Wms. From branches and tree trunks in the dark, humid forest, fascicles of slender, flexible stems grow straight down and bear large, flat, purplish-striped, pendent blades that lie upon each other. The inflorescence also descends to hang flat against the leaf. Most racemes develop out of view, and can be seen only by parting the dangling blades.

The maroon-striped flowers spread but little. The minute, slender petals originate from the sides of the lower part of the column, and reach no farther than the apex. The three-lobed lip is minutely papillose.

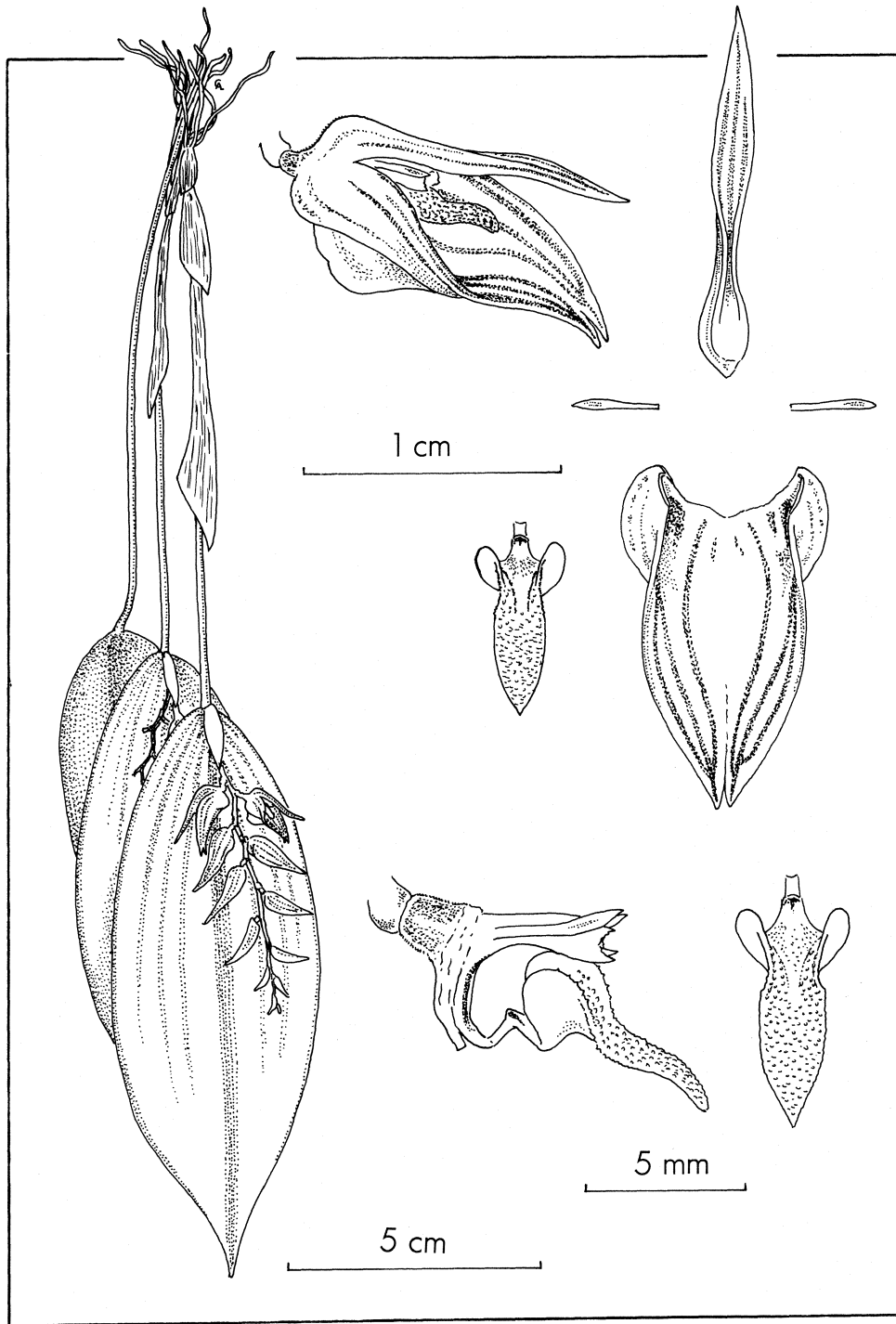


Figure 266. PLEUROTHALLIS LEPIDOTA L. O. Wms.

Pleurothallis ligulata Lindl., Folia Orchid. Pleuroth. 29. 1859.

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

Plant medium in size, terrestrial, caespitose; roots numerous, slender, flexuous. Secondary stems slender, erect, unifoliate, fasciculate, 6-9 cm long, enclosed by 2-3 loose, imbricating sheaths, 1-3 stems included within a sheath. Leaf erect, coriaceous, narrowly oblong-elliptical, subacute to obtuse, tridenticulate, the base cuneate, indistinctly short-petiolate, 8-12 cm long, 7-15 mm wide. Inflorescence racemose, 1-2 slender, erect, densely many-flowered racemes, 6-18 cm long, the peduncle short, from a spathe, 6-11 mm long at the base of the leaf; floral bract tubular, acute, 4 mm long; pedicel and ovary each 3 mm long; sepals yellow, glabrous without, sparsely pubescent within, each 3-veined, the veins prominent externally, the dorsal sepal elliptical, obtuse, concave, 7 mm long, 3.5 mm wide, the lateral sepals oblong-elliptical, obtuse, connate to near the middle, 6 mm long, 4 mm wide together; petals pale yellow, marked with purple, broadly elliptical, the apex rounded, 3 mm long, 2 mm wide, 3-veined; lip fleshy, orange, marked with red-purple, oblong-ovate, the apex obtuse to rounded, the sides broadly rounded, erect and fleshy-thickened below the middle, the base truncate, shortly concave, the disc broadly concave, featureless, 2.5 mm long, 1.5 mm wide; column stout, white marked with purple, 1.5 mm long, with a short foot.

ETYMOLOGY: From the Latin *ligulatus*, "shaped like a little tongue," in reference to the ligulate leaves.

TYPE: *ECUADOR*: without locality, terrestrial, *Jameson Stelis No. 2* (HOLOTYPE: K).

DISTRIBUTION: Ecuador.

ECUADOR: LOJA: terrestrial on a road embankment, above Saraguro, alt. ca. 2500 m, 5 March 1977, C. Luer, J. Luer & K. Cordoba 1537 (SEL).

This species, originally described by Lindley from Ecuadorian material sent to Hooker by Jameson, was recently found again growing terrestrially in full sunlight at a relatively high elevation in semi-arid terrain in the Province of Loja. Jameson labeled his specimen *Stelis No. 2*, and the flowering plant does, indeed, resemble a *Stelis*. In fact, species of *Stelis* of the same general similarity were growing with *Pleurothallis ligulata*.

The secondary stems are produced by a very short, ascending rhizome so that fascicles of stems share in common large, cauline sheaths. From the base of the narrow, ligulate leaves one or two racemes of small, yellow flowers reach a short distance beyond the leaves. *Pleurothallis ligulata* most closely resembles *P. tunguraguae* Lehm. & Krzl., but the former is distinguished by broad, 3-veined petals, and an obscurely three-lobed, ligulate lip.

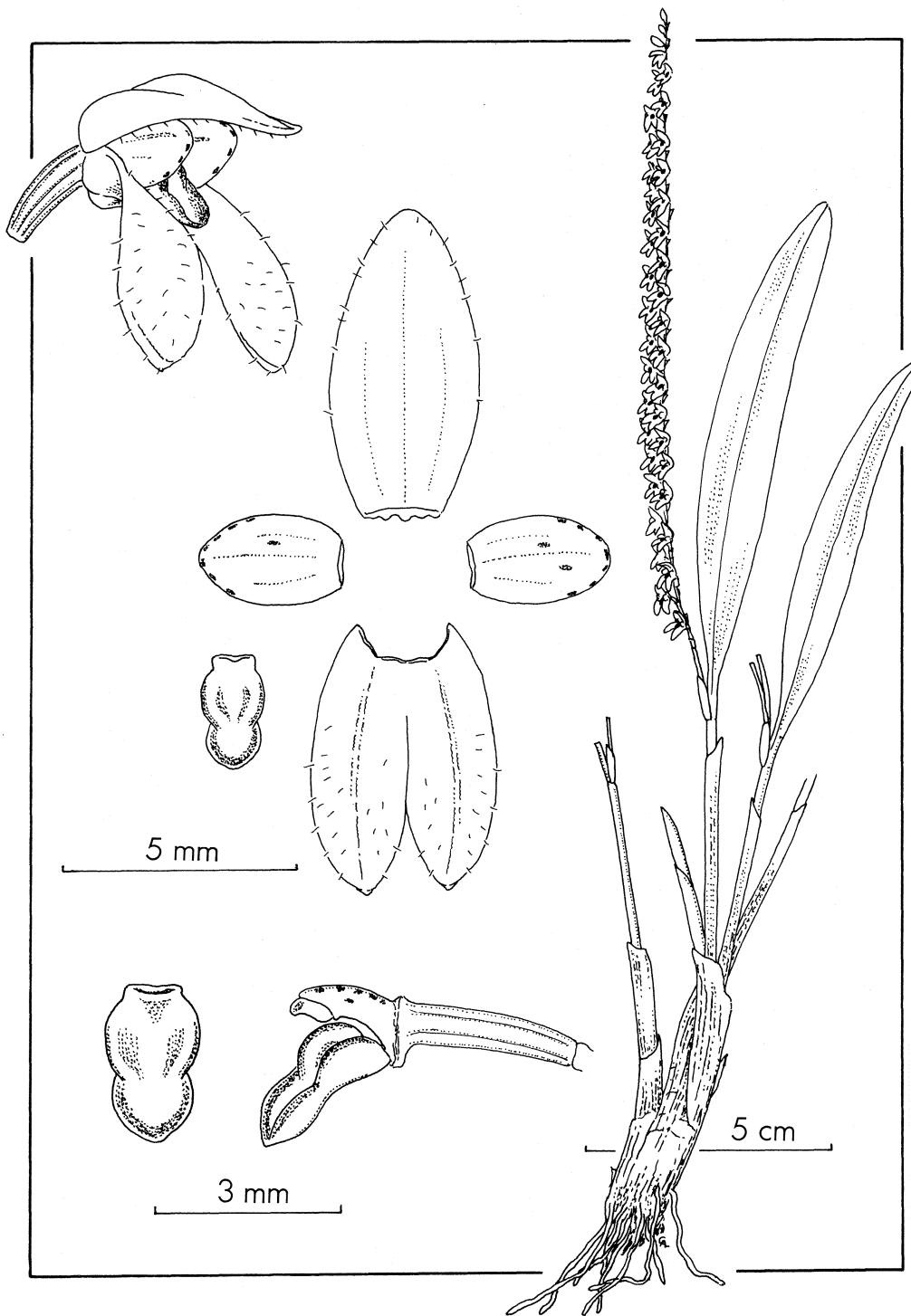


Figure 267. PLEUROTHALLIS LIGULATA Lindl.

Pleurothallis lilijae Foldats, Acta Bot. Venez. 3:379. 1968.

Plant medium in size to large, epiphytic, caespitose; roots slender flexuous. Secondary stems slender, terete, 10-37 cm long, with a tight-fitting tubular sheath below the middle and another 1-2 at the base, unifoliate. Leaf coriaceous, deflexed, the apex acuminate, acute, tridenticulate, the base cordate, with the auricles more or less erect, 8-14 cm long, 2-4 cm wide. Inflorescence fasciculate, the flowers produced singly and successively from a spathe about 1.5 cm long, obliquely descending from the base of the leaf; floral bract 5-6 mm long; pedicel 10-15 mm long; ovary 10 mm long; flowers large, widely spread, light purplish brown, the sepals and petals glabrous externally, minutely glandular-pubescent within; middle sepal broadly ovate to suborbicular, obtuse, slightly convex, 10-12 mm long, 8.5-10 mm wide, 7-9-veined; lateral sepals connate into an ovate, obtuse synsepal, the sides recurved, 10-12 mm long, 5.5-7 mm wide expanded, 6-veined; petals elliptical, slightly oblique, the apex acuminate, acute, narrowed below the middle, the margins serrulate, 9-10 mm long, 2.5-4 mm wide, 3-veined; lip thick, purplish, ovate-cordate, the apex rounded, the base concave, with thick, incurved basal angles, the disc concave between a converging pair of thick callosities running from the basal angles to near the apex, 4-5 mm long, 4 mm wide; column stout, 1.5 mm long, 2.5 mm wide, with a very short, broad foot.

ETYMOLOGY: Named by Foldats in honor of his wife Lilija.

TYPE: VENEZUELA: TACHIRA: foothills immediately below the paramo de Tama, alt. 2750-2950 m, J. A. Steyermark, G. C. K. & E. Dunsterville 98549 (HOLOTYPE: VEN).

DISTRIBUTION: Venezuela, Ecuador, and Peru.

PERU: PASCO: near Yaupi, R. Northen 3 (SEL).

ECUADOR: ZAMORA-CHINCHIPE: terrestrial on the road embankment near km 22 between Loja and Zamora, alt. ca. 2200 m, 6 March 1977, C. Luer, J. Luer & K. Cordoba 1553 (SEL).

Pleurothallis lilijae may be recognized by its relatively large, acutely deflexed leaf borne at the summit of a slender stem. The base of the leaf is deeply cordate with the basal lobes curved up so that their rounded margins may touch. This produces a concavity toward the base of the long, downward-directed blade. A large spathe protrudes downward from the insertion of the stem at the base of the leaf. The broad, rounded, dorsal sepal of the relatively large, resupinate, brownish-purple flower appears much wider than the synsepal, the sides of which are curled beneath. This species is related to *P. cardiostola* Rehb. f. and *P. alopex* Luer, as well as to the Central American *P. phyllocardia* Rehb. f. and *P. scitula* Luer.

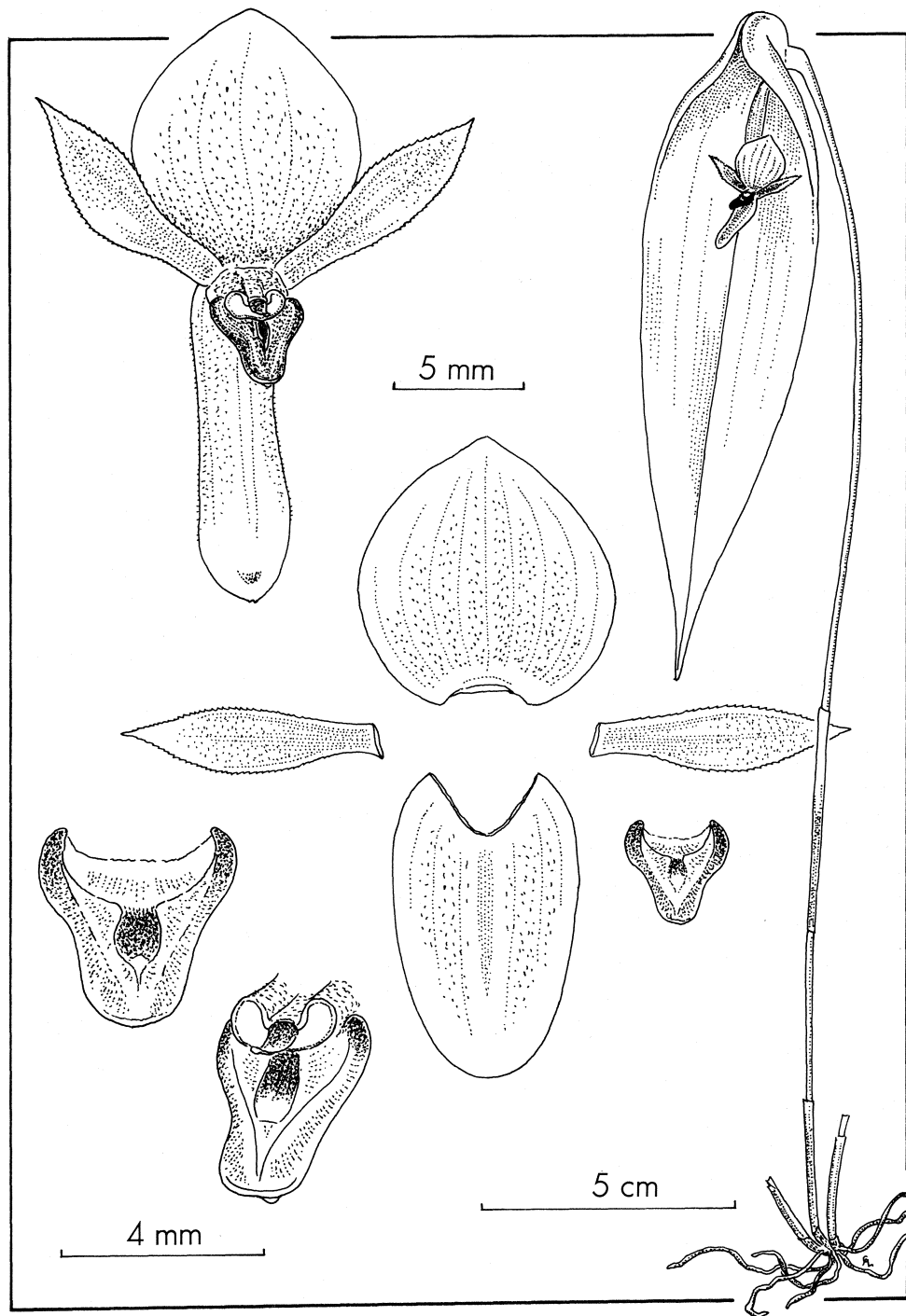


Figure 268. PLEUROTHALLIS LILIJAE Foldats

Pleurothallis longipedicellata Ames & Schweinf., Sched. Orchid. 8:27. 1925.

Plant large, epiphytic, caespitose or shortly repent; roots slender, flexuous. Secondary stems slender, terete, 10-35 cm long, with a closely fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf thin, coriaceous, ovate, acuminate, acute, tridenticulate, the base sessile, rounded to cordate with large, rounded lobes, 8-15 cm long, 4-9 cm wide. Inflorescence a lax, several-flowered (5-10) raceme, 7-12 cm long; peduncle slender, from a narrow spathe 1.5-2.5 cm long at the base of the leaf; flowers bilabiate, dull purplish; flotal bract oblique, acute, 3-4 mm long; pedicel erect, 8-20 mm long; ovary 2.5 mm long; dorsal sepal broadly ovate, shortly acuminate, obtuse, concave, 6-8 mm long, 5 mm wide, 3-veined; lateral sepals connate into an ovate synsepal, subacute, 7-8 mm long, 5-mm wide, 4-veined; petals orange-brown, sigmoid-oblong, acuminate, acute, minutely denticulate, 5 mm long 1.75 mm wide; lip yellow-brown, fleshy, ovate, the apex subacute, the base subcordate with rounded angles, concave on the end, the glenion broad, the disc slightly concave; column stout, 2.5 mm long, with a bulbous foot.

ETYMOLOGY: From the Latin *longus*, "long," and *pedicellatus*, "pedicelled," in reference to the long pedicels of the flowers.

TYPE: COSTA RICA: CARTAGO: La Estrella, C. H. Lankester 792 (HOLOTYPE: AMES).

DISTRIBUTION: Costa Rica and Panama.

PANAMA: CHIRIQUI: epiphytic in cloud forest above Guadalupe, alt. ca. 2200 m, 17 Dec. 1976, C. Luer, A. Luer, R. L. Dressler, N. H. Williams & F. L. Steveson 1358 (SEL); epiphytic in cloud forest above Boquete, alt. ca. 2000 m, 18 Dec. 1976, C. Luer, A. Luer & R. L. Dressler 1366 (SEL), greenhouse acc. no. 155-76-20, flowered in cult. 26 Jan. 1977.

Pleurothallis longipedicellata is locally abundant in western Panama. Huge clumps of the long stems bear large, spreading, cordate leaves. The comparatively short raceme rests upon the leaf, but each flower is elevated above the surface by an elongated pedicel. The semi-translucent, dull red-purple flowers are similar to those of *P. rowleei* Ames and *P. pallida* C. Luer. The leaves of *P. rowleei* are narrower without a cordate base, and the lip is geniculate with incurved lateral lobes. The small leaves of *P. pallida* are elliptical and erect, and the arching raceme far exceeds the leaf.

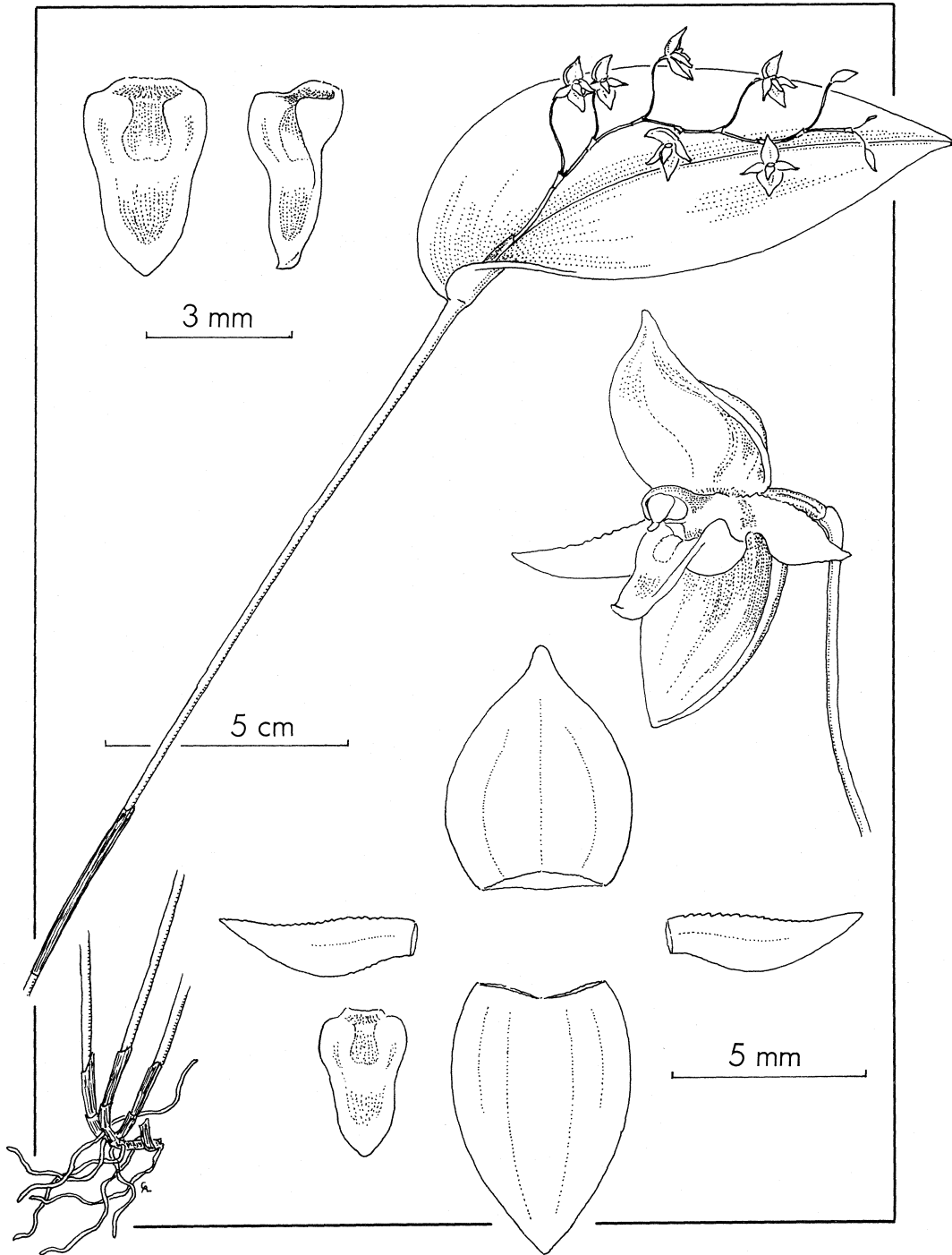


Figure 269. PLEUROTHALLIS LONGIPEDICELLATA Ames & Schweinf.

- Pleurothallis loranthophylla* Rchb. f., Bot. Zeitung (Berlin) 10:674. 1852.
Rhynchopera punctata Karst., Auswahl Neurer Gew. Venez. 21:t.7. 1848.
Pleurothallis subpellucida Kl., Ind. Sem. Hort. Berol. 1. 1852.
Humboldtia loranthophylla (Rchb. f.) Kuntze, Rev. Gen. Pl. 2:667. 1891.
Humboldtia subpellucida (Kl.) Kuntze, Rev. Gen. Pl. 2:668. 1891.
Pleurothallis intermedia Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6:35. 1919.
Pleurothallis punctata (Karst.) Schltr., l. c. 6:63. 1919; not Lindl., nor Ker-Gawl., nor Barb. Rodr.
Pleurothallis violaceorosea Schltr., l. c. 19:198. 1923.

Plant medium-sized, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 4-14 cm long, with a closely fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf erect, coriaceous, oblong-elliptical, acute to subacute, tridenticulate, the base cuneate into a 1-1.5 cm channeled petiole, more or less twisted, 5-9 cm long, 2.2-2.8 cm wide. Inflorescence a solitary, arching, many-flowered raceme, 12-15 cm long, the peduncle slender, from a foliaceous spathe, 3-4.5 cm long, from the apex of the stem; floral bracts oblique, acute, 3 mm long; pedicel 3 mm long; ovary spotted with purple, 1 mm long; sepals and petals translucent, pale yellow-green to pale pink, spotted with purple, glabrous; dorsal sepal narrowly ovate, acute, 8 mm long, 2 mm wide, 3-veined; lateral sepals completely united into an ovate synsepal, acute, 8 mm long, 4 mm wide, 6-veined; petals membranous, narrowly ovate, acuminate, acute, 7 mm long, 1.5 mm wide, 3-veined; lip ovate, oblong above the middle, subacute, dilated below the middle with the sides incurved, the base broadly united to the column-foot, 6 mm long, 2.5 mm wide; column white, 2 mm long, with a short foot.

ETYMOLOGY: Named for a similarity of the leaf to a species of *Loranthus*, a genus in the mistletoe family. (From the Greek *loros*, "strap," *anthos*, "flower," and *phyllon*, "leaf.")

TYPE: VENEZUELA: Caracas, *H. Wagener s.n.*

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

PANAMA: VERAGUAS: epiphytic near first branch of Rio Santa Maria, ca. 8 km NW. of Santa Fe, alt. ca. 650 m, 21. Dec. 1975, *R. L. Dressler 5230* (SEL); same area, 6 Sept. 1976, *C. Luer & R. L. Dressler 1256* (SEL).

This species, widely distributed in the Andes, is reported here for the first time from Panama. It is locally frequent in the cloud forest near the continental divide in the central part of the country. Schlechter's *Pleurothallis violaceorosea* extends the range to Costa Rica.

The stems, often amassed in large clusters, bear leaves commonly with a twisted petiole, so that the large spathe may be directed to the side or behind the blade. A colorful arching raceme emerges from the spathe and droops as the delicate flowers open. All stems flower simultaneously to create a spectacular display. The flowers are similar to those of several closely allied species, but may be distinguished by their glabrous, membranous, three-veined petals that are, at most, acuminate instead of subulate.

Pleurothallis macrantha L. O. Wms., Ann. Missouri Bot. Gard. 28:417. 1941.

Plant medium in size, epiphytic, caespitose; roots slender, fibrous, flexuous. Secondary stems stout, terete, 6-9 cm long, mostly concealed by a long, loose tubular sheath, with 1-2 others at the base, unifoliate. Leaf erect, thick, rigid, coriaceous, elliptical, obtuse, retuse, the base cuneate, sessile, 5-7.5 cm long, 2-3.8 cm wide. Inflorescence an erect, distantly few-flowered (5-6) raceme, to 15 cm long, of large, fleshy flowers, yellow-green, intensely marked with purple, produced 1-2 at a time; peduncle from a spathe, 8-10 mm long at the base of the leaf; floral bract thin, infundibular, acute, 6-7 mm long; pedicel erect, acutely deflexed at the junction with the ovary, 6-8 mm long; ovary sigmoid, 5-6 mm long; dorsal sepal obovate, obtuse, cymbiform, 19-21 mm long, 8-9 mm wide; lateral sepals connate into an obovate, acuminate, bidentate, bicarinate synsepal, 18 mm long, 8 mm wide; petals fleshy, cuneate, truncate, 10 mm long, 4.5 mm wide, the 3 heavily pigmented veins prominent both internally and externally; lip orange, suffused with purple, tubular, formed by the involuted sides, with rounded lobes at the base, with a central keel, the apex truncate, erose, 10 mm long, 2.5 mm wide, column stout, 1.5 mm long, with a tubular anther cap nearly as long, with a cylindrical foot 1.5 mm long.

ETYMOLOGY: From the Greek *macros*, "large," and *anthos*, "flower," referring to the large flower of the species.

TYPE: PANAMA: CHIRIQUI: Bajo Chorro, alt. 1900 m, *Woodson & Schery 666* (HOLOTYPE: MO).

DISTRIBUTION: Panama.

PANAMA: CHIRIQUI: epiphytic above Guadalupe, alt. ca. 2200 m, June 1976, *H. Butcher s.n.* (SEL), greenhouse acc. no. 123-76-67, flowered in cult. 23 Nov. 1976; epiphytic in valley of cloud forest above Guadalupe, alt. ca. 2200 m, Dec. 1976, *C. Luer, A. Luer, R. L. Dressler, N. H. Williams & F. L. Stevenson 1380* (SEL), greenhouse acc. no. 155-76-39, flowered in cult. 28 March 1977.

This singular species is easily recognized by its flowers, but vegetatively the plant is not as distinctive. The thick, rigid, broadly elliptical leaf is borne by a stem invested by loose sheaths. The large fleshy, pincer-like flowers, intensely mottled with red-brown to purple, are borne in slow succession in an erect raceme. The junction of the ascending pedicel and descending ovary is angled nearly 180°. The three-striped petals and the tubular lip are truncate.

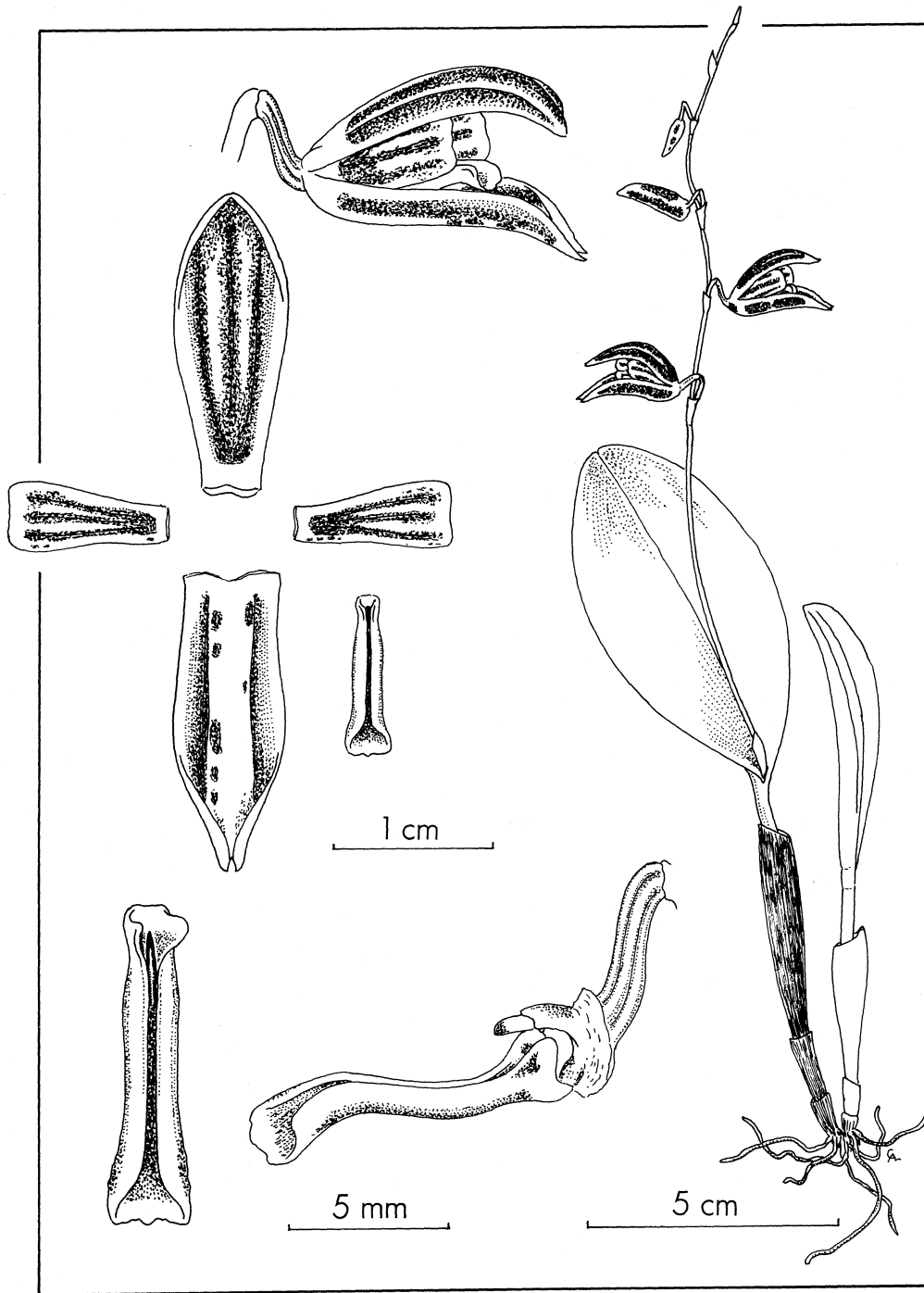


Figure 271. PLEUROTHALLIS MACRANTHA L. O. Wms.

Pleurothallis matudiana C. Schweinf., Bot. Mus. Leaflet. 5:102. 1938.

Plant medium in size, epiphytic, caespitose; roots fasciculate, flexuous. Secondary stems slender, terete, 10-18 cm long, with a closely appressed tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, spreading, ovate, acuminate, acute, tridenticulate, the base deeply cordate with rounded lobes, sessile, 6-9 cm long, 2.5-4 cm wide. Inflorescence fasciculate, the bilabiate flowers produced singly (occasionally 2-3) and successively, from a spathe 10-12 mm long at the base of the leaf; floral bract about 8 mm long; pedicel about 1 cm long; ovary 3.5 mm long; sepals pale yellowish, striped with rose-pink; dorsal sepal elliptical, acute, concave, 7-8 mm long, 4 mm wide, 3-veined; lateral sepals connate into an ovate synsepal, acute, 6-7 mm long, 4 mm wide; petals narrowly linear-ovate, acute, glabrous to microscopically denticulate, 4-6 mm long, 0.75 mm wide, with a central purplish vein, held more or less parallel to the lip; lip yellowish toward the base, heavily suffused with purple or brownish, fleshy, ovate-ligulate, or shield-shaped, the apex subacute to obtuse, occasionally apiculate, the margins entire or microscopically crenulate, shallowly sulcate centrally, the base broadly concave on the end, 3.5-4 mm long, 2-2.5 mm wide; column stout, 1.5 mm long, 2 mm wide, with a short foot.

ETYMOLOGY: Named in honor of its discoverer, E. Matuda.

TYPE: MEXICO: CHIAPAS: Siltepec, 8 Aug. 1937, *E. Matuda 1577* (HOLOTYPE: AMES).

DISTRIBUTION: Mexico, Guatemala, Salvador, Honduras, and Nicaragua.

GUATEMALA: JALAPA: epiphytic on Volcán Jumay, alt. 1300-2200 m, 1 Dec. 1939, *J. A. Steyermark 32381* (SEL); without specific locality, *F. L. Stevenson 1-2675-5* (SEL).

NICARAGUA: MATAGALPA: cloud forest above Santa Maria de Ostuma, alt, ca. 1500 m, *F. Matthews s.n.* (SEL), greenhouse acc. no. 20-74-57, flowers intermittently; without specific locality, *F. L. Stevenson 1-2675-7* (SEL).

This species is the medium-sized member of the cordate-leaved complex in the northernmost parts of the distributions. It is very similar to a host of others farther south and in the Andes. *Pleurothallis matudiana* may be recognized by its deeply cordate leaves and medium-sized, pink-striped flowers. The narrow petals, visibly glabrous, are held down to either side of the simple lip.

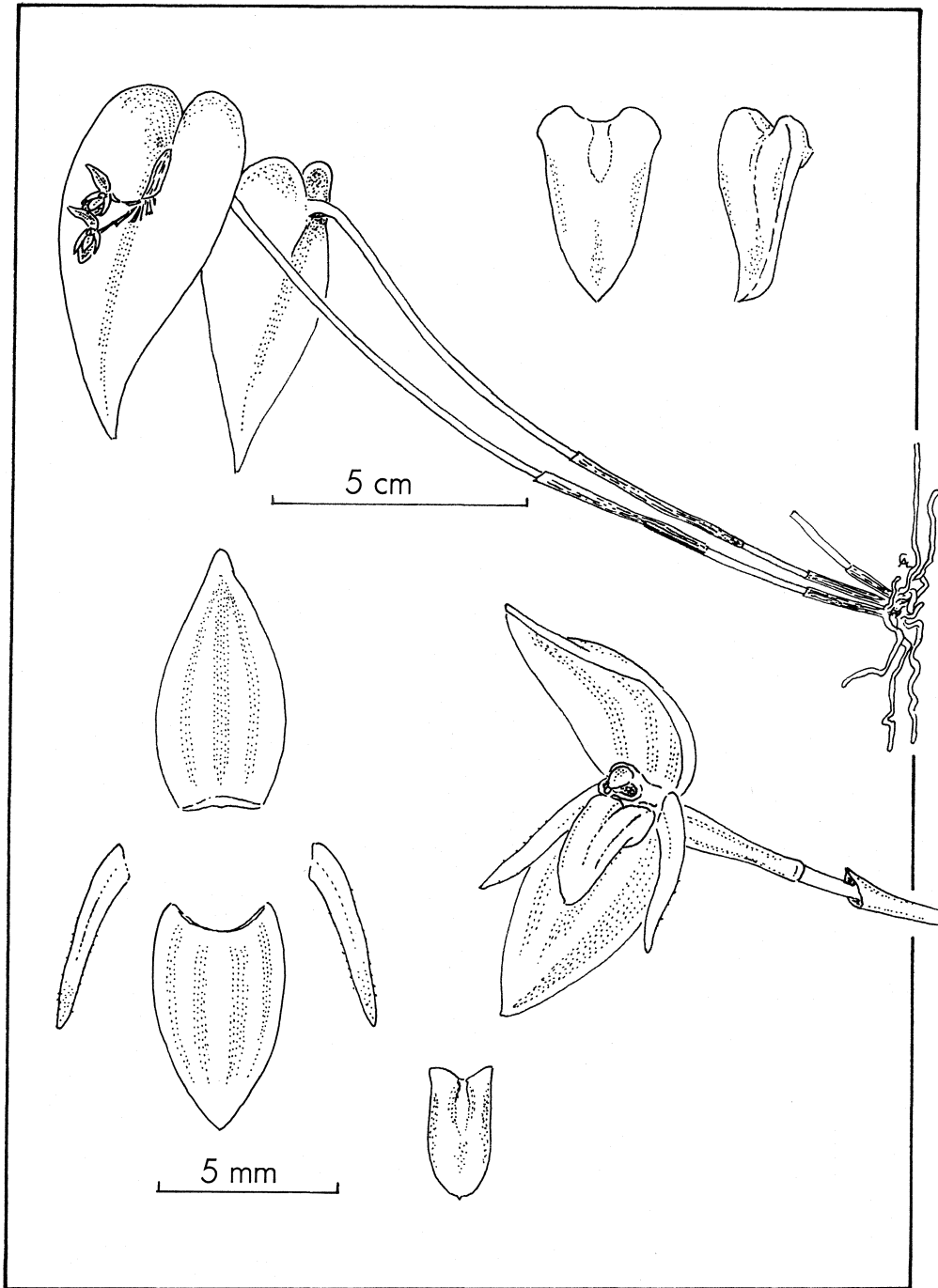


Figure 272. PLEUROTHALLIS MATUDIANA C. Schweinf.

Pleurothallis microcharis Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8:61. 1921; not Schltr. ex Hoehne, 1936.

Plant very small, epiphytic, caespitose and scandent; roots filiform, commonly appearing from the apices of the secondary stems; secondary stems slender, prolific, 8-20 mm long, concealed in 2-4 close-fitting, imbricating sheaths with dilated stomata, the surfaces and margins echinate, unifoliate. Leaf broadly elliptical to orbicular, the apex rounded, emarginate, apiculate, the base rounded, short-petiolate, 4-9 mm long, 4-6 mm wide, with a network of purple veins visible mostly through the under surface. Inflorescence a short (less than 1 cm), few-flowered (1-2) raceme, the flowers large for the plant; peduncle 5 mm long; floral bract acute, 0.5-1.5 mm long; pedicel 0.5 mm long; ovary red, echinate, 3-angled, 0.5 mm long; sepals dark red to white, oblong-ovate, the apices acuminate, long-attenuate, carinate, spiculate externally; dorsal sepal 12-15 mm long, 2-2.5 mm wide, 3-veined; lateral sepals united for 3 mm or less, 15 mm long, 2.5 mm wide together; petals elliptical, subacute, the margins obscurely serrulate above the middle, translucent, 3 mm long, 1.2 mm wide, 1-veined; lip red, or yellow in the white flowers, oblong, obtuse, dilated near the base into more or less rounded, up-curved lobes, denticulate above the middle, the apex rounded, the disc concave centrally with distinct margins, the base shortly and narrowly unguiculate, 3-3.5 mm long, 1.5 mm wide; column terete, 2 mm long, with a short, bulbous foot.

ETYMOLOGY: From the Greek *micros*, "small," and *charis*, "favor, or grace," in allusion to the graceful appearance of the minute plant.

TYPE: *ECUADOR*: PICHINCHA: in forests on the western side of Mt. Corazon, *A. Sodiro s.n.*

DISTRIBUTION: Colombia and Ecuador.

COLOMBIA: "El Viadal," alt. 2700 m, *Janet Kuhn s.n.* (SEL).

ECUADOR: PICHINCHA: epiphytic in citrus tree W of Tandapi, alt. 1500 m, 13 March 1976, *C. Luer, J. Luer & P. Taylor 851* (SEL).

Long, prolific branches of the lepanthiform stems of this minute, round-leaved species crawl among and dangle from moss-covered twigs in cloud forests. The spines of the cauline sheaths are proportionately long, and the spicules which cover the external surfaces of the sepals are also well developed. The flowers of the plant examined from Colombia were dark red, apparently similar to those of the originally described plant from Ecuador. The flowers of the plant illustrated here were white with a yellow lip. An oval concavity occupies the center of the lip. The basal lobes vary in the degree of development.

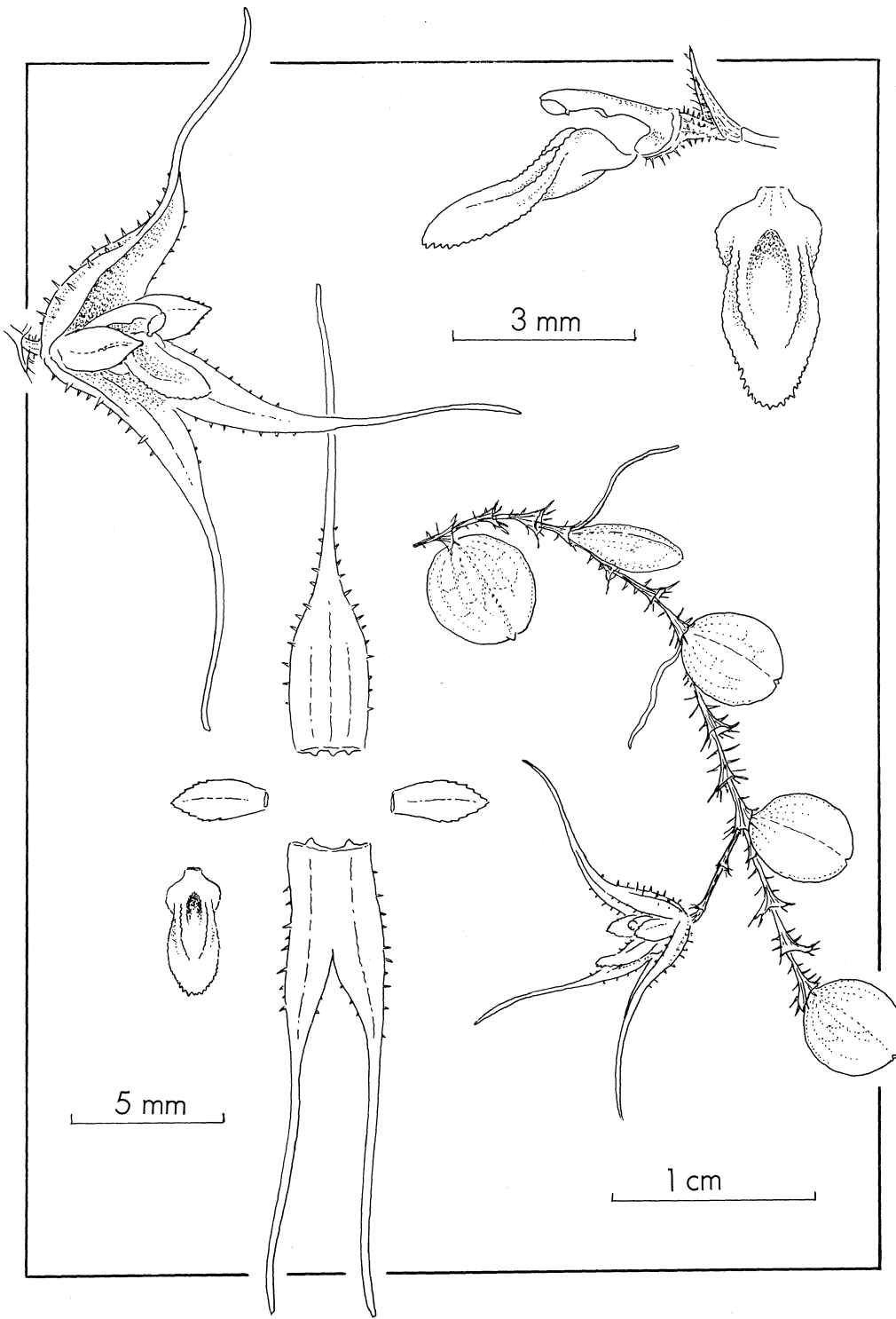


Figure 273. PLEUROTHALLIS MICROCHARIS Schltr.

Pleurothallis nanifolia Foldats, Bol. Soc. Ven. Cienc. Nat. 22:258. 1961.

Plant minute, epiphytic, repent; primary stem comparatively stout, creeping, branching, producing a secondary stem about every 1-2 mm; roots thick and flexuous. Secondary stem terete, about 1 mm long, invested by a scarious sheath, monophyllous. Leaf reclining, thick, broadly elliptic, apex obtuse to rounded, tridenticulate, base broadly cuneate, sessile, 5-8 × 3-6 mm. Inflorescence racemose, erect, slightly longer than the leaf, few-flowered (1-4), flowers maroon, produced singly; peduncle from a node on the secondary stem; floral bract glabrous, about 1 mm long; pedicel about 1.5 mm long; ovary about 1 mm long; dorsal sepal narrowly obovate, acute, 4 × 1.25 mm; lateral sepals free to near their bases where they form a shallow mentum, narrowly elliptical, oblique, acute, 3.5 × 1.25 mm; petals elliptical, obtuse, 3 × 1.5 mm; lip maroon, narrowly ovate, 2 × 0.5 mm, apical half linear, thick, semi-terete, rounded, microscopically papillose, broadly lobed just below the middle, the lobes low, rounded, erect, disc with a longitudinal pair of low lamellae; base shortly unguiculate with a pair of minute auricles; column maroon, winged, 1.5 mm long with a foot 0.5 mm long.

ETYMOLOGY: From the Latin *nanus*, "dwarf," and *folium*, "leaf," in allusion to the very small leaves.

TYPE: VENEZUELA: BOLIVAR: "Por encima del raudal cortúa, al Sur de La Paragua," alt. 300 m. *J. A. Steyermark* 86725.

DISTRIBUTION: Venezuela and Bolivia.

BOLIVIA: SANTA CRUZ: epiphytic, about 1 km west of Buena Vista, *Fred Fuchs, Jr. s.n.* (SEL), greenhouse acc. no. 26-74-71, flowered in cult. Dec. 1974 - June 1975.

Whether or not this species exists in the vast forests between the only two presently known disjunct stations, will have to be determined by future diligent searching. The plant not only must be rare, but it must be very difficult to find. The extremely small rounded leaves, smaller than those of *Pleurothallis lewisae* Ames, creep close to the surface of the host, often imbedded deep within moss. Colonies of the rambling, over-lapping leaves resemble dwarf tropical species of *Peperomia*.

The maroon flowers are large for the plant and they protrude above the blanket of prostrate leaves. The plant is obviously closely allied to *P. lewisae*, but the sheaths and bracts are glabrous. The floral parts are also similar, but the apical portion of the lip is thick and semi-terete, instead of broad and fleshy.

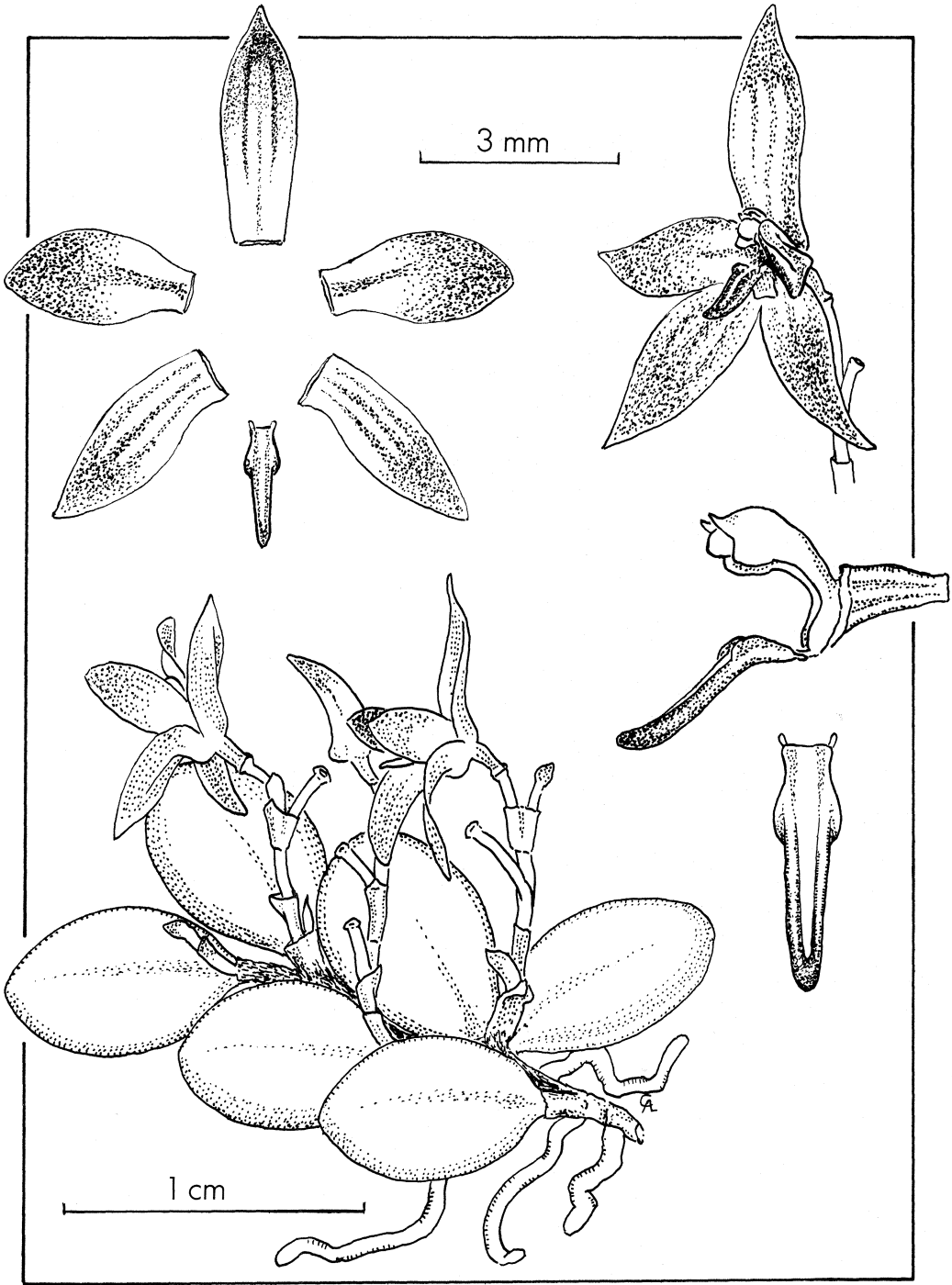


Figure 274. PLEUROTHALLIS NANIFOLIA Foldats

Pleurothallis navicularis Lindl., Folia Orchid. Pleuroth. 6. 1859.

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

Pleurothallis spathata Schltr., Repert. Spec. Nov. Regni Veg. 27:54. 1929.

Plant medium-sized to large, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 5-20 cm long, with a close-fitting tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf coriaceous, thin, oblong-elliptical, acute to acuminate, tridenticulate, base cuneate into a channeled petiole, 5-14 cm long, 2-5 cm wide, including the 1-1.5 cm petiole. Inflorescence racemose, solitary, arcuate, loosely several-flowered (5-22), 8-23 cm long, flowers pale yellow-green marked with red or purple; peduncle slender, arcuate, from a foliaceous spathe, 3-6 cm long at the base of the leaf-petiole; floral bract infundibuliform, acute, 2 mm long; pedicel 2-6 mm long; ovary green spotted with purple, 2.5-3 mm long; dorsal sepal narrowly ovate, acute to acuminate, yellow-green, spotted with purple, 8-11 mm long, 2-3.5 mm wide, 3-nerved; lateral sepals united into an ovate, bidentate lamina, 7-11 mm long, 5-6 mm wide, 4-veined, similar to the dorsal sepal; petals very narrowly triangular, acute to acuminate, lightly sigmoid, 7-10 mm long, 2 mm wide, 3-veined, with a red pubescence, especially externally; lip oblong-ovate, obtuse, dilated below the middle and subrhombic with the sides curved up in the natural position, base slightly concave, broadly and firmly united with the column-foot, 6-7 mm long, 3-4 mm wide spread-out, marked with red-purple; column subterete, 1.5 mm long, with a short foot.

ETYMOLOGY: From the Latin *navicularis*, "boat-shaped" (*navis*, "ship"), in allusion to the long, navicular lip.

TYPE: COLOMBIA: MAGDALENA: San Antonio, Nevada de Santa Marta, Purdie s.n. (HOLOTYPE: K).

DISTRIBUTION: Colombia, Ecuador, Peru, and Bolivia.

COLOMBIA: ANTIOQUIA: along the shore of Lagos Miraflores, alt. 2300 m, 23 April 1972, R. McCullough 1873 (SEL), flowered in cult. 8 May 1976.

ECUADOR: ZAMORA-CHINCHIPE: near km. 33 between Zamora and Loja, alt. 1600 m, 8 Aug. 1958, C. H. Dodson 230 (SEL); same area, 5 Aug. 1975, C. Luer, G. Luer & S. Wilhelm 1273 (SEL), greenhouse acc. no. 44-75-274, flowered in cult. 12 Nov. 1976; without definite location, F. L. Stevenson 111974-13 (SEL).

PERU: HUANUCO: 15 km S. of Tingo Maria, F. Fuchs, Jr. s.n. (SEL), flowered in cult. Feb. 1976.

Vegetatively and florally *Pleurothallis navicularis* is similar to *P. loranthophylla* Rchb. f. Both species are characterized by a slender stem, a petiolate leaf, and a long, conspicuous spathe. The raceme elongates quickly from the apex of the spathe and soon begins to droop as the buds develop. The delicate, purple-spotted, bilabiate flowers spread widely and last but a few days. The distinguishing feature of *P. navicularis* is the red pubescence which covers the backs and margins of the attenuated petals. This covering varies from a short, dense mat, to relatively long, glandular hairs. The petals of *P. loranthophylla* are glabrous and the lip of *P. navicularis* is concave basally with rounded, up-turned sides which reminded Lindley of a boat. The lip is broadly and firmly united to the column-foot.

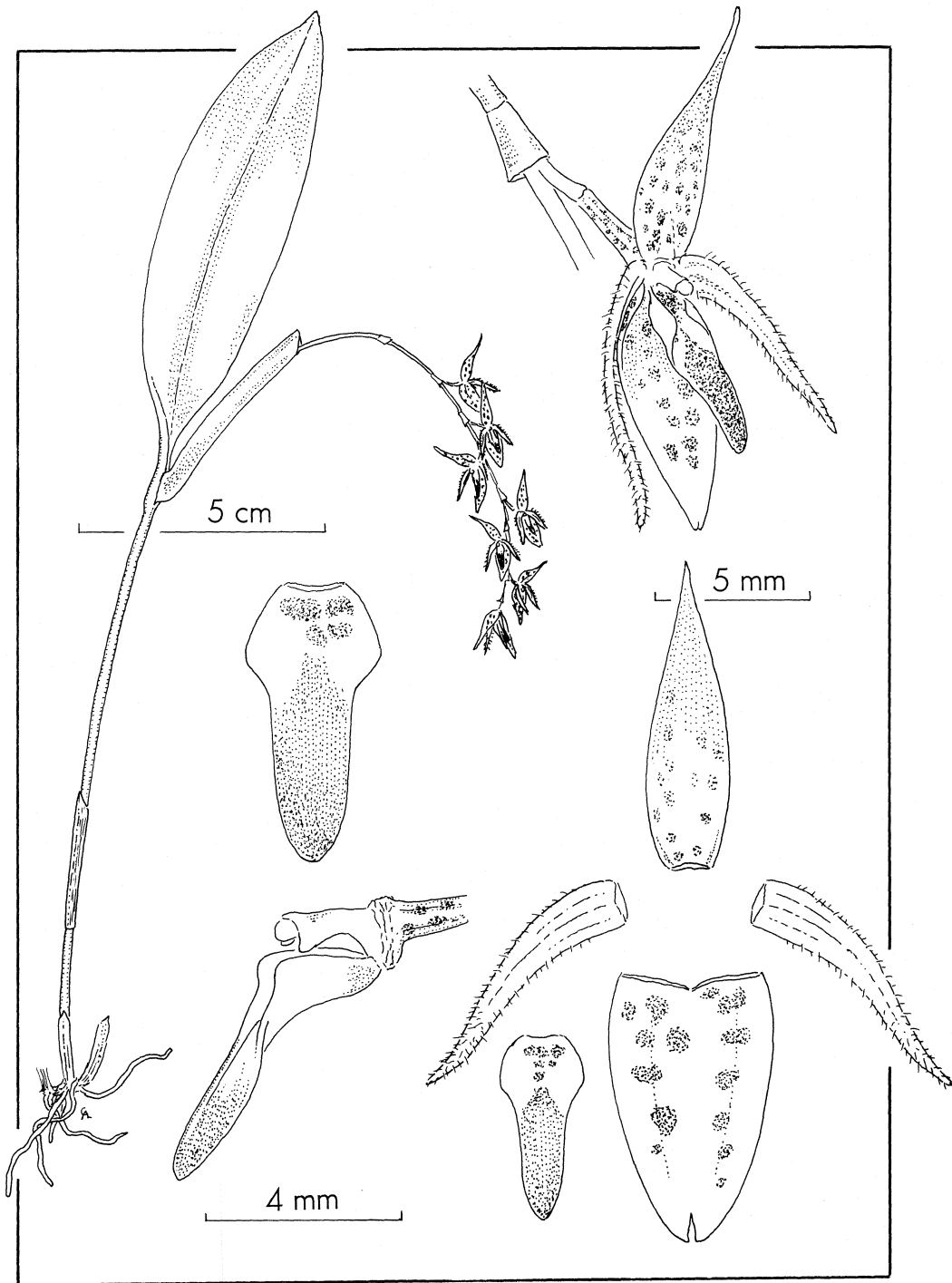


Figure 275. PLEUROTHALLIS NAVICULARIS Lindl.

Pleurothallis nitida Luer, sp. nov.

Planta parva epiphytica caespitosa, caulibus secundariis crassis rigidis teretibus unifoliatis, foliis crassis nitidis ellipticis obtusis base subcordatis, floribus fasciculatis singularibus successivis nigropurpureo, sepalo dorsali synsepaloque ovatis subacutis concavis, petalis oblongis fimbriatis, labello crasso cordato apice acuminato acuto, lobis basalibus rotundatis erectis, disco concave, marginibus erosis.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, rigid, terete, 3-6 cm long, with a tubular sheath below the middle and another at the base, unifoliate. Leaf thick rigid, coriaceous, dark green, shiny, elliptical, the apex obtuse to retuse, obscurely tridentate, the base subcordate, sessile, the median vein sulcate, the margins recurved, 2.5-3.5 cm long, 14-18 mm wide. Inflorescence fasciculate, the flowers deep purple, produced singly and successively from a spathe, 5-6 mm long, at the base of the leaf; floral bract 3-5 mm long; pedicel 5-7 mm long; ovary 3 mm long; dorsal sepal ovate, subacute, concave, 6 mm long, 4 mm wide, 3-veined; lateral sepals connate into a synsepal similar to the dorsal sepal, 4-veined; petals oblong, acute, fimbriate, 5 mm long, 1 mm wide; lip thick, cordate, the lateral margins erose, the apex acuminate, acute, the basal lobes rounded, erect, cannot be spread, the disc concave between thickenings extending forward from the basal lobes, 3 mm long, 2 mm wide; column stout, 2.5 mm long.

ETYMOLOGY: From the Latin *nitidus*, "shiny, polished," in reference to the glossy surface of the leaves.

TYPE: PANAMA: CHIRIQUI: epiphytic in elfin cloud forest on Cerro Hornito, alt. ca. 1700 m, 15 Dec. 1976, C. Luer, A. Luer, R. L. Dressler, N. H. Williams & F. L. Stevenson 1337 (HOLOTYPE: SEL).

DISTRIBUTION: Panama.

This small species is locally abundant, along with numerous other pleurothallids, on the mossy branches of a dwarf cloud forest near a mountain crest in western Panama. Dense clumps of the tough little stems bear hard, glossy leaves which present their curved, polished surfaces to either side of a sulcate mid-vein. A nearly black, deep purple flower is borne on a pedicel that holds it above the center of the elliptical blade. The concave sepals spread to permit the long-fringed petals to protrude.

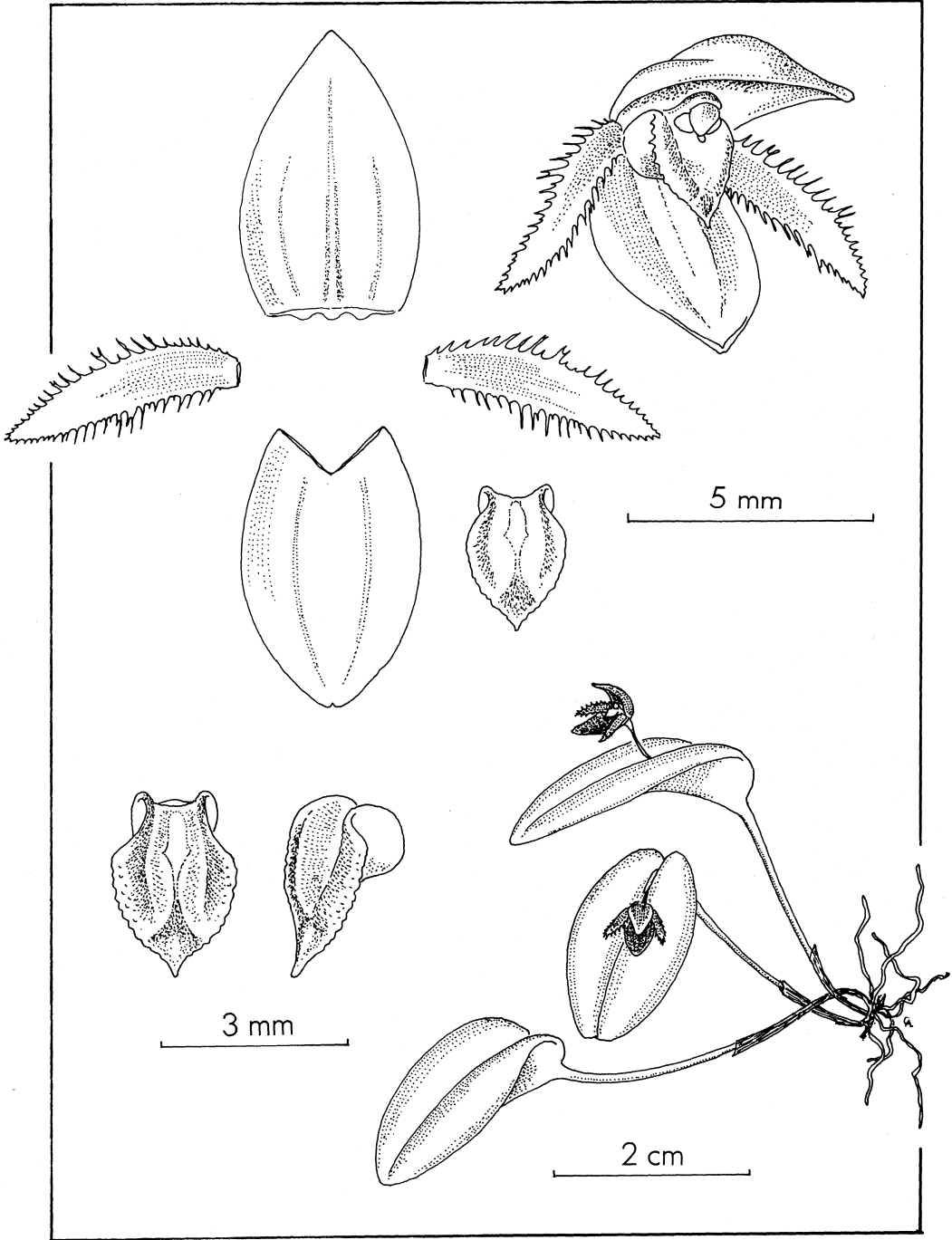


Figure 276. PLEUROTHALLIS NITIDA Luer

Pleurothallis octomerioides Lindl., Companion Bot. Mag. 2:354. 1836.

Pleurothallis congesta A. Rich. & Gal., Ann. Sci. Nat. Bot. 3(3):17. 1845.

Humboldtia octomerioides (Lindl.) Kuntze, Rev. Gen. Pl. 2:668. 1891, as *H. octomerioides*.

Plant epiphytic, medium in size, shortly repent to caespitose; roots slender, flexuous. Secondary stems stout, terete, 9-12 cm long, concealed by 3-4 close-fitting, tubular, scabrous, papery sheaths, unifoliate. Leaf erect, thick, coriaceous, elliptical, obtuse, retuse, the base cuneate to rounded, sessile, 9-13 cm long, 2.5-3.2 cm wide. Inflorescence fasciculate, the flowers produced singly, several at a time from a cluster of nodes at the base of the leaf; floral bract pubescent, 1-3 mm long; pedicel 3 mm long; ovary 3.5 mm long; flowers fleshy, pale yellow; dorsal sepal elliptical, obtuse to rounded, 8 mm long, 4.5 mm wide, 3-veined; lateral sepals elliptical-oblong, obtuse to rounded, connate basally to form a shallow mentum, each 7 mm long, 4 mm wide, 3-veined; petals ovate, obtuse to rounded, 7 mm long, 3 mm wide, 3-veined; lip fleshy, yellow suffused with purple, the apex subacute, dilated below the middle with broad obtuse angles, disc with a pair of low thickenings running forward from the lateral angles, shortly unguiculate, column stout, 2.5 mm long with a foot nearly as long.

ETYMOLOGY: Named for the similarity of the species to the genus *Octomeia*. *Octomeia* from the Greek *octo*, "eight," and *meros*, "part," referring to the eight pollinia, and *-oides*, "resembling."

TYPE: MEXICO: *Henchman s.n.* (HOLOTYPE: K).

DISTRIBUTION: Mexico.

MEXICO: OAXACA: epiphytic in open dry woods near Puerto Escondido, alt. 400 m, *R. McCullough 1843* (SEL), flowered in cult. 22 Dec. 1976.

This Mexican species is closely allied to *Pleurothallis octomeriae* Schltr., which is found from Nicaragua to Panama. *Pleurothallis octomeriae* was illustrated (Figure 90.), but identified as *P. octomerioides* in SELBYANA 1:312, 1975. The former was included in the synonymy of the latter, and the correction was made in SELBYANA 1:426, 1976.

Vegetatively *P. octomerioides* lacks the swellings often seen in the rhizome of *P. octomeriae*. Florally the two species are also similar, but the lip of *P. octomerioides* is dilated below the middle and not verrucose, while the lip of *P. octomeriae* is oblong and minutely verrucose.

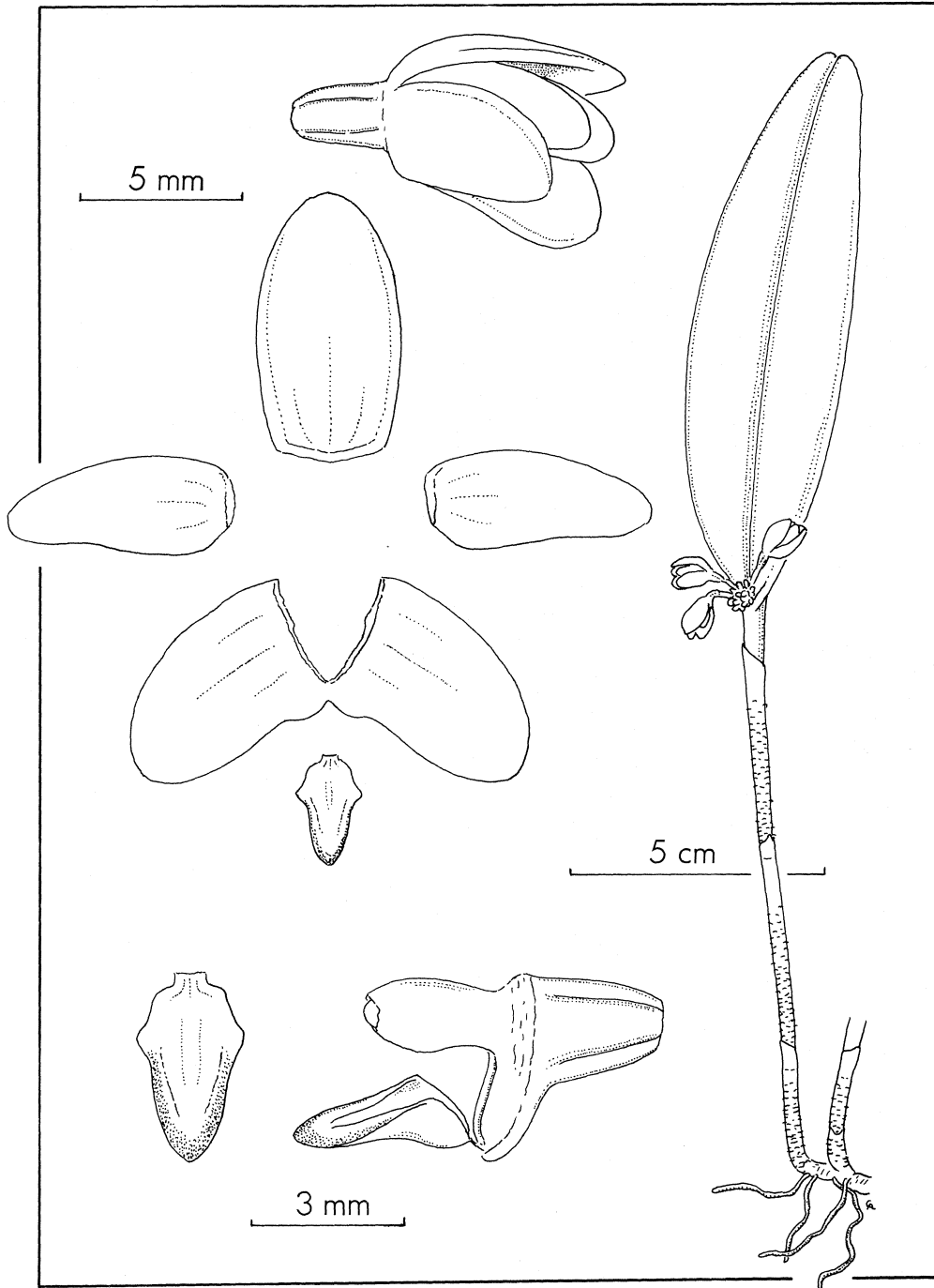


Figure 277. PLEUROTHALLIS OCTOMERIOIDES Lindl.

***Pleurothallis orectopus* Luer, sp. nov.**

Planta mediocris vel grandis rhizomatosa, caule primario crasso producto vaginato, caulibus secundariis longis gracilibus teretibus unifoliatis, foliis erectis ellipticis longipetiolatis, racemo brevi plurifloro floribus parvis flavis, sepalo dorsali ovato concavo, sepalis lateralibus ellipticis ad medium connatis supra medium sparsim pubescentibus, petalis obovatis obtusis, labello elliptico subtrilobato apice rotundato base concavo, lobis lateralibus late rotundatis callosis.

Plant medium to large, presumably epiphytic to terrestrial, repent, the primary stem stout, sheathed, producing a secondary stem about every 3 cm; roots slender, flexuous. Secondary stems ascending, slender, terete, more or less flexible, 21-30 cm long, unifoliate, with a closely fitting, long, tubular sheath near the middle and 1-2 others at the base. Leaf coriaceous, erect, narrowly elliptical, acute, tridenticulate, the base cuneate, distinctly petiolate, the petiole 3.5-4 cm long, the blade 10-12 cm long excluding the petiole, 2.5-3 cm wide. Inflorescence a single, erect, subaxly several-flowered raceme, 4-8 cm long, from a spathe 12-15 mm long, at the apex of the stem, the flowers small, yellow; floral bract infundibular, acute, 3 mm long; pedicel 3-4 mm long; ovary 1.75 mm long; sepals lightly pubescent within above the middle, the dorsal sepal ovate, acute, concave, 5.5 mm long, 2.5 mm wide, 3-veined, the lateral sepals elliptical acute, connate to near the middle, 5.5 mm long, 3.5 mm wide together, each 3-veined; petals obovate, obtuse, 3 mm long, 1.75 mm wide, 3-veined; lip elliptical to indistinctly 3-lobed, the apex rounded, dilated near the middle with the broadly rounded sides curved up, the base concave to accommodate the column-foot, the disc with a pair of rounded, flattened calli near the margins of the lateral lobes, 2.25 mm long, 1.5 mm wide; column stout, 1.5 mm long, with a short, bulbous foot.

ETYMOLOGY: From the Greek *orektos*, "stretched out," and *-pus*, "-footed," in allusion to the elongated rhizome.

TYPE: *ECUADOR*: PICHINCHA: terrestrial on the road bank of the new road between Quito and Santo Domingo, alt. ca. 2000 m, 16 Aug. 1975, C. Luer, G. Luer & S. Wilhelm 547 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

Pleurothallis orectopus is related to the horde of species characterized by fasciculate secondary stems from a short, ascending rhizome and contained within large, loose sheaths. It seems most closely allied to *P. ecuadorensis* Schltr. and *P. velaticaulis* Rchb. f., but it is distinguished from them by the elongated rhizome. The secondary stems are long and thin; the leaf is long-petiolate; and the raceme is short. The small flowers follow the pattern of the related species. The sepals are sparsely pubescent within. The lip is indistinctly three-lobed, the lateral lobes being overlaid by thick, rounded callosities.

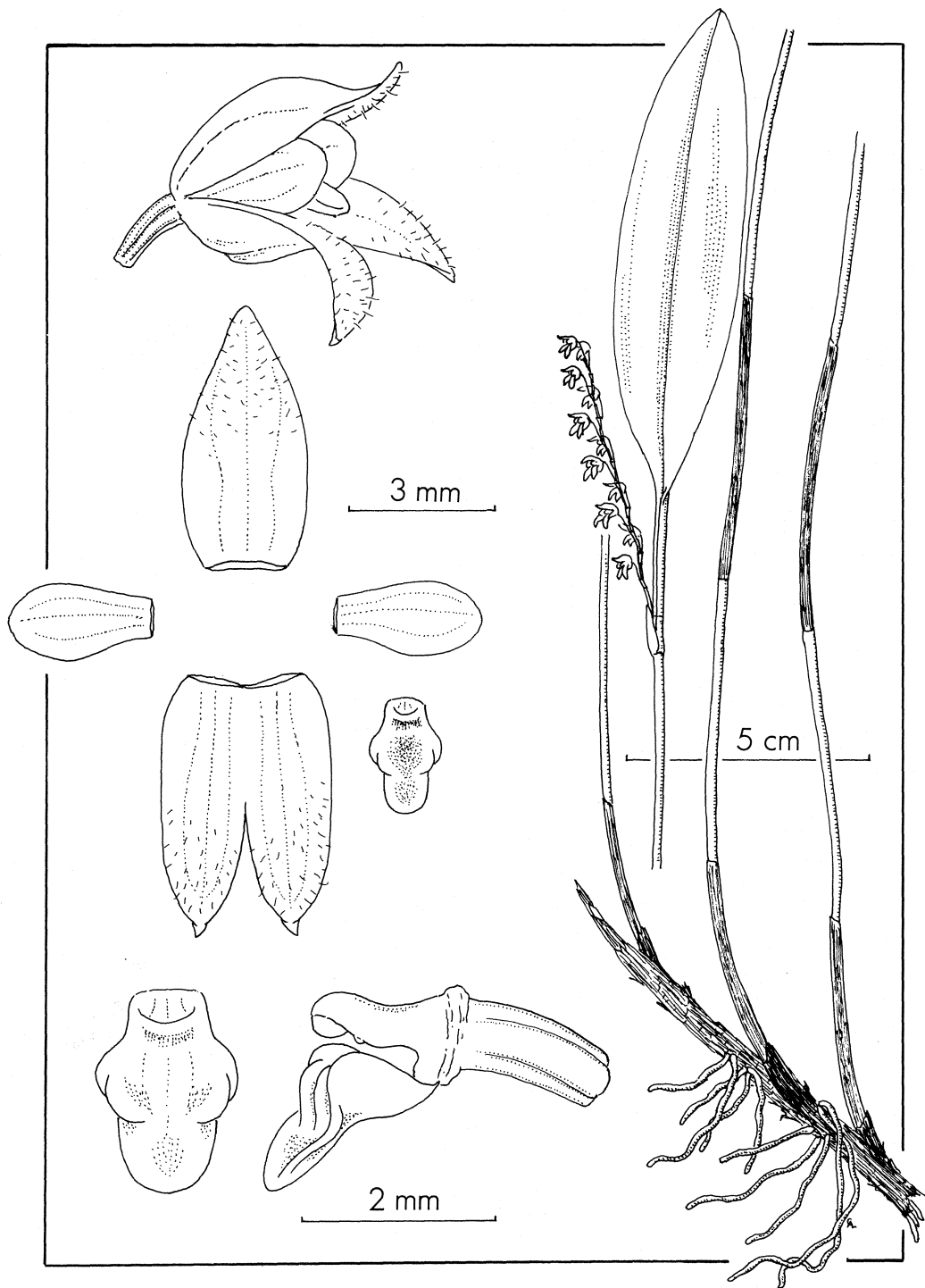


Figure 278. PLEUROTHALLIS ORECTOPUS Luer

Pleurothallis pallida Luer, sp. nov.

Planta parva vel mediocris epiphytica repens, rhizomate crasso, caulibus secundariis gracilibus teretibus unifoliatis folio brevioribus, foliis coriaceis ellipticis obtusis basi rotundatis sessilibus, racemo folio multilongiore, floribus grandibus pro planta pallido-viridibus erubescens ringentibus longipedicellatis, sepalo synsepaloque ovatis concavis acuminatis, petalis anguste falcatis acutis marginibus microscopice denticulatis, labello late ovato breviter acuminato basi breviter unguiculato.

Plant small to medium in size, epiphytic, repent, the rhizome stout and branching; roots slender, flexuous. Secondary stems slender, terete, 2.5-6 cm long, with a brown, tubular sheath below the middle and 1-2 others at the base, unifoliate. Leaf erect, coriaceous, elliptical, subacute to obtuse, apex retuse with an apicule in the sinus, base cuneate to rounded, sessile, 4-7 cm long, 2-3.8 cm wide. Inflorescence a solitary arching, distichous raceme, up to 14 cm long, 7- to 14-flowered; flowers long-pedicellate, ringent, bilabiate, pale green or flushed with pale rose toward the apices of the sepals; peduncle slender, from a narrow 15-18 mm spathe in the axil of the leaf; floral bract 2 mm long, pedicel slender, 8-17 mm long; ovary 2 mm long; dorsal sepal ovate, concave, acuminate, acute, 8 mm long, 4 mm wide, 3-veined; lateral sepals united into a synsepal similar to the dorsal sepal, 7 mm long, 5 mm wide, 4-veined; petals narrowly falcate, acuminate, acute, 7 mm long, 1.5 mm wide, 1-veined, the margins microscopically denticulate; lip pale green, not geniculate, broadly ovate to suborbicular, shortly acuminate, acute, base broadly unguiculate, disc slightly concave with a prominent glenion, 3.5 mm long, 2.5 mm wide; column stout, 1.5 mm long, with a bulbous, glandular foot.

ETYMOLOGY: From the Latin *pallidus*, "pale," in allusion to the pastel colors of the species.

TYPE: PANAMA: COCLÉ: epiphytic in the hills north of El Valle, alt. 1000 m, 6 March 1976, C. Luer, R. Dressler, J. Luer & P. Taylor 954 (HOLOTYPE: SEL), flowered in cult. 14 April 1976.

DISTRIBUTION: Panama.

Pleurothallis pallida is closely allied to *P. longipedicellata* Ames & Schweinf., but the former may be readily distinguished by its small habit. The secondary stems are stout, more or less shorter than the small, erect, elliptical leaf. The stems of the robust *P. longipedicellata* often reach 30 cm in length and bear a large, spreading, cordate leaf. The long, many-flowered, arching raceme of *P. pallida* far surpasses the leaf, while the fewer-flowered raceme of *P. longipedicellata* usually does not surpass the leaf in length. Both species bear their similar flowers on long pedicels. The sepals of *P. pallida* are more acuminate, and the non-geniculate lip is shorter and more apiculate. The flowers are pale green in color, but some plants bear flowers prettily flushed with pink.