

ICONES PLEUROTHALLIDINARUM  
(ORCHIDACEAE)

MISCELLANEOUS NEW SPECIES IN THE PLEUROTHALLIDINAE

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The following descriptions of pleurothallids are being published without the illustrations which will appear soon in respective monographs for the genera.

**Cryptophoranthus dodsonii** Luer, sp. nov.

Inter species generis *Cryptophoranthi* Barb. Rodr. species haec floribus carneis anguste elongatis fenestris infra medium parvis, ovario non-cristato, petalis pentangulatis acuminatis, labello sagittato lobis lateralibus retrorsis unciformibus lobo antico verrucoso et callo supra basim humili verruculoso dignoscenda.

Plant medium-sized, epiphytic, caespitose; roots slender, flexuous. Secondary stems ascending, slender, unifoliate, 5-11 cm long, concealed by a series of 5-7 oblique, acute, loose, inflated, ribbed, imbricating sheaths with dilated ostia. Leaf erect, coriaceous, purplish beneath, elliptical, shortly petiolate, 8-11 cm long including the 1 cm long petiole, 3.5-4 cm wide, the apex acute, tridenticulate, cuneate below into the petiole. Inflorescence a succession of single, slender, flesh-colored flowers from the apex of the secondary stem; peduncles 10-15 mm long; floral bracts 5 mm long; pedicel 8 mm long; ovary 4-5 mm long, with subverrucose ribs; dorsal sepal narrowly ovate, concave, non-carinate, 31 mm long, 9 mm wide spread out, the apex thickened, narrowly rounded, connate to the lateral sepals for 20 mm above the 3 mm long eye, and for 8 mm below the eye; lateral sepals connate to the thickened, obtusely bilobed apex into an ovate lamina, longitudinally concave beneath, 31 mm long, 16 mm wide spread out, convex within except near the base which is concave to accommodate the lip; petals pentagonal, 4.5 mm long, 2.75 mm wide, obtusely angled above the middle on both sides to the acuminate, acute apex; lip sagittate, 4.5 mm long, 1.5 mm wide unspread, with a pair of narrowly acuminate, retrorse lateral lobes below the middle, each from a marginal carina extending forward onto the apex, the apex narrowly obtuse, verrucose, with a low, rounded, verrucose callus above the base, the base with a pair of thin, basal lobules; column semiterete, 2.75 mm long, the foot equally long with diverging carinae near the middle to create a concavity for the callus of the lip.

ETYMOLOGY: Named in honor of Calaway H. Dodson, Director of the Marie Selby Botanical Gardens, who discovered this species.

TYPE. ECUADOR: EL ORO: epiphytic in cloud forest between Piñas and Santa Rosa, alt. 800 m, 9 Oct. 1979, C. H. Dodson, A. Gentry & G. Schupp 9202 (HOLOTYPE: SEL), Luer illust. 4815.

DISTRIBUTION: Southern Ecuador.

This species is distinguished from the others in the genus by the long, slender flowers with a small eye below the middle. The petals are pentagonal and acute. The apex of the sagittate lip is verrucose and the callus at the base between the unciform lateral lobes is rounded and verrucose.

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**Cryptophoranthus vulturiceps** Luer, sp. nov.

Planta mediocris caespitosa, caulibus secundariis erectis vaginis inflatis obliquis imbricatis obtectis quam foliis ellipticis leviter brevioribus, ovario alato, flore singulari niveo glabro, tubo sepalorum curvato apice uncinato supra medium dilatato cum fenestris parvis, synsepalo intus rugoso, petalis oblongis breviter obtusis, labello anguste sagittato apice acuto, lobis laterali-bus infra medium oblongis retrorsis.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect, unifoliate, 5-7.5 cm long, concealed by 4-5 imbricating, inflated, oblique, brown sheaths. Leaf erect, coriaceous, elliptical, 7-12 cm long, 2-3 cm wide, the apex acute, tridenticulate, the base cuneate into a channeled petiole 1-2 cm long. Inflorescence a single, snow-white, waxy, glabrous flower borne in succession from the apex of the secondary stem, the peduncles 12-15 mm long; floral bract 5-8 mm long; pedicel 7-8 mm long; ovary green, 6-winged, 3 mm long, 2.5 mm wide; sepals connate into a curved sepaline tube, dilated above the middle with a 3.5 mm long window on each side 7 mm from the acute, uncinat apex, the dorsal sepal linear, concave, acute, 33 mm long, 5 mm wide, connate to the synsepal except for the windows, the lateral sepals connate into an elliptical synsepal 20 mm long, 7 mm wide unspread, convex, creamy white and rugose between the erect sides, the apex acute, decurved; petals yellowish white, obovate-oblong, 4 mm long, 2 mm wide, the apex obtusely acuminate, rounded, slightly dilated on the labellar margin; lip yellowish white, sagittate, 4.5 mm long, 1 mm wide, the apex narrowly oblong, acute, the lateral lobes below the middle, retrorse, oblong, with rounded apices, with a pair of converging, broadly rounded lamellae extending forward onto the middle lobe, the oblong base thickened, shortly unguiculate; column yellowish white, semiterete, 3 mm long, with a thick foot 1 mm long.

**ETYMOLOGY:** From the Latin *vultur*, "a vulture," and *-ceps*, "-headed," in allusion to the appearance of the flower.

**TYPE:** *COSTA RICA*: without locality, collected by Janet Kuhn in 1972, cultivated at J & L Orchids, Easton, Ct., flowered in cult. 11 Nov. 1977, *C. Luer 2164* (HOLOTYPE: SEL).

**DISTRIBUTION:** Costa Rica.

This species is easily identified by the snow-white flowers that look like the naked head of a vulture complete with beady eyes and hooked beak.

**Dracula cordobae** Luer, sp. nov.

Inter species generis *Draculae* Luer species haec flore mediocri albo marginibus sepalorum rubiginosis albo-pilosis et epichilio labelli orbiculari concavo marginibus erectis multidenticulatis distinguitur.

Plant medium-sized to large, densely caespitose; roots slender, flexuous. Secondary stems channeled, unifoliate, 2.5-3.5 cm long, enclosed by 2-3 loose, tubular sheaths. Leaf erect, thinly coriaceous, narrowly elliptical, 15-23.5 cm long, 3-4 cm wide, the acute apex tridenticulate, carinate dorsally along the midrib, narrowed below into the conduplicate, subpetiolate base. Inflorescence a congested, successively-flowered raceme borne by a horizontal to descending, slender peduncle, up to 19 cm long including the raceme,

from a node low on the secondary stem; floral bract oblique, acute, 1 cm long; pedicel 10-12 mm long; ovary 5 mm long, minutely subverrucose; sepals ovate, the periphery intensely spotted with red brown, with a long, white pubescence, the inner halves creamy white, the dorsal sepal 18 mm long, 15 mm wide, connate to the lateral sepals for 6 mm to form a flat, widely spread flower, the acute apex produced into a filiform, dark brown tail ca. 6 cm long, the lateral sepals oblique, 25 mm long, 15 mm wide, connate 12 mm to form a shallow mentum, the acute apices contracted into tails similar to that of the dorsal sepal; petals white, marked with brown, oblong, 4 mm long, 2 mm wide, bivalvate, the outer lamina rounded, minutely denticulate, the inner lamina acute, papillose between; lip white, spatulate, 13 mm long, 8 mm wide, the hypochile oblong, 4 mm long, 2 mm wide, with acute, erect, marginal angles, cleft centrally, the concave foot hinged to the column-foot, the epichile suborbicular, 9 mm long, 8 mm wide, concave with erect, denticulate margins, the cavity filled with 3 irregular, branching, elevated veins and numerous secondary veins to either side ending in the marginal teeth; column white, semiterete, 4.5 mm long, with a short, thick foot.

ETYMOLOGY. Named in honor of Clever Cordoba of Guayaquil, Ecuador, who discovered this species.

TYPE: *ECUADOR*: EL ORO: epiphytic in cloud forest 10 km west of Piñas along the new road to Machala, alt. 800 m, 19 July 1979, C. H. Dodson, P. Morgan, R. Perry & C. Cordoba 8469 (HOLOTYPE: SEL). C. Luer illust. 4082.

DISTRIBUTION: Southwestern Ecuador.

The medium-sized, showy flower of *D. cordobae* is easily recognized by the red-brown borders of the sepals covered by a mat of long, white hairs. In sharp contrast, the sepals are white centrally with a white, rounded, minutely denticulate epichile of the lip.

#### *Dracula ripleyana* Luer, sp. nov.

Inter species generis *Draculae* Luer foliis mediocribus vel grandis, pedunculo gracili horizontali, floribus parvis albis breviter pubescentibus intus area centrali purpurea et labello niveo epichilio 3.5 mm lato suborbiculari concavo tricarinato margine dentato incurvo distinguitur.

Plant medium in size, epiphytic, caespitose; roots coarse, flexuous. Secondary stems channeled, stout, unifoliate, 2.5-4 cm long, concealed by 3 close, imbricating, tubular sheaths. Leaf erect, thinly coriaceous, keeled dorsally along the midrib, narrowly obovate, 14-25 cm long, 1.6-2.5 cm wide, the apex acute, tridentate, gradually narrowed below to the sulcate base. Inflorescence a successively few-flowered (up to 4 small flowers) raceme borne by a slender, sparsely bracted, more or less horizontal peduncle 8-12 cm long including the raceme, from a node low on the secondary stem; floral bract 7 mm long; pedicel 10-12 mm long; ovary 5 mm long, brown, subverrucose; sepals white, suffused with purple and glabrous externally, white and shortly pubescent within, spotted and suffused with purple on the inner halves, the dorsal sepal broadly ovate, 8 mm long, 9 mm wide, connate to the lateral sepals for 3 mm to form a shallowly cupped flower, the obtuse apex contracted into a slender, purple tail 3.5 cm long, the lateral sepals

ovate, oblique, each 11 mm long, 10 mm wide, connate 5 mm to form a shallow mentum, the subacute apices contracted into tails similar to that of the dorsal sepal; petals white, marked with purple-brown, oblong, 3 mm long, 1.25 mm wide, the apex bivalvate, the inner lamina denticulate, the outer lamina rounded, papillose between; lip white, spatulate, 7.5 mm long, 3.5 mm wide, the hypochile oblong, 3.5 mm long, 2 mm wide, with obtusely rounded, erect marginal angles, cleft centrally, the concave base hinged to the column-foot, the epichile suborbicular, concave, 4 mm long, 3.5 mm wide, the anterior margin incurved, verrucose externally, the concavity coursed by 3 central carinae with several incomplete secondary elevated veins ending in marginal teeth; column white, suffused with brown, semiterete, 3.5 mm long, with a stout foot 2.5 mm long.

**ETYMOLOGY:** Named in honor of Harold R. Ripley of San Francisco, California, in whose orchid collection this species was discovered.

**TYPE:** COSTA RICA: without locality or collector, originally cultivated by Beaufort Fisher, subsequently by Harold Ripley in San Francisco, California, flowered in cult. 22 March and 20 Aug. 1979, *C. Luer 4041* (HOLOTYPE: SEL).

**DISTRIBUTION:** Costa Rica.

Unfortunately, the collection data of this small-flowered species is unknown except for the country of origin. It was originally cultivated as *Masdevallia astuta* Rehb. f. in the collection of the late Beaufort Fisher. Harold Ripley has successfully cultivated the plant for the past several years.

*Dracula ripleyana* may be recognized by the small white flower with a dark purple center, and a short white pubescence lines the inside of the sepals. The epichile of the small white lip is concave with an incurved, denticulate margin.

#### ***Masdevallia nicaraguae* Luer, sp. nov.**

Species haec *M. floribundae* Lindl. affinis sed floe albo caudis sepalorum crassis illis lateralium brevibus triangularibus differt, et a *M. tubuliflora* Ames floe majore laminis sepalorum lateralium expansis et apice columnae integro dignoscenda.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems unifoliate, 1-1.5 cm long, enclosed by 1-2 thin, tubular sheaths. Leaf suberect, coriaceous, narrowly obovate, 6-11 cm long including a 2-4 cm petiole, 1.4-1.7 cm wide, the obtuse apex tridenticulate, gradually narrowed below into the channeled petiole. Inflorescence a solitary flower borne by an erect to suberect, slender peduncle 4-6.5 cm long, with a bract below the middle, from a node low on the secondary stem; floral bract tubular, 5-6 mm long; pedicel 10-14 mm long; ovary green, minutely pitted, 6-8 mm long; sepals glabrous, white, faintly suffused with rose within toward the bases, the dorsal sepal veined in rose, oblong, 25 mm long, 5 mm wide, connate to the lateral sepals for 11-12 mm to form a cylindrical tube, the triangular free portion contracted into an erect, greenish white, thick, semiterete tail, the lateral sepals 21-23 mm long, connate 14 mm into a bifid, more or less obovate synsepal 12-15 mm wide, broadly dilated above the union with the dorsal sepal, the free portions triangular, diverging, contract-

ed into short, thick greenish white tails ca. 4 mm long; petals white, oblong, 5 mm long, 1.5 mm wide, the obtuse apex obscurely apiculate, with a low, longitudinal callus parallel to both margins, the lower callus ending in an obtuse angle below the middle; lip white with purple specks, oblong-ligulate, 5 mm long, 1.5 mm wide, the subacute apex yellow, with minutely erose margins, the disc with a pair of longitudinal calli above the middle, the truncate base hinged beneath; column white, semiterete, 4 mm long, the apex entire, the thick foot 2 mm long with an incurved extension.

ETYMOLOGY: Named for Nicaragua, the country of origin.

TYPE: NICARAGUA : GRANADA: epiphytic in cloud forest on Mombacho Volcano, J. T. Atwood s.n., cultivated by J & L Orchids, Easton, Ct., flowered in cult. 7 Nov. 1977, *C. Luer 2118* (HOLOTYPE: SEL).

DISTRIBUTION: Nicaragua.

This species, apparently endemic in Nicaragua, is allied to *M. floribunda* and *M. tubuliflora*. From the former, *M. nicaraguae* may be distinguished by the thick sepaline tails, especially those of the lateral sepals that are short and triangular. From the latter, *M. nicaraguae* may be separated by the larger flowers, the erect tail of the dorsal sepal, the broadly dilated lateral sepals above the sepaline tube, and the entire apex of the column.

*Masdevallia nicaraguae* appears to have been illustrated by A. Heller from the Department of Matagalpa.

#### ***Masdevallia rafaelliana* Luer, sp. nov.**

Planta mediocris caespitosa, caulibus secundariis abbreviatis unifoliatis, inflorescentia folio anguste oblongo longiore, racemo flexuoso paucifloro floribus speciosis coetaneis, ovario cristato, cupula sepalorum brevissima, sepalo dorsali roseo late ovato concavo brevicaudato, sepalis lateralibus oblongis truncatis apiculatis carinatis, labello purpureo erecto oblongo obtuso supra medium biplicato, pede columnae longo incurvato.

Plant medium in size, epiphytic, shortly repent to caespitose; roots coarse, flexuous. Secondary stems stout, unifoliate, 2.5-4 cm long, enclosed by 2-3 loose, tubular sheaths. Leaf erect, fleshy, coriaceous, shiny, narrowly oblong, carinate dorsally, indistinctly petiolate, 11-18 cm long, 1.5-2.5 cm wide, the apex obtuse to subacute, tridenticulate, gradually narrowed below the middle to a sulcate base. Inflorescence racemose, 15-22 cm long including the more or less flexuous raceme 2.5-8 cm long of 3 to 8 simultaneous, showy flowers, the peduncle slender, erect to suberect, with 2-3 tubular bracts, from a node on the secondary stem; floral bracts inflated, acute, 5 mm long; pedicel 3 mm long; ovary 2.5-4 mm long, with 6 undulating crests; dorsal sepal light rose, broadly ovate, concave, 14.5 mm long, 10 mm wide spread out, the margins minutely erose above the middle and sparingly ciliate, the apex abruptly contracted into a 3.5 mm long tail, connate basally for 2 mm to the lateral sepals; lateral sepals white, dotted with purple, oblong, oblique, 13 mm long, 6 mm wide, spreading, minutely erose, the apices contracted into tails ca. 4 mm long, connate 2 mm at the base to form a rounded mentum below the column-foot; petals yellow, oblong,

slightly curved, 6 mm long, 2 mm wide, the truncate apex slightly dilated, apiculate, with a longitudinal carina along the lower margin forming an obtuse angle above the base and near the apex; lip purple, erect, oblong, 7 mm long, 3 mm wide, sulcate centrally, with irregular marginal folds above the middle, the anterior portion suborbicular, obtuse, the base truncate, hinged beneath; column yellow-white, 6 mm long, winged above the middle, the foot equally long with a 2 mm long incurved extension.

ETYMOLOGY: Named in honor of Dr. Rafael Lucas Rodriguez C. of the University of Costa Rica, renowned illustrator of the orchids of Central America.

TYPE: COSTA RICA: SAN JOSE: epiphytic in wet cloud forest, alt. 2850 m, above Division on the road to San Isidro, 21 July 1979, K. S. Walter 79198 (HOLOTYPE: SEL; ISOTYPE: CR); same area, in fruit, 20 Sept. 1979, C. Luer, J. Luer & K. S. Walter 4241 (SEL).

DISTRIBUTION: Costa Rica.

This colorful species has been known to exist in Costa Rica for at least ten years. It was beautifully illustrated by Dr. Rafael Lucas Rodriguez in 1978. *Masdevallia rafaiana* is the only member of the multiflowered "polysticta-group" known at this time to occur in Central America.

*Masdevallia rigens* Luer, sp. nov.

Herba mediocris caespitosa, foliis crassis linearibus arcuatis, pedunculo brevi unifloro, flore crasso rigido ochraceo rubropunctato intus minute pubescenti, sepalis in tubum cylindricum connatis, caudis paulo longioribus rigescentibus reflexis, petalis oblongis marginibus crassis, labello obovato apice rotundato verrucoso.

Plant medium-sized, presumably epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, sulcate, unifoliate, 5-6 cm long, enclosed by 2-3 thin, close, tubular sheaths. Leaf dull green, suberect, arching, rigid, thickly coriaceous, narrowly elliptical-linear, 15-22 cm long, 1.5-1.8 cm wide, the obtuse apex tridenticulate, imperceptibly narrowed to the channeled base. Inflorescence a single flower borne by a stout, erect, terete peduncle 2-2.5 cm long, with a basal bract, from a node low on the secondary stem; floral bract 10-13 mm long; pedicel 17-22 mm long; ovary 7 mm long, greenish white with purple dots; sepals thick, rigid, light yellow-brown, lightly dotted with red, glabrous externally, minutely pubescent-verrucose within, the dorsal sepal oblong, 35 mm long including the tail, 8 mm wide, connate to the lateral sepals for 10 mm to form a slightly curved sepaline tube, the free portion triangular with the subacute apex contracted into a thick, recurved tail ca. 2 cm long; lateral sepals connate 10 mm into an oblong, bifid lamina 11 mm wide, spotted with red within toward the base, with acute, diverging apices, each lateral sepal 38 mm long including the recurved, 2 cm long tail; petals yellowish white with a purple midvein, oblong, 7 mm long, 2 mm wide, thickened along both margins, broadly angled on the lower margin below the middle, the truncate apex with a short, rounded apical lobe; lip ivory, heavily marked with red, obovate, 8 mm long, 3.75 mm wide, the rounded apex verrucose, the base notched and hinged beneath, the disc

with a central pair of low, parallel calli; column yellowish white with purple margins, semiterete, 6 mm long, the foot spotted, 4 mm long, with a short, incurved extension.

ETYMOLOGY: From the Latin *rigens*, "rigid," referring to the vegetative and floral parts.

TYPE: *PERU*: without locality or collector, obtained by Harold Ripley from the greenhouse collection of the University of California at Berkeley, cultivated in San Francisco, flowered in cult. 20 Aug. 1979, *C. Luer 4088* (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

The long, narrow leaves of this species are thick and rigidly arched. The short peduncle bears a solitary, rather small, butterscotch-colored flower with thick, rigid tails recurving from a cylindrical sepaline tube. The petals are thickened along both margins, and the rounded apex of the lip is thickened and verrucose.

*Masdevellia walteri* Luer, sp. nov.

Planta mediocris caespitosa, caulibus secundariis abbreviatis unifoliatis, foliis carnosis obovatis pedunculo gracili unifloro longioribus, flore aureo probabiliter autogamo, sepalis oblongis in tubum connatis, caudis gracilibus sepalis leviter longioribus, petalis albis oblongis margine inferiore incrassato, labello flavo ovato obtuso biplicato.

Plant medium-sized, epiphytic, caespitose; roots coarse, flexuous. Secondary stems stout, unifoliate, 2-3.5 cm long, concealed by 2-3 loose, tubular sheaths. Leaf erect to suberect, thickly coriaceous, shiny, narrowly obovate, 7-13 cm long including the 2-4 cm long petiole, 1.5-2.5 cm wide, the apex subacute to obtuse, tridenticulate, cuneate below into the sulcate petiole. Inflorescence a solitary, yellow-orange, commonly fertilized flower (autogamous?) borne by a slender, suberect peduncle 6-9.5 cm long, with a bract below the middle, from a node on the secondary stem; floral bract tubular, 7-9 mm long; pedicel 14-18 mm long; ovary green, 5 mm long, lengthening in older flowers; sepals glabrous, yellow-orange with orange tails, the dorsal sepal oblong, 13 mm long, 5 mm wide, connate to the lateral sepals for 7 mm to form a curved, sepaline tube, the triangular free portion contracted into a slender tail ca. 17 mm long, the lateral sepals 12 mm long, connate 8 mm to form an arcuate, oblong, bifid lamina 9 mm wide, the acute apices produced into tails ca. 14 mm long; petals white, oblong, 5 mm long, 2 mm wide, the rounded apex bluntly apiculate, with a low rounded thickening along the lower half, slightly dilated below the middle; lip yellow, ovate, 4.75 mm long, 2 mm wide, with marginal folds above the middle, the apical portion oblong, obtuse, with a high, grooved callus from the truncate base to above the middle, hinged beneath; column white, stout, semiterete, 5 mm long, with a foot 2 mm long, ending in an incurved extension.

ETYMOLOGY: Named in honor of Kerry S. Walter, research fellow in the Department of Botany of the National Museum, San José, Costa Rica, who discovered this species.

TYPE: COSTA RICA. SAN JOSE: epiphytic in wet cloud forest, alt. 2850 m. above Division on the road to San Isidro, 21 July 1979, K. S. Walter 79199 (HOLOTYPE: SEL; ISOTYPE: CR): same area, in fruit, 20 Sept. 1979, C. Luer, J. Luer & K. S. Walter 4242 (SEL).

DISTRIBUTION: Costa Rica.

Although vegetatively indistinguishable from many other species of the genus, *M. walteri* may be recognized by the solitary yellow-orange flowers that commonly produce capsules. The flower is reminiscent of those of *M. attenuata* Rchb. f. and *M. laucheana* Krztl., but this species may be distinguished by the color of the flower and the toothless petals.

*Masdevallia welischii* Luer, sp. nov.

Planta mediocris lithophytica caespitosa, radicibus crassis, pedunculo unifloro foliis carnosis anguste obovatis longiore, flore specioso cinnabarino indumento sepali dorsalis iridocyaneo, sepalis in tubum connatis partibus libris ovatis caudatis, cauda sepali dorsalis gracili erecta, caudis sepalorum lateralium brevibus, petalis albis oblongis acutis carinatis, labello ligulato apice callo nigro.

Plant medium in size, lithophytic, caespitose; roots thick, coarse, flexuous. Secondary stems erect, semiterete, unifoliate, 2.5-4.5 cm long, enclosed by 2 loose, ribbed, tubular sheaths. Leaf erect, thickly coriaceous, glossy green, narrowly obovate, 7-11 cm long, 1.5-2.2 cm wide, the obtuse apex tridenticulate, narrowly cuneate below into an ill-defined, sulcate petiole. Inflorescence a solitary, very showy flower borne by an erect to suberect, terete peduncle 12-18 cm long, with a bract below the middle and another at the base, from a node low on the secondary stem; floral bract 1.5-2 cm long; pedicel 2-4 cm long; ovary 5-7 mm long; dorsal sepal brown-orange and glabrous externally, red-orange within and covered by short, slender, reddish hairs that appear bright blue in sunlight, connate to the lateral sepals for 14 mm into a cylindrical tube, the free portion ovate with the subacute, acuminate apex contracted into a slender, erect, dark red-brown tail ca. 15 mm long, the entire length of the dorsal sepal 40 mm, the width 13 mm; lateral sepals bright vermilion, red within the tube above the white base, glabrous except for a few hairs along the margins near the dorsal sepal, ovate, oblique, abruptly dilated above the sepaline tube, connate 29 mm into a bifid lamina 26 mm wide, the ovate, subacute apices produced into slender, red-brown tails 6 mm long, the total length of each lateral sepal 36 mm; petals white, oblong, 10 mm long, 2.5 mm wide, the acute apex minutely notched, with a carina along the lower margin terminating in a short, acute, retrorse tooth; lip white, marked with purple, oblong-ligulate, 7 mm long, 2.75 mm wide, the obtuse apex with a central, thick, black callus, the disc with a pair of low, parallel calli, the base cordate, hinged beneath; column white, marked with purple along the dorsum and margins, semiterete, 7 mm long, the foot 3 mm long with a short, curved extension.

ETYMOLOGY. Named in honor of David Alan Welisch of San Francisco, California, who discovered this species.

TYPE: PERU: Dept. of Cuzco: Prov. of La Convencion, Vilcabamba mountains near Yanama, on exposed rocks, alt. 3000 m, Oct. 1978, D.

Welisch s.n., cultivated in San Francisco, flowered in cult. 15 Aug. 1979, *C. Luer 4085* (HOLOTYPE: SEL).

DISTRIBUTION: Peru.

This species was discovered by David Welisch in a high, remote, mountainous area of Peru in October 1978 while he was searching for the long-lost *Masdevallia davisii* Rchb. f. The plants were past flowering, and although the orangish, withered sepals did not look like what he expected for *M. davisii*, he was thrilled because he suspected that he had something never seen before. His plants grew well in the San Francisco climate and flowered the following August, not only proving to be new, but also one of the showiest of all the so-called "coccinea" group.

Most spectacular in this noteworthy species is the pubescence of the dorsal sepal that glows with a blue iridescence in the sunlight. The hairs are short and pointed, not capitate as they are in *Masdevallia veitchiana* Rchb. f. or its putative hybrids. The vermilion, dilated lateral sepals are glabrous except for a few hairs along the margins nearest the dorsal sepal.

*Masdevallia elegans* Luer & Escobar, sp. nov.

Herba mediocris caespitosa elegans, flore specioso solitario, pedunculo suberecto quam folio obovato petiolato brevior, sepalis albis roseo suffusis in tubum cylindricum connatis, sepalis lateralibus oblongis sepalo dorsali longioribus caudis plus minusve aequilongis, petalis oblongis unguiculatis truncatis apiculatis cum dente brevi supra umguem, labello grandi ligulato purpureo punctato.

Plant medium in size, presumably epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, becoming blackish with age, unifoliate, 4-6 cm long, enclosed by 2-3 loose, tubular sheaths. Leaf erect, coriaceous, obovate, petiolate, 7-15 cm long including the 2.5-5 cm long petiole, 1.8-3.8 cm wide, the apex obtuse to rounded, tridenticulate, cuneate below into the slender, channeled petiole. Inflorescence a solitary, showy flower borne by a suberect peduncle 8-12 cm long, with a tubular sheath below the middle, from a node on the secondary stem; floral bract 12-14 mm long; pedicel 16-28 mm long; ovary olive green, 6-8 mm long; dorsal sepal white, lightly suffused with rose, obovate, 18 mm long, 14 mm wide, connate to the lateral sepals for 11 mm to form a cylindrical sepaline tube, the free portion triangular, the subacute apex produced into a slender, forwardly directed yellow-green tail ca. 3 cm long; lateral sepals white, generously suffused and dotted with rose, cellular-glandular to minutely pubescent within, oblong, 27 mm long, 10 mm wide, connate 9 mm, forming a broad mentum with the column-foot, the apices obliquely contracted into slender tails ca. 2.5 cm long; petals white, oblong, broadly unguiculate, 9.5 mm long, 5 mm wide, the truncate apex shortly apiculate, obtusely angled on the upper margin, with a marginal callus along the lower margin ending in a short, retrorse tooth above the claw; lip rose, speckled with purple, oblong-ligulate, 13 mm long, 6 mm wide, the apex slightly dilated, obtuse to rounded, minutely irregular, with a dark purple callus just inside the margin, the disc shallowly sulcate between the thickened halves, the base subcordate, hinged beneath; column white, semiterete, 9 mm long, the foot 4 mm long with an incurved extension.

ETYMOLOGY: From the Latin *elegans*, "elegant," referring to the qualities of the plant.

TYPE: *PERU*: CAJAMARCA: San Ignacio, exported by R. Stumpfle 974/5, cultivated by M. & O. Robledo at La Ceja, Colombia, flowered in cult. 21 Oct. 1979, *C. Luer* 4083 (HOLOTYPE: SEL; ISOTYPE: JAUM),

DISTRIBUTION: Northern Peru.

This species is characterized by a large, showy, rosy flower borne by a peduncle a little shorter than the obtuse, obovate leaves with blackish petioles. From the sepaline tube the oblong lateral sepals spread and twist, the apices of all three sepals continued forward in slender, greenish tails.

**Masdevallia semiteres** Luer & Escobar, sp. nov.

Species haec *M. civilis* Rchb. f. similis sed foliis pedunculisque brevioribus, floribus minoribus caudis brevibus, petalis obtusis et labello denticulato non-verruculoso notabilis.

Plant small to medium in size, presumably epiphytic, caespitose; roots coarse, flexuous. Secondary stems thick, terete, unifoliate, 1.5-3 cm long, enclosed by 2-3 short, tubular sheaths. Leaf erect to suberect, gray-green, very thick, fleshy, semiterete, narrowly linear-obovate, sulcate, 4-9.5 cm long, 0.7-1 cm wide, 0.4-0.5 cm thick, the apex acute, tridenticulate, gradually narrowed below to the base. Inflorescence a solitary flower borne by a suberect peduncle 1-1.5 cm long, from a node on the secondary stem; floral bract 1 cm long; pedicel 1.5-2 cm long; ovary light brown spotted with brown, 6-7 mm long; sepals thick, fleshy, glabrous externally, minutely pubescent within, light brown speckled with purple-brown, with short, yellow tails, the dorsal sepal oblong, connate to the lateral sepals for 11 mm to form a broad, cylindrical tube, the free portion triangular, acuminate into the short, erect, thick tail, the total length 25 mm, 10 mm wide, the lateral sepals oblong, connate for 11 mm into a bifid lamina 17 mm broad, the total length 26 mm, forming with the column-foot a deep, rounded mentum, the free portions subovate, contracted into thick tails ca. 6 mm long; petals white with a red apex and midvein, oblong, 9.5 mm long, 4 mm wide, the apex more or less rounded with an apiculum, with callous thickenings of both margins ending below the middle; lip purple, spotted with dark purple, thick, oblong, 11 mm long, 5.75 mm wide, the apex obtuse, minutely denticulate, non-verrucose, the disc with a pair of low, subparallel calli above the middle, the base subcordate, hinged beneath; column white, semiterete, 7.5 mm long, the foot equally long, with a short, incurved extension.

ETYMOLOGY: From the Latin *semi-*, "half-," and *teres*, "terete," referring to the fleshy, narrowly cylindrical leaves.

TYPE: *PERU*: without locality, alt. 2400 m, collected by D. Bennett s.n., cult. by D. Richardson 1959, cultivated at La Ceja, Colombia by M. & O. Robledo, flowered in cult. 12 July 1979, *C. Luer* 2955 (HOLOTYPE: SEL; ISOTYPE: JAUM).

DISTRIBUTION: Peru.

The small fleshy, semiterete, gray-green leaves of this species are distinctive. The single, fleshy, brown flower diffusely speckled with purple-brown is borne by a short peduncle. The anterior margins of the lip are minutely denticulate but the surface is non-verrucose.

**Platystele dodsonii** Luer, sp. nov.

Planta minuta caespitosa, caulibus secundariis abbreviatis, racemo plurifloro foliis nanis crassis obovatis duplolongiore, floribus purpureis, sepalis ovatis caudatis, petalis linearibus, labello ovato acuminato acuto basi rotundato.

Plant minute, epiphytic, caespitose; roots comparatively thick, flexuous. Secondary stems abbreviated, 2-4 mm long, concealed by 2-3 loose, tubular sheaths, unifoliolate. Leaf erect, thickly coriaceous, narrowly obovate-elliptical, 10-15 mm long, 2.5-3 mm wide, the apex obtuse, tridenticulate, cuneate below into a short, indistinct petiole. Inflorescence an erect, subdensely several-flowered raceme of 6-11 minute flowers produced simultaneously, 10-20 mm long including the filiform peduncle, from a node on the secondary stem; floral bracts inflated, oblique, acute, 0.5-1 mm long; pedicel 1.5 mm long; ovary 0.5 mm long; sepals and petals translucent, diffusely mottled with purple, glabrous; dorsal sepal ovate, concave, 2-2.5 mm long, 0.6-0.75 mm wide, the apex acuminate, acute; lateral sepals ovate, oblique, 1.75-2.5 mm long, 0.6-0.75 mm wide, connate at the base, the apices abruptly acuminate into slender tails ca. 0.5 mm long; petals linear-filiform, acute, 1.8 mm long, 0.2 mm wide; lip dark purple, glandular-cellular, ovate, acuminate, acute, 1 mm long, 0.5 mm wide, the rounded base shallowly concave on the end; column hooded, 0.5 mm long and wide.

ETYMOLOGY: Named in honor of Calaway H. Dodson, Director of the Marie Selby Botanical Gardens, Sarasota, Florida, who discovered this species.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest between Loja and Zamora, alt. 2800 m, 18 Sept. 1961, *C. H. Dodson & L. B. Thien 665A* (HOLOTYPE: SEL; ISOTYPE: MO); same area, 30 July 1975, *C. Luer, G. Luer, & S. Wilhelm 500A* (SEL).

DISTRIBUTION: Southern Ecuador.

This tiny species grows in the moss on stunted trees in the cold, wet, windswept pass east of Loja. *Platystele dodsonii* may be identified by the minute, multiflowered racemes of short-pedicellate, purple flowers with inflated floral bracts. The sepals are caudate, the petals are linear, and the lip is ovate with an acute, acuminate apex.

**Platystele hirtzii** Luer, sp. nov.

Planta perparva caespitosa, caulibus secundariis abbreviatis, racemo debili sparsim paucifloro foliis anguste obovatis duplolongiore, flore tenui successivo, sepalis longis translucentibus pallide lavandulis venis purpureis angustissime ovatis attenuatis, petalis filiformibus, labello grandi atropurpureo ovato plano acuto.

Plant very small, epiphytic, caespitose; roots slender, flexuous. Secondary stems unifoliolate, abbreviated, ca. 1 cm long, enclosed by 2-3 loose, ribbed, tubular sheaths. Leaf erect, coriaceous, narrowly obovate, petiolate, 3-4 cm long including the 1-1.5 cm long petiole, 6-8 mm wide, the apex subacute, tridenticulate, the base tapering into the slender petiole. Inflorescence a weak, distantly 4- to 5-flowered raceme of successive, comparatively large flowers, up to 6.5 cm long, from a node on the secondary stem; floral bract infundibular, 1.5 mm long; pedicel 4-6 mm long; ovary 1 mm long; sepals translucent, pale lavender with purple central veins, very narrowly ovate, attenuate, acute, the dorsal sepal 13 mm long, 1.5 mm wide, subcarinate, the

lateral sepals connate at the base, each 14 mm long, 2.1 mm wide, unicarinate; petals very narrowly linear-ovate or filiform, 9 mm long, 0.75 mm wide, spreading upward; lip dark purple, ovate, 6 mm long, 3.5 mm wide, more or less flat, acute, shortly apiculate, the rounded base with a small concavity on the end; column minute, 0.5 mm long, 1 mm wide.

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

TYPE: *ECUADOR*: *CARCHI*: epiphytic in the cloud forest above Maldonado, alt. ca. 2000 m, 26 Aug. 1978, C. Luer, J. Luer & A. Hirtz 3376 (HOLOTYPE: SEL).

DISTRIBUTION: Northwestern Ecuador.

This showy, large-flowered species of *Platystele* may be recognized by the long, attenuated, pale lavender sepals each with a prominent purple stripe, and a large, flat, more or less featureless, ovate, deep purple lip.

***Platystele stellaris* Luer, sp. nov.**

Planta parva, caespitosa, caulibus secundariis brevibus, racemo debili flexuoso plurifloro foliis anguste obovatis multilongiore, flore grandi successivo glabro, sepalis petalisque ovatis longicaudatis translucetibus brunellolis venis rufescentibus, labello rubiginoso ovato acuminato acuto.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems short, 12-16 mm long, unifoliate, enclosed by 2-3 loose, ribbed, tubular sheaths. Leaf erect, coriaceous, narrowly obovate, petiolate, 2-3 cm long including the 1-1.5 cm long petiole, 6-8 mm wide, the apex subacute, tridentate, the base tapering into the slender petiole. Inflorescence a weak, flexuous, lengthening raceme, to 15 cm long with up to 11 comparatively large flowers produced successively, the peduncle filiform, from a node on the secondary stem; floral bracts tubular, oblique, 1.5 mm long; pedicel 5-7 mm long; ovary 0.5 mm long; sepals and petals translucent pale tan with the midvein red-brown, apparently glabrous, but microscopically glandular-cellular with cellular erose margins; sepals ovate, 15 mm long, 3.5 mm wide, the apices acuminate, into filiform tails; petals ovate, 11 mm long, 2.5 mm wide, the bases shortly and narrowly unguiculate, the apices acuminate into filiform tails; lip red-brown, ovate, acuminate, acute, 5 mm long, 2.5 mm wide, shallowly concave centrally; column yellowish white, 0.5 mm long, 1.25 mm wide, the stigmatic lobes edged in red-brown, the anther red-brown.

ETYMOLOGY: From the Latin *stellaris*, "like a star," in allusion to the shape of the flowers.

TYPE: *ECUADOR*: *PICHINCHA*: epiphytic on low vegetation on a wet embankment near Mindo, alt. ca. 2400 m, 1 Feb. 1978, C. Luer & J. Luer 2409 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

*Platystele stellaris* may be recognized by the comparatively large, star-shaped, translucent flowers with free, similar, spreading sepals and petals, broad below with a red-brown stripe ending in a filamentous tail, and a large, ovate, red-brown lip.

**Platystele teaguei** Luer, sp. nov.

Herba parva caespitosa, caulibus secundariis brevibus, racemo laxo paucifloro foliis obovatis petiolatis subduplolongiore, floribus translucen-  
tibus albis purpureo vittatis, sepalis ovatis apicibus filiformibus, petalis brevi-  
bus ellipticis apicibus filiformibus, labello roseo purpureo suffuso ovato  
apice rotundato, basi lobis obtusis incurvis columnam amplectentibus, disco  
longitudine fisso marginibus involutis.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary  
stems short, unifoliate, ca. 1 cm long, enclosed by 2 loose, tubular sheaths.  
Leaf erect, coriaceous, obovate, petiolate, 3-5 cm long including the 0.5-1  
cm long petiole, 1.5-1.7 cm wide, the apex rounded, emarginate, apiculate,  
the base cuneate into the slender petiole. Inflorescence an erect, loosely 4- to  
5-flowered raceme to 6.5 cm tall including the filiform peduncle, from a  
node on the secondary stem, the flowers produced 1-3 simultaneously; floral  
bract 2 mm long; pedicel 2 mm long; ovary 1 mm long; sepals translucent  
white, striped with red-purple along the veins, sparsely short-pubescent, the  
dorsal sepal ovate, 11.5 mm long, 2 mm wide, 3-veined, acute with the fili-  
form apex occupying about half the length, the lateral sepals ovate, 13 mm  
long, each 2 mm wide, connate for 2.5 mm, acuminate into filiform apices  
similar to that of the dorsal sepal; petals elliptical, acute, half the length  
occupied by the filiform apex, 2.5 mm long, 1 mm wide, 1-veined; lip rose,  
suffused with purple, ovate, 3.5 mm long, 1.75 mm wide, the apex rounded,  
the base with obtuse, incurved lobes embracing the column, the disc longi-  
tudinally cleft with involute margins; column short, ca. 1 mm long and wide.

ETYMOLOGY: Named in honor of Walter Teague of San Francisco, Cali-  
fornia, who discovered this species.

TYPE: *ECUADOR*: IMBABURA: epiphytic in cloud forest above Apuela,  
alt. ca. 3000 m, July 1977, W. Teague s.n., cultivated in San Francisco,  
Calif., flowered in cult. 21 April 1979, *C. Luer 4059* (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

Among the species of *Platystele* this showy species may be recognized  
by the broad, obovate leaves, the filiform apices of the translucent, purple-  
striped sepals and petals, and the cleft lip with basal lobes embracing the  
column.

**Pleurothallis acremona** Luer, sp. nov.

Planta parva ramulosa, caulibus secundariis prolificantibus vaginis  
lepanthiformibus, racemo debili laxo paucifloro folio elliptico duplolongiore,  
floribus pellucidis flavis glabris, sepalo dorsali anguste ovato acuminato,  
sepalis lateralibus basi connatis anguste triangularibus, petalis ellipticis ob-  
tusis, labello trilobato, lobo antico oblongo apice rotundato crasso convexo,  
lobis lateralibus erectis ovatis obliquis.

Plant small, epiphytic, climbing, branching, to 15 cm tall excluding the  
inflorescence; roots slender, fasciculate, from the bases (or apices) of sec-  
ondary stems. Secondary stems unifoliate, slender, prolific, each 1-8 cm  
long, enclosed by 2-6 imbricating, ribbed sheaths with oblique, slightly  
dilated ostia, minutely ciliate along the ribs and margins. Leaf erect, coria-

ceous, narrowly elliptical, subpetiolate, 15-25 mm long, 3-4 mm wide, the apex acute, tridenticulate, the base narrowly cuneate. Inflorescence a weak, loose, 5- to 7-flowered raceme 3-4 cm long including the filiform peduncle, from the apex of a secondary stem; floral bract 1.5 mm long; pedicel 4-8 mm long; ovary 1 mm long; flowers membranous, translucent yellow, glabrous; dorsal sepal narrowly ovate, acuminate, acute, 8 mm long, 2 mm wide, 3-veined, subcarinate, the apex thickened; lateral sepals narrowly triangular, acute, connate 1 mm at the base, 8 mm long, 1 mm wide, subcarinate, the apex thickened; petals translucent white, elliptical, 2.75 mm long, 1 mm wide, the margins slightly irregular to the narrowly obtuse apex; lip yellow, 3-lobed, 3.25 mm long, 1-2 mm wide spread out, the apical lobe oblong with the apex rounded, thick, convex, cellular-pubescent, the lateral lobes below the middle, erect, oblique, ovate, obtuse, the anterior margins perpendicular, minutely undulate, narrowed below to the truncate base; column pale green, winged near the apex, 2 mm long, with a foot 1 mm long.

ETYMOLOGY: From the Greek *akremon* (*ακρεμων*), "a bough or branch," referring to the branching habit of the species.

TYPE: *ECUADOR*: PASTAZA?: without certain locality, probably in the vicinity of Puyo, 1974, Janet Kuhn s.n., cultivated by J & L Orchids, Easton, Ct., flowered in cult. 1 Nov. 1975, *C. Luer 596* (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador.

This little, lepanthiform-sheathed species is notable for its slender, branching habit. The yellow flowers, characterized by a three-lobed lip, are borne in a short, few-flowered raceme. The anterior lobe of the lip is ligulate, thickened, and microscopically cellular-pubescent.

#### *Pleurothallis aequatorialis* Luer, sp. nov.

*Planta mediocris caespitosa, vaginis caulium secundariorum gracilium lepanthiformibus, foliis crassis anguste ellipticis, racemo plurifloro dependenti quam caulibus aequilongo, floribus pellucidis alboviridibus, sepalis anguste ovatis acuminatis, petalis oblongis acutis, labello ligulato lateribus revolutis disco sulcato lobis basalibus angustis acutis.*

Plant medium-sized, epiphytic, caespitose; roots fine, flexuous. Secondary stems suberect, slender, unifoliate, 4.5-9 cm long, enclosed by 5-6 close, imbricating, ribbed, tubular sheaths with dilated, oblique, ciliated ostia. Leaf suberect, thickly coriaceous, narrowly elliptical, 5-6 cm long, 5-7 mm wide, the acute apex tridenticulate, the cuneate base shortly petiolate. Inflorescence a pendent, distichous, flexuous raceme 8-10 cm long including the slender, weak peduncle, with up to 17 nearly simultaneous, translucent, pale green flowers; floral bract and pedicel each 3 mm long; ovary 1 mm long, 6-ribbed; dorsal sepal narrowly ovate, acuminate, acute, 11 mm long, 3 mm wide, 3-veined; lateral sepals narrowly ovate, acuminate, acute, 11 mm long, 2 mm wide, connate basally for 0.5 mm; petals oblique, acute, 2.75 mm long, 1 mm wide, 1-veined; lip yellow, oblong with revolute sides, 3-lobed, 4 mm long, 1.25 mm wide unspread, the apex rounded, the base truncate with slender, acute lobes 1 mm long, directed forward from the angles, the disc with a pair of low lamellae extending forward from the basal lobes to near

the middle and with a longitudinal, central sulcus terminating 1 mm from the apical margin; column 2 mm long with a foot equally long.

ETYMOLOGY: From the Latin *aequatorialis*, "of Ecuador," referring to the country of origin.

TYPE: *ECUADOR*: without locality, collected and cultivated by Walter Teague of San Francisco, California, flowered in cult. 20 Aug. 1979, *C. Luer 4121* (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador.

This lepanthiform-sheathed species may be recognized by the long, drooping racemes of translucent flowers with long-acuminate sepals. The ligulate lip is furnished with a forwardly directed pair of slender, basal lobes.

### *Pleurothallis anceps* Luer, sp. nov.

Herba mediocris caespitosa, caulibus secundariis erectis ancipitiis, folio erecto elliptico acuto rigido carinato marginibus revolutis, flore singulari successivo longipedicellato albovirescenti purpureo-punctato, sepalo dorsali synsepaloque supra basin anguste lineari obtuso, petalis angustissimis semiteretibus serrulatis, labello ovato acuto calloso.

Plant medium in size, epiphytic, caespitose, roots slender, flexuous. Secondary stems erect, monophyllous, sharply ancipitous, 6-21 cm long, 4-6 mm wide near the leaf, enclosed below by 2-3 imbricating, tubular sheaths. Leaf erect, rigidly coriaceous, elliptical, 7-10.5 cm long, 1.5-2.2 cm wide, the margins revolute, carinate along the midrib, the acute apex tridenticulate, the base rounded with the sides shortly decurrent on the stem. Inflorescence a succession of single flowers borne in a fascicle from a spathe ca. 1 cm long at the base of the leaf; peduncle erect, ca. 8 mm long; floral bract 5-10 mm long; ovary green, subverrucose, 4 mm long; sepals and petals glabrous, greenish white with purple dots; dorsal sepal narrowly ovate, linear above the dilated base, obtuse, carinate, 13 mm long, 3.5 mm wide; lateral sepals connate into a similarly shaped synsepal, concave, bicarinate, 13 mm long, 4 mm wide; petals very narrowly ovate, acuminate, acute, 12 mm long, 1.5 mm wide, semiterete above the middle, the margins minutely serrate; lip white, suffused and dotted with red, ovate, acute, 4.4 mm long, 2.1 mm wide, the truncate base broadly but lightly fixed to the column-foot, the disc with a broad, rounded callus in the center; column pink, semiterete, 1 mm long, with a short foot.

ETYMOLOGY: From the Latin *anceps*, "two-headed or two-sided," referring to the sharply ancipitous secondary stems.

TYPE: *ECUADOR*: CARCHI: epiphytic in cloud forest near Maldonado, alt. 1500 m, cultivated at SEL, greenhouse acc. no. 78-942, flowered in cult. 30 Sept. 1978, *M. Madison, L. Besse, H. Kennedy & T. Plowman s.n.* (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *COLOMBIA*: without locality, cultivated by M. & O. Robeldo, La Ceja, Col., R. Escobar 1416, flowered in cult. 16 Oct. 1977, *C. Luer 2056* (SEL), *ECUADOR*: PICHINCHA: terrestrial on the road embankment between Nanegalito and Gualea, alt. 1500 m, 9 Aug. 1978, *C. H. Dodson, T. Dodson, A. Embree & R. Perry 6993* (SEL).

DISTRIBUTION : Northern Ecuador and Colombia.

This species is one of a small group characterized by laterally compressed secondary stems. In this case the stem is markedly flattened in its upper half. The single, whitish flowers with slender floral parts are dotted with purple, and the simple, ovate lip is convex centrally.

**Pleurothallis apopsis** Luer, sp. nov.

Planta grandis caespitosa, caulibus secundariis teretibus altis prope apicem arcuatis, folio maturo deflexo cordato acuminato, floribus luteis breviter pubescentibus successivis fasciculatis spatha reclinata, sepalo dorsali late elliptico obtuso, synsepalo ovato lateribus revolutis, petalis ellipticis acuminatis erosis, labello crasso triangulari late bicalloso.

Plant large, epiphytic, caespitose; roots slender, fasciculate, flexuous. Secondary stems unifoliate, erect but arching near the apex, terete, 25-45 cm long, with a long, close, tubular sheath below the middle and another 2 at the base. Mature leaf horizontal to deflexed, coriaceous, ovate, 10-13 cm long, 3-3.5 cm wide, the apex acuminate, acute, tridenticulate, the base deeply cordate, sessile, the immature leaf erect, narrowly elliptical, petiolate. Inflorescence a succession of solitary, light yellow, shortly pubescent, widely spread flowers borne in a compact fascicle from the base of the leaf, subtended by a reclining spathe ca. 1.5 cm long; peduncles 3 mm long; floral bract thin, 5 mm long; pedicel 5-11 mm long; ovary 5 mm long; dorsal sepal broadly elliptical, obtuse, 13 mm long, 9.5 mm wide, 3-veined; lateral sepals connate into an ovate lamina with revolute sides, 14 mm long, 6.5 mm wide; petals elliptical, acute, acuminate, 11 mm long, 2.5 mm wide, shortly pubescent, the margins erose-denticulate; lip thick, glabrous, triangular, 4 mm long, 4 mm wide, the anterior angle rounded, the basal angles subacute, the disc with a pair of low calli above the base and callous plates ending just short of the apex; column stout, 1.5 mm long, 3 mm wide, with a broad, bulbous foot.

ETYMOLOGY: From the Greek *apopsis* (ἀποψις), "a high place with a commanding view," in allusion to the high, mountainous habitat.

TYPE: *ECUADOR*: *IMBABURA*: epiphytic in cold cloud forest between Mariano Acosta and Ibarra, alt. 3400 m, 9 Feb. 1979, C. Luer, J. Luer, R. Escobar & A. Hirtz 3955 (HOLOTYPE: SEL).

DISTRIBUTION : Northern Ecuador.

This species seems most similar to *P. cardiostola* Rchb. f., but *P. apopsis* is notable in the longer stems arching above, and light yellow flowers produced from a reclining spathe. The lip is triangular with smooth, more or less flat callosities.

**Pleurothallis aporosis** Luer, sp. nov.

*Pleurothallidis secundae* Poepp. & Endl. affinis sed racemis brevibus erectis bifloris et labello geniculato suborbiculari minute crenulato ecalloso distinguitur.

Plant medium to large, terrestrial to semi-epiphytic, caespitose, roots coarse, fasciculate. Secondary stems erect, terete, unifoliolate, 20-50 cm tall, with a close, tubular sheath below the middle and 2-3 others at the base. Leaf erect, coriaceous, narrowly elliptical, 10-17 cm long, 3-3.5 cm wide, the apex acuminate, acute, tridenticulate, the base rounded, sessile. Inflorescence 1 to several, short, erect, 1- to 2-flowered racemes borne from the base of the leaf, the flowers non-resupinate, the peduncle up to 2 cm long, the spathe ca. 1 cm long, deciduous; floral bract 5-18 mm long, pedicel 4-20 mm long; ovary 5 mm long, sepals light orange-brown, glabrous, only slightly concave, the middle sepal ovate, acute, 12 mm long, 5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 12 mm long, 8 mm wide, 4-veined; petals red-brown, elliptical, oblique, acute, 9 mm long, 2 mm wide; lip red-brown suborbicular, 4 mm long, 3.5 mm wide, the margins minutely crenulate, the apex rounded, apiculate, geniculate at the base, with erect, rounded, basal lobes, the disc free of any callus; column stout, 1.5 mm long, with an obsolescent foot.

ETYMOLOGY. From the Greek *a-* (*a-*), "without," and *porosis* (*πωρωσις*), "callus formation," in reference to the ecallose lip.

TYPE: *ECUADOR*: AZUAY: terrestrial in scrub vegetation, near km 80 south of Cuenca, alt. ca. 3000 m, 17 July 1977, C. Luer, J. Luer & G. Luer 1730 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This uncommon species was found growing with the abundant, yellow form of *P. secunda* in the relatively dry, scrub vegetation at a high elevation. *Pleurothallis aporosis* may be distinguished from the latter by the short, one- to two-flowered, erect racemes, and the ecallose lip.

#### ***Pleurothallis campicola* Luer, sp. nov.**

Planta parva epiphytica caespitosa, caulibus secundariis gracilibus teretibus foliis crassis anguste obovatis leviter brevioribus, racemo brevi erecto paucifloro floribus successivis, sepalis flavovirescentibus purpureo punctatis intus purpureo pilosis, sepalo dorsali obovato subacuto, sepalis lateralibus obovatis circa apices rotundatos connatis, petalis albis purpureo maculatis obovatis apice rotundatis, labello maculato integro elliptico bicarinato.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, 1.5-4 cm long, with a close, tubular sheath below the middle and another at the base, unifoliolate. Leaf erect, thick, coriaceous, narrowly elliptical-obovate, lightly sulcate, tridenticulate at the obtuse apex, the base narrowly cuneate, sessile, 3.5-5.5 cm long, 6-7 mm wide. Inflorescence an erect, several-flowered (3-10) raceme, 1-3 cm long, of small, successive, bilabiate flowers, the peduncle, slender, short, from a 2 mm long, fugacious spathe at the base of the leaf; floral bract brown, tubular, 2 mm long; pedicel 3-4 mm long; ovary green, 2 mm long; sepals yellow-green, irregularly speckled with purple, glabrous without, long-pubescent within, the hairs purple, the dorsal sepal obovate, subacute, more or less constricted above the base, 5 mm long, 2 mm wide, the lateral sepals connate to within 1 mm of the apex into an obovate lamina, rounded and bifid at the apex, 4 mm long, 2.5 mm wide; petals spatulate, rounded at the apex, minimally verrucose

externally along 3 veins, white speckled with purple, 2 mm long, 1.2 mm wide; lip elliptical, rounded at the narrowed apex, lightly contracted below obtuse lateral angles near the middle into an ill-defined claw, truncate at the base, the disc with a pair of longitudinal carinae from the lateral angles toward the apex, greenish white, speckled with purple, 2.25 mm long, 0.75 mm wide; column terete, white spotted with red-purple, 2 mm long.

ETYMOLOGY: From the Latin *campus*, "plain," and *-cola*, "-dweller," referring to *los llanos del Volcan* where the species was discovered.

TYPE: PANAMA: CHIRIQUI: epiphytic in scrubby trees on the llanos del Volcan, a few km west of El Hato del Volcan, alt. 1500 m, 20 Feb. 1977, greenhouse acc. no. 77-1754, flowered in cult. 15 Sept. 1977, C. Luer, J. Luer & H. Butcher 1830 (HOLOTYPE: SEL).

DISTRIBUTION: Panama.

This small species seems to be most closely allied to the Mexican *P. hieroglyphica* Ames, but the smaller habit, purple pubescence within the sepals, and the entire lip readily distinguish it. The flowers are perhaps more similar to those of *P. hirsuta* Ames, also Mexican in origin, but the short inflorescence and entire lip easily distinguish *P. campicola*.

#### *Pleurothallis cucumeris* Luer, sp. nov.

Herba mediocris caespitosa, caulibus secundariis erectis teretibus seriei vaginarum costatarum vestitis unifoliatis, foliis coriaceis ellipticis petiolatis, racemo brevissimo paucifloro, pedunculo pedicello ovarioque verrucoso, sepalis crassis verrucosis carinatis ovatis virescentibus, sepalis lateralibus connatis, petalis dolabriformibus, labello ligulato obtuso lateribus erectis.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect, slender, terete, unifoliate, 5-11 cm long, mostly concealed by a series of 4-6 loose, ribbed, non-scabrous, tubular sheaths, soon fragmented. Leaf erect, narrowly elliptical, coriaceous, petiolate, 5.5-8 cm long, 1.3-2 cm wide, the acute apex tridenticulate, the base cuneate into a 1-2 cm long petiole. Inflorescence a short, ca. 1 cm long raceme of 2-5 light greenish flowers, from the apex of the secondary stem; peduncle verrucose, ca. 5 mm long; floral bract white, thin, papery, 2-3 mm long; pedicel verrucose, 4 mm long; ovary verrucose, 1 mm long; sepals thick, tricarinate, verrucose and glandular-cellular externally, glabrous within, the dorsal sepal ovate, narrowly obtuse, 8 mm long, 3 mm wide, the lateral sepals connate to the apices into an ovate, obtuse lamina 7.5 mm long, 4 mm wide; petals translucent yellow, dolabriform, 3 mm long, 1.75 mm wide, 2-veined, the apex acute, the labellar margin with an obtuse, rounded angle; lip light yellow, oblong-ligulate, arcuate, 3 mm long, 1 mm wide, the sides erect, the obtuse, sub-truncate apex minutely erose, the truncate base with ill-defined basal lobules, hinged to the column-foot; column stout, green, 2 mm long, the foot 1.5 mm long.

ETYMOLOGY: From the Latin *cucumis*, *-eris*, "a cucumber," in allusion to the appearance of the flowers and fruit.

TYPE: PANAMA: CHIRIQUI: epiphytic in cloud forest, Cerro Colorado, alt. ca. 1700 m, Feb. 1977, greenhouse acc. no. 77-1825, flowered in cult.

10 Dec. 1977, *C. Luer, J. Luer & R. L. Dressler 2258* (HOLOTYPE: SEL).

DISTRIBUTION: Panama.

Apparently without close relatives, this species was first found in fruit. The capsules were markedly warty, as the flowers themselves proved to be later that year when the plants flowered in cultivation.

***Pleurothallis cynocephala* Luer, sp. nov.**

Herba perparva caespitosa, racemo laxo paucifloro foliis anguste obovatis longipetiolatis subduplongiore, floribus successivis pellucidis guttatis, sepalis ovatis longicaudatis clavellatis, petalis ciliatis caudatis, labello crasso subovato truncato bicalloso lobis lateralibus parvis erectis acuminatis ciliatis.

Plant very small, epiphytic, caespitose; roots fine, fasciculate. Secondary stems unifoliate, abbreviated, 3-5 mm long, enclosed by 2 white, ribbed, tubular sheaths. Leaf erect, coriaceous, very narrowly obovate, indistinctly petiolate, 2-3.5 cm long including the 0.5-1.5 cm long petiole, 3-4 mm wide, the apex subacute, tridenticulate, the base gradually narrowed into the slender petiole. Inflorescence a loose, successively few-flowered raceme, 4-5 cm long including the filiform peduncle, from a node on the secondary stem; floral bract 1 mm long; pedicel 5 mm long; ovary 1 mm long; sepals translucent greenish white spotted with purple, the margins sparsely ciliate, uncarinate, the acute apices contracted into slender tails with gradually thickened apices, the dorsal sepal free, ovate in the lower third, 3 mm long, 1.25 mm wide, the tail 7 mm long, the lateral sepals connate basally, ovate in the lower third, 3 mm long, 1.75 mm wide, the tails 6 mm long; petals narrowly ovate in the lower third, both margins sparsely long-ciliate, the apex attenuated into a slender tail, the total length 5 mm, 0.5 mm wide; lip light green marked with purple, thick, more or less ovate, 2 mm long, 0.8 mm wide, the apex truncate, the keel beneath with a few excrescences, with a pair of erect, ciliate, acuminate marginal lobes between the middle and lower thirds, with a pair of calli extending forward on the disc to near the middle; column semiterete, 2 mm long, with a short foot.

ETYMOLOGY: From the Greek *kyon*, *kynos* (κυων, κυνος), "a dog," and *kephale* (κεφαλη), "head," (Latin *-cephalus*, "headed"), hence "like the head of a dog," in allusion to the fancied appearance of the lip.

TYPE. BOLIVIA: COCHABAMBA: epiphytic in cloud forest between Cochabamba and Villa Tunari, alt. 1900 m, Nov. 1978, cultivated at SEL s.n., flowered in cult. 21 May 1979, *C. Luer 4065* (HOLOTYPE: SEL).

DISTRIBUTION: Bolivia.

This little species may be recognized by the long, slender, sepaline tails slightly thickened toward the apices. The translucent greenish white blades are spotted with purple and the blades of the caudate petals are ciliated. Microscopically the minute lip resembles the head of a dog with erect ears.

***Pleurothallis eidos* Luer, sp. nov.**

Planta mediocris vel grandis caespitosa, caulibus secundariis erectis gracilibus teretibus, folio ovato-cordato acuminato acuto sessili, racemis

binis erectis laxe multifloris quam folio multilongioribus, floribus luteis, sepalo dorsali ovato concavo acuminato acuto, synsepalo similari profunde concavo, petalis angustissime ovatis acutis, labello suborbiculari concavo trilobato, lobo antico rotundato apiculato, lobis lateralibus brevis obtusis.

Plant medium to large, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect, unifoliate, slender, terete, to 30 cm tall, with a tubular sheath below the middle and another at the base. Leaf suberect, thinly coriaceous, ovate, up to 16 cm long, 8 cm wide, the apex acuminate, acute, tridenticulate, the base deeply cordate, sessile. Inflorescence racemose, 1-2 loosely many-flowered, erect racemes, 18-25 cm long including the peduncle, from a spathe ca. 1 cm long at the base of the leaf; floral bract infundibular, 3 mm long; pedicel 4 mm long; ovary 2 mm long; flowers clear yellow, glabrous; dorsal sepal ovate, concave, 6 mm long, 3.25 mm wide, the apex acuminate, acute; lateral sepals connate into a deeply concave, suborbicular to broadly ovate synsepal, 6 mm long, 6 mm wide fully expanded, the apex acuminate, acute; petals very narrowly ovate, 6.5 mm long, 1.25 mm wide, 3-veined, the apex attenuate, acute, minimally thickened; lip suborbicular to broadly ovate, 4.5 mm long, 4 mm wide spread out, concave, 3-lobed, the apical lobe rounded, terminated by a narrow apiculum, the lateral lobes above the middle, short obtuse, forwardly directed, the base broad, firmly attached to the column-foot, the disc with a pair of low, smooth calli above the base; column stout, 1.5 mm long, with an obsolescent foot.

ETYMOLOGY: From the Greek *eidos* (εἶδος), "a sort," or "a kind," in reference to the species being one of many similar kinds.

TYPE: ECUADOR: CARCHI: epiphytic in cloud forest above Maldonado, alt. 2000-2500 m, 25 Aug. 1978, C. Luer, J. Luer & A. Hirtz 3367 (HOLOTYPE: SEL).

DISTRIBUTION. Northwestern Ecuador.

This species may be recognized by the tall stem, large cordate leaf, and one or two long racemes of yellow flowers. The lower flowers drop as the upper ones mature. The sepals are concave and acuminate, the narrow petals are essentially membranous, and the comparatively large, rounded, concave lip is apiculate anteriorly, and shallowly notched laterally to form short, obtuse, lateral lobes.

#### ***Pleurothallis eumeces* Luer, sp. nov.**

Planta mediocris caespitosa, caulibus secundariis teretibus gracilibus longis vaginis tubulosis scabrosis instructis, foliis erectis ellipticis, floribus fasciculatis successivis brevipedunculatis, sepalis anguste ovatis, petalis basin versus ovatis apice teretibus longissimis quam sepalis longioribus, labello trilobato, lobo antico rotundato dentato, lobis lateralibus uncinatis, base bilobulato disco bicarinato.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect to ascending, slender, terete, unifoliate, 10-25 cm long, provided with a series of 6-7 close, tubular sheaths, the lower ones scabrous, soon fragmenting. Leaf erect, coriaceous, shortly petiolate, elliptical, 9-11 cm long including the 5-8 mm long petiole, 1.5-1.9 cm wide, the sides revolute, the apex acute, tridenticulate, the base cuneate into the

petiole. Inflorescence a fascicle of single, successive flowers from the apex of the secondary stem, the spathe ca. 5 mm long, deciduous; peduncle ca. 4 mm long; floral bract 4-5 mm long, echinate; pedicel 4-5 mm long, with a short filament; ovary 2.5 mm long, glandular-cellular; sepals translucent tan suffused with red, lightly pubescent externally, connate basally ca. 1 mm, the dorsal sepal ovate, 12 mm long, 3.75 mm wide, the margins revolute above the middle, the apex narrowly obtuse, the lateral sepals similar to the dorsal sepal, each 10.5 mm long, 3 mm wide, lightly pubescent within below the middle; petals translucent with 3 red veins, ovate, minutely serrate, 14 mm long, 2.25 mm wide, the apex narrowly long-terete; lip purple, oblong, 3-lobed, 3.25 mm long, 1 mm wide unspread, the lateral lobes erect, introrse, acute, with minutely serrate margins, the anterior lobe rounded, dentate, the disc with a pair of rounded calli above the middle and a pair of closely parallel calli ending at the truncate base, with a minute pair of basal lobules, hinged to the column-foot; column 3 mm long, semiterete, the clinandrium with 2 projecting, subulate processes.

ETYMOLOGY: From the Greek *eumekes* (εὐμηκες), "very long," in reference to the extremely long petals.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest at the pass between Loja and Zamora, alt. 2700 m, 11 Feb. 1978, C. Luer, J. Luer & M. Portilla 2530 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: ZAMORA-CHINCHIPE: same locality, 28 Sept. 1961, C. H. Dodson & L. B. Thien 754 (SEL).

DISTRIBUTION: Southern Ecuador.

This species may be distinguished from its numerous relatives by the extremely long, slender, terete apices of the petals that project well beyond the sepals.

#### *Pleurothallis giraffa* Luer, sp. nov.

Planta mediocris caespitosa, caulibus secundariis gracilibus teretibus, foliis suberectis vel horizontalibus anguste ovatis breviter cordatis, flore singulari successivo bilabiato, sepali dorsali synsepaloque bruneolo-virescenti ovato subacuto minute ciliato, petalis pupureis linearibus acutis denticulatis, labello atropurpureo rhombico leviter concavo supra medium minute denticulato apice obtuso apiculato, infra medium in basim latam leviter concavam angustato, columna gracili elongata arcuata.

Plant medium in size, epiphytic, caespitose; roots fine, fasciculate. Secondary stems very slender, terete, erect, unifoliate, 9-19 cm tall, with a close, tubular sheath below the middle and 1-2 others at the base. Leaf suberect to horizontal, coriaceous, narrowly ovate, 5-9 cm long, 1.5-3.5 cm wide, the apex acute, tridenticulate, the base shallowly cordate, sessile. Inflorescence a single, successive, bilabiate flower produced from a spathe 6-15 mm long, from the base of the leaf; peduncles 4-5 mm long; floral bract 5 mm long; pedicel 10 mm long; ovary dark purple, subverrucose, 4 mm long; sepals greenish tan, the margins minutely ciliate, the dorsal sepal ovate, subacute, 9 mm long, 5.5 mm wide, 3-veined, the lateral sepals connate into an ovate lamina similar in shape to that of the dorsal sepal, 8 mm long, 6.5 mm wide; petals purple, linear, curved, apiculate, 7 mm long, 1 mm wide, the base minutely biauriculate, the margins denticulate; lip dark purple, rhombic, 5

mm long, 3.75 mm wide, shallowly concave, minutely denticulate above the middle, the apex obtuse, apiculate, contracted below the middle into the broad, shallowly concave base, with a narrow glenion above the base; column slender, arcuate, 3 mm long, with a thick foot 2 mm long.

ETYMOLOGY: From the Latin *giraffa*, "a giraffe," in allusion to the long-necked column.

TYPE: *ECUADOR*: IMBABURA: epiphytic in cloud forest above Apuela, alt. ca. 2000 m, 8 Feb. 1979, C. Luer, J. Luer, R. Escobar & A. Hirtz 3942 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: COTOPAXI: epiphytic in cloud forest near El Corazon, alt. 1200 m, 18 Feb. 1979, C. Luer, J. Luer & A. Hirtz 4007 (SEL).

DISTRIBUTION: Western Ecuador.

This is the only species of the "cordate-leaved" group that I have seen with an elongated, arcuate column.

#### *Pleurothallis gongylodes* Luer, sp. nov.

Planta parva caespitosa, caulibus secundariis gracilibus brevibus, racemo flexuoso foliis coriaceis angustissime obovatis longiore, floribus successivis albivirescentibus purpureo punctatis, sepalis carinatis glabris oblongis caudatis, petalis ovatis acuminatis unguiculatis minute erosis, labello rubiginoso crasso obovato infra medium biangulato bicallosoque supra medium subgloboso.

Plant small, epiphytic, caespitose; roots slender, fasciculate, flexuous. Secondary stems slender, unifoliate, 1.5-2 cm long, enclosed by 2 thin, tubular, ribbed sheaths. Leaf erect, coriaceous, very narrowly obovate, 3.5-6 cm long, 0.9-1 cm wide, the apex subacute, tridenticulate, the base gradually narrowed into the narrowly petiolate base. Inflorescence an arching raceme of successive flowers, up to 10 borne on a progressively lengthening, fractiflex rachis, up to 13 cm long including the filiform peduncle, from a node on the secondary stem; floral bract 2-3 mm long; pedicel 10-15 mm long; ovary 2.5 mm long; sepals widespread, translucent greenish white with purple spots, glabrous, carinate externally along the primary nerves, oblong, the acute apices ending in 5 mm long, terete tails, the total length 12-13 mm, the dorsal sepal free, 3 mm wide, the lateral sepals connate for 2 mm, 5 mm wide together; petals translucent greenish white with purple dots, ovate, 6 mm long, 2.5 mm wide, the apex acuminate, acute, the margins minutely erose-lacerate, the base abruptly unguiculate; lip red-brown, thick, obovate, 4.5 mm long, 2.25 mm wide, the apex smooth, globose, 2 mm thick, with revolute margins that meet beneath, with erect, subacute, marginal angles below the middle and a pair of thickened calli extending to the middle, the base truncate, concave, flanked by a pair of microscopic lobules; column green, semiterete, 3.5 mm long, with a bilobed foot.

ETYMOLOGY: From the Greek *gongylodes* (γογγυλωδης), "like a ball," in reference to the globose apex of the lip.

TYPE: *ECUADOR*: IMBABURA: epiphytic in scrub cloud forest near the edge of the paramo, alt. ca. 3000 m, ca. 30 km west of Otavalo, 17 Feb. 1978, C. Luer, J. Luer & A. Hirtz 2602 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

This large member of the relatives of *P. aristata* Hook. is not only characterized by the size of the leaves and flowers, but by the distinctive, smooth, globose apex of the lip formed by the revolute sides, the margins of which meet in the middle beneath.

***Pleurothallis harpago* Luer, sp. nov.**

*Pleurothallidi eumecocaulo* Schltr. affinis sed sepala petalaeque minore, petalis ciliatis et labello ciliato concavo valde hamato differt.

Plant small, delicate, epiphytic, caespitose; roots slender, fasciculate. Secondary stems erect, slender, terete below, compressed above, unifoliate, 5-13 cm long, with a long, close, tubular sheath below the middle. Leaf sub-erect, coriaceous, narrowly elliptical, 4-5 cm long, 12-17 mm wide, the acute apex tridenticulate, the rounded base sessile. Inflorescence a fascicle of erect, long-pedicelled, single, successive flowers from the base of the leaf, the spathe fugacious; peduncle filamentous, 17-22 mm long; floral bract 3-4 mm long; pedicel 10-11 mm long; ovary green, 2.5 mm long; dorsal sepal white with purple cells scattered within, ovate, narrowly obtuse, 4 mm long, 2.5 mm wide; lateral sepals white, connate into an ovate, subacute lamina 4 mm long, 2.5 mm wide; petals narrowly ovate, acute, 3.75 mm long, 1 mm wide, white with purple-ciliate margins and with short, purple hairs within; lip white marked with purple, ovate, concave, 3.25 mm long, 1.5 mm wide, the margins ciliate, the apex inflexed into a prominent, hook-like process, the truncate base firmly fixed to the column-foot; column white dotted with purple, stout, 1 mm long, with an obsolescent foot.

ETYMOLOGY: From the Latin *harpago*, "a grappling hook," in allusion to the uncinat lip.

TYPE: PANAMA: DARIEN: Cerro Pirre, July 1977, R. L. Dressler s.n., cultivated at SEL, greenhouse acc. no. 77-2600A, flowered in cult. 20 March 1978, C. Luer 2798 (HOLOTYPE: SEL).

DISTRIBUTION : Eastern Panama.

This species may be distinguished from the closely allied *P. eumecocaulon* by the smaller flowers with ciliated petals and a markedly hooked apex of the lip.

***Pleurothallis herpestes* Luer, sp. nov.**

Species haec *P. macroblepharis* Rchb. f. similis sed foliis angustissimis, racemo prostato brevior et lobis lateralibus labello tenuis unciformibus antrorsis differt.

Plant small, epiphytic, densely caespitose; roots slender, fasciculate, flexuous. Secondary stems unifoliate, abbreviated, 4-7 mm long, enclosed by 1-2 ribbed, tubular sheaths. Leaf erect, dark green, coriaceous, linear-obovate, 3-4 cm long, 2.5-3 mm wide, the apex obtuse, tridenticulate, gradually narrowed below to the slender base. Inflorescence a loose, flexuous, more or less prostrate, successively few-flowered raceme, 2-4 cm long, borne by a filiform peduncle from a node low on the secondary stem; floral bracts and pedicels each 1.5 mm long; ovary costate, 1.5 mm long; sepals glabrous,

membranous, translucent greenish white, diffusely spotted with dark purple, the dorsal sepal ovate, tricarinate, 7 mm long, 1.5 mm wide, the acute apex long-acuminate, the lateral sepals free, ovate, oblique, bicarinate, 7 mm long, 2 mm wide, with the acute, long-acuminate apices ascending; petals translucent dull white with a purple midvein, elliptical, 5 mm long, 0.75 mm wide, with ciliated margins, the acute apex long-acuminate; lip dull white, suffused and spotted with dark purple, elliptical, 4 mm long, 1.75 mm wide, the apex slightly narrowed and rounded, the margins long-ciliate with purple-black hairs above the slender, uncinata, antrorse, lateral lobes below the middle, the disc with a pair of low calli extending forward from each lateral lobe with a shallow concavity between them, the truncate base broadly attached between 2 diverging horns at the base of the column-foot; column light green, slender, semiterete, 2.5 mm long, with a broad, 1 mm long foot with marginal horns at the base.

ETYMOLOGY : From the Greek *herpestes* (ἑρπεστές), a creeping animal, or snake, in allusion to the character of the inflorescence.

TYPE: COSTA RICA: CARTAGO: epiphytic in cloud forest south of Cartago below Empalme, alt. ca. 1900 m, 14 Sept. 1979, C. Luer, J. Luer & K. S. Walter 4169 (HOLOTYPE: SEL); HEREDIA: near Vara Blanca, alt. ca. 1800 m, 15 Sept. 1979, C. Luer, J. Luer & K. S. Walter 4184 (SEL).

DISTRIBUTION : Costa Rica.

Although the flower of this species appears similar to that of *P. macroblepharis* from Peru, the very narrow leaves and creeping inflorescence amply identify *P. herpestes*. In addition, the thin lateral lobes of the long-fringed lip are unciform and curved forward.

#### ***Pleurothallis ibex* Luer, sp. nov.**

Planta pusilla caespitosa, caulibus secundariis brevissimis, foliis ellipticis brevipetiolatis, racemo laxo paucifloro folio longiore, floribus minutis successivis flavovirescentibus purpureo vittatis, ovario papilloso, sepalis patentibus ovatis acuminatis, petalis linearibus, labello trilobato bicalloso infra medium deflexo marginibus supra basim late erectis irregularibus lobis lateralibus anguste acuminatis.

Plant very small, epiphytic, shortly repent and ascending to caespitose; roots comparatively thick, flexuous. Secondary stems unifoliate, 2-3 mm long, contained within 1-2 thin, tubular sheaths. Leaf erect, coriaceous, elliptical, petiolate, 10-18 mm long including the 2-3 mm long petiole, 4-5 mm wide, the acute apex tridenticulate, the base cuneate into the sulcate petiole. Inflorescence a weak, erect, 2- to 4-flowered, loose raceme 2-3.5 cm long of successive, tiny, widespread flowers, the peduncle filiform, from the apex of the secondary stem; floral bract 0.5 mm long; pedicel 2 mm long; ovary 1 mm long, densely papillose; dorsal sepal translucent yellowish white, edged and veined in dark purple, erect, ovate, 3 mm long, 1 mm wide, the apex acuminate, acute; lateral sepals yellow, veined in purple, ovate, curved, recurved, acute, 3 mm long, 1 mm wide, connate basally for 1 mm, the surfaces minutely, lightly verrucose; petals red-purple, linear, acute, 2.5 mm long, 0.2 mm wide; lip white dotted with purple, oblong-3-lobed, 1 mm long, 2 mm wide spread, the apex terminated by a recurved, acuminate tail, the

lateral lobes near the middle, widely spread, narrowly acuminate, the disc with a pair of minute calli below the apex, deflexed below the middle with broad, erect, irregular margins, the base hinged to the column-foot; column purple, 1.5 mm long, cucullate, slender below the middle, with an obsolescent foot.

ETYMOLOGY: From the Latin *ibex*, "a wild goat," in allusion to the three lobes of the lip that resemble the horns and beard of a goat.

TYPE: *ECUADOR*: IMBABURA: epiphytic in cloud forest near the edge of the paramo west of Otovalo, alt. ca. 3000 m. 17 Feb. 1978, C. Luer, J. Luer & A. Hirtz 2597 (HOLOTYPE: SEL).

DISTRIBUTION : Western Ecuador.

The tiny flowers of this very small species are spectacular when examined through a strong lens. The colorfully striped sepals and petals are gracefully spread while the three-pronged lip is held closely beneath the purple column.

#### *Pleurothallis janetiae* Luer, sp. nov.

Species haec *P. guttatae* Luer affinis sed habitu et flore grandiore, pedunculo ascendenti, petalis infra medium papillosis et labello obscure trilobato differt.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems purple, slender, unifoliate, 1.5-2.5 cm long, enclosed by 2 thin, tubular, ribbed sheaths. Leaf erect, coriaceous, petiolate, elliptical, 6-9.5 cm long including the 1-3 cm long petiole, 17-23 mm wide, the subacute to obtuse apex tridenticulate, the base cuneate into the slender, purple petiole. Inflorescence a weak, ascending, few (2-3)-flowered raceme, 8-10 cm long including the peduncle, of relatively large, drooping, successive flowers, the peduncle filiform, from a node on the secondary stem; floral bract thin, 3 mm long; pedicel 10-12 mm long; ovary green, 3 mm long; sepals translucent yellow, suffused and lightly spotted with rose, glabrous, the dorsal sepal ovate, concave, subacute, 13-18 mm long, 10-11 mm wide, the lateral sepals connate the full length into a bicarinate synsepal similar to the dorsal sepal, 15-18 mm long, 9 mm wide; petals yellow marked with brown, elliptical, 13 mm long, 5 mm wide, minutely serrate above the middle, the apex acuminate-acute, papillose below the middle; lip yellow marked with brown, bright yellow toward the thickened base, ovate to obscurely 3-lobed, 12 mm long, 6 mm wide, the margins of the broadly rounded sides lacerate to above the middle, the acute apical lobe minutely serrate; column white suffused with pink, 5 mm long, broadly winged, the column-foot obsolescent.

ETYMOLOGY: Named in honor of Janet Kuhn of Easton, Ct. who discovered and cultivated this species.

TYPE: *COSTA RICA*: PUNTARENAS: epiphytic in cloud forest above Las Cruces, July 1977, cultivated at J & L Orchids, Easton, Ct., flowered in cult. 8 Nov. 1977, C. Luer 2123 (HOLOTYPE: SEL).

DISTRIBUTION: Costa Rica.

This very attractive little species is closely related to the Panamanian

*Pleurothallis guttata*, but the former may be distinguished by the larger habit and larger flowers borne by an ascending instead of descending peduncle. The delicate, translucent flower dangles from the weak raceme. The serrated petals are papillose below the middle and the lip is obscurely three-lobed with rounded, lacerate lateral lobes.

***Pleurothallis lamia* Luer, sp. nov.**

Species haec grandis *P. sicariae* Lindl. affinitatibusque similis sed statura majore, lobis lateralibus labelli erectis subacutis, lobo antico integro et disco cum callis hippocrepiformibus differt.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect to suberect, unifoliate, sharply triquetrous, carinate dorsally, 10-45 cm long, 8-18 mm wide at the junction with the leaf, with 2-3 close, basal sheaths. Leaf erect, coriaceous, elliptical, 8-16 cm long, 2-5 cm wide, the apex acute, tridenticulate, the base obliquely decurrent on the stem for 0.5-2.5 cm, the basal margins of the leaf continuous with the wings of the secondary stem. Inflorescence racemose, 1-3 few-flowered (4-6 flowers) racemes ca. 2.5 cm long including the peduncle, from a spathe ca. 1 cm long at the apex of the secondary stem above the base of the leaf; floral bract brown, tubular, 5 mm long; pedicel green, 3 mm long; ovary pubescent, 2 mm long; sepals fleshy, striped and marked with purple, pubescent externally, lightly verrucose within, the dorsal sepal obovate, obtuse, 8.5 mm long, 3 mm wide, the lateral sepals connate into a transversely ovate synsepal 5 mm long, 6 mm wide, the apex broadly obtuse to rounded, the sides revolute, the base concave and connate to the dorsal sepal for 1 mm; petals orange, edged in purple, ovate, indistinctly 3-lobed, 3 mm long, 2 mm wide, narrowed above the middle with obscure lateral lobes below the middle, the margins coarsely erose; lip dark yellow, marked with purple-brown, thick, elliptical, 3-lobed, 3 mm long, 2.25 mm wide, the apex rounded, entire, the lateral lobes above the base, small, erect, irregular, subacute, the truncate base minutely bi-auriculate, the disc with a thick pair of curved, obliquely "U-shaped," irregularly margined calli near the middle; column dark yellow, 3.5 mm long, toothed at the apex, with a thick foot equally long.

ETYMOLOGY: From the Greek *lamia*, "a fabled monster, or bugbear," in allusion to the appearance of the flowers.

TYPE: *ECUADOR*: AZUAY: epiphytic in old trees near Lago Zorrocucho, 20 km west of Cuenca, alt. 3000 m, 18 July 1977, C. Luer, J. Luer & G. Luer 1744 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This large species is related to *P. sicaria*, but differs in the large size as well as the possession of a pair of horseshoe-shaped calli on the lip.

***Pleurothallis litotes* Luer, sp. nov.**

Species haec *Pleurothallidis xanthochlorae* Rchb. f. et *P. cymbisepalae* Schltr. affinis sed labello laevi profunde cordato et profunde concavo obtuse apiculato differt.

Plant medium to large, epiphytic to terrestrial, shortly repent, the rhi-

zome 0.5-2 cm between secondary stems, roots slender, fasciculate. Secondary stems slender, terete, unifoliate, 7-37 cm long, with a close, tubular sheath near or a little above the middle, another below the middle or above the base plus another at the base. Leaf erect, coriaceous, narrowly ovate, 7-17 cm long, 1.5-6.5 cm wide, the apex acuminate, acute, tridenticulate, the base cuneate to rounded, sessile. Inflorescence racemose, 1-6 slender, densely many-flowered racemes 8-17 cm long, flowering nearly from the base, from a fugacious spathe 1.5-2.2 cm long at the base of the leaf; floral bract thin, 2.5-4 mm long, pedicel 3-6 mm long, subappressed to the rachis; ovary 1.5-2.5 mm long, sepals and petals glabrous, dark red to rose or white, the dorsal sepal ovate, concave, acuminate, acute, 3-4 mm long, 1.75-2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, concave, subacute synsepal, 3-3.5 mm long, 2.5-3.25 mm wide, the petals narrowly oblong-elliptical, acute, 2-4 mm long, 0.5-1 mm wide, 1-veined; lip green, ovate-cordate, concave, 1.5-2.5 mm long, 1.25-2 mm wide, the subacute apex apiculate, the base with a transverse thickening, broadly fixed to the column-foot; column stout, 1-1.5 mm long, the foot obsolescent.

ETYMOLOGY. From the Greek *litotes* (λιτοτες), "simplicity," in allusion to the simple flower parts and habit.

TYPE: *ECUADOR*: CARCHI: epiphytic in cloud forest above Maldonado, alt. ca. 2000 m, 21 Feb. 1978, C. Luer, J. Luer & A. Hirtz 2700 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: CARCHI: epiphytic in cloud forest above El Carmelo, alt. ca. 3000 m, 23 Feb. 1978, C. Luer & A. Hirtz 2747 (SEL); AZUAY: epiphytic and terrestrial in and around low shrubs near km 80 south of Cuenca, alt. ca. 3000 m, 17 July 1977, C. Luer, J. Luer & G. Luer 1821 (SEL); MORONA-SANTIAGO: terrestrial on the road embankment east of Paute toward the dam site, alt. ca. 2000 m, 10 July 1977, C. Luer, J. Luer, A. Andretta & G. Luer 1761 (SEL); *COLOMBIA*: CAUCA: cloud forest above Monchique, alt. 2750 m, 26 July 1978, C. Luer, J. Luer, J. Kuhn & R. Escobar 2997 (SEL).

DISTRIBUTION: Ecuador and Colombia.

Probably previously identified as *Pleurothallis xanthochlora* or *P. cymbisepala*, *P. litotes* differs from them in the rose to white flowers, but always, to my knowledge, with a bright green lip. The cordate lip is deeply concave and smooth with the apex apiculate. This species is variable in size of habit and flowers in its range from southern Colombia to southern Ecuador.

***Pleurothallis madisonii* Luer, sp. nov.**

Species haec *P. decurrentis* Poepp. & Endl. similis sed floribus minoribus, petalis obovatis apicibus rotundatis serrulatis apiculatis et labello obovato lobis lateralibus supra medium serrulatis differt.

Plant large, epiphytic, shortly repent to caespitose; rhizome thick, ca. 1 cm between secondary stems; roots coarse, flexuous. Secondary stems erect, slender, terete below, lightly compressed above, to 28 cm long (or longer), unifoliate, with a close tubular sheath 4 cm above the base and another at the base. Leaf erect, coriaceous, elliptical, 14.5 cm long, 9 cm wide, the apex

shortly acuminate, acute, tridenticulate, the base rounded, decurrent on the stem for 2.5 cm. Inflorescence a 5 cm long, congested, 8-flowered raceme (in the only specimen examined), the peduncle subnil, from a spathe 1 cm long at the apex of the embedded secondary stem, emerging 2.5 cm above the base of the leaf; floral bracts infundibular, oblique, acute, 4 mm long, concealing the 2 mm long pedicel; ovary 2.5 mm long; flowers fleshy, glabrous, not wide-spreading; dorsal sepal yellow, narrowly obovate, 9.5 mm long, 2.5 mm wide, connate basally for 1 mm to the lateral sepals, thickened and convex above the middle, subverrucose externally, the apex rounded, apiculate; lateral sepals maroon, connate to within 2 mm of the apices into a bifid, obovate, bicarinate lamina 9.5 mm long, 5.5 mm wide, thickened above the middle, the apices subacute, apiculate; petals obovate, oblique, 3 mm long, 1.5 mm wide, minutely verrucose within, serrulate above the middle, the apex rounded, apiculate, with a curved, serrated carina along the apical margin on the inner surface; lip obovate, indistinctly 3-(5-)lobed, 4.5 mm long, 3 mm spread, the apex more or less rounded, serrulate, shortly acuminate, the lateral lobes above the middle erect, rounded, serrulate, thickened basally, with a longitudinal callus between, the disc thickened below the middle between erect, rounded, serrulate margins, the narrowed base subunguiculate, concave, minutely biauriculate, hinged to the column-foot; column 3 mm long, broadly winged above the middle, the foot thick, 1.5 mm long.

ETYMOLOGY: Named in honor of Michael T. Madison of the Marie Selby Botanical Gardens, Sarasota, Florida, who discovered this species.

TYPE: *ECUADOR*: *CARCHI*: epiphytic in wet forest in the vicinity of Maldonado, alt. 1600 m, 13 April 1977, *M. Madison 3922* (HOLOTYPE: SEL).

DISTRIBUTION: Northwestern Ecuador.

The illustration and description were drawn from a single stem, leaf, and inflorescence with two flowers preserved in alcohol and formalin.

#### ***Pleurothallis morenoi* Luer, sp. nov.**

Species haec *P. recurvae* Lindl. affinis sed habitu minore, floribus paucis guttatis et labello verrucoso notabilis.

Plant small, epiphytic, repent, the primary stems 7-13 mm long, usually concealed by 2 tubular sheaths; roots slender, flexuous, produced singly from nodes. Secondary stems abbreviated, 2-4 mm long, enclosed by 2 white, imbricating, tubular sheaths, unifoliate. Leaf thick, prostrate, commonly distichously arranged and overlapping, green suffused with purple, especially beneath, ovate, 12-17 mm long, 10-14 mm wide, the obtuse apex retuse with an apiculum in the sinus, the rounded base sessile. Inflorescence a solitary, gaping flower or a simultaneously 2-flowered raceme, the peduncle up to 5 mm long, from a 1 mm long spathe at the base of the leaf; floral bract 1 mm long; pedicel 1-1.5 mm long; ovary 1.5 mm long, purple, glabrous; sepals fleshy, rose diffusely covered within by minutely pubescent, raised spots, glabrous externally, the dorsal sepal recurved, ovate, obtuse, 8 mm long, 4.5 mm wide, connate 1 mm at the base to the lateral sepals, the lateral sepals connate (but easily separable) to the apices to form a broadly obovate to suborbicular lamina, 8 mm long, 9 mm wide; petals translucent, dotted with purple, ovate, 2 mm long, 1.5 mm wide, minutely

erose above the middle, the apex subacute; lip purple, thick elliptical, 3 mm long, 1.5 mm wide, verrucose with denticulate margins above the middle to the rounded apex, with erect, obtuse, marginal angles below the middle, the truncate base biauriculate, the disc with oblique calli extending forward from the lateral angles; column stout, longitudinally winged, denticulate at the apex, 2 mm long, with a concave foot equally long.

ETYMOLOGY: Named in honor of Dr. Luis Moreno of Santa Cruz, Bolivia, who discovered this species.

TYPE: *BOLIVIA*: SANTA CRUZ: without specific locality, L. Moreno s.n. cultivated at SEL. flowered in cult. 25 Sept. 1979, *C. Luer 4285* (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Bolivia.

This species is related to *P. recurva*, but *P. morenoi* may be distinguished by the smaller habit, fewer, externally glabrous flowers with pubescent, purple spots within, and a verrucose lip. A pair of flowers practically covers the little, prostrate leaf.

*Pleurothallis pelex* Luer, sp. nov.

*Pleurothallidis archidonae* Lindl. similis sed foliis angustioribus base rotundatis, floribus flavis solitariis successivis longipedicellatis et callis loborum basaliu[m] labelli brevioribus differt.

Plant medium in size to large, epiphytic, caespitose, roots fine, densely fasciculate. Secondary stems erect, slender, unifoliate, 13-25 cm long, with a close, thin, tubular sheath on the lower third and another at the base. Leaf erect, coriaceous, very narrowly ovate, 10-17 cm long, 12-18 mm wide, the acute apex tridenticulate, the base rounded to subcordate, sessile. Inflorescence a crowded fascicle of long-pedicellate, solitary, successive flowers, from the base of the leaf, the spathe narrow, 1.5-2.5 cm long, fugacious; peduncles ca. 1 cm long, floral bracts loose, 10-15 mm long, pedicels filiform, arching, 2-3 cm long; ovary 6-8 mm long, flowers glabrous, yellow, non-resupinate; middle sepal elliptical-ovate, acute, 11.5 mm long, 5 mm wide, 5-veined, lateral sepals connate completely into a deeply concave, hood-shaped synsepal, ovate, subacute, 11 mm long, 8 mm wide unspread; petals elliptical, oblique, acute, 9 mm long, 3.5 mm wide, 5-veined, directed forward together; lip suborbicular, 3.5 mm long, 4 mm wide, including a pair of obtuse basal lobes 1.5 mm long nearly surrounding the column, with an erect, obtuse, cone-shaped callus on each basal lobe to either side of the column, the apex rounded, the base acutely deflexed to unite with the column foot; column 2 mm long, with a short, thick foot.

ETYMOLOGY: From the Greek *pelex* (πέλεξ), "a helmet," in reference to the shape of the uppermost synsepal.

TYPE: *ECUADOR*: NAPO: epiphytic in cloud forest ca. 20 km north of Baeza, alt. ca. 1500 m, 10 Aug. 1978, *C. Luer, J. Luer, A. Andretta & A. Hirtz 3183* (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

The yellow flowers of *P. pelex* are extremely similar to those of *P. archidonae*, but the former are produced singly on long pedicels. The purple-

spotted flowers of *P. archidonae* are produced in short, 2-flowered racemes. The calli of the lip of *P. pelex* are not as pronounced as they are in *P. archidonae*. The ranges of the two species will probably prove to overlap.

***Pleurothallis perryi* Luer, sp. nov.**

Species haec *P. cardiostolae* Rchb. f. et affinitatibus similis sed folio maturo cordato verticali plano, spatha erecta, flore singulari successivo non-resupinato, sepalis petalisque longiciliatis, sepalis transverse ovatis obtusis pellucidis flavis roseo multinervis, petalis spatulatis obtusis, labello transverse ovato apice rotundato differt.

Plant medium-sized, epiphytic, caespitose; roots fine, flexuous. Secondary stems erect, slender, monophyllous, the immature stems 3-4 cm long, the mature stems to 28 cm long, with a close, tubular, sheath below the middle and 1-2 others at the base; immature leaf erect, petiolate, narrowly elliptical, 10-14 cm long, 2.5-3 cm wide, acute at the apex, the base narrowly cuneate into a channeled petiole 1.5-2 cm long; mature leaf flat, deflexed to a vertical position, ovate, 9-10.5 cm long, 4-4.8 cm wide, the apex acuminate, acute, tridenticulate, the base deeply cordate, sessile. Inflorescence a succession of solitary, inverted flowers, occurring 1-2 at a time, from an erect spathe 14-15 mm long at the base of the leaf; peduncles ca. 3 mm long; pedicels curved, 10 mm long; floral bract 5 mm long; ovary light green, 4 mm long; sepals translucent yellow, veined in rose, the margins ciliate with long, white hairs, the middle sepal transversely ovate, obtuse, 6.5-8 mm long, 6.5-8 mm wide, 9-veined, the lateral sepals connate into a transversely elliptic lamina 7-8 mm long, 7.5-9 mm wide, 12-veined; petals rose, covered with long white hairs along the periphery and with short red hairs centrally, obovate-spatulate, obtuse, 4-4.5 mm long, 2.75-3 mm wide, 3-veined; lip white basally, pale yellow-brown toward the apex, transversely ovate, 3-3.5 mm long, 3.75-4.5 mm wide, the apex rounded, minutely apiculate, the base broadly concave with acute, retrorse, basal angles, with a small, elevated glenion; column red-purple, 1 mm long, 2.5 mm wide, with a foot 1 mm long.

ETYMOLOGY: Named in honor of Richard Perry, M.D. of St. Petersburg, Florida, co-discoverer of this species.

TYPE: *ECUADOR*: EL ORO: epiphytic in orange tree, 10 km west of Piñas along the new road to Machala, alt. 900 m, 6 Aug. 1979, C. H. Dodson, H. & P. Morgan, A. & R. Perry 8634 (HOLOTYPE: SEL); C. Luer illust. 4125.

DISTRIBUTION: Southern Ecuador.

This attractive species is related to *P. cardiostola*, but may be distinguished by the flat, deflexed vertical leaves, and pastel colored flowers with ciliated sepals and petals.

***Pleurothallis pidax* Luer, sp. nov.**

Planta mediocris vel grandis caespitosa, caulibus robustis teretibus vagina grandi laxa, folio grandi coriaceo elliptico vel suborbiculari, inflorescentia pauci- vel multiracemosa, racemis multifloris folio brevioribus, floribus parvis sepalis libris breviter ciliatis lateralibus gibbosis, petalis oblongis apice truncatis crassis, labello oblongo-pandurato ecalloso apice

rotundato, columna late alata.

Plant medium to large, epiphytic, caespitose; roots slender, flexuous. Secondary stems stout, terete, unifoliate, 10-25 cm long, with a large, loose, tubular sheath below the middle and 1-2 others at the base. Leaf erect, coriaceous, elliptical to subobicular, the obtuse to rounded apex minutely retuse and apiculate, the base cuneate into a channeled petiole 2-6 cm long, the blade 6-30 cm long, 2.5-20 cm wide. Inflorescence racemose, up to 18 densely many-flowered, distichous racemes 8-22 cm long, the flowers small, pale yellow-green, infrequently rose, the peduncle slender, from a spathe ca. 1.5 cm long at the base of the leaf-petiole; floral bract thin, 1.5-2 mm long; pedicel and ovary each 1.5-2 mm long, curved; dorsal sepal free, ovate, obtuse, 4-5 mm long, 2 mm wide, minutely ciliate; lateral sepals oblong, oblique, 4 mm long, 1.5 mm wide, connate at the base to form a mentum with the column-foot, ciliate, carinate externally; petals translucent with 3 close veins, oblong-obovate, 2.5-3.25 mm long, 1.5 mm wide, the apex truncate, thickened, indistinctly toothed; lip oblong-pandurate, arcuate, 2-2.5 mm long, 0.75-1 mm wide, the apex rounded, slightly dilated below the middle, the base truncate, the disc flat, 3-veined, yellow to light purple, edged in dark purple; column broadly winged, 2.5 mm long, with a short foot.

ETYMOLOGY: From the Greek *pidax* (πίδαξ), "a fountain," in allusion to the sprays of flowers.

TYPE: *ECUADOR*: LOS RIOS: epiphytic in rain forest at Río Palenque Science Center, Km. 47 south of Santo Domingo, alt. 200 m, March 1976, cultivated at SEL, greenhouse acc. no. 91-76-51, flowered in cult. Jan. 1978, *C. Luer* 2277 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: COTOPAXI: cloud forest near km 40 between Quevedo and Pilalo, alt. ca. 700 m, March 1975, *C. Luer* & *R. Kent* 1092 (SEL); above El Corazon, alt. ca. 1500 m, 17 Feb. 1979, flowers rose, *C. Luer*, *J. Luer* & *A. Hirtz* 3994 (SEL); below El Corazon, alt. 1200 m, 18 Feb. 1979, flowers yellow, *C. Luer*, *J. Luer* & *A. Hirtz* 4029, 4030 (SEL); LOS RIOS: Río Palenque Science Center, 2 March 1974, *C. H. Dodson* 5242 (SEL) and 7 March 1975, *C. H. Dodson* 5856 (SEL); PINCHINCHA: 20 km east of Santo Domingo, alt. 900 m, Jan. 1979, *L. Besse*, *K. Tan* & *J. Halton* 159 (SEL, QCA).

DISTRIBUTION: Western Ecuador.

Closely related to the widespread and variable *Pleurothallis gelida* Lindl. and the West Indian *P. univaginata* Lindl., *P. pidax* is nearly sympatric with *P. gelida* on the western slopes of the Andes of central Ecuador where *P. gelida* usually occurs at higher elevations. From *P. gelida* this species may be distinguished by usually more numerous racemes usually shorter than the leaves, the smaller flowers, the shortly ciliate sepals, the petals thickened at the apex, the ecallose lip and the broadly winged column. From *P. univaginata* it may be separated by the more numerous racemes, the smaller flowers, the ciliated sepals, the petals thickened at the apex, the non-unguiculate lip and the broadly winged column.

**Pleurothallis polysticta** Luer, sp. nov.

Species haec ab *P. pallida* Luer at affinitatibus statura parva, foliis angustis, racemo paucifloro, floribus virescentibus roseo-maculatis, sepalis late ovatis acuminatis, petalis integris et labello late cordato apiculato angulis basalibus erectis obtusis disco bipapillato differt.

Plant small, epiphytic, caespitose; roots fine, flexuous. Secondary stems slender, terete, unifoliate, 3-6 cm long, with a close, tubular sheath above the base and another at the base. Leaf erect, coriaceous, narrowly elliptical-ovate, 4-5.5 cm long, 9-13 mm wide, the acute apex tridentate, the cuneate base sessile. Inflorescence a weak, suberect, few-flowered (3-4) raceme ca. 7 cm long including the filiform peduncle, from a 5-9 mm long spathe at the base of the leaf; floral bract 2 mm long; pedicel 5-11 mm long; ovary 2.5 mm long; flowers greenish white with light purple spots; dorsal sepal broadly ovate, concave, acuminate, acute, 6 mm long, 4 mm wide; lateral sepals connate into an ovate, acute lamina 6 mm long, 5 mm wide; petals widespread, cream with purple spots, very narrowly ovate to linear, acute, entire, 6.5 mm long, 0.75 mm wide; lip green with purple dots, broadly cordate-ovate, 4 mm long, 3.75 mm wide, the obtuse to rounded apex shortly apiculate, the basal angles erect, obtuse, the disc with a small pair of papillae in the center; column stout, 1 mm long, 2 mm wide, with a short foot.

ETYMOLOGY: From the Greek *poly-* (πολυ-), "many-," and *stictos* (στικτος), "dotted," in reference to the multiple rose-purple spots on the flowers.

TYPE: PANAMA: DARIEN: Cerro Pirre, July 1977, R. L. Dressler s.n., cultivated at SEL, greenhouse acc. no. 77-2600B, flowered in cult. 27 March 1978, C. Luer 2799 (HOLOTYPE: SEL).

DISTRIBUTION : Eastern Panama.

This delicate little species differs from *P. pallida* and its host of relatives in the narrow leaves, the few-flowered raceme of translucent greenish white, rose-spotted flowers with entire petals and a broadly cordate, apiculate lip with a tiny pair of calli in the center of the disc.

**Pleurothallis portillae** Luer, sp. nov.

Planta mediocris epiphytica subrosulata, caulibus secundariis gracilibus teretibus horizontalibus, foliis dependentibus anguste linearibus marginibus revolutis basi cordatis, flore solitario successivo rubiginoso, sepalo dorsali obovato subrotundato, synsepalo ovato obtuso, petalis lineari-ovatis, labello crasso triangulato obtuso glenio grandi.

Plant medium in size, epiphytic, caespitose to shortly repent, more or less rosetted; roots slender, flexuous. Secondary stems suberect to horizontal, slender, terete, unifoliate, 11-21 cm long, with a close tubular sheath below the middle and 1-2 others at the base. Leaf dependent, coriaceous, narrowly linear, the sides revolute, 12-15 cm long, 1-1.1 cm wide, the acute apex tridentate, the base cordate, sessile. Inflorescence a fascicle of single, successive flowers from the base of the leaf, with a fugacious spathe 9-10 mm long; peduncles 1-2 mm long; floral bract 6-7 mm long; pedicel 7-8 mm long; ovary 3 mm long, brown with black dots; sepals gaping, red-brown, microscopically pubescent within, the dorsal sepal obovate, obtuse to

rounded at the apex, 6.5 mm long, 3.5 mm wide, the lateral sepals united into an ovate, obtuse synsepal 4.5 mm long, 4 mm wide; petals red-brown, linear ovate, the apex narrowly acute, 5 mm long, 0.5-1 mm wide; lip red-purple, thick, triangular, 2.25 mm long, 1.6 mm wide, the apex rounded, the disc with a proportionately large glenion, the base deflexed, with a thin, articulating strap; column white, stout, 2 mm long, 1.75 mm thick, the foot shortly spiculate.

**ETYMOLOGY:** Named in honor of Mario Portilla of Cuenca, Ecuador, who discovered this species.

**TYPE:** *ECUADOR: ZAMORA-CHINCHIPE:* epiphytic in cloud forest along the river below the pass east of Loja, alt. ca. 2500 m, 11 Feb. 1978, C. Luer, J. Luer & M. Portilla 2529 (HOLOTYPE: SEL).

**DISTRIBUTION:** Southern Ecuador.

This species is similar to *Pleurothallis lemniscifolia* Luer, but the narrow leaves are neither twisted nor as long. The small flowers of *P. portillae* are red-brown with a thick, triangular lip.

***Pleurothallis radula* Luer, sp. nov.**

Planta mediocris vel grandis epiphytica vel terrestris caespitosa caulibus secundariis erectis gracilibus teretibus, folio deflexo vel horizontali anguste ovato-cordato, spatha erecta, flore solitario successivo luteo, sepalo dorsali synsepaloque ovato acuto petalis reflexis ellipticis acutis serratis, labello crasso ovato subacuto valde verrucoso.

Plant medium in size to large, caespitose, epiphytic to terrestrial; roots slender, flexuous. Secondary stems erect, slender, terete, unifoliate, 6-50 cm long, with a long, close, tubular sheath below the middle and 2 others near the base. Mature leaf deflexed to more or less horizontal, coriaceous, narrowly ovate, 8-19 cm long, 2.8-6.2 cm wide, the apex acute, tridenticulate, the base sessile, deeply cordate; immature leaf erect, narrowly elliptical-ovate, to 8 cm long, 2.5 cm wide, acuminate, the base cuneate, shortly petiolate. Inflorescence a single, successive, yellow flower produced from an erect spathe 14-27 mm long, concealing peduncle, pedicel and floral bract, from the base of the leaf; floral bract 5 mm long; pedicel ca. 15 mm long; ovary 4 mm long; dorsal sepal erect, ovate, acute, 14 mm long, 6.4 mm wide, 3-veined, the margins revolute; lateral sepals connate into an ovate, acute lamina 14 mm long, 8.5 mm long, 2 mm wide, the margins serrate; lip thick, ovate, 5 mm long, 3 mm wide, subacute, the upper surface diffusely and markedly verrucose, the glenion well demarcated; column stout, 2 mm long, 2 mm wide with a foot 2 mm long.

**ETYMOLOGY:** From the Latin *radula*, "a rasp," in allusion to the markedly verrucose lip.

**TYPE:** *COSTA RICA: CARTAGO:* terrestrial in cloud forest near San Cristobal, alt. ca. 1900 m, 22 Sept 1979, C. Luer, J. Luer & K. S. Walter 4251 (HOLOTYPE: SEL); without locality, L. Glicenstein s.n., cult. by P. Jesup, Bristol, Ct., flowered in cult. 1 Dec. 1977, C. Luer 2247 (SEL).

DISTRIBUTION : Costa Rica.

This species is characterized by the deflexed, narrowly cordate leaf, an erect spathe, and a succession of widely spread, yellow flowers with reflexed, serrated petals and an extremely verrucose lip.

*Pleurothallis regalis* Luer, sp. nov. (Selbyana 3:237, Figure 219).

Species haec ab *P. acuminata* (HBK) Lindl. petalis et labello denticulatis differt.

See Selbyana 3:236 for English description.

ETYMOLOGY: From the Latin *regalis*, "regal," in allusion to the royal colors (gold and purple) of the flowers.

TYPE: *ECUADOR*: COTOPAXI: epiphytic in cloud forest between Angamarca and El Corazon, alt. ca. 2000 m, 17 Feb. 1979, C. Luer, J. Luer & A. Hirtz 3998 (HOLOTYPE: SEL).

OTHER MATERIAL EXAMINED: *ECUADOR*: COTOPAXI: epiphytic between Quevedo and Latacunga, Nov. 1974, G. Kennedy s.n., greenhouse acc. no. 30-74-184, flowered in cult. 9 June 1976, C. Luer 683 (SEL).

DISTRIBUTION: Western Ecuador.

*Pleurothallis regalis* was misidentified as the widespread *P. acuminata* in Selbyana 3:236. It differs from the latter not only in the thinner leaves and flower parts (as readily seen in dried herbarium specimens) but also in the minutely denticulate margins of the petals and lip.

*Pleurothallis ripleyi* Luer, sp. nov.

Planta grandis caespitosa, caulibus secundariis erectis elatis teretibus ad apicem arcuatis, foliis anguste ovatis vel linearibus declinatis marginibus revolutis base cordatis, spatha magna reclinata, flore singulari successivi nutanti flavovirescenti rebropunctato glabro, sepalo synsepaloque ovato obtuso concavo, petalis oblongis acutis subserratis, labello triangulari apice obtuso angulis basalibus rotundatis glenio discum superanti, columna latissima.

Plant large, epiphytic, caespitose; roots slender, fasciculate. Secondary stems unifoliate, slender terete, erect, arching toward the apex, 20-38 cm long, with a close, brown, tubular sheath below the middle and another at the base. Leaf coriaceous, declining, descending, arching the normally dorsal surface facing inward and downward, very narrowly ovate to linear, 12-16 cm long, about 1 cm wide with revolute margins, 1.5-1.8 cm wide spread out, the apex acute, acuminate, tridenticulate, the base cordate, sessile. Inflorescence a succession of single, nutant flowers produced from a 15-23 mm long, reclining spathe at the base of the leaf; floral bract ca. 5 mm long; pedicel ca. 7 mm long; ovary 7-8 mm long, olive-green with black dots; sepals not widely spread, deeply concave, glabrous, yellow-green with red dots concentrated near the primary veins, the dorsal sepal ovate, obtuse, 8 mm long, 5 mm wide, the lateral sepals connate into an ovate, obtuse, syn-

sepal 8 mm long, 7 mm wide unspread; petals light red-brown, oblong, 7.5 mm long, 2 mm wide, acute, the margins subserrate; lip rose toward the base, orange toward the apex, triangular-ovate, 4 mm long, 4 mm wide, the apex obtuse, the basal angles rounded, the disc with a shallow cleft, the glenion elevated on a promontory above the deflexed base; column white, stout, 2 mm long, 2.5 mm wide, the foot nearly 2 mm long, red-papillose.

ETYMOLOGY: Named in honor of Harold Ripley of San Francisco, California, who discovered and cultivates this species.

TYPE: *ECUADOR*: Z AMORA - CHINCHIPE? : without definite locality, May 1976, collected by H. Ripley, s.n., cultivated in San Francisco, California, flowered in cult. 15 Dec. 1978, *C. Luer 3642* (HOLOTYPE: SEL).

DISTRIBUTION: Ecuador.

Apparently unique in *Pleurothallis*, the apices of the long secondary stems of this species gently bend or twist to bear their slender, curving, descending leaves in such a manner that the normally upper surface of each leaf faces downward and inward. Consequently, the more or less pendent flowers are borne from the "under surface" of the leaves.

#### *Pleurothallis schizopogon* Luer, sp. nov.

Planta parva repens ascendens, caulibus secundariis brevibus unifoliatis, foliis coriaceis anguste obovatis, pedunculo filiformi, racemo paucifloro quam foliis longiore, floribus successivis pallidis interdum rubro suffusis vittatisve, sepalo dorsali ovato caudato, synsepalo dense villosa bifurcato apicibus acuminatis, petalis angustissimis, labello 3-lobato lobis lateralibus rotundatis erectis lobo antico muricato late ovato truncato infra apicem lamellato.

Plant small, epiphytic, repent, ascending, the rhizome 5-20 mm long between secondary stems, rooting at nodes. Secondary stems unifoliate, slender, 10-12 mm long, mostly concealed by 1-2 loose, tubular sheaths. Leaf suberect, coriaceous, narrowly obovate, 3.5-6.5 cm long, 9-13 mm wide, the obtuse to rounded apex tridenticulate, the base narrowly cuneate into an indistinct, channeled petiole. Inflorescence a loose, successively few (3-4)-flowered raceme 5-8 cm long including the peduncle, the peduncle filiform, from a node low on the secondary stem; floral bract 2 mm long; pedicel 3-6 mm long; ovary 2-3 mm long, densely spiculate; sepals yellow to white, or translucent, striped and suffused with red, the dorsal sepal ovate, concave, tricarinate, 23-26 mm long, 7 mm wide, the apex long-acuminate, the lateral sepals connate 9-10 mm into an ovate, bifid synsepal covered by long to short trichomes internally, bicarinate externally, with the sides revolute, 24-27 mm long, 6 mm wide spread, the apices narrowly acuminate; petals widely spread, very narrowly ovate, 21 mm long, 2 mm wide, the margins microscopically irregular, the apex gradually acuminate into a slender tail; lip yellow to red, subquadrate-3-lobed to cordate, 3 mm long, 3 mm wide unspread, deflexed basally and flanked by a pair of erect, rounded lateral lobes, the apical lobe broadly ovate, shortly muriculate, the apex more or less truncate with a keel projecting beneath; column 3 mm long, the stigma transverse, the foot short.

ETYMOLOGY: From the Greek *schizo-* (σχίζω-), "cleft," and *pogon* (πωγων), "beard," in allusion to the appearance of the hairy, bifid synsepal.

TYPE: *ECUADOR*: LOJA: epiphytic in cloud forest near the pass north of Loja, alt. ca. 3000 m, 12 Feb. 1978, C. Luer, J. Luer & M. Portilla 2561 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: Loja: same area, C. Luer, J. Luer & M. Portilla 2562, flowers white, (SEL): Azuay: Near km 75 south of Cuenca, alt. 2800 m, 20 May 1958, C. H. Dodson 256 (SEL).

DISTRIBUTION: Southern Ecuador.

The fragile, translucent flowers are sometimes delicately veined in red with hairs of the same color covering the combined lateral sepals. Photographs of this species from the province of Zamora-Chinchiipe have been seen.

***Pleurothallis stelidilabia* Luer, sp. nov.**

Herba mediocris caespitosa caulibus secundariis erectis gracilibus teretibus, folio deflexo plano crasso rigido ovato-cordato breviter acuminato sessili, spatha erecta, flore singulari successivo albescenti non-resupinato, sepalo mediano ovato obtuso, synsepalo profunde concavo, petalis oblongis acutis intus minute verrucosis, labello parvo late cordato obtuso disco sulcato.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems erect, unfoliate, slender, terete, 10-17 cm tall, with a close, brown, tubular sheath below the middle and another at the base. Leaf deflexed, flat, thick, rigidly coriaceous, ovate-elliptical, 5.5-6.5 cm long, 2.5-3.7 cm wide, the apex shortly acuminate, tridenticulate, the base deeply cordate, sessile. Inflorescence a fascicle of successive, single, yellowish white, non-resupinate flowers borne from an erect, conduplicate spathe 11-13 mm long, 5-6 mm wide, from the base of the leaf; peduncles 6-7 mm long, floral bract white, inflated, ca. 5 mm long; pedicel 4 mm long; ovary white, cellular-glandular, 2-3 mm long; sepals not wide-spreading, glabrous without, microscopically pubescent within, the middle sepal ovate, obtuse, 6 mm long, 4.5 mm wide, the lateral sepals connate into a deeply concave, obtuse, cucullate synsepal, 7 mm long, 8 mm wide spread out; petals oblong, acute, 5 mm long, 2 mm wide, minutely verrucose within; lip yellowish white, cellular-glandular, broadly cordate, obtuse, 3 mm long, 3.5 mm wide, deflexed below the middle with erect, rounded margins, the disc sulcate between callous thickenings; column stout, 1.5 mm long, with a short foot.

ETYMOLOGY: Named for the similarity of the lip to those of the genus *Stelis* Sw.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest near Valladolid, alt. ca. 2000 m, July 1975, W. Teague, L. Figueroa & D. Welisch s.n., cult. by W. Teague in San Francisco, California, flowered in cult. 12 Dec. 1978, C. Luer 3635 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This species is characterized by the thick, flat, deflexed, cordate leaves, an erect spathe, and a small, globular, yellowish white, non-resupinate flower. The small lip hidden within appears similar to the basic pattern of the lip of the genus *Stelis*.

***Pleurothallis stevensii* Luer, sp. nov.**

Species haec *P. longipedicellatae* Ames & Schweinf. affinis sed racemis subdensifloris et floribus brevipedicellatis distinguitur.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems suberect to ascending, slender, 20-28 cm long, with a close, brown-spotted sheath below the middle, unifoliate. Leaf suberect, coriaceous, ovate, 11-17 cm long, 6-10 cm wide, the apex acuminate, acute, tridenticulate, the base rounded to shallowly cordate, sessile. Inflorescence racemose, 1-2 reclining, subdensely several (to 15)-flowered racemes 15-18 cm long including the peduncle 6-7 cm long, from a 2.5-3 cm long spathe at the base of the leaf; floral bracts and pedicels each 2-3 mm long; ovary 2-3 mm long; sepals glabrous, pale rose-brown, the dorsal sepal broadly ovate, obtuse, 5 mm long, 4 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, concave, obtuse synsepal, 4.5 mm long, 4.5 mm wide, 4-veined; petals yellow, elliptical, oblique, 4 mm long, 1.75 mm wide, the apex acuminate, acute, the margins crenate-erose; lip yellow, ovate-sagittate, 3 mm long, 2 mm wide, the apex subacute, thickened, the base broadly clawed below subacute, erect, basal angles, the disc with a low callus above the claw; column yellow, stout, 1.5 mm long and wide, with a short, thick foot.

ETYMOLOGY: Named in honor of Dr. Douglas Stevens, investigator of the flora of Central America, who discovered this species.

TYPE: COSTA RICA: ALAJUELA: epiphytic in cloud forest between San Ramon and Balsa, alt. 1100 m, 12 Sept. 1979, *D. Stevens 14253* (HOLOTYPE: SEL; ISOTYPE: MO), C. Luer illustration 4143.

DISTRIBUTION: Costa Rica.

This robust species is closely allied to *P. longipedicellata*, but *P. stevensii* is easily distinguished by the more densely flowered racemes of short-pedicellate flowers.

***Pleurothallis stricta* Luer, sp. nov.**

A *Pleurothallis luctuosa* Rchb. f. statura majore et in florescentia stricta pluriflora foliis multilongiore dignoscenda.

Plant medium in size, epiphytic, caespitose; roots fine, flexuous. Secondary stems slender, erect, unifoliate, 6-12 cm long, with a close, tubular sheath below the middle and another at the base. Leaf erect, coriaceous, narrowly elliptical, 5-9.5 cm long, 1.8-2.7 cm wide, the apex acute, tridenticulate, the base cuneate, sessile. Inflorescence an erect, distichous, loose, 6- to 8-flowered raceme 8-16 cm long including the filiform peduncle, from a 1-1.5 cm long spathe at the base of the leaf, with old peduncles often remain-

ing; floral bract below the pedicel, 3 mm long; pedicel 10-15 mm long; ovary 2 mm long; sepals widespread, translucent yellowish white, broadly striped with red-purple, the dorsal sepal ovate, concave below the middle, 9-13 mm long, 3 mm wide, the apex long-acuminate, acute, the lateral sepals connate into a narrowly ovate, bicarinate synsepal 9.5-13 mm long, 2.5-3.5 mm wide, the obtuse apex minutely retuse; petals purple, edged in yellow, deflexed to either side, narrowly ovate, oblique, acute 5-6 mm long, 1-1.25 mm wide, the margins denticulate; lip dull yellow-brown, marked with purple, triangular, 3-lobed, 1.75-2 mm long, 1.5 mm wide, the apex acute, the basal angles erect, rounded, the base concave, the disc with a semicircular callus surrounding the glenion; column red-purple, 1.5 mm long, with a foot 0.5 mm long.

ETYMOLOGY: From the Latin *strictus*, "straight," referring to the slender, upright inflorescence.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest above Valladolid, alt. ca. 2500 m, July 1975, W. Teague, L. Figueroa & D. Welisch s. n., cultivated by Teague in San Francisco, California, flowered in cult. 20 Aug. 1979, *C. Luer 4113* (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED. *COLOMBIA*: CUNDINAMARCA: Munic. of San Antonio de Tena, Santandercito, alt. 2000-2500 m, 1971, Padre Sergio Restrepo, cultivated at La Ceja by M. & O. Robledo, flowered in cult. 21 July 1978, *C. Luer 2937* (SEL).

DISTRIBUTION: Southeastern Ecuador and the Eastern Cordillera of Colombia.

Instead of short, drooping, 1- to 3-flowered racemes as in *P. luctuosa*, the 6- to 8-flowered racemes of *P. stricta* are strictly erect, exceeding the leaves by more than twice their length. The flowers of the two species are similar, but the sepals of the latter are more conspicuously striped and the petals are more coarsely denticulate.

#### *Pleurothallis stumpfleii* Luer, sp. nov.

Herba pusilla caespitosa, caulibus secundariis brevissimis, racemo debili plurifloro foliis anguste obovatis duplolongiore, floribus successivis pellucidis guttatis, sepalis anguste ovatis acuminatis, petalis serrulatis, labello atropurpureo oblongo sulcato infra medium bidentato supra medium convexo rotundato ciliato, columna gracili pede bulboso.

Plant very small, epiphytic, caespitose; roots fine, flexuous. Secondary stems abbreviated, unifoliate, 5-8 mm long, enclosed by 2 thin, ribbed sheaths. Leaf suberect, light green, lightly mottled with purple beneath, coriaceous, narrowly obovate, petiolate, 30-45 mm long including the petiole 10-15 mm long, 6-9 mm wide, the apex subacute, tridenticulate, gradually narrowed below into the petiole. Inflorescence a weak, successively several-flowered raceme to 8 cm long including the filiform peduncle, from a node low on the secondary stem; floral bract 1 mm long; pedicel 3 mm long; ovary 1 mm long, rose with green ribs; sepals translucent greenish white, sparsely spotted with purple, uncarinate, the dorsal sepal ovate, 7-10 mm long, 1.5-2.25 mm wide, the apex acuminate, acute, the lateral sepals narrowly ovate, connate at the base for 1 mm, each 7-10 mm long, 1-2 mm wide, the apices acuminate, acute; petals translucent white, elliptical, serrulate, acute, 3-3.5

mm long, 0.6 mm wide; lip green, heavily marked with dark purple, oblong, 3-3.5 mm long, 1 mm wide, the apex convex, rounded, with ciliate margins above the middle, with a pair of narrow, marginal tooth-like lobes just below the middle, the disc with a longitudinal, pubescent cleft from the base nearly to the apex; column light green marked with purple, slender, semiterete, 3 mm long, with a short, bulbous foot.

ETYMOLOGY: Named in honor of Sr. Rodolfo Stumpfle of Lima, Peru, who exported this species.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: epiphytic in cloud forest near Valladolid, alt. ca. 2500 m, July 1975, W. Teague, L. Figueroa & D. Welisch s.n., cultivated by H. Ripley in San Francisco, Calif, flowered in cult. 18 Aug. 1979, *C. Luer 4096* (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *PERU*: without locality, exported by R. Stumpfle, cultivated by M. & O. Robledo at La Ceja, Colombia, flowered in cult. 28 Jan. 1978, *C. Luer 2344* (SEL).

DISTRIBUTION: Southern Ecuador and Peru.

This little relative of *P. setigera* Lindl. may be distinguished by the weak, filiform, successively flowered raceme of translucent light-green flowers with a few purple spots. The serrulate petals lack a terminal awn, and the ligulate lip is ciliate above a pair of small, narrow lateral lobes.

***Pleurothallis tantilla* Luer, sp. nov.**

Habitu *P. foliatae* Griseb. similis, sed sepalo dorsali oblongo nec acuminate nec concavo, petalis longioribus, labello infra medium latiore et columna nonalata differt.

Plant very small, epiphytic, caespitose to scandent; roots filiform, flexuous. Secondary stems slender, 1.5-2 cm long, proliferative, each stem concealed by 2-4 lepanthiform sheaths, unifoliate. Leaf coriaceous, elliptical, obtuse to rounded, tridenticulate, the base cuneate to rounded, short-petiolate veined in purple, 7-15 × 5-8 mm, the petiole about 1 mm long. Inflorescence a loose, few-to several-flowered, flexuous raceme, 1.5-3.5 cm long, the peduncle filiform, from the apex of a secondary stem within the upper sheath; floral bract 1 mm long; pedicel 2-4 mm long; ovary 0.25 mm long; flowers widely spread, yellowish with purplish veins; dorsal sepal oblong, acute, 3.5-4 × 1.25-1.75 mm, 3-veined, the veins prominent dorsally; lateral sepals free, narrowly triangular, oblique, acute, 2.5-4 × 1-1.5 mm, 1-veined; petals obovate, slightly oblique, subacute, 1.5-2 × 0.6-1 mm, 1-veined; lip ovate, arcuate, the apex obtuse to rounded, thickened, minutely papillose, the sides below the middle dilated and broadly rounded and curved up in the natural position, the base rounded and broadly hinged to the column-foot; disc with a pair of converging calli near the middle, 1.5-2.5 × 1-1.5 mm; column slender, wingless, 1-1.5 mm long, with a short foot.

ETYMOLOGY: From the Latin *tantillus*, "so little," in reference to the size of the plant.

TYPE: *PANAMA*: COCLE: epiphytic in cloud forest above El Valle, alt. 1000 m, 6 March 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 1078*

(HOLOTYPE: SEL); epiphytic in orange grove above El Valle, alt. ca. 1000 m, 2 Sept. 1976, C. Luer & H. Butcher 1122 (SEL).

ADDITIONAL MATERIAL EXAMINED: PANAMA: PANAMA: La Eneida region of Cerro Jefe, 3 July 1971, R. L. Dressler 4041 (SEL).

DISTRIBUTION: Panama.

Vegetatively this small species appears identical to the widespread *Pleurothallis foliata* Griseb. *Pleurothallis tantilla* may be recognized by the raceme of tiny, yellowish flowers, strongly marked with purple. The flowers have a different aspect. The erect dorsal sepal is neither concave nor acuminate. The lip is decidedly widest below the middle, but otherwise the apex and the calli are very similar to those of *P. foliata*. The wings of the column of the latter are comparatively large and well developed, but the column of *P. tantilla* is wingless.

***Pleurothallis taxis* Luer, sp. nov.**

Planta parva caespitosa, caulibus secundariis crassis laxè vaginatis, foliis erectis ellipticis breviter petiolatis, spatha magna, racemo erecto densifloro folio aequilongo, bracteis cucullatis imbricantibus, floribus secundis marroninis, sepalis ovatis acutis intus pubescentibus, sepalis lateralibus ad medium connatis, petalis oblongis apice rotundatis, labello subquadrato apice truncato retuso basi lobis rotundatis erectis disco bicarinato.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems unifoliate, stout, 2.5-4 cm long, more or less fasciculate, contained within 3 loose, papery, tubular sheaths. Leaf erect, coriaceous, oblong-elliptical, petiolate, 4.5-6 cm long including the 5 mm petiole, 2-2.5 cm wide, the apex rounded to obtuse, tridenticulate, cuneate below into the channeled petiole. Inflorescence an erect, secund raceme, densely flowered to the base, 6-7 cm long, from a conduplicate spathe 12-14 mm long, from near the apex of the secondary stem; floral bracts imbricating, cucullate, ovate, obtusely acuminate, 8 mm long, 8 mm wide spread out, enclosing the lower parts of the flowers; pedicel 2 mm long; ovary 1.5 mm long; sepals maroon, not widely spread, glabrous without, pubescent within above the middle, the dorsal sepal ovate, acute, tricarinate, 8.5 mm long, 4 mm wide, the lateral sepals narrowly ovate, acute, 8 mm long, connate to near the middle, 4.5 mm wide together; petals oblong, 4.5 mm long, 2 mm wide, the apex rounded, the 3 veins dark purple on translucent light purple; lip subquadrate, 3.5 mm long, 3.5 mm wide spreadout, the dark purple apex truncate-retuse, the base dilated into a pair of large, rounded, translucent greenish white, erect lobes flanking the column, the disc with a pair of rounded carinae above the middle; column rose, semiterete, 2 mm long.

ETYMOLOGY: From the Greek *taxis* (τάξις), "a row, or a line," referring to the secund inflorescence.

TYPE: ECUADOR: LOJA: epiphytic in cloud forest near the pass north of Loja, alt. ca. 3000 m, 12 Feb. 1978, C. Luer, J. Luer & M. Portilla 2563 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

*Pleurothallis taxis* may be recognized by the loosely sheathed, fascicled secondary stems and a densely flowered raceme of maroon flowers sub-

tended by cucullate bracts. The labellum is subquadrate with the apex broad and retuse, and with erect, rounded basal lobes.

**Pleurothallis telamon** Luer, sp. nov.

Planta grandis epiphytica caespitose, caulibus secundariis gracilibus teretibus horizontalibus, folio pendenti lineari acuto base cordato, flore solitario successivo bilabiato, sepalo dorsali synsepaloque pallido flavo ovato subacuto, petalis linearibus scabrosis denticulatis, labello rubro ligulato.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, terete, purple, horizontal, unifoliate, 9-20 cm long, with a close, tubular sheath below the middle and another at the base. Leaf satiny deep green suffused with purple, pendent, coriaceous, linear-ovate, 12-21 cm long, 2.5-3.5 cm wide, the apex acute, tridenticulate, the base cordate, sessile. Inflorescence a solitary, bilabiate flower produced successively from a 5-6 mm long spathe in the cleft at the base of the leaf; peduncle ca. 5 mm long; floral bract 6-7 mm long; pedicel 8-10 mm long; ovary green, 3 mm long; sepals glabrous, light yellow, the dorsal sepal ovate, subacute, 15 mm long, 8 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute lamina 13.5 mm long, 7 mm wide, 4-veined; petals light yellow, linear, oblique, acute, 11 mm long, 1.25 mm wide, minutely scabrous, with minutely denticulate margins; lip red, cellular-glandular, oblong-ligulate, 8 mm long, 3.25 mm wide, the apex rounded, the base shallowly concave with a small glenion, the disc smooth; column stout, 1.5 mm long, 2.5 mm wide, with a short, thick foot.

ETYMOLOGY: From the Greek *telamon* (τελαμων), "a strap for a sword," in allusion to the strap-like leaves.

TYPE: PANAMA: COCLÉ: epiphytic in cloud forest near El Copé, May 1977, R. L. Dressler s.n., cultivated at SEL, greenhouse acc. no. 77-2218, flowered in cult. 29 Oct. 1977, *C. Luer 2112* (HOLOTYPE: SEL).

DISTRIBUTION: Panama.

This showy species of the cordate-leaved group may be identified by the large, pendent, deep green, glistening leaves suffused with purple and borne by slender, horizontal stems. The solitary gaping, light yellow flower is comparatively large with narrow, minutely scabrous petals and a comparatively large, red, oblong lip.

**Pleurothallis trichostoma** Luer, sp. nov.

Species haec *P. flexuosae* (Poepp. & Endl.) Lindl. affinis sed statura minore, labello integro trulliformi et columna longi-aristata differt.

Plant small, epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, short, 6-12 mm long, with 1-2 close, tubular sheaths, unifoliate. Leaf erect, coriaceous, elliptical, the apex subacute, tridenticulate, the base channeled, cuneate, subpetiolate, 3-4.5 cm long, 10-26 mm wide. Inflorescence a loose, arching, fractiflex raceme, 7-10 cm long, increasing in length with the successive flowers, up to 10 in number; peduncle filiform, from a small, fugacious spathe at the base of the leaf; floral bract 1 mm long; pedicel 5 mm long; ovary red-purple, 2 mm long; sepals yellow, marked with pur-

ple, glabrous without, hirsute within, the hairs of the dorsal sepal purple, those of the lateral sepals white, the dorsal sepals obovate, obtuse to rounded at the apex, 5 mm long, 2 mm wide, the lateral sepals connate into a broadly elliptical lamina forming a shallow mentum near the middle, the rounded apex retuse, 5 mm long, 3 mm wide; petals translucent red, obovate-spatulate, rounded at the apex, with a 3-lobed callus on the external surface, terminating in a short apiculum, 2.5 mm long, 1.5 mm wide; lip yellow, trulliform, the apex subacute, slightly irregular, the disc with a pair of low, converging carinae that meet at the apex, the claw narrowed to a biauriculate base, 2 mm long, 0.75 mm wide; column red, 2.5 mm long including a long, aristate apex, with a short, glandular foot.

ETYMOLOGY: From the Greek *trichos*, "hair," and *stoma*, "mouth," in allusion to the bilabiate flowers pubescent within.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE: without specific location along the road between Loja and Zamora, J. Brenner s.n., flowered in cult. 1 Aug. 1977, C. Luer 1795 (HOLOTYPE: SEL).

DISTRIBUTION: Southern Ecuador.

This small species is related to the variable and widespread *P. flexuosa*, but may be distinguished by the smaller habit and flowers, an entire lip and a long-aristate column.

#### *Pleurothallis uxoria* Luer, sp. nov.

Planta grandis rosularis, caulibus secundariis gracilibus longis ascendentibus vaginis tubulosis scabrosis obtectis unifoliatas, foliis erectis angustissime ovatis marginibus revolutis, inflorescentia fasciculata floribus flavis singularibus successivis, sepalis ellipticis, apicibus petalorum teretibus crassis, labello obovato arcuato apice late rotundato retuso basi angustato concavo bilobulato.

Plant large, epiphytic, caespitose, rosetted; roots coarse, flexuous. Secondary stems slender, terete, purple where exposed, ascending to suberect, unifoliate, 20-35 cm long, mostly concealed by a series of 6-10 close, tubular sheaths, later shed, the lowermost scabrous. Leaf dark green, suffused with purple, erect, rigidly coriaceous, very narrowly ovate, 15-23 cm long, 1-1.2 cm wide, the apex long-attenuate, tridentate, the margins revolute, the base cuneate. Inflorescence a fascicle of successive, single, clear yellow, glabrous flowers from the axil of the leaf; floral bract 4-5 mm long, sparsely pubescent; pedicel 4 mm long; ovary green, glandular-cellular, 3 mm long; dorsal sepal erect, elliptical, subacute, 8.5 mm long, 4.5 mm wide; lateral sepals elliptical, deflexed, oblique, obtuse, 6 mm long, 4 mm wide, connate basally for 1 mm; petals spreading, light yellow, ovate, 7 mm long, 3 mm wide, constricted above the middle into a thick, terete, blunt, dark yellow tail 1 mm broad; lip yellow marked with brown, obovate, arcuate, 5 mm long, 3 mm wide, the broadly rounded apex retuse, the base narrowed, concave, with a minute pair of lateral lobules, the disc with a pair of thick, rounded, parallel calli below the middle; column winged, 3 mm long, with a concave foot about as long.

ETYMOLOGY: From the Latin *uxor*, "a wife," in honor of my wife who discovered this species.

TYPE: *ECUADOR*: ZAMORA-CHINCHIPE : epiphytic in cloud forest east of the pass between Loja and Zamora, alt. ca. 2500 m, 11 Feb. 1978, C. Luer, J. Luer & M. Portilla 2533 (HOLOTYPE: SEL).

DISTRIBUTION: Southeastern Ecuador.

A single, large, handsome specimen of this species was found growing on a shrub on a steep embankment in cloud forest by Jane Luer. About ten long stems radiated in a circle from the base, and several stems bore a clear yellow flower at the base of the long, pointed, narrow leaves.

***Pleurothallis variabilis* Luer, sp. nov.**

Planta mediocris vel magna caespitosa, caulibus secundariis elatis teretibus, foliis anguste ovato-linearibus acutis basi leviter cordato, flore successivo albescenti, luteo vel purpureo, sepalis dorsali ovato, synsepalo late cordato concavo, petalis reflexis trapeziformibus integris acuminatis, labello late triangulari convexo obtuso carina supra basim rotundato.

Plant medium sized to large, epiphytic to terrestrial, caespitose; roots numerous, slender, fasciculate. Secondary stems slender, erect, terete, unifoliate, 14-37 cm long, with a long, close, tubular sheath below the middle and 1-2 others at the base. Leaf erect to suberect to horizontal, coriaceous, narrowly linear-ovate, 9-18 cm long, 1.5-3 cm wide, the apex acute, tridenticulate, the base shallowly cordate, sessile. Inflorescence a single, non-rotated, widely spread, glabrous, creamy-white, yellow or purple flower produced successively in a fascicle from a 1.5 cm long spathe at the base of the leaf; peduncles 3-5 mm long; floral bract 5-13 mm long; pedicel 10-17 mm long; ovary 7-10 mm long; middle sepal ovate, narrowly rounded, 11-12 mm long, 6-7.5 mm wide, 3-veined; lateral sepals connate into a deeply concave, cordate, obtuse lamina 9-10 mm long, 9-10 mm wide; petals reflexed, thick, oblong-trapeziform, 8.5-10 mm long, 2-3 mm wide below the middle, acuminate above the middle to the subacute apex, the base broadly recurved; lip thick, broadly triangular, convex 3.5-5.25 mm long, 3.5-4.75 mm wide, the apex rounded to obtuse, the basal angles subacute, the base broad, deflexed, the glenion elevated on a protuding, rounded carina above the base; column stout, 1.5 mm long, 3 mm wide, the bulbous foot, 2 mm long, 3 mm wide, cellular-glandular.

ETYMOLOGY: From the Latin *variabilis*, "variable," referring to the different colors and positions of the flowers.

TYPE: *ECUADOR*: IMBABURA : terrestrial on the road cut in cloud forest above Apuela, alt. ca. 2500 m, 8 Feb. 1979, C. Luer, J. Luer, R. Escobar & A. Hirtz 3909 (HOLOTYPE: SEL).

ADDITIONAL MATERIAL EXAMINED: *ECUADOR*: NAPO: epiphytic in cloud forest below Papallacta, alt. ca. 2800 m, 28 Aug. 1978, C. Luer, J. Luer & A. Andretta 3432 (SEL).

DISTRIBUTION: Ecuador.

Although similar in many respects to many other related species in the "cordate-leaved" complex, *P. variabilis* may be recognized by the long, slender secondary stems, long, narrow, shallowly cordate leaves, "non-rotated" flowers with entire, reflexed petals, and a broad, convex, obtuse, triangular lip with a prominent, rounded callus above the base. The colors of

the flowers vary from ivory (Imbabura) to yellow or purple (Napó). When the leaf grows more or less erect (Imbabura), the flower presents itself with the lip lowermost, but when the leaf grows horizontally (Napó), the flower remains nonresupinate, the lip contained within the cucullate synsepal and the reflexed petals acting like balancing arms.

***Pleurothallis zorrocuchensis* Luer, sp. nov.**

Planta perparva repens, radicibus crassis, caulibus secundariis brevissimis, foliis parvis ellipticis obtusis marginatis, racemo brevi paucifloro folio subaequilongo, floribus successivis virescentibus purpureo suffusis, sepalo synsepaloque ovato acuminato, petalis anguste ovatis acuminatis, labello obovato apice rotundato calloso base bilobulato lateribus multi-appendiculatis.

Plant very small, epiphytic, repent, the sheathed rhizome 2-5 mm long between secondary stems; roots comparatively thick, flexuous. Secondary stems unifoliate, 1-2 mm long, enclosed by a loose, ribbed, tubular sheath. Leaf suberect to horizontal, coriaceous, elliptical, marginate, 5-12 mm long, 4-6 mm wide, the obtuse apex tridenticulate, the base cuneate, subpetiolate. Inflorescence a loose, suberect, raceme 5-8 mm long, with 3-4 successive flowers, the peduncle filiform, from the apex of the secondary stem; floral bract purplish, cucullate, ca. 1 mm long; pedicel 1.5 mm long; ovary tripartite, 1 mm long; sepals and petals glabrous, yellow suffused with purple to yellow-green suffused with brown; dorsal sepal ovate, 4 mm long, 2.5 mm wide, the apex acuminate, acute; lateral sepals connate into an ovate lamina 3.5 mm long, 2.5 mm wide, the apex acuminate, minutely bidentate; petals narrowly ovate, 3 mm long, 0.8 mm wide, acuminate-acute; lip light green, obovate, concave below, 2.2 mm long, 0.9 mm wide, the apex rounded with a low, central callus, the hinged base bilobulate, the sides with numerous, white, pedunculated appendages, column greenish white, semiterete, 1.75 mm long, the apex denticulate, broadly long-winged, the foot 1 mm long.

ETYMOLOGY. Named for the lake, Lago Zorrocucho, near which the species was discovered. Zorrocucho from the Quechua for "fox den."

TYPE: ECUADOR: AZUAY: epiphytic in mossy branches of trees near Lago Zorrocucho southeast of Cuenca, alt. 3000 m, 7 Feb. 1978, C. Luer, J. Luer, A. Andretta & M. Portilla 2473 (HOLOTYPE: SEL); same area, July 1977, in fruit, C. Luer, J. Luer & G. Luer 1826 (SEL).

DISTRIBUTION: Southern Ecuador.

Although the Quechua name for the lake where the species occurs may be spelled phonetically several different ways, the present spelling is one of those more frequently used locally. Plants were first found in early fruit with a few old flowers which prompted a return visit. The plants are difficult to find because they grow in the thick moss on high boughs of large trees. The flowers are most distinctive in the tiny white appendages that dangle from the sides of the lip.

***Scaphosepalum beluosum* Luer, sp. nov.**

Inter species generis *Scaphosepali* Pfitz. foliis magnis longissime petiola-

tis, pedunculo brevi gracili leviter verruculoso horizontali paucifloro floribus duobus coetaneis, sepalis ochraceis brunneo-purpureo punctatis carinis eroso-ciliolatis caudis brevibus, labello ovato-ligulato trilobato bicarinato, lobo antico deflexo obovato denticulato, lobis lateralibus prope medium brevibus distinguitur.

Plant large, epiphytic, caespitose; roots slender, flexuous. Secondary stems slender, erect, unifoliate, 2-4 cm long, enclosed by 2 loose, tubular sheaths at the base. Leaf erect, thinly coriaceous, very long-petiolate, the petiole slender, 5-11 cm long, the blade elliptical, up to 14 cm long, 3.5-5 cm wide, the apex acute, tridenticulate, cuneate below into the petiole. Inflorescence a loose, several-flowered, distichous raceme 5-8 cm long, including the peduncle, two flowers commonly produced simultaneously, the peduncle slender, horizontal, lightly verrucose, from a node on the secondary stem; floral bract 4 mm long; pedicel 7-11 mm long, scabrous; ovary 3.5 mm long, pubescent; sepals yellowish tan dotted with purple-brown, with erose-ciliate carinae, the middle sepal tricarinate, fleshy, ovate, the apical half tubular with revolute sides, verrucose near the apex, the lateral sepals connate 8 mm into an ovate, concave, bicarinate synsepal, 15 mm long including the tails, 9 mm wide, with acutely triangular, yellow-orange pads filling the diverging, acute apices, the apices gradually narrowed into decurved, sparsely spiculate tails; petals yellow, marked with purple, polygonal, 4 mm long, 2.25 mm wide, the apex subacute, obtusely angled on the labellar margin, with a low callus near the base, acutely angled near the base on the opposite side; lip greenish white, marked with purple, ovate-ligulate, 3-lobed, the anterior lobe deflexed, obovate, obtuse, denticulate, the lateral lobes short, rounded, near the middle, with a pair of erect, obtusely toothed carinae in the center, the basal portion elliptical, concave, minutely bi-auriculate at the base; column greenish white, marked with purple, broadly winged, curved, 4 mm long, with a thick foot 2 mm long.

ETYMOLOGY: From the Latin *beluosus*, "full of monsters," (*belua*, "a beast"), referring to more than one ferocious-appearing flower produced at a time.

TYPE: *ECUADOR*: PICHINCHA. epiphytic in cloud forest above Mindo, alt. 2200m, 11 Nov. 1979, C. Luer, J. Luer & A. Hirtz 4746 (HOLOTYPE: SEL); without locality, W. Teague and D. Welisch s.n., 1975, cultivated in San Francisco, Calif., and La Ceja, Colombia, C. Luer 2058 (SEL).

DISTRIBUTION: Ecuador.

This species is characterized by the long, slender petioles bearing thin elliptical blades, and a short, horizontal peduncle usually bearing two flowers simultaneously. The light yellowish brown flowers with purplish brown spots are provided with erose carinae and short tails. The anterior lobe of the bicarinate lip is deflexed and denticulate and the middle lobes near the middle are small and rounded.

#### *Scaphosepalum ursinum* Luer, sp. nov.

Planta grandissima dense caespitosa, caulibus secundariis canaliculatis quam foliis magnis carnosus purpurascens longipetiolatis multibrevioribus, racemo folio plus minusve aequilongo floribus grandibus successivis, pedunculo suberecto infra glabro supra in rhachidi scaberulo, sepalis albo-

virescentibus purpureo guttatis extus puberulis, sepalo inferno ovato concavo supra medium compresso, synsepalo concavo pulvinis triangulatis caudis gracilibus subaequilongis, petalis dolabriformibus, labello trilobo, lobo antico deflexo obovato serrulato, lobis lateralibus prope medium brevibus oblongis, disco carinis dentatis duobus, basi oblongo concavo.

Plant large, epiphytic to semiterrestrial, shortly repent and densely caespitose; roots coarse, flexuous. Secondary stems erect, stout, semiterete, channeled, unifoliate, 6-8 cm long, enclosed by 2-3 loose, fragmenting sheaths. Leaf suberect, fleshy, coriaceous, dark purplish green, narrowly obovate, long-petiolate, 20-30 cm long including the 8-11 cm long petiole, 3.5-4.5 cm wide, the apex subacute, tridenticulate, gradually narrowed below into the channeled petiole. Inflorescence a suberect to reclining, distichous, loose to dense, successively-flowered raceme 10-35 cm long including the peduncle, the peduncle smooth below, lightly scabrous above in the rachis, from a node on the secondary stem; floral bract 3-6 mm long; pedicel 9-20 mm long, scabrous; ovary 4 mm long, green, pubescent; flowers large, greenish white with purple spots, shortly pubescent externally; middle sepal ovate, carinate, concave below, 14 mm long 6 mm wide, the apical half compressed with reflexed sides, the acute apex uncinata; lateral sepals connate ca. 10 mm into a concave, bicarinate synsepal 13 mm long, 10 mm wide, with a well-formed, triangular pulvinus filling each of the diverging apices, the apices acute, produced into slender, decurved, pubescent tails 10 mm long; petals yellow-white marked with purple, dolabriform-pentangular, 4 mm long, 3 mm wide, the apex obtuse, with a broadly obtuse angle on the labellar margin; lip greenish white marked with purple, ovate-ligulate, 3-lobed, deflexed near the middle, 5.25 mm long, 2.25 mm wide spread out, the anterior lobe obovate, obtuse, serrulate, the lateral lobes near the middle, oblong, rounded, with a pair of erect, dentate lamellae between, the basal portion elliptical, concave, bidentate at the short claw; column greenish white marked with purple, broadly winged, curved, 6 mm long, with a thick, sulcate foot.

ETYMOLOGY: From the Latin *ursinus*, "of a bear," in allusion to the size of the plant and the appearance of the pubescent flower with sepaline tails like canine teeth.

TYPE: *ECUADOR*: CARCHI: epiphytic in cloud forest above Maldonado, alt. ca. 2500 m, 26 August 1978, C. Luer, J. Luer & A. Hirtz 3408 (HOLOTYPE: SEL).

DISTRIBUTION: Northwestern Ecuador.

This huge species is characterized by the dark purplish green leaves and a large, pubescent, greenish white flower spotted with purple. The middle sepal is laterally compressed and the anterior lobe of the three-lobed lip is serrate.

*Stelis anolis* Luer, sp. nov.

Planta grandis epiphytica vel terrestris caespitosa, caulibus secundariis teretibus folio erecto elliptico obtuso petiolato plus minusve aequilongis, racemo erecto multifloro disticho folio multilongiore, floribus non-resupinatis, sepalis pallido virescentibus intus breviter pubescentibus, sepalo medi-

ano libro anguste ovato, sepalis lateralibus parallelis anguste ovatis obliquis ad basim connatis, petalis ovatis infra medium obtusangulis, labello minuto crasso subhemisphaerico.

Plant large, epiphytic to terrestrial, caespitose; roots coarse, flexuous. Secondary stems erect, terete, 6-13 cm long, with a long, loose, tubular sheath below the middle and another at the base. Leaf erect, coriaceous, petiolate, elliptical, 10-13 cm long including the 3 cm long petiole, 4-5 cm wide, longitudinally veined, the apex obtuse to rounded, retuse with an apiculum in the sinus, cuneate below into the narrow channeled petiole. Inflorescence an erect, many-flowered, distichous raceme to 30 cm long or longer, flowering from near the base, from a spathe 1-2 cm long at the base of the leaf, the flowers non-resupinate; floral bracts oblique, infundibular, 2-3 mm long; pedicel 3 mm long; ovary 3 mm long; sepals pale green, shortly pubescent within, the middle sepal free, ovate, acuminate, acute, 11 mm long, 3.5 mm wide, the lateral sepals uppermost, ovate, oblique, 10 mm long, parallel, connate basally to form a concave hood over the middle sepal, 5 mm wide together; petals ovate, 2 mm long, 1.25 mm wide, subacute, the margins obtusely angled below the middle, 3-veined; lip thick, subhemispherical, 1 mm long, 1 mm wide, concave anteriorly above the thick, rounded margin, the glenion small, shallowly concave above the basal attachment; column stout, 1 mm long and wide, with separate stigmatic lobes.

ETYMOLOGY: From the reptilian genus *Anolis* in allusion to the resemblance of the flower to the head of the American chameleon (*Anolis carolinensis*).

TYPE: *ECUADOR*. TUNGURAHUA: terrestrial in Valle de Chaupe above Baños, alt. 2200 m, 24 July 1975, cultivated at SEL, C. Luer, J. Luer & S. Wilhelm 629 (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Ecuador.

This many-flowered species is characterized by the long, pale green, non-resupinate flowers. The lateral sepals connive to form a hood over the free middle sepal.

#### *Stelis glomerosa* Luer, sp. nov.

Planta magna epiphytica scandens, caulibus secundariis brevibus prolificantibus ramosis foliis anguste ellipticis plus minusve aequilongis, racemo multifloro pendenti flaccido flexuoso, floribus albis roseo suffusis sphaericis non-resupinatis, sepalis concavis prope apices recurvatos connatis, petalis transverse quadrangulatis apiculatis, labello minuto subpyramidali apiculato transverse calloso.

Plant large, epiphytic, scandent; roots slender, from the bases of secondary stems; secondary stems ascending, prolific, branching, each unifoliate, 3-6.5 cm long, producing series of rambling stems to over 1 meter tall. Leaf suberect, coriaceous, shortly petiolate, narrowly elliptical, 4-6.5 cm long including the 1 cm petiole, 0.8-1.4 cm wide, the apex acute, tridenticulate, the base narrowly cuneate into the petiole. Inflorescence a pendent, flaccid, flexuous, many-flowered raceme to 15 cm long, producing 2-3 flowers simultaneously, flowering from near the base, from the axil of a leaf; floral bract inflated, oblique, acute, 3-5 mm long; pedicel 1.5 mm long;

ovary 2 mm long; sepals glabrous, white, veined and lightly suffused in purple, connate to near the recurved apices into a spherical, non-resupinate flower, the middle sepal elliptical, concave, acute, 8 mm long, 4.5 mm wide, 5-veined, the lateral sepals together forming the uppermost, suborbicular lamina, 7.5 mm long, 7.5 mm wide unspread, the obtuse apex minutely bifid; petals transversely subquadrangular, 2.2 mm long including the abruptly apiculate apex, 2 mm wide; lip purple, thick, subpyramidal, 1.5 mm long, 1 mm wide, the apex acuminate, acute, with a transverse callus separating the concave anterior surface from the minutely lobular, shallowly concave surface above the basal attachment; column stout, 0.75 mm long, 1.25 mm across the diverging stigmatic lobes.

ETYMOLOGY: From the Latin *glomerosus*, "round like a ball," referring to the spherical flowers.

TYPE: ECUADOR: COTOPAXI: epiphytic in cloud forest between Angamarca and El Corazon, alt. ca. 2000 m, 17 Feb. 1979, C. Luer, J. Luer & A. Hirtz 3993 (HOLOTYPE: SEL).

DISTRIBUTION: Western Ecuador.

This unusual, climbing species is easily identified by the dangling inflorescence of globular flowers. Like little lips, the apices of the sepals part to form a minute aperture into the inflated, non-resupinate flower.

*Stelis gratiosa* Luer, sp. nov.

Species haec *S. ciliaris* Lindl. affinis sed racemo pendulo flaccido dense multifloro floribus majoribus differt.

Plant medium in size, epiphytic, caespitose; roots slender, flexuous. Secondary stems unifoliate, terete, stout, 1.5-3 cm long, invested by 2-3 imbricating, tubular sheaths. Leaf erect, thickly coriaceous, shortly and indistinctly petiolate, narrowly obovate, 10-15 cm long including the 2-3 cm long petiole, 2-4 cm wide, the apex subacute, tridenticulate, narrowly cuneate below into the channeled petiole. Inflorescence a drooping, flaccid, many-flowered, cylindrical raceme, 8-15 cm long including the 2 cm long peduncle which rises more or less erectly before arching; floral bract infundibular, red-brown, 2 mm long; pedicel 2 mm long; ovary 2.5 mm long; sepals similar, red-purple, broadly ovate with rounded apices, 5 mm long, 4.5 mm wide, connate basally, the margins densely long-ciliate, the hairs white; petals cream, faintly mottled with rose, flabellate with the apex rounded, 1.25 mm long, 1.5 mm wide; lip colored similarly, suborbicular, nearly flat, 2 mm long, 1.75 mm wide, the base concave with a small glenion; column stout, 1 mm long and wide, broadly tridentate at the apex.

ETYMOLOGY: From the Latin *gratiosus*, "favorite, lovely," referring to pleasing qualities of the plant.

TYPE: PANAMA: PANAMA: epiphytic in cloud forest on Cerro Jefe, alt. 1000 m, 2 March 1976, cult. at SEL, greenhouse acc. no. 43-76-155, flowered in cult. 8 May 1977, C. Luer, J. Luer & P. Taylor 1619 (HOLOTYPE: SEL).

DISTRIBUTION. Eastern Panama.

This charming species is related to the smaller-flowered, widely distri-

buted *S. ciliaris*, but *S. gratiosa* is readily recognized by the dense, flaccid, cylindrical raceme of red-purple flowers with long, white hairs. The drooping habit of the raceme is reminiscent of that of the small-flowered *S. pendulispica* Ames from Costa Rica.

***Stelis triaristata* Luer, sp. nov.**

Planta mediocris epiphytica caespitosa, caulibus secundariis brevibus laxè vaginatis, folio anguste elliptico-lineare, racemo erecto gracili dense multifloro secundo, sepalis libris similibus albobirescentibus anguste ovato-linearibus marginibus revolutis, petalis flabellatis, labello minuto crasso triangulari supra apicem rotundatum concavo supra basem bisulcato.

Plant medium-sized, epiphytic, caespitose; roots slender, flexuous. Secondary stems terete, unifoliate, 3-4 cm long, enclosed by 1-2 loose, tubular, imbricating sheaths. Leaf erect, coriaceous, narrowly linear-elliptical, 8-14 cm long, 1-1.6 cm wide, the apex subacute, tridenticulate, gradually narrowed below to the slender base. Inflorescence an erect, slender, crowded, many-flowered, secund raceme, 10-16 cm long including the 3 cm long peduncle, from a node on the secondary stem; floral bracts close, tubular, 2-2.5 mm long; pedicel 1 mm long; ovary 1 mm long; sepals free, similar, spreading, greenish-white, glabrous, narrowly linear-ovate, acute with revolute margins, 7 mm long, 1 mm wide; petals flabellate, with a thickened, rounded margin, 0.6 mm long, 0.8 mm wide; lip greenish-white, thick, triangular, 0.5 mm long, 0.8 mm wide, concave anteriorly above the rounded apex, bisulcate with a central, rounded callus below the column above the attachment to the column-foot; column stout, 0.5 mm long, 0.8 mm wide across the protruding stigmatic lobes.

ETYMOLOGY: From the Latin *triaristatus*, "three-awned," referring to the appearance of the flowers.

TYPE: PANAMA. PANAMA: epiphytic in cloud forest along the Altos de Pacora road, alt. ca. 350 m, March 1976, C. Luer, J. Luer, R. L. Dressler & P. Taylor 2109 (HOLOTYPE: SEL).

DISTRIBUTION: Eastern Panama.

This delicate species is characterized by the narrow leaves borne by short secondary stems concealed by loose sheaths. Borne in a slender, crowded raceme, the little whitish flowers appear to be composed of three very slender, diverging sepals.

***Stelis tridactylon* Luer, sp. nov.**

Planta mediocris vel grandis epiphytica caespitosa, caulibus secundariis teretibus superne leviter compressis folio erecto elliptico obtuso plus minusve aequilongis, racemo erecto multifloro disticho folio multilongiore, sepalis supra medium viridibus infra medium rubro suffusis libris similibus anguste ovatis obtusis, petalis minutis flabelliformibus, labello minuto rubro crasso subhemisphaerico.

Plant medium in size to large, epiphytic, caespitose; roots coarse, flexuous. Secondary stems erect, terete, slightly compressed above, 5-10 cm

long, with a loose tubular sheath near the middle and another at the base. Leaf erect, coriaceous, elliptical, 8-12.5 cm long, 3-4 cm wide, the apex obtuse to rounded, retuse, apiculate, the base cuneate, conduplicate, sessile. Inflorescence an erect, many-flowered, distichous raceme to 23 cm long or longer, flowering from near the base, from a spathe 2-2.5 cm long at the base of the leaf; floral bracts close, tubular, 2 mm long, pedicel 3 mm long; ovary 3 mm long; sepals similar, green, suffused with red below the middle, glabrous, free, spreading, with the sides more or less revolute, narrowly ovate, 10-13 mm long, 1.5-2 mm wide, the apices narrowly obtuse; petals broadly flabellate, 1 mm long, 1.5 mm wide, the rounded margin thickened, red, glandular-cellular, concave centrally; lip red-purple, thick subhemispherical, 1 mm long, 1 mm wide, slightly concave anteriorly with a small glenion, the apex rounded, slightly concave above the broad basal attachment; column stout, 1 mm long, 1.5 mm wide across the laterally protruding stigmatic lobes.

ETYMOLOGY: From the Greek *tri-* ( $\tau\rho\iota$ ), "three-" and *dactylon* ( $\delta\alpha\kappa\tau\upsilon\lambda\omicron\nu$ ), "finger," in reference to the three-pronged flowers.

TYPE. *ECUADOR*: NAPO: epiphytic in cloud forest 14 Km north of Archidona, alt. ca. 600 m, 27 July 1975, cult. at SEL, greenhouse acc. no. 44-75-289, C. Luer, J. Luer & S. Wilhelm 622 (HOLOTYPE: SEL; ISOTYPE: AMES, K).

DISTRIBUTION: Eastern Ecuador.

This many-flowered species may be recognized by the free, narrow, similar, spreading sepals, green above the middle and red below the middle.