

MISCELLANEOUS NEW SPECIES
IN THE PLEUROTHALLIDINAE (ORCHIDACEAE)

Carlyle A. Luer

3222 Old Oak Drive, Sarasota, FL 33579
Research Associate, Missouri Botanical Garden

Brachionidium diaphanum Luer & Vásquez, sp. nov.

Planta parva repens, rhizomate elongato ramificanti, foliis ellipticis cauli longioribus, pedunculo gracili folio brevior, flore grandi, sepalis petalisque diaphanis, sepalo mediano suborbiculato longicaudato, synsepalo ovato longicaudato apice fisso, petalis obovatis obliquis minute ciliatis longicaudatis, labello transverse oblongo, angulis basalibus acutis incurvis, disc cum callo ovoideo pubescenti.

Plant small, epiphytic in moss, the rhizome elongate, repent, branching, 3-12 mm long between secondary stems, enclosed by frequently shed, tubular sheaths; roots slender, from nodes. Secondary stems ascending, 4-5 mm long, enclosed by 2 tubular sheaths. Leaf erect, coriaceous, elliptical, acute, 15-22 mm long, 4-6 mm wide, narrowly cuneate below into a subpetiolate base. Inflorescence a solitary, non-resupinate flower borne by a slender peduncle 6-7 mm long, with a bract below the middle; floral bract infundibular, 4 mm long; pedicel 1 mm long, with a filament 4 mm long; ovary stout, 2.5 mm long; sepals and petals translucent white, the middle sepal suborbiculat-obovate, 9 mm long, 8.5 mm wide, 3-veined, the apex obtuse, acuminate into a filiform tail ca. 20 mm long, the lateral sepals connate into an ovate synsepal 12 mm long, 9 mm wide, 4-veined, the apex acute, acuminate into a tail ca. 20 mm long, split apically for ca. 10 mm; petals broadly obovate, oblique, 8.5 mm long, 7 mm wide, the apex obliquely acute, acuminate into a filiform tail ca. 18 mm long; lip yellow-white, transversely oblong, concave, 3 mm long, 7 mm wide expanded, the rounded apex bluntly apiculate, the basal angles acute, incurved, the broad base delicately hinged to the column-foot, the disc with an ovoid, pubescent callus, shallowly channeled; column stout, rose, 2 mm long; pollinia 8.

Etymology: From the Latin diaphanus, "colorless and nearly transparent," referring to qualities of the flower.

Type: Bolivia: Dept. of Cochabamba: Prov. of Chapare: epiphytic in moss in cloud forest near Pampa Tambo, alt. 2700 m, 28 Oct. 1979, R. Vásquez 197 (Holotype: SEL; Isotype: Herb. Vásquezianum), C. Luer illustr. 9407; same area, alt. 2500 m, 22 Jan. 1980, in fruit, C. Luer, J. Luer & R. Vásquez 4973 (SEL).

This small, repent species is most noteworthy for the comparatively large, diaphanous flowers. The sepals and petals are provided with long, filiform tails, that of the synsepal being split for about half the length.

Brachionidium muscosum Luer & Vasquez, sp. nov.

Planta pusilla repens, rhizomate elongato ramificanti, foliis ellipticis caulibus longioribus, pedunculo filiformi folio longiore, sepalis petalisque diaphanis similibus ovatis minute ciliatis longi-attenuatis, labello minuto triangulari cum callo ovoideo pubescenti.

Plant very small, epiphytic in moss, the rhizome elongated, repent, branching, 2-5 mm long between secondary stems, enclosed by 2-4 tubular sheaths with attenuate apices; roots slender, from nodes. Secondary stems ascending, 1.5-2 mm long, enclosed by 2 tubular sheaths with attenuate apices. Leaf suberect, coriaceous, elliptical, acute, apiculate, 8-10 mm long, 3-4.5 mm wide, 3-veined, cuneate below into a 1 mm long petiole. Inflorescence a single, non-resupinate, delicate flower borne by an erect, filiform peduncle 12-14 mm long, with a bract below the middle; floral bract infundibular, acute, 1.5 mm long; pedicel 0.5 mm long, with a filament 2 mm long; ovary 1 mm long; sepals and petals translucent white, the middle sepal ovate in the lower fourth, minutely ciliate, the apex acute, long-attenuate into a filiform tail, 10 mm long, 1.75 mm wide, 3-veined; lateral sepals completely connate into a synsepal similar to the middle sepal, 10.5 mm long, 1.8 mm wide, 4-veined; petals ovate in the lower quarter, minutely fimbriate, the apex acute, attenuate into a filiform tail, 7 mm long, 1.25 mm wide, 1-veined; lip white, transversely ovate-triangular, concave, 1.25 mm long, 1.75 mm wide, the subacute apex minutely apiculate, the basal angles erect, narrowly rounded, the disc with an ovoid, pubescent callus, the broad base delicately hinged to the column-foot; column stout, 0.75 mm long; pollinia 6.

Etymology: From the Latin muscosus, "mossy," in reference to the habitat and appearance of the plant.

Type: Bolivia: Dept. of Cochabamba: Prov. of Chapare: epiphytic in moss in cloud forest east of Cochabamba toward Villa Tunari, alt. 1850 m, 29 Jan. 1984, C. Luer, J. Luer & R. Vasquez 9452 (Holotype: SEL).

This tiny species, discovered by Jane Luer, grows intertwined in loose mats of moss around the shaded bases of trees in moist cloud forest. The fragil little flowers are colorless and nearly transparent.

Brachionidium pteroglossum Luer, sp. nov.

Planta parva erecta rhizomate elongato, folio elliptico caule longiore, flore diaphano virescenti purpureo nervato, sepalis petalisque ovatis acutis caudatis, petalis ciliatis, labello transverse obtriangulari lobis lateralibus acutis expansis.

Plant small, epiphytic in moss, the rhizome erect, stout, 2 mm thick, 8-10 mm long between secondary stems, enclosed by 3 tubular, abruptly acuminate sheaths; roots slender, from nodes. Secondary stems suberect, slender, 5-7 mm long, enclosed by 2 abruptly acuminate sheaths. Leaf suberect, coriaceous, elliptical, acute, 15 mm

long, 5 mm wide, cuneate below into an indistinctly petiolate base. Inflorescence a non-resupinate, solitary flower borne by a slender, erect peduncle 12 mm long, with an apiculate bract near the middle; floral bract inflated, 3 mm long, acuminate; pedicel 1 mm long, with a filament 3 mm long; ovary 2 mm long; sepals and petals lime green with purple veins, the sepals sparsely ciliate, the middle sepal ovate, acuminate, acute, 12 mm long, 4.25 mm wide, 3-veined, the laterals connate into an ovate, acute lamina 12 mm long, 4.75 mm wide, 4-veined; petals ovate, oblique, acuminate, acute, ciliate, 11.5 mm long, 3 mm wide, 3-veined; lip green, transversely obtriangular, 2 mm long, 4 mm wide, the apex broadly rounded, thickened, shortly apiculate, the lateral angles acute, expanded, the disc with a rounded, microscopically pubescent callus; column stout, 2 mm long; pollinia 8.

Etymology: From the Greek pteroglossa, "a winged tongue," referring to the shape of the lip.

Type; Ecuador: Zamora-Chinchipe: epiphytic on moss in dark, wet, cloud forest south of Yangana, alt. 2400 m, 30 Jan. 1980, D. D'Alessandro 80-001 (Holotype: SEL), C. Luer illustr. 9489.

This small species with a stout rhizome is notable for the translucent green, purple-veined flowers with long-acuminate sepals and petals, and a lip with acute, lateral lobes expanded forward.

Brachionidium vasquezii Luer, sp. nov.

Planta mediocris erecta, rhizomate elongato ramificanti, foliis ellipticis cauli longioribus, pedunculo erecto longissimo, flore grandi, sepalo mediano synsepaloque similibus late ovatis obtuse acuminatis brevicaudatis, petalis late ovatis obtuse acuminatis minute ciliatis, labello transverse ovato-oblongo apiculato, disco cum callo ovoideo.

Plant medium in size, terrestrial in moss, the rhizome erect, elongate, branching, 5-20 mm long between secondary stems, enclosed by 2-3 tubular sheaths, frequently shed; roots coarse, descending from nodes. Secondary stems ascending, 10-17 mm long, enclosed by 2 tubular sheaths. Leaf coriaceous, elliptical, acute, 15-25 mm long including the 1-3 mm long petiole, 5-8 mm wide, cuneate below into the petiole. Inflorescence a solitary, non-resupinate flower borne by an erect, slender peduncle 5-10 cm long, with a bract below the middle; floral bract infundibular, 5 mm long; pedicel 1 mm long, with a filament 5 mm long; ovary stout, 2.5 mm long; sepals and petals translucent rose, veined in purple, the middle sepal broadly ovate, the apex obtusely acuminate into a short tail ca. 2 mm long, 3-veined, 15 mm long, 9 mm wide, the lateral sepals totally connate into a synsepal similar to the dorsal sepal, 4-veined, 13 mm long, 9 mm wide; petals broadly ovate, the margins minutely ciliate, the apex obtusely acuminate into a short tail ca. 3 mm long, 13 mm long, 7 mm wide; lip purple, transversely ovate-oblong, concave, 2.5 mm long, 5 mm wide, 6 mm wide expanded,

the rounded apex shortly apiculate, the basal angles obtuse, erect, the broad base delicately hinged to the column-foot, the disc with an ovoid, rounded callus, shallowly concave anteriorly; column stout, 1.5 mm long, pollinia 8.

Etymology: Named in honor of Sr. Roberto Vásquez Ch., illustrious investigator of the Orchidaceae of Bolivia, illustrator and co-author of the Orchids of Bolivia, who discovered this species.

Type: Bolivia: Dept. of Cochabamba: Prov. of Chapare: Balconcillo, terrestrial in moss along the trail embankment, alt. 3250 m, 7 Dec. 1980, R. Vásquez 477 (Holotype: SEL; Isotype: Herb. Vásquezianum); same area, 16 Jan. 1981, C. Luer, J. Luer & R. Vásquez 5627 (SEL); same area, 17 Jan. 1984, C. Luer, J. Luer & R. Vásquez 9356 (SEL).

Plants of this little species grow erect in fully exposed, deep, loose moss at the base of a dripping wet embankment at a high altitude where frosts are frequent during July and August. The erect, long, slender peduncle rises far above the highest leaf to bear the proportionately large, purple-striped flowers.

Lepanthes bifaria Luer, sp. nov.

Planta parva vel mediocris, inflorescentia foliis ellipticis longi-acuminatis brevior, racemo disticho densifloro, sepalis denticulatis, petalis transverse bilobis ciliatis, labelli laminis ellipticis ciliatis, appendicibus duobus brevibus ciliatis.

Plant small to medium in size, epiphytic, caespitose; roots filamentous. Secondary stems slender, erect, 4-6 cm long, enclosed by 9-11 ciliate lepanthiform sheaths with dilated ostia. Leaf erect, coriaceous, elliptical, 4-5 cm long, 1-1.4 cm wide, the apex acute, long-acuminate, tridenticulate with the middle tooth elongated, the base cuneate into a petiole 1.5 mm long. Inflorescence a dense, distichous, successively flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 12-22 mm long; floral bract 1.25 mm long; pedicel 2 mm long; ovary 2 mm long; sepals yellow, suffused with red, denticulate, carinate-spiculate, the laterals fimbriate, the dorsal sepal broadly ovate, obtuse, 3.5 mm long, 2 mm wide, connate 1 mm to the lateral sepals, the lateral sepals ovate, subacute, connate 1 mm, 3.5 mm long, 1.6 mm wide; petals red-purple, short-pubescent, long-ciliate, transversely bilobed, 0.6 mm long, 2.1 mm wide, the lobes subequal, subfalcate with rounded ends; lip red-purple, the blades narrowly elliptical, 1.66 mm long, long-ciliate, the ends narrowly obtuse, the connectives short and broad forming a broad body attached to the base of the column, the obtuse sinus with a pair of equal, short, oblong, ciliate appendices; column slender, 2 mm long, the anther and stigma apical.

Etymology: From the Latin bifarius, "double," in reference to the pair of similar appendices.

Type: Ecuador: Prov. of Pichincha: Tandapi, alt. 2000 m, July 1983, A. Hirtz 1013 (Holotype: SEL), C. Luer illustr. 9156.

This species is superficially similar to many others with long-acuminate leaves and a short, congested inflorescence, but the lateral sepals are fimbriate, the petals and blades of the lip are long-ciliate, and the appendix is double, both appendices being short and ciliate, side by side in a broad sinus.

Lepanthes brunnescens Luer, sp. nov.

Planta mediocris debilis, foliis floribusque brunneis, folio ovato acuminato inflorescentia longiore, racemo congestissimo longipedicellato, sepalis ovatis, petalis transverse trilobis, lobo superiore cuneato integro, lobo inferiore apice truncato eroso, lobo mediano setiformi, labelli laminis oblongis agglutinatis, appendice crasso cymbiformi pubescenti.

Plant medium in size, epiphytic, caespitose, weak; roots filamentous. Secondary stems slender to suberect or horizontal, 2-8 cm long, enclosed by 5-10 close, microscopically ciliate lepanthiform sheaths. Leaf erect, thinly coriaceous, satiny brown, ovate, 2-4 cm long, 0.8-1.7 cm wide, the apex acuminate, acute, the rounded base contracted into a petiole 1 mm long. Inflorescence a very congested, long-pedicellate raceme up to 4 mm long, borne on top of the leaf by a filiform peduncle 6-15 mm long; floral bract 1 mm long; pedicel 4-4.5 mm long; ovary 1 mm long; sepals translucent tan, the dorsal sepal ovate, acute, 3.25 mm long, 2.75 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals connate 1.5 mm into an ovate, broadly bifid lamina 3 mm long, 3 mm wide, the apices subacute; petals brown, microscopically pubescent, transversely trilobed, 1.5 mm long, 4.5 mm wide, the upper lobe cuneate with rounded angles of the apex, the lower lobe cuneate with the truncate apex erose, the middle lobe setiform, 1 mm long, from the outer margin at the middle; lip dark brown, microscopically cellular-pubescent, the blades oblong, 1.8 mm long, agglutinated medially over the column, the apices subtruncate, the bases narrowly obtuse, the connectives short, broadly cuneate from the middle of the blades, connate to the column above the base, the appendix from the sinus, large, oblong-cymbiform, pubescent, with an apical gland; column 2 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Latin *brunnescens*, "becoming brown," referring to the color of the leaves and flowers.

Type: Panama: Prov. of Panama: epiphytic in cloud forest, Cerro Jefe, alt. 900 m, 1 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9200 (Holotype: SEL).

This relative of the common South American L. mucronata Lindl. is characterized by the overall brown color, a long-pedicellate, congested raceme, petals with the lower lobe erose, and a lip with broad connectives from the middle of the blades, and a large, boat-shaped appendix with figurehead.

Lepanthes caloptera Luer, sp. nov.

Planta parva, inflorescentia folio elliptico breviter acuminato brevior, racemo congesto disticho, petalis transverse bilobis sepalis ovatis longioribus, lobis petalorum subaequalibus subfalcatis et obtuse angulatis, labelli laminis ovalibus, appendice crassa digitiformi.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 15-27 mm long, enclosed by 4-6 dark brown, minutely ciliate lepanthiform sheaths. Leaf erect, coriaceous, broadly elliptical, 22-27 mm long, 13-15 mm wide, the apex subacute to obtuse, lightly acuminate, the base broadly cuneate into the petiole 2 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 10-12 mm long; floral bract muricate, 1 mm long; pedicel 2-3 mm long; ovary 1.5 mm long; sepals translucent white, ovate, lightly acuminate, acute, the dorsal sepal 4.5 mm long, 3.25 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals connate 2 mm into a broadly bifid lamina 4 mm long, 3 mm wide; petals yellow, suffused with purple medially, microscopically pubescent, transversely bilobed, 1 mm long, 5 mm wide, 3-veined, the lobes subequal, subfalcate, each with an obtuse angle on the outer margin; lip red-purple, minutely pubescent, the blades ovate with rounded ends, 1 mm long, the connectives short, cuneate, connate to the column above the base, the appendix thick, oblong, pubescent, at the sinus, protruding immediately beneath the stigma; column 1 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Greek calos, "beautiful," and pteron, "wing," referring to the petals of the species.

Type: Panama: Prov. of Panama: epiphytic in cloud forest, Cerro Jefe, alt. 900 m, 1 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9194 (Holotype: SEL).

This species with a congested raceme shorter than the elliptical leaf is most remarkable for the more or less equally falcate lobes of the petals longer than the sepals, and a thick, fingerlike appendix in close proximity to the stigma.

Lepanthes coeloglossa Luer, sp. nov.

Planta perparva, inflorescentia foliis ellipticis plus minusve longiore, racemo congesto disticho, sepalis ovatis subaequalibus pro parte maxima libris, petalis bilobis, lobo superiore oblongo, lobo inferiore falcato, labelli laminis oblongis corpore protuberanti et excavata.

Plant very small, epiphytic, caespitose; roots filiform. Secondary stems slender, erect, 15-25 mm long, enclosed by 3-4 microscopically ciliate lepanthiform sheaths. Leaf erect, coriaceous, elliptical, the blade 9-10 mm long, 6-7 mm wide, the apex subacute to obtuse, the base broadly cuneate into the petiole 2 mm long. Inflorescence a congested, distichous, successively flowered raceme

up to 4 mm long on top of the leaf, by a filiform peduncle 6-10 mm long; floral bract 1-1.25 mm long, muricate; pedicel 1-1.5 mm long; ovary 0.9 mm long; flowers yellow; sepals ovate, acute, 2 mm long, 1.25 mm wide, connate basally for 0.25-0.5 mm; petals transversely bilobed, 0.4 mm long, 1.5 mm wide, the upper lobe oblong with the apex rounded, the lower lobe falcate, narrowly obtuse; lip glabrous, the blades oblong, 0.6 mm long, the apices truncate, the bases round, the connectives thick, cuneate, the body with a central, round cavity just above the connation to the base of the column, the sinus protuberant, rounded, apiculate; column 0.6 mm long, the anther and stigma apical.

Etymology: From the Greek koilos, "hollow," and glossa, "tongue," referring to the rounded excavation on the lip.

Type: Panama: Prov. of Chiriqui: epiphytic in elfin forest on Cerro Hornito, alt. 1700 m, 15 Dec. 1976, C. Luer, A. Luer, R. L. Dressler & N. H. Williams 1357 (Holotype: SEL).

This little species may be identified by the congested raceme borne by a peduncle about as long as the elliptical leaf. The sepals are subequal and nearly free; the lower lobe of the petals is falcate; and the body of the lip has a central, round excavation.

Lepanthes deliqua Luer, sp. nov.

Planta parva, racemis paucis laxae flexuosae folio elliptico plus minusve longioribus, sepalis denticulatis acuminatis, petalis anguste transverse oblongis, labelli laminis suborbiculatis pubescentibus connectivis angustis, corpore appendiceque deliquis.

Plant small, epiphytic, caespitose; roots filiform. Secondary stems slender, erect, 3.5-5.5 cm tall, enclosed by 5-7 minutely ciliate lepanthiform sheaths. Leaf erect, coriaceous, elliptical, obtuse, 22-25 mm long, 8-12 mm wide, cuneate below to the subpetiolate base. Inflorescence a loose, flexuous, progressively lengthening raceme 1.5-5 cm long including the filiform peduncle ca. 1 cm long; floral bract 1.5 mm long, muricate; pedicel 1.5 mm long; ovary 1 mm long; sepals yellow, diffusely suffused with purple, carinate, minutely denticulate, the dorsal sepal ovate, concave, acute, acuminate, 6 mm long, 2.5 mm wide, connate basally for 0.75 mm to the lateral sepals, the lateral sepals ovate, oblique, connate 3 mm, 6.5 mm long, 3.75 mm wide together, the apices acute, acuminate into slender, incurved tails; petals yellow, suffused with purple medially, narrowly transversely oblong, minutely pubescent, 0.6 mm long, 3.5 mm wide, the lobes narrowly triangular-oblong, narrowly obtuse, the lower lobe longer; lip purple, the blades minutely pubescent, suborbicular, 1.33 mm long and wide, deflexed to surround the apical half of the column, the connectives narrowly cuneate from the bases of the blades to the connection directly to the under surface of the column near the middle without forming a body or appendix; column 1.5 mm long, decurved-arcuate, the anther dorsal with a large, bifurcated cap, the stigma ventral.

Etymology: From the Latin deliquus, "lacking, wanting," referring to the total absence of the body and appendix of the lip.

Type: Ecuador: Prov. of Chimborazo: La Palma, alt. 2800 m, July 1983, A. Hirtz 1255 (Holotype: SEL), C. Luer illustr. 9155.

This species is most unusual for the complete absence of a body and appendix of the lip. The round blades of the lip surround the arcuate column, and they are suspended by narrow connectives that originate directly from the under surface of the column without prior union into a body. Consequently, there is no trace of an appendix.

Lepanthes demissa Luer, sp. nov.

Planta mediocris debilis, foliis tenuibus anguste ovatis inflorescentia longioribus, racemo congesto disticho, sepalis ovatis microscopicamente denticulatis, petalis parvis transverse oblongis, labelli laminis anguste oblongis connectivis late cuneatis, appendice extus minuta pubescenti.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems weak, slender, erect to transverse, 3-9.5 cm long, enclosed by 6-11 lepanthiform sheaths with minutely ciliate, dilated ostia. Leaf erect to suberect, thinly coriaceous, narrowly ovate, acuminate, acute, 3.5-5.5 cm long, 8-12 mm wide, the base cuneate into a 1 mm long petiole. Inflorescence a congested, distichous raceme up to 5 mm long, borne on top of the leaf by a filiform peduncle 10-24 mm long; floral bract 2 mm long, lightly muricate; pedicel 1.5 mm long, ovary 1.5 mm long, 6-carinate; sepals dull tan, ovate, acute, carinate-spiculate, the margins cellular-denticulate, the dorsal sepal 5 mm long, 2.6 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 1 mm, 5 mm long, 1.8 mm wide; petals orange-brown, microscopically pubescent, transversely oblong, 0.5 mm long, 1.8 mm wide, the ends of the lobes rounded, the lower lobe much smaller than the upper lobe; lip orange-brown, microscopically pubescent, the blades narrowly oblong, 1.4 mm long, the apices narrowly obtuse, incurved, the bases narrowly rounded, the connectives broadly cuneate, connected to the base of the column, the body with a small round cavity near the protuberant, rounded, pubescent sinus, the body pubescent externally with a minute, pedunculated, pubescent appendix; column 1.4 mm long, the anther and stigma apical.

Etymology; From the Latin demissus, "drooping, weak," in reference to the habit of the plant.

Type: Panama: Prov. of Chiriqui: epiphytic in cloud forest above Guadalupe, alt. 2300 m, 8 Dec. 1983, C. Luer, J. Luer & A. Maduro 9292 (Holotype: SEL).

This species is characterized by the thin, weak stems with a congested inflorescence on top of the thin, narrowly ovate, acuminate leaf. The sepals are cellular-denticulate, the petals are small, and the appendix is minute and pubescent on the under surface of the body of the lip.

Lepanthes echidna Luer & Vásquez, sp. nov.

Herba parva, folio ovato breviter acuminato inflorescentia flexuosa longiore, sepalis acutis, lateralium marginibus ambabus inflexis cristatis, petalis transverse oblongis, labelli laminis lunatis pubescentibus, appendice nulla.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 1-6 cm long, enclosed by 3-8 ciliate lepanthiform sheaths with dilated apices. Leaf erect, coriaceous, the blade ovate, obtuse, shortly acuminate, 17-23 mm long, 10-13 mm wide, the rounded base contracted into a petiole 4-5 mm long. Inflorescence a subdense, flexuous, successively flowered raceme up to 11 mm long, borne behind the leaf by a filiform peduncle 7 mm long; floral bract 2 mm long, ciliate; pedicel 2.25 mm long; ovary 1 mm long; sepals triangular, concave, acute with setiform apices, the dorsal sepal purple, 6 mm long, 3 mm wide, connate to the lateral sepals for 1 mm, tricarinate, the carinae irregularly ciliate-fringed, the lateral sepals yellow, suffused with purple centrally, unicarinate, similarly fringed, 7 mm long, 3 mm wide, connate less than 1 mm, both margins sharply folded with a fringed lamella along the creases; petals purple, shortly pubescent, transversely oblong, 1 mm long, 3 mm wide, the lobes subequal, oblong with rounded ends; lip rose, shortly pubescent, the blades lunate, 1.8 mm long, the apices narrowly obtuse, incurved, the bases rounded, the connectives broadly cuneate, originating with the base of the column, the sinus obtuse without an appendix; column 1.5 mm long, the anther and stigma apical.

Etymology: From the Greek echidna, "a viper," or the genus of spiny anteaters, Echidna, referring to the prickly exterior of the flower.

Type: Bolivia: Dept. of Chapare: epiphytic in cloud forest between Cochabamba and Villa Tunari, alt. 1850 m, 17 Jan. 1984, C. Luer, J. Luer & R. Vásquez 9386 (Holotype: SEL).

This unusual species, another member of the Bolivian "complicata" group, is distinguished by the crested, folded margins of both sides of the lateral sepals. It seems closely related to L. ptyxis and L. zongoensis Luer & Vásquez.

Lepanthes empis Luer, sp. nov.

Planta minuta, inflorescentia foliis late ellipticis brevior, racemo congesto disticho, floribus minutissimis, sepalis ovatis acutis, petalis transverse bilobis multangulatis, labelli laminis oblongis, appendice ovoidea pubescenti transverse fissa.

Plant minute, epiphytic, caespitose; roots comparatively coarse. Secondary stems erect, slender, 3-17 mm tall, enclosed by 2-4 microscopically pubescent lepanthiform sheaths. Leaf erect, coriaceous, broadly elliptical, obtuse, the blade 5-11 mm long, 4-6 mm wide, the base cuneate into a twisted petiole 1 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 4 mm long, borne behind the leaf by a filiform peduncle 3-4 mm

long; floral bract and pedicel each 0.75 mm long; ovary 0.75 mm long; sepals light green to rose, ovate, acute, the dorsal sepal 1.8 mm long, 1 mm wide, the lateral sepals 1.8 mm long, 0.9 mm wide, connate 0.8 mm; petals purple to orange margined in purple, glabrous, at most cellular, transversely bilobed, 0.5 mm long, 1.2 mm wide, with a minute, obtuse angle near the middle of the outer margin, the upper and lower lobes subequal, more or less ovate, obtusely angled on the outer margins, the apices rounded; lip glabrous, at most cellular, purple, the blades oblong, 0.6 mm long with rounded ends, the connectives cuneate from the bases of the blades, connate to the column above the base, the sinus filled with a proportionately large, pubescent, ovoid appendix with the apex transversely cleft.

Etymology: From the Greek empis, "a gnat or mosquito," referring to the minute flowers.

Type: Panama: Prov. of Chiriqui: epiphytic in small trees near Volcan, "La Cordillera," alt. 1300 m, 9 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9314 (Holotype: SEL).

This minute species, one of the smallest in the genus, is characterized by the short, congested raceme, the entire sepals, the multangular petals, and the proportionately large ovate appendix cleft transversely.

Lepanthes epibator Luer & Vásquez, sp. nov.

Herba mediocris debilis scandens, inflorescentia racemosa subdensa folio anguste ovato brevior, petalis minutis transverse oblongis, labelli laminis oblongis pubescentibus, appendice oblonga longi-pubescenti.

Plant small to medium in size, epiphytic, scandent; roots from the apices of secondary stems, slender. Secondary stems slender, proliferating from the apices of other secondary stems, 4-8 cm long, enclosed by 5-8 close, minutely ciliate, lepanthiform sheaths. Leaf erect, coriaceous, narrowly ovate, acute, 2.5-4.5 cm long, 0.6-0.9 cm wide, the base cuneate into a petiole 2-3 mm long. Inflorescence a subdense, successively flowered raceme up to 20 mm long, produced on top of the leaf by a filiform peduncle 4-6 mm long; floral bract 1 mm long; pedicel 1.25 mm long; ovary 1.5 mm long; sepals white, ovate, acute, shortly acuminate into narrow apices, the dorsal sepal 3.2 mm long, 2.5 mm wide, connate 1 mm to the lateral sepals, the lateral sepals oblique, connate 1 mm, 3 mm long, 2.8 mm wide together; petals red-purple, pubescent, transversely oblong, 0.4 mm long, 1 mm wide, the lobes subequal, oblong, rounded; lip red-purple, the blades oblong with rounded ends, 1.2 mm long, the connectives broadly cuneate, the body connected to the column above the base, the sinus narrow with a comparatively large, oblong, long-pubescent appendix; column red-purple, 1 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Greek epibator, "a climber," referring to the scandent habit.

Type; Bolivia: Dept. of La Paz: Prov. of Sud Yungas: epiphytic in cloud forest east of Unduavi, alt. 3100 m, 22 Jan. 1984, C. Luer, J. Luer & R. Vásquez 9409 (Holotype: SEL).

This species may be distinguished from the other two scandent species of Lepanthes with racemes shorter than the leaves by the weak habit, the very small flowers, and the comparatively large, long-pubescent appendix.

Lepanthes frigida Luer, sp. nov.

Planta mediocris, racemis laxe plurifloris folio anguste elliptico brevioribus vel longioribus, sepalis acutis denticulatis, petalis transverse oblongis, labelli laminis oblongis apice acutis incurvis, connectivis latissimis, appendice minuta pedunculata.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems relatively stout, erect, 5-11 cm long, enclosed by 6-8 close lepanthiform sheaths with ciliate ostia. Leaf erect, coriaceous, narrowly elliptical, acute, 4.5-6.5 cm long including the 2-3 mm long petiole, 7-11 mm wide, the base cuneate into the petiole. Inflorescence racemose, 2-3 loose, distichous, successively several-flowered racemes up to 9 cm long including the 5-8 mm long, slender peduncle; floral bract 1.5 mm long; pedicel 1 mm long; ovary 1 mm long; sepals yellow to orange, minutely denticulate, the dorsal sepal elliptic-ovate, acute, 4.3 mm long, 2.5 mm wide, connate basally to the lateral sepals for 0.75 mm, the lateral sepals ovate, oblique, 1-veined, connate 1.5 mm, 4.3 mm long, 3 mm wide together; petals yellow with red margins, microscopically pubescent, transversely oblong, 0.75 mm long, 2.5 mm wide, with a small, obscure angle on the outer margin between the lobes, both lobes oblong, obtuse, the upper lobe twice longer than the lower lobe; lip yellow with red margins, microscopically pubescent, the blades oblong, 1.4 mm long, the apices broad, acute, incurved, the bases obtuse, the connectives broadly cuneate, connected to the column below the middle, the sinus acute, with a minute, pedunculated, ciliate appendix; column 2 mm long, the anther and stigma apical.

Etymology: From the Latin frigidus, "cold," referring to the cold, high altitude of the habitat.

Type: Ecuador: Prov. of Chimborazo: La Palma, alt. 3600 m, July 1983, A. Hirtz 1249 (Holotype: SEL), C. Luer illustr. 9158.

This species, a member of the group with an apical stigma, is notable for the narrowly elliptical leaves with loose inflorescences that begin flowering from near the base and continue until the raceme is about twice as long as the leaf. The sepals are acute and denticulate, the petals are transversely oblong, the apices of the lip are broadly incurved beneath the apex of the column, and the appendix is minute and pedunculated.

Lepanthes infundibulum Luer, sp. nov.

Planta mediocris, foliis patentibus suborbicularibus vel transverse ovatis infundibuliformibus, inflorescentia racemosa congesta brevi, sepalis ellipticis petalis transverse bilobis brevioribus, labelli laminis ovatis apicibus acuminatis incurvis, sinu cum caespiti villosa.

Plant medium in size, epiphytic, caespitose; roots filiform. Secondary stems relatively stout, erect, 2.5-5 cm long, enclosed by 5-6 blackish, minutely ciliate lepanthiform sheaths. Leaf suberect to spreading, coriaceous, suborbicular to transversely ovate, concave to funnel-shaped, from 15 mm long, 13 mm wide, to 25 mm long, 23 mm wide, the apex round to obtuse, the rounded base contracted into a petiole 1-3 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 6 mm long, borne on top of the leaf by a filiform peduncle 9-12 mm long; floral bract 1-1.25 mm long, pedicel 1 mm long; ovary 2 mm long; sepals yellow, elliptic, subacute, the dorsal sepal 2.5 mm long, 1.25 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 1 mm, 2.5 mm long, 1 mm wide; petals yellow, suffused and edged in red, pubescent, transversely bilobed, 1 mm long, 3.5 mm wide, the lobes subtriangular, narrowly obtuse, the upper lobe obtusely angled on the inner margin, slightly larger than the lower lobe; lip red-purple, the blades ovate, 1.2 mm long, minutely ciliate, the apices narrowly acuminate, acute, incurved beneath the column, the bases rounded, the connectives cuneate, connate to the column above the base, the sinus rounded, the appendix a tuft of villous hairs; column slender with a large anther-bed, 1.4 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Latin infundibulum, "a funnel," in reference to the shape of the leaves.

Type: Panama: Prov. of Chiriqui: epiphytic in elfin forest, Cerro Hornito, alt. 1700 m, 15 Dec. 1976, C. Luer, A. Luer, R. L. Dressler & N. H. Williams 1331 (Holotype: SEL).

The habit of this species is most unusual in the funnel-like shape of the broad leaves. The inflorescence is borne within the cup. The flowers are small, the petals longer than the sepals. The apices of the blades of the lip are narrow and curve under the large apex of the slender column. The appendix is reduced to a tuft of straight hairs in the sinus.

Lepanthes maduroi Luer, sp. nov.

Planta mediocris, racemo laxe plurifloro folium duplo superanti, floribus grandibus ferrugineis, sepalis ovatis leviter acuminatis, petalis transverse oblongis parvis, labelli laminis anguste oblongis apice incurvatis, sinu minute ciliato appendice destituta.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems slender, erect to suberect, 2.5-8 cm long, enclosed by 5-9 lepanthiform sheaths with dilated, ciliate stomata. Leaf

erect, coriaceous, elliptical, 2.5-4 cm long, 1-1.7 cm wide, the apex lightly acuminate, acute, the base cuneate into the 1-2 mm long petiole. Inflorescence a loose, subflexuous, flexible, successively several-flowered raceme up to 4 cm long, borne by a filiform peduncle 3-4.5 cm long; floral bract 1.5-2 mm long, lightly muricate; pedicel 2 mm long; ovary 2 mm long, 6-carinate; sepals reddish tan or brown, ovate, lightly acuminate, acute, carinate, the dorsal sepal 9.5 mm long, 6.25 mm wide, connate to the lateral sepals for 2 mm, the lateral sepals connate 3 mm, 9.25 mm long, 4.5 mm wide; petals red-brown, microscopically pubescent, transversely oblong, 1 mm long, 3.5 mm wide, the ends of the lobes rounded, the lower lobe narrower and slightly incurved; lip red-brown, glabrous except for microscopic cilia at the apices of the blades, the blades narrowly oblong with narrowly rounded ends, 2 mm long, the apices incurved beyond the column, the connectives broadly cuneate, connate to the column above the base, the sinus minutely ciliate without an appendix; column 2 mm long, the anther and stigma apical.

Etymology: Named in honor of Sr. Andres Maduro of Panama, Panama, who has collected this species, and has cultivated it successfully for several years.

Type: Panama; Prov. of Chiriqui: epiphytic in cloud forest above Guadalupe, alt. 2300 m, 8 Dec. 1983, C. Luer, J. Luer & A. Maduro 9305 (Holotype: SEL).

This handsome, large-flowered species with racemes exceeding the leaves grows intermixed with L. maxonii Schltr. The reddish tan sepals are shortly acuminate and tailless.

Lepanthes mariposa Luer, sp. nov.

Planta perpusilla, inflorescentia brevi racemosa congesta super folio crasso elliptico, petalis late bilobis sepalis ellipticis subaequantibus, lobis suborbiculatis, labelli laminis suborbiculatis convexis, connectivis brevibus, appendice ligulata pubescenti.

Plant very small, epiphytic, densely caespitose; roots filamentous. Secondary stems erect to suberect, 7-25 mm long, enclosed by 3-5 microscopically pubescent lepanthiform sheaths. Leaf more or less spreading, thickly coriaceous, elliptical, acute, 10-16 mm long, 5-8.5 mm wide, the base cuneate into a petiole 2 mm long. Inflorescence a congested, secund, successively flowered raceme up to 3 mm long, borne on top of the leaf by a filiform peduncle 2-4 mm long; floral bract 0.75 mm long; pedicel 1 mm long; ovary 1 mm long; sepals light yellow, elliptical, subacute to obtuse, the dorsal sepal 2 mm long, 1.5 mm wide, connate to the lateral sepals for 0.25 mm, the lateral sepals 2 mm long, 1.25 mm wide, connate 0.5 mm; petals yellow to orange or orange-brown, more or less suffused with purple, glabrous, or at the most cellular, transversely bilobed, nearly as large as the sepals, 1 mm long, 2 mm wide, the lobes more or less suborbicular, subequal; lip bright purple, the blades cellular, suborbicular, convex, 1.2 mm long, the connectives cuneate, short, from near the base of the blades, to form a narrow body, con-

nate to the column above the base, the appendix proportionately large, ligulate, pubescent; column 0.8 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Spanish mariposa, "a butterfly," in allusion to the appearance of the petals.

Type: Panama: Prov. of Chiriqui: epiphytic in scrubby trees near Volcan, alt. 1350 m, 7 Dec. 1983, C. Luer, J. Luer & H. Butcher 9278 (Holotype: SEL): epiphytic, La Cordillera, near Volcan, alt. 1300 m, 9 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9310 (SEL); epiphytic in cloud forest, Cerro Colorado, alt. 1700 m, 16 Feb. 1977 C. Luer, J. Luer & R. L. Dressler 1598 (SEL).

This floriferous little species with short racemes on top of the little ovate leaves is easily recognized by the large pair of petals that spread like the wings of a butterfly to either side of the lip and column.

Lepanthes megalocephala Luer & Vásquez, sp. nov.

Planta perpusilla, racemo grandifloro congesto folio ovato reticulato brevior, sepalis ovatis ciliatis, petalorum lobis anguste triangularibus pubescentibus, labelli laminis anguste ovatis longiciliatis, connectivis anguste cuneatis, corpore nullo, appendice oblonga pubescenti.

Plant very small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 5-10 mm long, enclosed by 4-5 microscopically scabrous lepanthiform sheaths. Leaf erect, coriaceous, purple beneath, reticulated, ovate, subacute, 8-10 mm long, 6-7 mm wide, the rounded base contracted into a petiole 1 mm long. Inflorescence a congested, distichous, successively large-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 3-5 mm long; floral bract ciliate, 0.75 mm long; pedicel 0.75 mm long; ovary 1.5 mm long; sepals red with yellow margins, triangular-ovate, acute, densely ciliate and carinate ciliate, the dorsal sepal 4.5 mm long, 3 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals 4.5 mm long, 2 mm wide, connate for 1.5 mm, minutely pubescent above the middle; petals red-orange, pubescent, transversely bilobed, 3.75 mm wide, 1 mm long, the lobes narrowly triangular, acute, the upper larger; lip yellow, suffused with red-orange, the blades linear-ovate, 2 mm long, long-ciliate, the ends narrowly obtuse, the connectives narrowly cuneate, originating from the base of the column without forming a body, the sinus acute, with an oblong, truncate, pubescent appendix; column slender, 2 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Latinized Greek megaloscephalus, "with a large head," referring to the comparatively large flower for the plant.

Type: Bolivia: Prov. of Chapare: epiphytic in cloud forest between Cochabamba and Villa Tunari, alt. 1850 m, 29 Jan. 1984, C. Luer, J. Luer & R. Vásquez 9470 (Holotype: SEL).

This tiny species, found by Roberto Vásquez, produces on a short peduncle a brightly colored flower as large as the reticulated leaf. The sepals are densely ciliate, the narrowly triangular lobes of the petals are pubescent, the linear blades of the lip are long-ciliate, and the connectives do not form a body.

Lepanthes menatoi Luer & Vásquez, sp. nov.

Planta grangis, inflorescentia racemosa congestissima brevipedicellata folio elliptico breviter acuminato brevior, sepalis acutis, petalis bilobis, lobo superiore truncato, lobo inferiore anguste triangulari, labelli laminis oblongis convexis parvis marginibus interioribus longiciliatis, appendice oblonga pubescenti.

Plant large, epiphytic, caespitose; roots coarse. Secondary stems stout, erect, 17-24 cm long, enclosed by 11-12 ciliate lepanthiform sheaths. Leaf erect, thinly coriaceous, elliptical, 8-8.5 cm long, 3.7-4 cm wide, the apex subacute, lightly acuminate, the base broadly cuneate into a petiole 2-3 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 3 cm long, borne either behind or in front of the leaf by a filiform peduncle up to 3.5 cm long; floral bract 1.5 mm long; pedicel 1.5 mm long; ovary 3.5 mm long; sepals yellow, glabrous, the dorsal sepal triangular, acute, 8 mm long, 5.5 mm wide, connate to the lateral sepals for 1.5 mm, the lateral sepals semilunate, connate 3.5 mm into an ovate synsepal 7.5 mm long, 7 mm wide, the apices subacute, approximate; petals yellow, suffused with red, essentially glabrous, transversely bilobed, 1.25 mm long, 4 mm wide, the upper lobe oblong, truncate, the lower lobe narrowly triangular, oblique, acute; lip yellow, suffused with red, the blades oblong, convex, with rounded ends, 1.25 mm long, the surfaces and outer margins glabrous, the inner margins and bases long-ciliate, the connectives narrowly oblong from the bases of the blades, long-ciliate anteriorly, the body originating from the end of the ovary with the column, the sinus broad with a small, oblong, pubescent appendix; column 1 mm long, expanded at the apex, the anther dorsal, the stigma ventral.

Etymology: Named in honor of Don Dino Menato of Chulumani, Bolivia, who discovered and cultivated this species.

Type: Bolivia: La Paz: Prov. of Sud Yungas: without specific locality, cultivated by Dino Menato in Chulumani, flowered in cultivation 26 Jan. 1984, C. Luer 9428 (Holotype: SEL).

This large, yellow-flowered species is yet another in the widespread elata-monitor complex. Lepanthes menatoi, however, is easily identified by the small oblong lobes of the lip with long-ciliate, inner margins, the hairs spreading over the column.

Lepanthes microtica Luer & Escobar, sp. nov.

Planta parva, foliis ovatis inflorescentia longioribus, racemo congesto, sepalis ellipticis lateralibus alte connatis, petalis perparvis transverse oblongis, labelli laminis minute pubescentibus anguste ovatis columna brevioribus, appendice minuta triangulari.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 1.5-5 cm long, enclosed by 4-7 microscopic ciliate-scabrous lepanthiform sheaths. Leaf erect, coriaceous, ovate, subacute to obtuse, 10-15 mm long, 6-9 mm wide, the rounded base contracted into a petiole 1 mm long. Inflorescence a congested raceme up to 4 mm long, borne on top of the leaf by a filiform peduncle up to 6 mm long; floral bract 0.75 mm long, lightly echinate; pedicel 0.5 mm long; ovary 1 mm long; sepals elliptical, subacute, the dorsal sepal translucent rose, minutely apiculate, tri-carinate, 2.75 mm long, 1.5 mm wide, the lateral sepals light orange, connate 1.5 mm into a suborbicular, bifid lamina 2.5 mm long, 2.25 mm wide; petals orange, suffused with purple, transversely oblong, 0.3 mm long, 1 mm wide, microscopically cellular-glandular, the lobes subequal, oblong-triangular with rounded apices; lip light purple, minutely pubescent, the blades narrowly ovate, 1 mm long with rounded ends, the connectives cuneate, connate to the column above the base, the obtuse sinus with a small, triangular appendix; column 1.3 mm long, the anther and stigma apical.

Etymology: From the Greek micro-, "little," and otikos, "pertaining to ears," in reference to the small petals.

Type: Costa Rica: Prov. of San José: road to Santa Maria de Dota, alt. 2240 m, 23 July 1983, R. Escobar 3070 (Holotype: SEL), C. Luer illustr. 9132; Prov. of Cartago: La Chonta, along the Pan American highway, alt. 2450, 6 Aug. 1983, R. Escobar 3158 (SEL).

This species may be recognized by the little ovate leaves with a short, congested raceme. The lateral sepals are connate to near the apices, the transversely oblong petals are minute, and the lobes of the lip are smaller than the column.

Lepanthes plumifera Luer, sp. nov.

Planta mediocris, inflorescentia racemosa congesta folio ovato acuminato dimidio brevior, sepalo dorsali synsepaloque transverse ovatis, petalis transverse ellipticis bobis acutis, labelli laminis fusiformibus, appendice magna pilosa protrudenti.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 6-9 cm long, enclosed by 6-8 close, minutely ciliate lepanthiform sheaths. Leaf suberect, thinly coriaceous, ovate, acuminate, 4-5.5 cm long, 2.2-2.5 cm wide, the round base abruptly contracted into a petiole 2 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 8 mm long, borne behind the leaf by a filiform peduncle up to 10 mm long; floral bract 1 mm long, muricate; pedicel 1.5 mm long; ovary 1 mm long; sepals yellow, minutely denticulate, the dorsal sepal transversely ovate, subacute, 2.66 mm long, 3 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals connate 1.5 mm into a transversely ovate lamina 2.8 mm long, 3.2 mm wide, the apices acute, oblique, free for 0.66 mm; petals orange, suffused with purple, transversely bilobed, minutely pubescent, 1 mm long, 3.5 mm wide,

the upper lobe triangular-oblong, acute, the lower lobe shorter, triangular, acute; lip orange, suffused with purple, the blades fusiform, 1 mm long with acute ends, embracing the column, the connectives obliquely cuneate from the apical halves of the blades, each with a rounded below the attachment to the under surface of the column below the middle, the appendix comparatively large, pilose, triangular, acute, protruding forward beyond the apices of the blades; column 0.75 mm long, the anther dorsal, the stigma ventral.

Etymology; From the Latin pluma, "feather," and -fer, "bearing," referring to the featherlike appendix.

Type: Ecuador: Prov. of El Oro: epiphytic in cloud forest west of Pinas, alt. 1000 m, 25 Sept. 1980, C. Luer, J. Luer, C. H. Dodson et al. 5542 (Holotype: SEL).

The flowers of this species are very small with broad, denticulate sepals and pointed petals. The narrow blades of the lip hug the column, and protruding from beneath is the featherlike appendix.

Lepanthes prora Luer, sp. nov.

Planta parva, inflorescentia foliis orbiculatis brevior, racemo congesto disticho, sepalis triangularibus denticulatis, petalis transverse bilobis pubescentibus, lobis triangularibus acutis, labelli laminis pubescentibus oblongis, appendice crassa cymbiformi.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 15-25 mm long, enclosed by 4-5 dark brown, microscopically ciliate lepanthiform sheaths. Leaf erect, coriaceous, suborbicular, the blade 11 mm long and 10 mm wide to 22 mm long and 19 mm wide, the apex rounded, the base rounded, contracted into a petiole 2 mm long. Inflorescence a congested, distichous, successively flowered raceme 3 mm long, borne behind the leaf by a filiform peduncle 4-5 mm long; floral bract muricate, 1 mm long; pedicel 1-1.5 mm long; ovary 1 mm long; sepals light yellow, ovate-triangular, acute, minutely denticulate, low-carinate-denticulate along the veins externally, the dorsal sepal 4 mm long, 2.5 mm wide, connate 0.75 mm to the lateral sepals, the lateral sepals connate 1 mm, 3.75 mm long, 2 mm wide; petals yellow, suffused with red, minutely pubescent, transversely bilobed, 0.75 mm long, 3 mm wide, the lobes triangular, acute, the upper lobe twice longer than the lower lobe; lip yellow, minutely pubescent, the blades oblong, 1.25 mm long, the apices acute, curved under the column, the bases rounded, the connectives broadly cuneate, the body connected to the base of the column, the appendix stout, cymbiform, pubescent; column 1.5 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Greek prora, "the bow of a boat," referring to the shape of the appendix.

Type: Panama: Prov. of Panama: epiphytic in cloud forest, Cerro Jefe, alt. 900 m, 1 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9207 (Holotype: SEL).

This species is characterized by round leaves; a short inflorescence; minutely denticulate sepals; pubescent, pointed petals; and a thick, pubescent appendix that resembles the prow of a boat.

Lepanthes psyche Luer, sp. nov.

Planta mediocris, foliis crassis ellipticis breviter acuminatis inflorescentia longioribus, racemo congesto disticho, sepalo dorsali synsepaloque late ovatis, petalis grandibus cum dente marginali, lobo superiore suborbiculato glabro, labelli laminis agglutinatis, appendice ligulata convexa cum parte terminali concava.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems slender, erect to horizontal or pendent, 4-6 cm long, enclosed by 4-5 close, minutely ciliate lepanthiform sheaths. Leaf erect to drooping, thickly coriaceous, more or less concave, often coppery in color, more or less suffused with purple beneath, elliptical, 3-5.5 cm long, 1.5-3.5 mm wide, the apex shortly acuminate, acute, the base cuneate into a petiole 2-5 mm long. Inflorescence a congested, distichous raceme up to 10 mm long, borne on top of the leaf by a filiform peduncle 15-20 mm long; floral bract 1 mm long; pedicel 2 mm long; ovary 2.5 mm long; sepals yellow to tan, the dorsal sepal broadly ovate, obtuse, 3 mm long, 2.5 mm wide, the lateral sepals connate 1.5 mm into a transversely ovate lamina 2.5 mm long, 3 mm wide, the apices acute; petals orange to orange-brown, glabrous or microscopically cellular, transversely bilobed, 1.75 mm long, 3.25 mm wide, 4-veined, with a short tooth on the outer margin between the lobes, the upper lobe broadly elliptical to suborbicular, the lower lobe half as large, oblong, obtuse; lip rose to purple, the blades obovate, 2 mm long, agglutinated medially over the column, the apices broadly obtuse, the bases narrowly obtuse, the connectives short, cuneate, connate to the column above the base, the appendix in the acute sinus, pubescent, ligulate, nearly 1 mm long, convex, with a concave apical segment with a bilobulate apex; column 1.5 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Greek psyche, "a butterfly," in reference to the large petals.

Type: Panama: Prov. of Chiriqui: epiphytic in small trees near Volcan, "La Cordillera," alt. 1300 m, 9 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9317 (Holotype: SEL); same area, C. Luer et al. 9312 (SEL); between Concepcion and Volcan, alt. ca. 1000 m, 9 Sept. 1976, C. Luer & H. Butcher 1158 (SEL).

Vegetatively this species is very similar to that of L. setos. In mature plants, the thick, heavy, concave, coppery leaves cause the stems to bend or hang from their perch. The small flowers are distinguished by the large, overlapping petals with a small marginal tooth. The toothed petals and the agglutinated blades of the lip indicate some relationship with the South American L. mucronata Lindl.

Lepanthes schizocardia Luer, sp. nov.

Planta mediocris, foliis late ellipticis inflorescentia longioribus, racemo congesto disticho longipedicellato, sepalis ovatis, petalis transverse bilobis obtusis, labello cordato concavo apice acuto bifido, appendice crassa ligulata pubescenti, columna brevi.

Plant medium in size, epiphytic, caespitose; roots filamentous. Secondary stems slender, erect, 2.5-9.5 cm tall, enclosed by 5-9 close, dark brown, microscopically ciliate-scabrous lepanthiform sheaths. Leaf erect, coriaceous, suffused with purple beneath, broadly elliptical, 2.5-5 cm long, 1.2-3 cm wide, the apex subacute to obtuse, more or less lightly acuminate, the base cuneate to round, contracted into a petiole 3-4 mm long. Inflorescence a congested, distichous, successively flowered raceme, up to 5 mm long, borne behind the leaf by a filiform peduncle 15-25 mm long; floral bract muricate, 2 mm long; pedicel 3-4 mm long; ovary 2 mm long; sepals yellow, ovate, subacute, the dorsal sepal 3-3.75 mm long, 2-2.25 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, 3-4 mm long, 1.5-2 mm wide, connate for 1 mm; petals orange, suffused with red, microscopically pubescent, transversely bilobed, 1-1.25 mm long, 3-3.75 mm wide, 3-veined, the lobes subequal, triangular with rounded apices; lip red, microscopically cellular-pubescent, cordate with the acute apex bifid, the blades with connectives semiovate, concave, 1.75-2.25 mm long, the apices acute, the bases rounded, to either side of the column, connate to the base of the column, the appendix thick, ligulate, pubescent, below the sinus; column 1 mm long, the anther and stigma apical.

Etymology: From the Greek schizo-, "split," and kardia, "heart," in reference to the cleft, heart-shaped labellum.

Type: Panama: Prov. of Panama: epiphytic in cloud forest, Cerro Jefe, alt. 900 m, 1 Dec. 1983, C. Luer, J. Luer, H. Butcher & A. Madero 9193 (Holotype: SEL); same area, 2 Mar. 1976, C. Luer, J. Luer, P. Taylor & H. Butcher 709 (SEL); Altos de Pacoro, alt. 650 m, 4 Mar. 1976, C. Luer, J. Luer, P. Taylor & R. L. Dressler 733 (SEL).

This handsome species is best distinguished by the concave, cordate lip cleft at the apex. The laminae are mere thickenings along the margins, the demarcations with the connectives obscure. The blades and exposed body of the lip embrace the sides and bottom of the short column. The thick, pubescent appendix protrudes from beneath the sinus and between the apices of the blades.

Lepanthes setos Luer, sp. nov.

Planta mediocris, foliis crassis ellipticis breviter acuminatis inflorescentia longioribus, racemo congesto disticho, sepalo dorsali synsepaloque late ovatis, petalis grandis, lobis triangularibus pubescentibus, labelli laminis ellipticis pubescentibus, appendice ligulata convexa cum parte apicali concava,

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems slender, erect to horizontal or pendent, 2.5-8 cm long, enclosed by 4-6 close, minutely scabrous lepanthiform sheaths.

Leaf erect to drooping, thickly coriaceous, more or less concave, often coppery in color, more or less suffused with purple beneath, elliptical, 2.5-4.5 cm long, 1-2.7 cm wide, the apex shortly acuminate, acute, the base cuneate into a petiole 2-3 mm long. Inflorescence a congested, distichous raceme up to 8 mm long, borne on top of the leaf by a filiform peduncle 10-12 mm long; floral bract and pedicel each 1 mm long; ovary 2.5 mm long; sepals yellow to tan, the dorsal sepal broadly ovate, obtuse, 3 mm long, 2.25 mm wide, the lateral sepals connate 1.5 mm into a broadly ovate lamina 2.75 mm long, 2.75 mm wide, the apices acute; petals orange, long-ciliate and pubescent, transversely bilobed, 1.3 mm long, 4.25 mm wide, 3-veined, the lobes subequal, triangular, acute; lip bright rose to purple, the blades narrowly elliptical, 2.2 mm long, long-ciliate and pubescent, the ends narrowly rounded, the connectives short, broadly cuneate, connected to the column above the base, the appendix in the sinus, pubescent, ligulate, 0.6 mm long, convex, with a concave apical segment with a bilobulate apex; column 2 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Greek setos, "a moth," in reference to the large pubescent petals.

Type: Panama: Prov. of Chiriqui: epiphytifer in scrubby trees near Volcan, alt. 1350 m, 7 Dec. 1983, C. Luer, J. Luer & H. Butcher 9279 (Holotype: SEL); "La Cordillera" near Volcan, alt. 1300 m, 9 Dec. 1983, C. Luer, J. Luer, A. Maduro & H. Butcher 9311 (SEL); Rio Chiriqui west of Volcan, alt. 1500 m, 12 Sept. 1976, C. Luer & H. Butcher 1203 (SEL); dry creek bed, llanos del Volcan, alt. 1500 m, 14 Sept. 1976, C. Luer & H. Butcher 1224 (SEL).

This species is essentially indistinguishable from L. psyche with which it grows sympatrically. The sepals and appendix of the lip are also amazingly similar, but the lobes of the petals of L. setos are acute and long-pubescent without a lateral tooth, and the blades of the lip are also long-pubescent and not agglutinated over the column.

Lepanthes trichidion Luer, sp. nov.

Planta parva, caulibus multivaginatibus foliis ovatis acutis paulo longioribus, inflorescentia foliis longiore, racemo congesto disticho, sepalis anguste ovatis magnis, petalis parvis transverse oblongis, labelli lamina oblongis, connectivis brevibus late cuneatis, appendice filamentosa.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect to suberect, 2-4 cm long, enclosed by 8-10 lepanthiform sheaths with ciliate, dilated ostia and ribs. Leaf erect, thinly coriaceous, ovate, narrowly acute, 20-35 mm long, 7-12 mm wide, the base round to cuneate, contracted into a petiole 1-1.5 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 23 mm long, borne by a filiform peduncle up to 25 mm long; floral bract 2 mm long; pedicel 2-2.5 mm long; ovary 1 mm long; sepals translucent rose, suffused and veined in brown, car-

inate, narrowly ovate, acute, the dorsal sepal 10.5 mm long, 3 mm wide, connate 0.75 mm to the lateral sepals, the lateral sepals 11 mm long, 5.5 mm wide, connate 4 mm; petals yellow-brown, cellular-pubescent, transversely obliquely oblong, 1 mm long, 2.25 mm wide, the upper lobe oblong with the apex rounded, the lower lobe a third as long, obtusely triangular; lip white, glabrous, at most cellular-pubescent, the blades more or less oblong-lunate, 2.25 mm long, the ends rounded, the connectives short, broadly cuneate from the length of the blades, connected to the base of the column, the appendix a microscopic filament in a narrowly acute sinus; column slender, 3 mm long, the anther and stigma apical.

Etymology: From the Greek trichidion, "a tiny hair," referring to the appendix.

Type: Panama: Prov. of Chiriqui: epiphytic in cloud forest above Guadalupe, alt. 2300 m, 8 Dec. 1983, C. Luer, J. Luer & A. Maduro 9307 (Holotype: SEL).

This small species is characterized by the relatively large flower borne in a long, congested, distichous raceme that exceeds the leaf in length. The petals are the same size as the lip. The appendix in the narrow sinus is reduced to a microscopic, cellular process.

Lepanthes versicolor Luer & Vásquez, sp. nov.

Planta mediocris vel grandis, caulibus secundariis longis gracilibus, folio elliptico breviter acuminato racemo congesto longiore, sepalis scuminatis, petalorum lobis triangularibus, labelli laminis pubescentibus ovatis, appendice grandi oblonga longipubescenti.

Plant medium in size to large, epiphytic, caespitose; roots numerous, filiform. Secondary stems slender, erect, 8-23 cm long, enclosed by 9-16 ciliate lepanthiform sheaths. Leaf erect, thinly coriaceous, elliptical, 5.5-8 cm long, 1.6-2.7 cm wide, the apex acute acuminate, the base obtuse, contracted into a petiole 3-4 mm long. Inflorescence a congested, successively flowered raceme up to 3 cm long, borne behind the leaf by a filiform peduncle up to 4 cm long; floral bract 1 mm long; pedicel 1.25 mm long; ovary 3 mm long; sepals translucent rose to yellow, glabrous, ovate, acuminate, acute, the dorsal sepal triangular-ovate, 7-12 mm long, 3-4.75 mm wide, connate to the lateral sepals for 1-2 mm, the lateral sepals oblique, connate 2-3.5 mm, 7-11.5 mm long, 4.75-7 mm wide together; petals yellow to orange, suffused with red to purple, pubescent, transversely bilobed, 1-1.75 mm long, 4-5.25 mm wide, the lobes subequal, obliquely triangular; lip purple, pubescent, the blades ovate with rounded ends, pubescent, 2.25 mm long, the connectives cuneate, the body attached to the end of the ovary with the column, the appendix oblong, 0.5 mm long, long-pubescent at the apex; column 2 mm long, the anther dorsal, the stigma ventral.

Etymology: From the Latin versicolor, "of various colors," referring to the variation of colors seen in the flowers.

Type: Bolivia: Cochabamba: Prov. of Chapare: epiphytic in cloud forest between Cochabamba and Villa Tunari, alt. 1850 m, 17 Jan. 1984, C. Luer, J. Luer & R. Vásquez 9382 (Holotype: SEL).

Although locally abundant in one area of cloud forest, this species has not yet been found elsewhere. Two or three flowers mature simultaneously, and fruit is frequently formed. As commonly seen in other species, the colors of the flower parts are variable.

Lepanthes volsella Luer & Escobar, sp. nov.

Herba perparva, inflorescentia racemosa congesta foliis parvulis brevioribus, sepalis anguste ellipticis, petalis transverse oblongis, labello bilobo lobis falcatis, appendice minuta triangulari.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 15-27 mm long, enclosed by 4-6 minutely ciliate lepanthiform sheaths. Leaf erect, coriaceous, suffused with purple beneath, elliptical, obtuse, 8-11 mm long, 6-8 mm wide, the base broadly cuneate into a petiole 1 mm long. Inflorescence a congested, distichous, successively flowered raceme up to 4 mm long, borne on top of the leaf by a filiform peduncle 3-4 mm long; floral bract 0.75 mm long; pedicel 1 mm long; ovary 1 mm long; sepals light green with 2 light red stripes, narrowly elliptical, subacute, the dorsal sepal 3 mm long, 1.25 mm wide, connate to the lateral sepals for 0.3 mm, the lateral sepals connate 1 mm, 2.75 mm long, 1.25 mm wide; petals yellow, suffused with purple, transversely oblong, 0.4 mm long, 1.5 mm wide, cellular-glandular, the upper lobe triangular-oblong, obtuse, the lower lobe oblong with the apex rounded, larger than the upper lobe; lip red-orange, glandular-cellular, bilobed, the lobes falcate, acute, 0.9 mm long, flanking the column, the bases cuneate into a narrow body, connate to the column above the base, the rounded sinus with a small, triangular appendix; column 1.2 mm long, the anther apical, the stigma ventral.

Etymology: From the Latin volsella, "pincers," in reference to the shape of the lip.

Type: Costa Rica: Prov. of Cartago: La Chonta, along the Pan American highway, alt. 2450 m, 6 Aug. 1983, R. Escobar 3157 (Holotype: SEL), C. Luer illustr. 9135.

This little species is characterized by the small elliptical leaves with a short, congested inflorescence. The sepals are narrowly elliptical, the petals are small and transversely oblong, and the lip is bilobed with the falcate lobes embracing the column.

Lepanthopsis acetabulum Luer, sp. nov.

Planta mediocris, inflorescentia folio crasso angustissime elliptico subaequilonga vel paulo longiore, racemo disticho densifloro, floribus parvis simultaneis, sepalis ovatis acuminatis, petalis obtusis, labello cordato cum cavitate rotundata basali.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 4-10 cm long, enclosed by 6-8 blackish, ciliate lepanthiiform sheaths. Leaf erect, thickly coriaceous, narrowly linear-elliptical, acute, 2.5-6 cm long, 0.3-0.7 cm wide, the base cuneate into the petiole 2-5 mm long. Inflorescence a suberect, dense, distichous, simultaneously flowered raceme up to 18 mm long, borne by a filiform peduncle 20-40 mm long; floral bract 0.5-1 mm long; pedicel 0.25 mm long; ovary 0.5 mm long; sepals dark purple, cellular ciliate, ovate, acute, acuminate, the dorsal sepal 3-4 mm long, 1.6 mm wide, the lateral sepals oblique, 3-4 mm long, 1 mm wide, connate 0.75 mm, the apices near and parallel; petals dark purple, cellular ciliate, elliptical, obtuse, 1 mm long, 0.75 mm wide; lip lighter purple, cellular pubescent, ovate-cordate, 2 mm long, 1.75 mm wide, the apex obtuse, the basal angles obtuse, flanking the column, the base of the disc with a circular cavity, probably a modified glenion; column hooded, 0.5 mm long and wide.

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

Type: Ecuador: Prov. of Zamora-Chinchipe: Valladolid, alt. 1800 m, 3 Jan. 1983, S. Dalström 417 (Holotype: SEL), C. Luer illustr. 9166; Retorno, between Loja and Zamora, alt. ca. 2000 m, 15 Apr. 1980, D. D'Alessandro 94 (SEL). Peru: Dept. of Huanuco: between Tingo Maria and Pucallpa, March 1975, collected by Janet Kuhn, flowered in cultivation at J & L Orchids, Easton, CT, 12 Nov. 1977, C. Luer 2175 (SEL).

This species is similar to L. acuminata Ames, but the leaves of L. acetabulum are long and narrow, and the lip has a circular cavity at the base.

Lepanthopsis culiculosa Luer, sp. nov.

Planta parva, caulibus secundariis plus minusve proliferantibus, racemo stricto disticho dense multifloro foliis anguste ellipticis longiore, floribus minutis simultaneis, sepalis ovatis uninerviis, petalis obtusis, labello transverse cordato.

Plant small, epiphytic, ?caespitose, ?normally prolific; roots slender. Secondary stems slender, erect, 2 or more cm long, enclosed by 3 or more microciliate lepanthiiform sheaths, branching and rooting at the apex of an incomplete stem in the specimen at hand. Leaf erect, thickly coriaceous, narrowly elliptical, acute, 17-22 mm long, 5 mm wide, cuneate below into the petiole 2 mm long. Inflorescence an erect, straight, distichous, dense, simultaneously many-flowered raceme up to 38 mm long, borne by a filiform peduncle up to 20 mm long, the flowers minute, bright yellow; floral bract 1 mm long; pedicel 0.25 mm long; ovary 0.5 mm long; sepals glabrous, ovate, narrowly obtuse, 1-veined, the dorsal sepal 1.3 mm long, 0.8 mm wide, the lateral sepals 1.5 mm long, 0.6 mm wide, connate 0.5 mm; petals oblong, obtuse, 0.4 mm long, 0.15 mm wide; lip transverse-

ly ovate-cordate, 0.6 mm long, 0.8 mm wide, the apex obtuse to rounded, the basal angles obtuse, to either side of the column; column hooded, 0.5 mm long and wide.

Etymology: From the Latin culiculosus, "with gnats," referring to the numerous, minute flowers.

Type: Ecuador: Prov. of Napo: Cosanga, alt. 2000 m, 1983, A. Hirtz 978 (Holotype: SEL), C. Luer illustr. 9169; Prov. of Zamora-Chinchipe: Vilcabamba, alt. 2100 m, D. D'Alessandro 102A (SEL).

This species seems similar to the Venezuelan L. steyermarkii Foldats, but the longer leaves and longer, straight, densely flowered racemes distinguish L. culiculosa. Both species have very small, 1-veined sepals. Lepanthopsis culiculosa is also similar to L. vinacea C. Schweinf., but the former has ecaudate sepals on an extremely reduced scale.

Masdevallia leucophaea Luer & Vásquez, sp. nov.

Planta mediocris, pedunculo unifloro gracili foliis anguste obovatis subaequilongis, sepalis glabris albis longicaudatis in cupulam brevem connatis, petalis oblongis cum carina longitudinali in dentem magnum supra basim connatis, labello ovato apice anguste obtuso recurvo.

Plant medium in size, epiphytic, caespitose; roots slender. Secondary stems blackish, slender, erect, 1-1.5 cm long, enclosed by 2-3 tubular sheaths. Leaf erect, coriaceous, 7-10.5 cm long, 1.4-1.6 cm wide, the blade narrowly obovate, subacute to obtuse, narrowly cuneate below into a slender petiole 2.5-3.5 cm long. Inflorescence a solitary flower borne by a slender, suberect peduncle 6-8 cm long, with a bract below the middle, from a node low on the secondary stem; floral bract 8 mm long; pedicel 13-16 mm long; ovary greenish brown, 5 mm long; sepals glabrous, dull white to gray-white, lightly dotted with purple externally, the dorsal sepal ovate, concave, carinate, 13 mm long, 8 mm wide, connate to the lateral sepals for 2 mm into a shallow, gaping cup, the acute apex acuminate into a slender, yellow-orange, upcurved tail 2.5-3 cm long, the lateral sepals ovate oblique, 12-16 mm long, 8 mm wide, the margins more or less reflexed, connate 3-4 mm, the acute apex acuminate into a slender yellow-orange tail ca. 2.5 cm long; petals white with minute purple dots along the upper margin, oblong, 6 mm long, 2 mm wide, the apex truncate, minutely apiculate, the lower margin with a longitudinal carina ending in a large, obtuse, incurved process above the base; lip white, speckled with purple, ovate, 4.5 mm long, 2.5 mm wide, the apex purple, narrowed with the obtuse tip recurved, the truncate base hinged beneath; column white with purple margins, semiterete, 4 mm long, the foot 3 mm long with a long, incurved extension.

Etymology: From the Latin leucophaeus, "light gray," referring to dull white color of the sepals.

Type: Bolivia: Prov. of Sud Yundas (probably): cultivated by Don Dino Menato in Chulumani, without definite locality, flowered in cultivation 24 Jan. 1984, C. Luer 9426 (Holotype: SEL).

This species has been cultivated by Dino Menato for many years. Its origin has been long forgotten, but it most probably was collected in the mountains of the Yungas surrounding Chulumani. At least two clones are cultivated by Menato. The lateral sepals of one clone are held close together with revolute margins. The lateral sepals of another clone are spread without revolute margins.

Masdevallia scopaea Luer & Vásquez, sp. nov.

Planta perparva, inflorescentia grandifloro successivifloro, pedunculo foliis anguste ellipticis plus minusve aequilongo, sepalis striatis ecaudatis in tubum latum cylindricum connatis, petalis oblongis acutis cum dente obtuso supra basim, labello elliptico obtuso canaliculato arcuato.

Plant very small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 2-3 mm long, enclosed by 2-3 short, tubular sheaths. Leaf erect, coriaceous, 15-23 mm long, 3.5-5 mm wide, the blade narrowly elliptical, acute, cuneate below into a petiole 1-2 mm long. Inflorescence a congested, few-flowered raceme of comparatively large, successive flowers, borne by a slender suberect to horizontal peduncle 2 cm long, with a bract below the middle, from a node on the secondary stem; floral bract 3 mm long; pedicel 2 mm long; ovary 1.5 mm long; sepals glabrous, yellow, veined in purple-brown, the dorsal sepal narrowly ovate, 13 mm long, 3.25 mm wide, connate 4 mm to the lateral sepals to form a short, broad, sepaline tube, the free portion linear-triangular, subacute, the lateral sepals suffused with purple, ovate, 12 mm long, 4 mm wide, connate for 4 mm with a small mentum below the column-foot, the free portion triangular, subacute; petals yellow with a purple midvein, oblong, acute, 4.5 mm long, 1.5 mm wide, the lower margin thickened with a rounded, retrorse process above the base; lip yellow, suffused with purple-brown, elliptical, arcuate, longitudinally channeled, 5.5 mm long, 2 mm wide, the apex obtuse with a low midline callus, the base narrowed, subcordate, hinged beneath; column yellow with purple margins, semiterete, 2.5 mm long, the foot equally long with an incurved extension.

Etymology: From the Greek skopaios, "dwarf," referring to the habit of the species.

Type: Bolivia: La Paz: Prov. of Nor Yungas: epiphytic in cloud forest west of Coroico, alt. 1800 m, 22 Jan. 1984, C. Luer, J. Luer & R. Vásquez 9425 (Holotype: SEL).

Only one plant of this tiny species was found by Roberto Vásquez among numerous plants of Masdevallia bangii Schltr. It is characterized by the successively flowered raceme a little longer than the leaves. The yellowish flowers veined in purple-brown are large for the size of the plant.

Platystele enervis Luer, sp. nov.

Planta pusilla, racemo flaccido flexuoso capillari folio longipetiolato multilongiore, floribus minutissimis successivis, sepalis ovatis enervibus, lateralibus obtusis brevicaudatis, petalis angustissimis, labello ovato acuto.

Plant very small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 6-8 mm long, enclosed by 2-3 ribbed, tubular sheaths. Leaf erect, coriaceous, elliptical, subacute, long-petiolate, 10-21 mm long including the 4-8 mm long petiole, 3-4 mm wide, cuneate below into the slender petiole. Inflorescence a weak, flexuous, loosely flowered raceme up to 7 cm long including the capillary peduncle 1.5-2 cm long, the flowers successive, minute; floral bract 0.5 mm long; pedicel 1 mm long; ovary 0.25 mm long; sepals purple, white toward the apices, glabrous, free, without visible nerves, the dorsal sepal ovate, acute, 0.8 mm long, 0.4 mm wide, the lateral sepals broadly ovate, obtuse, 0.6 mm long, 0.4 mm wide, the obtuse apex abruptly contracted into a short tail; petals very narrowly triangular, acute, 0.6 mm long, 0.1 mm wide; lip purple, cellular-pubescent, ovate, acute, 0.6 mm long, 0.4 mm wide; column thinly cucullate, 0.4 mm long, 0.4 mm wide.

Etymology: From the Latin *enervis*, "without a nerve," referring to the sepals and petals.

Type; Ecuador: Prov. of Pichincha: epiphytic in cloud forest near Los Faisanes, alt. ca. 2000 m, 15 July 1983, A. Hirtz 1009 (Holotype: SEL), C. Luer illustr. 9164.

This species is most notable for the extremely small flowers produced on a hairlike, flexuous raceme much longer than the long-petiolate leaves. The sepals and petals are less than one millimeter long and without any trace of a midvein.

Platystele pubescens Luer, sp. nov.

Planta pusilla, racemo flexuoso folio longipetiolato duplolongiore, sepalis ovatis acutis ciliatis pubescentibus, petalis obovatis acutis ciliatis, labello transverse ovato obtuso.

Plant very small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 2-4 mm long, concealed by 2-3 loose, tubular sheaths. Leaf erect, coriaceous, elliptical, subacute, long-petiolate, 13-20 mm long including the 4-10 mm long petiole, 4-7 mm wide, cuneate below into the slender petiole. Inflorescence a loose, flexuous, successively flowered raceme up to 35 mm long including the capillary peduncle 15-20 mm long; floral bract 1 mm long; pedicel 2.5-3 mm long; ovary 0.5 mm long; sepals yellow with a red midvein, ciliate, pubescent above the middle, ovate, acute, 1-veined, free, the dorsal sepal 2.3 mm long, 1.5 mm wide, the lateral sepals oblique, 2 mm long, 1.2 mm wide; petals yellow with a red midvein, obovate, acute, ciliate, 2.3 mm long, 0.7 mm wide; lip red, cellular-pubescent, transversely ovate, obtuse, 0.8 mm long, 1 mm wide; column thinly cucullate, ca. 1 mm long and wide.

Etymology: From the Latin pubescens, "pubescent," referring to the pubescent sepals.

Type: Ecuador: Prov. of Pichincha: epiphytic in cloud forest near San Miguel de los Bancos, alt. 1300 m, July 1983, A. Hirtz 1044 (Holotype: SEL), C. Luer illustr. 9163.

Although similar in many respects to those species in the widespread and variable "lancilabris-complex," this species may be distinguished by the pubescent sepals and transversely ovate, obtuse lip.

Pleurothallis corynophora Luer, sp. nov.

Planta parva caespitosa, racemo laxe fractiflexo foliis anguste obovatis multilongiore, sepalis ellipticis intus pubescentibus, petalis clavatis apice pubescentibus, labello oblongo ciliato canaliculato.

Plant small, epiphytic, caespitose; roots slender. Secondary stems slender, erect, 3-5 mm long, enclosed by 2-3 ribbed, tubular sheaths. Leaf erect, coriaceous, narrowly obovate, subacute, long-petiolate, 20-27 mm long including the 5-10 mm long petiole, 4-5 mm wide. Inflorescence a progressively lengthening loose, flexuous, flexible, successively many-flowered raceme up to 8 cm long including the 2-3 cm long peduncle; floral bract 2 mm long; pedicel 1.5-2 mm long; ovary triquetrous, 1 mm long; sepals rose-brown, long-pubescent within, the dorsal sepal narrowly ovate-elliptical, 6 mm long, 2 mm wide, the lateral sepals connate into an elliptical lamina 5.5 mm long, 3 mm wide, the apex shortly bifid, the apices subacute; petals rose-brown, 4.5 mm long, 1.4 mm wide across the basal, ovate portion, narrowed above the middle, the apex thickened and pubescent; lip dark brown, oblong, 2 mm long, 1 mm wide, the apex rounded with revolute, ciliate margins, the margins thin and erect below the middle, the base truncate, bilobulate, thinly hinged to the column-foot, the disc longitudinally channeled; column semiterete, 2 mm long, toothed at the apex, the foot stout, short.

Etymology: From the Greek coryne, "a mace," and phoros, "bearing," in allusion to the clavate, bristly petals.

Type; Panama: Prov. of Chiriqui: epiphytic in cloud forest above Guadalupe, alt. 2300 m, 8 Dec. 1983, C. Luer, J. Luer & A. Maduro 9299 (Holotype: SEL).

This species seems most closely allied to the Costa Rican P. casualis Ames, but P. corynetes may be identified by the long racemes, clavate petals, and a ciliate lip.

Pleurothallis lipothrix Luer, sp. nov.

Species haec P. setigerae Lindl. affinis, sed sepalorum marginibus carinisque irregulariter denticulatis et labello late oblongo truncato convexo glabro marginibus integris distinguitur.

Plant small, epiphytic, densely caespitose; roots slender. Secondary stems slender, erect, 2-3 mm long, enclosed by 2-3 tubular sheaths. Leaf erect, coriaceous, obovate, subacute, long-petiolate, 15-30 mm long including the 7-14 mm long petiole, 4-6 mm wide. Inflorescence a loose, subflexuous, successively few-flowered raceme 5-12 cm long including the filiform peduncle; floral bract 1 mm long; pedicel 4-9 mm long; ovary 1 mm long; sepals light green, ovate basally, the apex acute, long-attenuate, the margins and carinae irregularly denticulate, 7.5 mm long, the dorsal sepal 1.5 mm wide, the lateral sepals 1.8 mm wide; petals translucent light green, 4.5 mm long, the basal third ovate, 1 mm wide, ciliate, the apex acute, long-attenuate; lip green, suffused with dull red, broadly oblong, 2.6 mm long, 1.5 mm wide, the margins entire, the apex truncate, the base subcordate with erect, obtuse, marginal angles, the disc longitudinally channelled below the middle, convex above the middle; column semiterete, 2 mm long, bidentate at the apex, column-foot short, thick, with 2 red spots at the base.

Etymology: From the Greek lipothrix, "hairless," referring to the short, convex lip.

Type: Ecuador: Prov. of Zamora-Chinchipe: collected by D. D'Alessandro near Km 41 between Loja and Zamora, alt. ca. 1400 m, cultivated at Vilcabamba, flowered 2 Nov. 1982, C. Luer 8267 (Holotype: SEL).

This species is related to the widespread P. setigera-complex, but may be distinguished by the irregularly denticulate sepals and the short, broad, truncate lip with entire margins, channelled below the middle and concave above the middle.

Pleurothallis simulatrix Luer, sp. nov.

Species haec P. aristatae Hook. similis, sed labello oblongo glabro ciliato infra medium bilobulato, lobis acutis brevibus, disco infra medium canaliculato differt.

Plant small, epiphytic, caespitose; roots coarse. Secondary stems slender, erect, 4-6 mm long, enclosed by 2-3 tubular sheaths. Leaf erect, coriaceous, obovate, subacute to obtuse, 2.5-4 cm long, 0.7-1 cm wide, cuneate below into a petiole 5-10 mm long. Inflorescence a lax, subflexuous, successively few-flowered raceme up to 6 cm long; floral bract 1 mm long; pedicel 2-3 mm long; ovary 0.75 mm long; sepals translucent light green, striped with purple, glabrous, the dorsal sepal narrowly ovate, the apex acute, acuminate, 6 mm long, 1.75 mm wide, the lateral sepals narrowly triangular, the apex acute, 5.5 mm long, 1.75 mm wide, connate 0.5 mm; petals translucent with 2 purple veins, elliptical, acute, 2.5 mm long, 0.75 mm wide, the margins serrate; lip purple, oblong, 3 mm long, 1 mm wide, smooth, the apex rounded, white-ciliate above the middle, with a pair of small, acute, erect lobes just below the middle, the base truncate, the disc channelled below the middle; column light green, semiterete, 2.5 mm long, narrowly winged, the foot short with a purple spot, the anther acutely conical.

Etymology; From the Latin simulatrix, "an imitator," referring to the similarity in appearance to P. aristata.

Type: Ecuador: without locality, probably southern Ecuador, cultivated at Predesur in Vilcabamba, flowered 3 Nov. 1982, C. Luer 8268 (Holotype: SEL).

Although larger in habit, this species is similar to P. aristata but differs mainly in the morphology of the lip. The lip of P. simulatrix is oblong, smooth, ciliate, with a pair of short, lateral lobes.

Pleurothallis yupanki Luer & Vásquez, sp. nov.

Planta minuta repens, flore subsphaeruco brevipedicellato folios ellipticos prostratos subaequant, sepalis obtusis semiconnatis concavis, petalis oblongis obtusis, labello ligulato lobis lateralibus parvis acutis.

Plant minute, lithophytic, repent, the rhizome stout, 1 mm thick, up to 0.5 mm long between secondary stems; roots comparatively coarse, 1-1.5 mm thick. Secondary stems stout, up to 0.5 mm long, enclosed by a deciduous, membranous sheath. Leaf prostrate, thickly coriaceous, elliptical, 4-5 mm long, 2.5-3 mm wide, 1-1.5 mm thick, the apex obtuse to rounded, minutely apiculate, the base obtusely cuneate, sessile. Inflorescence a single flower, followed at intervals by 1-2 others in a congested raceme, the peduncle 0.5 mm long; floral bract 1-1.5 mm long; pedicel 1 mm long; ovary 0.5 mm long; sepals dark purple, glabrous, connate for more than half the lengths into a subspherical sepaline tube, the dorsal sepal elliptical, obtuse, concave, 4 mm long, 2.5 mm wide unexpanded; lateral sepals elliptical, obtuse, connate into a concave lamina, 3.5 mm long, 2.75 mm wide unexpanded; petals purple, obovate, oblong, obtuse, 2 mm long, 1.25 mm wide; lip purple, oblong-ligulate, 2 mm long, 0.8 mm wide, smooth, the apex round, the margins with erect, acute, lateral lobes below the middle, the truncate base bilobulate, hinged to the column-foot; column semiterete, bidentate, 1.5 mm long, the foot 0.75 mm long.

Etymology: Named in honor of the chieftain Inca Yupanki who built the stone buildings now lying in ruins east of Samaipata.

Type: Bolivia: Dept. of Santa Cruz: lithophytic on stone Inca ruins east of Samaipata, alt. 2500 m, Nov. 1982, R. Vásquez & N. Williams s.n. (Holotype: SEL), C. Luer illustr. 8524.

This minute, creeping, prostrate species produces flowers as large as the confetti-sized leaves. The sepals are connate over half their length into a suborbicular flower.