margin involute, the apex (at least of the dorsal) probably recurved; dorsal recurved apically; lateral sepals obliquely bent downwards near the base. Petals ca. $11 \times 3.5 \mathrm{~mm}$, lanceolate, downflexed and recurved, apically thickened, acute; apical margin involute. Lip ca. 5.5 mm long in natural position, $7.5 \times 5 \mathrm{~mm}$ when spread, hinged to the column foot; hypochile with lateral lobes somewhat clasping the column; epichile (midlobe) ovate, sharply reflexed and with serrulate margins; callus obovate on the lower half, serrulate in front (aged?). Column without anther 5 mm long, stout in aged flowers; foot ca. 3.5 mm . Capsules ca. 3 cm long (developing) with pedicel $1.5-2 \mathrm{~cm}$ and persistent perianth.

Etymology. Named in honor of Robert M. Scully, Jr., whose life-long love of orchids has inspired countless thousands of orchidists.

Known only by the holotype collected in a Clusia-dominated primary cloud forest of Chocó, Colombia. Fruiting material collected in January.
Maxillaria sculliana should be easy to distinguish from similar species by the tall pseudo-bulb-less canes, large-diameter roots, rather long leaves, long peduncles, and appropriately large flowers. Its closest relative may be M. histrionica, but that species has much smaller flowers and distinctly sympodial growth pattern with each adult renewal shoot terminated by a pseudobulb. The appearance is very similar to that of M. aurea (Poepp. \& Endl.) L.O.Williams, but the flower is much larger which is evident even in fruit. Flowers analyzed: 2 from the holotype, persistent on developing fruits.

# New Species of the Genus Lepanthes Sw. from Hispaniola (Orchidaceae) 

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#### Abstract

Seventeen new species of Lepanthes from the Dominican Republic and Haiti are described from collections by Donald D. Dod. Lepanthes Sw. is the largest in numbers of species of all genera of orchids known from the island of Hispaniola. The 17 collections by Dod, published in preparation for the Flora of the Greater Antilles, are Lepanthes anisoloba, L. apiculata, L. austinae, L. boomerang, L. braccata, L. decussata, L. dondodii, L. excavata, L. incurva, L. longiloba, L. magnipetala, L. microdonta, L. minifora, L. politilabia, L. pteroglossa, L. semperflorens, and L. truncatipetala.


Key words: Orchidaceae, Hispaniola, Haiti, Dominican Republic, Lepanthes

## Introduction

Seventeen collections by Donald D. Dod are published here in preparation for the Flora of the Greater Antilles. Lepanthes Sw. is the largest in numbers of species of all genera of orchids known from the island of Hispaniola. The first species from the island attributed to Lepanthes was $L$. serrulata by Cogniaux in 1910, but it was later realized to belong to Lepanthopsis Ames. The first species of Lepanthes to be described from Hispaniola was L. tenuis by Schlechter in 1913 from a collection by Fuertes. Urban added three more in 1917. A few scattered collections were described prior to the Dod collections that began after his arrival in 1965. Hespenheide and Dod (1989, 1990, 1993) described 28 of Dod's collections in a series of three articles.

The following 17 collections by Dod are Lepanthes anisoloba, L. apiculata, L. austinae, L. boomerang, L. braccata, L. decussata, L. doñdodii, L. excavata, L. incurva, L. longiloba, L. magnipetala, L. microdonta, L. miniflora, L. politilabia, L. pteroglossa, L. semperflorens, and $L$. truncatipetala.

## New Species

Lepanthes anisoloba Dod ex Luer, sp. nov. Type: Dominican Republic: obtained from D.D. Dod as "inaequalis," cultivated by P. Jesup in Bristol, CT, 26 Apr. 1987, C. Luer 12867 (Holotype: MO).

Figure 1.
Planta parva racemo congesto folio ovato acuto breviore, sepalis ovatis acutis, petalis transverse bilobis, lobo superiore triangulari quam lobo inferiore rotundo ter majori, labelli laminis ovatis cum appendice crassa pubescenti distinguitur.

Plant small, epiphytic, caespitose; roots slen-
der. Ramicauls erect, slender, $2.5-6.5 \mathrm{~cm}$ long, enclosed by 8-12 tubular, lepanthiform sheaths with microscopically ciliate ostia. Leaf erect, coriaceous, elliptical-ovate, acute, $20-25 \mathrm{~mm}$ long, $10-12 \mathrm{~mm}$ wide, the base cuneate into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 13 mm long, borne on top of the leaf by a filiform peduncle $3-4 \mathrm{~mm}$ long; floral bracts echinate, 0.75 mm long; pedicels $0.75-1 \mathrm{~mm}$ long; ovary 1 mm long; sepals entire, glabrous, pale rosy tan, subcarinate, narrowly ovate-triangular, acute, the dorsal sepal 2.5 mm long, 2 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 2.5 mm long, 1.25 mm wide, 2 -veined, connate 1 mm ; petals orange, microscopically pubescent, transversely bilobed, 0.75 mm long, 2.5 mm wide, the lobes opposite, the upper lobe triangular, acute, slightly everted, 2 mm long, the lower lobe broadly rounded, 0.5 mm long; lip rose, microscopically cellular, bilaminate, the blades ovate, shallowly concave, obtuse at the ends, 1.5 mm long, flanking the column, the connectives and body oblong, connate to the base of the column, the sinus notched, with a short, ovoid, pubescent appendix; column stout, 1 mm long, the anther and stigma apical.

Etymology. From the Greek anisolobos, 'unequally lobed," referring to the lobes of the petals.

This species is known only from a collection by Dod that was cultivated by Jesup under the name "inaequalis," probably alluding to the lobes of the petals. It is characterized by the small habit with a dense raceme borne on top of an ovate, acute leaf. The sepals are ovate and acute with the laterals connate below the middle. The petals are transversely lobed, with the upper,


Figure 1. Lepanthes anisoloba.
triangular lobe four times longer than the rounded lower lobe. The blades of the lip are ovate and complete with broad connectives. The appendix is ovoid and pubescent.

Lepanthes apiculata Dod ex Luer, sp. nov. Type: Haiti: Massif de la Hotte, Les Cayes, Formond, collected ca. 1982, flowered in cultivation May 1986, as Formond \#4, D.D.

## Dod s.n. (Holotype: MO), C. Luer illustr. 12217. <br> Figure 2.

Planta parva mediocrisve racemo congesto folio el-liptico-ovato subacuto breviore, sepalis ovatis acutis, petalis transverse bilobis, lobo superiore oblongo oblique subtruncato, lobo inferiore triangulari, labello cordato-trilobo apiculato apice valde profundeque decurvato distinguitur.

Plant small or medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $2-6 \mathrm{~cm}$ long, enclosed by 5-7 minutely cil-iate-scabrous, lepanthiform sheaths. Leaf erect, coriaceous, elliptical-ovate, subacute, $13-18 \mathrm{~mm}$ long, $9-13 \mathrm{~mm}$ wide, the base rounded or cuneate, contracted into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 18 mm long, borne behind the leaf by a filiform peduncle $3-5 \mathrm{~mm}$ long, more or less arching; floral bracts minutely echinate, 0.5 mm long; pedicels 1 mm long; ovary 1 mm long; sepals light yellow, entire, glabrous, subcarinate, ovate, acute, the dorsal sepal 3.25 mm long, 2 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 3.25 mm long, 1.5 mm wide, 2-veined, connate 1.5 mm ; petals yellow, glabrous, transversely bilobed, 0.75 mm long, 2.75 mm wide, the upper lobe oblong, obliquely truncate at the apex, the lower lobe bluntly triangular, smaller than the upper lobe; lip yellow, microscopically pubescent, trilobed with basal lobes with incomplete blades below the middle, with rounded lobes embracing the column, 1.4 mm long, above the middle the midlobe entire, acutely deflexed with the apex obtuse and apiculate, the connectives broadly cuneate and decurved with the apex, the body connate to the base of the column, the appendix replaced by the apiculum; column stout, 1 mm long, with the anther and stigma apical.

Etymology. From the Latin apiculatus, "apiculate," referring to the decurved apex of the lip.

This species is known only from a collection by Dod who cultivated it as Formond \#4. It is characterized by a small or medium-sized habit with an arching, congested raceme borne behind and to the side of an elliptical-ovate leaf. The sepals are ovate and acute, with the laterals connate near the middle. The upper lobe of the petals is oblong while the triangular lower lobe is smaller. The cordate-trilobed lip is unique in the genus with incomplete blades below the middle, and with a middle lobe strongly decurved, entire and apiculate. The apiculum would be analogous to the appendix.

Lepanthes austinae Dod ex Luer, sp. nov. Type:

Haiti: Río Glace, Apr. 1992, D.D. Dod 2217 (Holotype: MO), C. Luer illustr. 16538.

Figure 3.
Planta parvula racemo congesto folio late ovato obtuso breviore, sepalis anguste triangularibus, petalis transverse oblongis, labelli lobis semilunatis laminis supra medium incompletis distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect slender $15-23 \mathrm{~mm}$ long, enclosed by 5-7 microscopically scabrous, lepanthiform sheaths. Leaf erect, coriaceous, broadly ovate-subcordate, obtuse, $10-11 \mathrm{~mm}$ long, $8-10 \mathrm{~mm}$ wide, the base broadly cuneate to round, abruptly contracted into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively several-flowered raceme up to 4 mm long, borne behind the leaf by a filiform peduncle ca. 2 mm long; floral bracts slightly subechinate, 0.5 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; sepals entire, glabrous, subcarinate, narrowly triangular, acute, the dorsal sepal 3.5 mm long, 1.66 mm wide, 3 veined, connate to the lateral sepals for 0.3 mm , the lateral sepals oblique, 3.5 mm long, 1 mm wide, connate 1 mm into a bifid synsepal 2 mm wide; petals microscopically pubescent, transversely bilobed, oblong, 0.66 mm long, 1.66 mm wide, the lobes opposite, oblong, obtuse, the lower lobe slightly smaller; lip minutely pubescent, bilobed, the lobes ovate, 0.75 mm long, with incomplete, rounded blades below the middle, with the apices uncovered, obtuse, incurved beneath the apex of the column, with the bases round, the connectives and body oblong, connate to the base of the column, the sinus obtuse, ciliate, with a small, triangular appendix externally; column 0.75 mm long, the anther and stigma apical.

Etymology. This name was intended to be used by Dod.

Apparently endemic in the forested mountains of southeastern Haiti, where it is known from a single collection, this species is characterized by the very small habit with a short raceme behind a subcordate leaf. The sepals are narrowly triangular and acute with the laterals connate below the middle. The petals are small and transversely oblong. The lobes of the lip have incomplete, rounded blades below the middle that flank the column. Above the middle, the lobes curve beneath the apex of the column. The appendix arises externally and protrudes at the sinus.

Lepanthes boomerang Dod ex Luer, sp. nov. Type: Dominican Republic: without collection data, cultivated as "boomerang," 7


Figure 2. Lepanthes apiculata.

May 1986, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12221.

Planta parva mediocrisve racemo congesto folio ovato acuto breviore, sepalis ovatis obtusis, petalis
transverse bilobis, lobis aequalibus triangularibus divergentibus, labelli laminis vestigialibus ovatis cum appendice brevi pubescenti distinguitur.

Plant small or medium in size, epiphytic,


Figure 3. Lepanthes austinae.
caespitose; roots slender. Ramicauls erect, slender, 6-8 cm long, enclosed by 7-9 microscopically scabrous, lepanthiform sheaths with minimally dilated ostia. Leaf erect, coriaceous, ellip-
tical-ovate, acute, slightly acuminate, $22-28 \mathrm{~mm}$ long, $14-16 \mathrm{~mm}$ wide, the base cuneate into a petiole $1-2 \mathrm{~mm}$ long. Inflorescence a congested, distichous, successively many-flowered raceme


Figure 4. Lepanthes boomerang.
up to 10 mm long, borne behind the leaf by a filiform peduncle $5-9 \mathrm{~mm}$ long; floral bracts minutely echinate, 1 mm long; pedicels 1 mm long; ovary 2 mm long; sepals entire, glabrous, yel-
low, subcarinate, narrowly ovate, obtuse, the dorsal sepal 3 mm long, 2 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 2.75 mm long, 1.6 mm wide,

2-veined, connate 0.5 mm ; petals orange, microscopically pubescent, transversely bilobed, 0.75 mm long, 3 mm wide, the lobes subequal, triangular, diverging $90^{\circ}$, each 2 mm long: lip red, minutely pubescent, the lobes semilunate, with indistinctly formed blades, 1.6 mm long, the connectives cuneate, connate to the base of the column, the sinus acute with a small, oblong, pubescent appendix; column stout, 1.5 mm long, with the anther and stigma apical.

Etymology. Named for the similarity of the shape of the petal to a boomerang.

This species is known only from a collection by Dod who cultivated it as "boomerang." It is characterized by a medium-sized habit with a dense raceme borne behind an ovate, acute leaf. The sepals are ovate and obtuse, with the laterals connate at the base. The petals are large and conspicuous, with the lobes triangular, equal in size and diverging $90^{\circ}$. The blades of the lip are indistinctly defined with the inner margins represented as mere, longitudinal calli along the inner third. The connectives are broad with a small, oblong appendix in the sinus.
Lepanthes braccata Luer \& Dod, sp. nov. Type: Dominican Republic: Barahona: Sierra de Bahoruco, above Aguacate, casa \#2, alt. $1700 \mathrm{~m}, 6$ May 1986, C. Luer, J. Luer, D. Dod \& T. Dod 12196 (Holotype: MO). Figure 5.
Planta parva mediocrisve racemo congesto folio el-liptico-ovato subacuto obtusove breviore, sepalis anguste triangularibus acutis leviter acuminatis, petalis transverse bilobis, lobis subaequalibus anguste oblongis supra columnam decussatis, labello bilobo lobis suboblongis ad apicem truncatis imbricantibus distinguitur.

Plant small or medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $2.5-4.5 \mathrm{~cm}$ long, enclosed by $6-7$ long-ciliated, lepanthiform sheaths. Leaf purple beneath, erect, coriaceous, subacute to obtuse, $17-24 \mathrm{~mm}$ long, $14-17 \mathrm{~mm}$ wide, the base cuneate into a twisted petiole ca. 2 mm long. Inflorescence a very congested, distichous, successively manyflowered raceme up to 11 mm long, borne behind the leaf by a filiform peduncle $5-7 \mathrm{~mm}$ long; floral bracts minutely echinate, 1 mm long; pedicels 1 mm long; ovary 2 mm long; sepals yellow, suffused with purple medially, entire, glabrous, subcarinate, ovate-triangular, acute, slightly acuminate, the dorsal sepal 7.5 mm long, 3.5 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 7 mm long, 2.5 mm wide, 2 -veined, connate 1.5 mm ; petals orange, minutely pubescent, transversely bilobed, 0.8 mm long, 5 mm wide, the lobes narrowly oblong, narrowly obtuse, oppo-
site, with the upper lobes 2.5 mm long, incurved and overlapping above the column and lip, the lower lobes 3.5 mm long; lip red, minutely cil-iate-pubescent, bilobed with broad connectives, 2.5 mm long, the lobes oblong, with the bases rounded, surrounding the column, the apices quadrate-truncate, partially overlapping, with the appendix microscopic and bilobed between; column stout, 1.5 mm long, with the anther and stigma apical.

Etymology. From the Latin braccatus, "with trousers," referring to the truncate, overlapping apices of the lip.

This species, apparently endemic in western Dominican Republic, is closely allied to the frequent and sympatric Lepanthes purpurata, but distinguished from the latter by larger and longer sepals, and a lip with the apical lobes truncate and overlapping, and extending well beyond the column. The species is characterized by a small or medium-sized habit with a very congested raceme borne behind an ovate, subacute leaf. The flowers are comparatively large with acute sepals 7 mm long. The lobes of the petals are narrowly oblong with the upper lobes crossing above the lip and column. The lip is bilobed without blades. The basal corners are round and surround the short column, which reaches only half way to the apex. The apex is split into two subquadrate, truncate lobes that partially overlap, concealing a small appendix in the sinus between the lobes.
Lepanthes decussata Dod ex Luer, sp. nov. Type: Haiti: Massif de la Hotte, Les Cayes, Formond, collected ca. 1982, flowered in cultivation May 1986, as Formond \#3, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12176. Figure 6.
Planta parva mediocrisve racemo congestissimo folio elliptico-ovato acuto breviore, sepalis ovatis acutis, petalis transverse bilobis semilunatis, lobis subaequalibus anguste triangularibus incurvis, lobis superioribus supra columnam decussatis, labelli laminis angustissime elongatis apicibus infra columnam decussatis distinguitur.

Plant small or medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $2-6.5 \mathrm{~cm}$ long, enclosed by 5-9 minutely ciliate, lepanthiform sheaths with minimally dilated ostia. Leaf purple beneath, erect, coriaceous, elliptical-ovate, acute, slightly acuminate, $18-25 \mathrm{~mm}$ long, $9-14 \mathrm{~mm}$ wide, the base cuneate into a petiole $2-3 \mathrm{~mm}$ long. Inflorescence a very congested, distichous, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle $4-8 \mathrm{~mm}$ long, more or less arching; floral bracts minutely echinate, 0.6 mm long; pedicels 1 mm long; ova-


Figure 5. Lepanthes braccata.
ry 1 mm long; sepals light purple, entire, glabrous, subcarinate, ovate, acute, the dorsal sepal 3.5 mm long, 2.25 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals
oblique, 3 mm long, 1.75 mm wide, 2 -veined, connate 0.6 mm ; petals orange, microscopically pubescent, transversely bilobed, crescentshaped, 0.5 mm long, 3 mm wide, the lobes sub-
microscopically pubescent, transversely bilobed, oblong, 1 mm long, 2.5 mm wide, the lobes opposite, equal, obcuneate-oblong, broadly truncate; lip bilobed without blades, the lobes semilunate, obtuse at the ends, 1.6 mm long, beyond the column but with bases embracing the column, the connectives and body broad, connate to the base of the column, the sinus narrow with an oblong, bifid, pubescent appendix, with a deep longitudinal cavity on the floor of the body beginning at the base of the appendix and extending nearly to the connation to the columnfoot; column stout, 1 mm long, the anther and stigma apical.

Etymology. From the Latin excavatus, "excavated," referring to the cavity of the body of the lip.
Identified as "Formond \#1," this species is one of many species of Lepanthes discovered by Dod in the forests of the Massif de la Hotte in Haiti. The broadly expanded, bilobed lip without blades and the very short column are similar to those of Cuban Lepanthes melanocaulon. Lepanthes excavata is characterized by a mediumsized habit with broadly ovate, obtuse, convex leaves with a congested raceme borne beneath. The sepals are ovate and acute with the laterals connate below the middle. The petals are transversely lobed, with the lobes equal, obcuneate and truncate. The lip is bilobed without blades. The broadly semilunate lobes with very wide connectives form a wide and thick body. On the floor of the body behind the marginal appendix there is a deep, elongated cavity.

Lepanthes incurva Dod ex Luer, sp. nov. Type: Dominican Republic: Zapotén, collected and cultivated as "big chin" by D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12298.

Figure 9.
Planta parva mediocrisve racemo congesto folio elliptico acuto breviore, sepalis ovatis triangularibusve acutis, petalis transverse bilobis, lobis subaequalibus anguste oblongis, lobis superioribus supra columnam decussatis, labelli laminis oblongis incompletis appendice microscopice membranacea distinguitur.

Plant small or medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $4.5-5.5 \mathrm{~cm}$ long, enclosed by 7-8 ciliated, lepanthiform sheaths with minimally dilated ostia. Leaf erect, coriaceous, elliptical, acute, 2227 mm long, $13-14 \mathrm{~mm}$ wide, the base cuneate into a twisted petiole ca. 2 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle $12-13 \mathrm{~mm}$ long, often arching outward; floral bracts minutely echinate, 1 mm long; pedicels 1.25 mm
long; ovary 1.5 mm long; sepals entire, glabrous, subcarinate, ovate, acute, the dorsal sepal 4 mm long, 2.3 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 4 mm long, 1.75 mm wide, 2 -veined, connate 1 mm ; petals minutely pubescent, transversely bilobed, 0.5 mm long, 3 mm wide, the lobes subequal, narrowly oblong, narrowly obtuse, opposite, with the upper lobes incurved and overlapping above the column and lip: lip microscopically pubescent, the lobes oblong, with incomplete blades, 2 mm long, the apex uncovered, narrowly obtuse, incurved beneath the column, the base rounded, the connectives cuneate, connate to the base of the column, the sinus obtuse with a microscopic, membranous appendix; column stout, 1 mm long, with the anther and stigma apical.

Etymology. From the Latin incurvus, "incurved," referring to the upper lobes of the petals.

This species is known only from a collection by Dod who cultivated it as "big chin." It is characterized by a small or medium-sized habit with a congested raceme borne behind an elliptical, acute leaf. The sepals are ovate and acute, with the laterals connate below the middle. The petals are narrowly oblong with the upper lobes incurved and crossing above the lip and column. The blades of the lip are narrow and incomplete with the apices free and incurved beneath the column.

Lepanthes longiloba Dod ex Luer, sp. nov. Type: Haiti: Río Glace, Apr. 1992, cultivated as Riviere Glace \#4, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12173.

Figure 10.
Planta parva mediocrisve racemo congesto folio elliptico subaequanti, sepalis ovatis acutis, petalis transverse oblongis, lobis subaequalibus anguste oblongis, labelli lobis semilunatis laminis incompletis distinguitur.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls weak, erect, slender, $3-11 \mathrm{~cm}$ long, enclosed by 4-9 minutely ciliate, lepanthiform sheaths. Leaf erect, coriaceous, elliptical, subacute, $18-27 \mathrm{~mm}$ long, $9-13 \mathrm{~mm}$ wide, the base cuneate into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 16 mm long, borne on top of the leaf by a filiform peduncle $8-15 \mathrm{~mm}$ long; floral bracts slightly subechinate, 1 mm long; pedicels 1 mm long; ovary 1 mm long; sepals dull light orange, entire, glabrous, subcarinate, ovate, acute, the dorsal sepal slightly acuminate, 3.75 mm long, 2 mm wide, 3 -veined, connate to the lateral se-


Figure 9. Lepanthes incurva.
pals for 0.5 mm , the lateral sepals oblique, 3.5 mm long, 1.5 mm wide, connate 0.5 mm into a bifid synsepal; petals red-orange, microscopically pubescent, transversely bilobed, oblong, 0.5
mm long, 3.6 mm wide, the lobes opposite, oblong, obtuse, the lower lobe slightly shorter; lip red-orange, microscopically pubescent, bilobed, the lobes lunate, 1.5 mm long, with incomplete,


Figure 10. Lepanthes longiloba.
narrowly ovate blades, with the apices uncovered, narrowly obtuse, incurved beneath the apex of the column, with the bases round, the connectives broad, short, the body broad, connate to the base of the column, the sinus obtuse, minutely retuse, with a the appendix consisting of a cluster of minute cilia; column 1 mm long, the anther and stigma apical.

Etymology. From the Latin longilobus, "with long lobes," referring to the lobes of the petals.

This species is apparently known only from the mountains of eastern Haiti, where it was collected by Don Dod and cultivated as "Riviere Glace \#4." It is characterized by a mediumsized habit, with very slender ramicauls much longer than the elliptical leaf it bears. The peduncles on top of the leaf reach to about the middle of the leaf, so that the congested raceme eventually reaches near the apex. The sepals are ovate and acute with the laterals connate below the middle. The transverse petals are narrowly oblong with the lobes nearly equal. The blades of the lip have are complete, with the apices curved beneath the apex of the column. The connectives and body are broad, and the appendix is reduced to a tiny clump of cilia.

Lepanthes magnipetala Dod ex Luer, sp. nov. Type: Haiti: Massif de la Hotte, Les Cayes, Formond, collected ca. 1982, flowered in cultivation May 1986, as Formond \#13, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12220.

Figure 11.
Planta parva racemo congesto folio elliptico-ovato subacuto breviore, sepalis ovato-triangularibus acutis, petalis transverse bilobis, lobis subaequalis oblongotriangularibus anguste obtusis, labelli bilobis marginibus incrassatis cum appendice minuta longiciliata distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $2-5 \mathrm{~cm}$ long, enclosed by 4-6 microscopically scabrous, lepanthiform sheaths, minimally dilated at the ostia. Leaf erect, coriaceous, elliptical-ovate, subacute, $12-22 \mathrm{~mm}$ long, $7-14 \mathrm{~mm}$ wide, with remote, minute, marginal teeth, the base broadly cuneate, contracted into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively few-flowered raceme up to 3 mm long or longer, borne behind? the leaf by a filiform peduncle 8 11 mm long; floral bracts echinate, 1 mm long; pedicels 1.5 mm long; ovary 1 mm long; sepals remotely and shortly denticulate, glabrous, subcarinate, ovate-triangular, acute, the dorsal sepal yellow, 4 mm long, 2.25 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 4 mm long, 2 mm wide, 2 -
veined, connate 0.75 mm ; petals orange, red medially, minutely pubescent, transversely bilobed, fusiform-elliptical, 1 mm long, 5 mm wide, the lobes opposite, subequal, 2.5 mm long, trian-gular-oblong, narrowly obtuse at the tips; lip orange, red medially, minutely pubescent, bilobed with the lobes semilunate with thickening along the broad margins forming indistinct blades, a low, longitudinal callus on the middle third where in inner margin of a blade would be, rounded at the ends, 2.25 mm long, embracing the column, the connectives cuneate, the body narrow, connate to the base of the column, the sinus acute, with a minute, ovoid, long-ciliatepubescent appendix; column stout, 1.5 mm long, the anther and stigma apical.

Etymology. From the Latin magnipetalus, "large-petaled," referring to the size of the petals.

Identified as "Formond \#13," this species is another of many species of Lepanthes discovered by Dod in the forests of the Massif de la Hotte in Haiti. It is characterized by a small habit with ovate, subacute leaves with a short, congested raceme of relatively large flowers. The sepals are ovate and acute with the laterals connate below the middle. The margins are remotely and minutely denticulate. The petals are transversely lobed, with the lobes equal and narrowly triangular, together forming large, fusiform petals longer than a sepal. The margins of the lobes of the lip are thickened forming indistinct blades. The cuneate connectives form a narrow body with a minute, ciliated appendix.
Lepanthes microdonta Dod ex Luer, sp. nov. Type: Haiti: Río Glace, Apr. 1992, cultivated as Riviere Glace \#5, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12172.

Figure 12.
Planta parva racemo congesto multifloro folio late ovato obtuso interdum longiore, sepalis anguste ovatis leviter accuminatis minutissime denticulatis, petalis transverse lobatis, lobo superiore oblongo subtruncato, lobo inferiore minore subtriangulari, labelli lobis semilunatis laminis supra medium incompletis, appendice crassa pubescenti distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $2-3.5 \mathrm{~cm}$ long, enclosed by 5-6 ciliate, lepanthiform sheaths. Leaf suffused with purple beneath, erect, coriaceous, broadly ovate-subcordate, obtuse, $10-15 \mathrm{~mm}$ long, $9-15 \mathrm{~mm}$ wide, the base broadly cuneate to round, abruptly contracted into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 20 mm long, borne behind the leaf by a filiform peduncle $4-7 \mathrm{~mm}$ long; floral bracts echinate, 0.75 mm long; pedicels 0.5 mm long; ovary 1


Figure 11. Lepanthes magnipetala.
mm long; sepals light green, minutely denticulate, subcarinate, ovate, acute, slightly acuminate, the dorsal sepal 2.75 mm long, 1.8 mm wide, 3-veined, connate to the lateral sepals for
0.5 mm , the lateral sepals oblique, 2.75 mm long, 1.4 mm wide, connate 1 mm into a bifid synsepal; petals yellow with red toward the tips, microscopically pubescent, transversely bilobed,


Figure 12. Lepanthes microdonta.
0.6 mm long, 2 mm wide, the lobes opposite, the upper lobe oblong, subtruncate, the lower lobe oblong-triangular, slightly smaller; lip yellow, minutely pubescent, bilobed, the lobes 1.5 mm long, with incomplete, narrowly ovate blades below the middle, with the apices uncovered, narrowly obtuse, flanking the apex of the column, the connectives broad, the body broad, connate to the base of the column, the sinus retuse, the appendix external, thickly ovoid, densely pubescent; column 1 mm long, the anther and stigma apical.

Etymology. From the Greek microdontus, "with tiny teeth," referring to the cilia of the sepals.

Apparently endemic in the forested mountains of eastern Haiti, was collected by Dod and cultivated as "Riviere Glace \#5." It is characterized by a small habit with a broadly ovate, obtuse leaves that are eventually surpassed by a lengthening, congested raceme. The sepals are ovate, acute and slightly acuminate, with the laterals connate below the middle. The petals are transversely with the upper lobe oblong and the smaller lower lobe oblong-triangular. The lobes of the lip have incomplete, narrowly ovate blades below the middle that flank the column. The appendix is external, ovoid and densely pubescent.

Lepanthes miniflora Dod ex Luer, sp. nov. Type: Dominican Republic: Brazo Seco, collected and cultivated as "miniflora" by D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12296.

Figure 13.
Planta parva racemo congesto folio ovato acuto acuminato breviore, sepalis late ovatis subacutis obtusisve, petalis transverse bilobis, lobis subaequalibus oblongis, labelli laminis ovatis obtusis, corpore mentoso cum appendice bifida pubescenti distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $3-4.5 \mathrm{~cm}$ long, enclosed by 6-7 microscopically scabrous, lepanthiform sheaths with minimally dilated ostia. Leaf erect, coriaceous, ovate, acute, acuminate, $20-27 \mathrm{~mm}$ long, $12-15 \mathrm{~mm}$ wide, the base acuminate into a petiole 1.5 mm long. Inflorescence a congested, distichous, successively manyflowered raceme up to 7 or more mm long, borne on top or behind the leaf by a filiform peduncle $2-7 \mathrm{~mm}$ long; floral bracts minutely echinate, 1 mm long; pedicels 1 mm long; ovary 2 mm long; sepals entire, glabrous, subcarinate, broadly ovate, subacute to obtuse, the dorsal sepal 2.8 mm long, 2.5 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 2.8 mm long, 1.8 mm wide, 2 veined, connate to the middle; petals microscop-
ically pubescent, transversely bilobed, 0.5 mm long, 2.2 mm wide, the lobes opposite, the upper lobe oblong, rounded at the end, the lower lobe shorter, oblong, narrowed into a rounded tip: lip bilaminate, microscopically pubescent, the blades oblong-ovate, with the ends obtuse or rounded, 1.2 mm long, the connectives oblong, the body broad, thick, connate to the base of the column, the sinus obtuse, retuse, above a mentum with a small, bifid, pubescent appendix; column stout, 1 mm long, with the anther and stigma apical.

Etymology. From the Latin miniflora, "with small flower," referring to the size of the flowers.

This species is known only from a collection by Dod who cultivated it as "miniflora." It is characterized by a small habit with a congested raceme of relatively small flowers borne either behind or on top of an ovate, acuminate leaf. The sepals are broadly ovate and obtuse, with the lateral sepals semiconnate. The petals are transverse with the upper lobe oblong and the lower lobe smaller and narrower. The blades of the lip are ovate with rounded ends. The body of the lip is thick with a mentum below the sinus, and with a small, bifid appendix.
Lepanthes politilabia Dod ex Luer, sp. nov. Type: Haiti: Rio Glace, cultivated as H-2, D. Dod 2216 (MO), C. Luer illustr. 12167. Figure 14.
Planta mediocris racemo congesto folio ovato leviter acuminato breviore, sepalis late ovatis ovatis acutis, petalis transverse bilobis, lobo superiore oblongo subtruncato, lobo inferiore minore triangulari, labelli laminis ellipticis convexis nitentibus imbricantibus distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, $3-10 \mathrm{~cm}$ long, enclosed by 6-8 ciliate, lepanthiform sheaths. Leaf erect, coriaceous, elliptical-ovate, acute to subacute, $3-4.5 \mathrm{~cm}$ long, $1.5-2.5 \mathrm{~cm}$ wide, the base broadly cuneate into a petiole $3-4 \mathrm{~mm}$ long. Inflorescence a congested, distichous, successively many-flowered raceme up to 12 mm long, borne behind the leaf by a peduncle $8-13 \mathrm{~mm}$ long; floral bracts echinate, 1.5 mm long; pedicels 1 mm long; ovary 1 mm long; sepals light orange-brown, glabrous, carinate, broadly ovate, subacute, the dorsal sepal 4.5 mm long, 4 mm wide, 3 -veined, connate to the lateral sepals for 1 mm , the lateral sepals, oblique, 4.5 mm long, 3 mm wide, 2 -veined, connate 1.5 mm ; petals orange with red margins, microscopically pubescent, transversely bilobed with the lobes opposite, 1.6 mm long, 4.25 mm wide, the upper lobe oblong, subtruncate, the lower lobe smaller, slightly incurved, obliquely triangular, narrowly obtuse; lip shiny red-orange, glabrous


Figure 13. Lepanthes miniflora.
to microscopically cellular, bilaminate, the blades elliptical, convex, with rounded ends, with the inner margins overlapping over the column, 1.4 mm long, the connectives broad, the
body broad, connate to the base of the column, the sinus transverse, with a short, broadly oblong, pubescent appendix; column 1 mm long, the anther and stigma apical.


Figure 14. Lepanthes politilabia.

Etymology. From the Latin politilabius, "with polished lip," referring to the shiny blades of the lip.

This species is apparently endemic to one lim-
ited area of Haiti. It is characterized by the me-dium-sized habit with a congested raceme borne behind an ovate leaf; broad, entire, subacute sepals; petals with the upper lobe oblong and sub-
truncate and the lower lobe obliquely triangular; and broadly elliptical, convex, overlapping, shiny red-orange blades of the lip. The appendix is short, broad and pubescent.

Lepanthes pteroglossa Dod ex Luer, sp. nov. Type: Haiti: Massif de la Hotte, Les Cayes, Formond, collected ca. 1982, flowered in cultivation May 1986, as Formond \#20, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12293.

Figure 15.
Planta parva racemo congesto folio elliptico obtuso breviore, sepalis ovatis ovatis acutis, petalis transverse bilobis, lobis subaequalis oblongo-triangularibus anguste obtusis, labelli laminis ovatis longipedicellatis cum appendice oblonga ciliata distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3 cm long, enclosed by 5 microscopically ciliate-scabrous, lepanthiform sheaths, minimally dilated at the ostia. Leaf erect, coriaceous, elliptical, obtuse, 17 mm long, 9 mm wide, the base broadly cuneate or rounded, contracted into a petiole ca. 1 mm long. Inflorescence an arcuate, congested, distichous, successively few-flowered raceme up to 4 mm long or longer, borne in front of the leaf by a filiform peduncle ca. 1 mm long; floral bracts echinate, 0.75 mm long; pedicels 1 mm long; ovary 1.25 mm long; sepals glabrous, subcarinate, ovate-triangular, acute, the dorsal sepal 3.5 mm long, 2.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 3.5 mm long, 2 mm wide, 2 -veined, connate 1 mm ; petals microscopically pubescent, transversely bilobed, 1 mm long, 2.75 mm wide, 2 -veined, the lobes oblong, opposite, subequal, obliquely inward, with the tips more or less rounded; lip minutely pubescent, bilaminate with the blades ovate, narrowly obtuse at the apex, rounded at the base, 0.9 mm long, flanking the column, the connectives elongate, oblong, the body narrow, connate to the base of the column, the sinus obtuse, with an oblong, pubescent appendix; column stout, 1 mm long, the anther and stigma apical.

Etymology. From the Greek pteroglossa, "a winged tongue," referring to the long-pedicellate lobes of the lip.

Identified as "Formond \#20," this species is another of many species of Lepanthes discovered by Dod in the forests of the Massif de la Hotte in Haiti. It is characterized by a small habit with elliptical, obtuse leaves with a short, congested raceme arching away from the leaf. The sepals are entire, ovate and acute with the laterals connate below the middle. The petals are transversely lobed, with the lobes nearly equal, oblong, and inclined inward. The blades of the
lip are ovate and held to either side of the column by equally long, oblong connectives. The body is narrow with an oblong, ciliated appendix.

Lepanthes semperflorens Dod ex Luer, sp. nov. Type: Haiti: Massif de la Hotte, Les Cayes, Formond, collected ca. 1982?, flowered in cultivation May 1986, as Formond \#6, D.D. Dod s.n. (Holotype: MO), C. Luer illustr. 12178.

Figure 16.
Planta mediocris racemo congesto folio ellipticoovato acuto saepe breviter trans apicem, sepalis ovatis acutis minute denticulatis, petalis transverse bilobis, lobis suboblongis-triangularibus ad apicem rotundis, lobo inferiore minore, labelli laminis oblongis obtusis distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $8-9 \mathrm{~cm}$ long, enclosed by 8-9 minutely ciliate-scabrous, lepanthiform sheaths. Leaf suffused with purple beneath, erect to suberect, coriaceous, ellipticalovate, acute, slightly acuminate, $25-30 \mathrm{~mm}$ long, $13-16 \mathrm{~mm}$ wide, the base broadly cuneate into a petiole ca. 1 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 25 mm long, eventually surpassing the leaf, borne on top of the leaf by a filiform peduncle $13-20 \mathrm{~mm}$ long, more or less arching; floral bracts minutely echinate, 1 mm long; pedicels 1.5 mm long; ovary 1 mm long; sepals yellow, minutely denticulate, subcarinate, ovate, acute, the dorsal sepal 4 mm long, 2.75 mm wide, 3 -veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 3.8 mm long, 1.6 mm wide, 2 -veined, connate 1 mm ; petals red-orange, microscopically pubescent, transversely bilobed, 0.75 mm long, 2.5 mm wide, the lobes opposite, oblong-triangular, rounded at the tip, the lower lobe smaller: lip red-orange, microscopically pubescent, bilaminate, the blades oblong, with the ends narrowly obtuse, 2 mm long, embracing the column, the connectives short, broadly oblong, the body broad, connate to the base of the column, the sinus retuse, the appendix small, ovoid, pubescent; column stout, 1.75 mm long, with the anther and stigma apical.

Etymology. From the Latin semperflorens, "always flowering," referring to the everlengthening racemes.

This species is known only from a collection by Dod who cultivated it as Formond \#6. It is characterized by a medium-sized habit with congested racemes borne on top of an ovate, acute leaf. The racemes continue to lengthen until they pass the leaf. The sepals are denticulate, ovate and acute, with the laterals semiconnate. The


Figure 15. Lepanthes pteroglossa.
lobes of the petals are acuminate-oblong and rounded at the tip, the lower lobe being half the size of the upper lobe. The blades of the lip are oblong and borne by broad by very short connectives. The appendix is small and pubescent.

Lepanthes truncatipetala Dod ex Luer, sp. nov. Type: Without collection data, collected and cultivated, May 1986, by D.D. Dod 2210 (Holotype: MO), C. Luer illustr. 16537.

Figure 17.


Figure 16. Lepanthes semperflorens.


Figure 17. Lepanthes truncatipetala.

Planta parva mediocrisve racemo congesto folio el-liptico-ovato breviter acuminato breviore, sepalis ovatis acutis, petalis transverse bilobis, lobo superiore cuneiformi late truncato, lobo inferiore minore obtuso, labelli laminis semilunatis, appendice bifida longiciliata distinguitur.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, $5-7 \mathrm{~cm}$ long, enclosed by $7-8$ microscopically ciliate, lepanthiform sheaths. Leaf erect, coriaceous, elliptical-ovate, acute, shortly acuminate, $22-36 \mathrm{~mm}$ long, 15 mm wide, the base obtuse, shortly acuminate into a petiole ca. 2 mm long. Inflorescence a congested, distichous, successively many-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 10 mm long; floral bracts 1 mm long; pedicels 1 mm long; ovary 1 mm long; sepals entire, glabrous, subcarinate, ovate, acute, the dorsal sepal 3.75 mm long, 2.75 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm , the lateral sepals oblique, 3.5 mm long, 2 mm wide, 2 veined, connate 1 mm ; petals glabrous, transversely bilobed, 1 mm long, 2 mm wide, the upper lobe cuneate, broadly and sharply truncate, the lower lobe smaller, oblong, round on the end; lip glabrous, bilobed with sharply demarcated, semilunate blades, 1.5 mm long, the
ends more or less acute, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse, with a small, bifid, long-ciliate appendix; column stout, 1 mm long, the anther and stigma apical.

Etymology. From the Latin truncatipetalus, "with truncate petals," referring to upper lobes of the petals.

This species is known only from a collection by Dod. It is characterized by the medium-sized habit with elliptical leaves more or less acuminate at both the apex and base, and a congested raceme borne along the back. The sepals are ovate and acute with the laterals connate below the middle. The petals are transversely lobed, with upper lobe cuneate, broadly and sharply truncate. The connectives and body are broad with a small, bifid, long-ciliate appendix.

## Literature Cited

Hespenheide, H.A. and D.D. Dod. 1989. El genero Lepanthes (Orchidaceae) de la Española. I., Moscosoa 5: 250-264.

- 1990. El genero Lepanthes (Orchidaceae) de la Española. II., Moscosoa 6: 167-195.

1993. El genero Lepanthes (Orchidaceae) de la Española. III., Moscosoa 7: 171-198.

# Miscellaneous New Species of Maxillaria (Orchidaceae) 

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#### Abstract

Ten new species of Maxillaria are described, nine from Andean South America and one from Mexico. Floral details are based on camera lucida drawings of flowers rehydrated with ammonia. Each description contains comparison notes with hypothesized closely related species.


Key words: Maxillaria, Orchid, Orchidaceae, Ornithidium

## Introduction

A study of the complexes of species around Maxillaria aggregata (Kunth) Lindl., M. adendrobium (Rchb. f.) Dressler, and M. graminifolia (Kunth) Rchb. f. made apparent the lack of names for nine species. In addition to providing names for these species, this article describes a tenth species from Mexico, thus legitimizing a herbarium name.

Floral details are based on camera lucida drawings of flowers rehydrated with ammonia. All original drawings have been reduced to $65 \%$ on acid free paper and mounted directly on their respective herbarium sheets. The number of flowers analyzed per species is provided as a record of sample size.

## Taxonomic Treatments

Maxillaria cachacoensis J.T. Atwood, sp. nov. Type: Ecuador: Prov. Loja: Cachaco, km 24 Yangana to Valladolid, $2450 \mathrm{~m}, 24$ July 1985, Dodson et al. 16021 (Holotype: MO).

Figure 1.
Ex affinitate Maxillariae haemathodis (Ruíz \& Pavon) Garay, sed labelo sine ungue et colore castaneo floris differt. Species haec M. brevifoliae (Lindl.) Rchb. f. similis, sed vaginis foliarum rugosis, lamina foliarum late lanceolata, labeloque ecalloso distinguitur.

Plant to ca. 1 m , terrestrial (probably opportunistically so and also epiphytic), straggly, apparently monopodial and lacking pseudobulbs as adults; juveniles unknown; roots grayish, to ca. 1.5 mm in diameter, in part serving as props. Stems $4-6 \mathrm{~mm}$ in diameter, erect to decumbent, concealed by leaf sheaths, each branch forming an acute angle with the main stem. Leaves distichous, sheaths coarsely rugose, with broadened hyaline margins; blade $3.5-6 \times 1-1.7 \mathrm{~cm}$, lacking a petiole, probably coriaceous, with veins emerging beneath, broadly lanceolate to narrowly ovate, acute, the margin denticulate apically.

Inflorescences apparently one per leaf axil; scapes ca. $2.5-3 \mathrm{~cm}$, ovary with pedicel $20-24$ mm subtended by a floral bract less than 2 mm . Flowers gaping, the color described by collectors as red brown to purple streaked with green; the lateral sepals reflexed and the petals appressed to the column. Sepals dissimilar; the dorsal $17 \times 4-5 \mathrm{~mm}$, lanceolate, acute; lateral sepals $16 \times$ ca. 4 mm , somewhat falcate, reflexed and oblique at the base, acute. Petals 13$16 \times 4 \mathrm{~mm}$, elliptic to elliptic-lanceolate, rather falcate, appressed to the column, sharply acute. Lip $10-11 \times 6-7 \mathrm{~mm}$ in natural position, hinged to the column foot, recurved at the base, somewhat 3-lobate on the lower third, the lateral lobes high, broadly rounded; the midlobe round when spread, deeply emarginate apically, and with a conic mucro at the apex ca. $1.5-2 \mathrm{~mm}$; callus a mere thickening centrally below the sinuses. Column stout (probably pollinated), 6-7 mm , strongly arching; foot ca. 2 mm ; anther unknown. Capsules unknown.
Etymology. Named for the place, Cachaco, where the type was found.
Known from just two localities in the province of Loja, Ecuador at 2450-2800 m in cold, wet, and windy cloud forests. Flowering at least July to September.

The rugose sheath, conic apicule of the movable lip, and minute floral bract suggest that Maxillaria cachacoensis is most closely related to the Neourbania (Maxillaria adendrobium (Rchb. f.) Dressler) alliance including M. haemathodes (Ruíz \& Pavon) Garay. The monopodial plant habit of M. cachacoensis superficially resembles some members of the M. graminifolia alliance, and it has been identified as M. brevifolia (Lindl.) Rchb. f., but the leaves are noticeably broader than those of the latter species. The floral bracts are minute as is typical of Neourbania (s. str.) and Ornithidium (s. str.). Number of flowers analyzed: 2.

Paratype. Ecuador: Prov. Loja: km 12-14, near top of pass on road to Zamora, $2800 \mathrm{~m}, 28$ Sep. 1961, Dodson \& Thien 774 (MO).

