

## NEW SPECIES OF *LEPANTHES* (ORCHIDACEAE) FROM COSTA RICA

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**ABSTRACT:** The following 24 new species of *Lepanthes* are reported in preparation for the *Handbook of the Flora of Costa Rica*. Nineteen of the species had been collected around 1867 by Endres, many of which he had illustrated and described in preparation for publication. When a name was indicated by him, the name has been retained. Many of the present illustrations have been made from hundred-year-old flowers hydrated in concentrated ammonia solution.

A. R. ENDRES' name is known from his numerous collections of Costa Rican orchids, many of which bear his name, but very little is known about the man. His birthplace and education are unknown. His native tongue seems to have been English; apparently he was not Costa Rican. He signed his last name *Endrés*.

In the early 1860's, he had been employed by James Bateman in Guatemala to collect orchids with Ure-Skinner. Via Nicaragua, he came to Costa Rica where he settled temporarily with English and German colonists along the San Carlos and Sarapiquí rivers. There he worked at least part-time with a Mr. Koschny in beginning a plantation of native rubber and nutmeg (L. D. Gómez, 1995, pers. comm.).

In Costa Rica Endres made numerous collections of orchids, especially of the genus *Lepanthes*, between 1867 and 1870. In 1871, he was employed as a collector by the firm of James Veitch & Sons of London, following the death of their collector Zahn. He was joined later by Downton who took collections to England. During these few years, many orchids were exported, but very few, such as *Cattleya dowiana*, proved to be of horticultural merit. Endres could possibly have been more interested in smaller species. The employment, terminated in 1873, was called "expensive and scarcely a success" in *Hortus Veitchii* (Veitch, 1906) where Endres was described as a "half-caste." He died in 1877, at which time Reichenbach lamented the fact by describing one of his collections of *Pleurothallis* as *P. luctuosa*, "luctuosus" meaning "sad."

Endres had a remarkable artistic talent. Many of his collections were accurately and meticulously illustrated, some in color, and many were described in minute detail in perfect English. He paid utmost attention to colors and minutest details of floral parts. For recording descriptions, he used ink and a fine-pointed pen, or sometimes a lead pencil. For drawing, he utilized an extremely fine pencil point and a strong source of magnification. He obtained symmetry in his flowers and floral parts by using a vertical fold of unlined paper. Apparently paper was scarce, because he used various kinds of what seem to be odd-sized scraps. He included only a few measurements in inches and fractions thereof. His illustrations usually included the habit in natural size. He drew the flowers magnified in a front view, with additional views of the more magnified lip. He often drew the lip as viewed from beneath (see Figs. 6, 22, and 24) instead of expanded with the column elevated to show the appendix.

Judging from the numerous notes indicating figures, intended pages and volumes, Endres was apparently preparing a publication. Localities, dates and altitudes are scanty, vague or sometimes lacking. His illustrations, manuscript and voucher specimens had been sent over a period of several years to Reichenbach, who, either out of deference to Endres, or from preoccupation with other genera, let the work lie untouched for his lifetime. According to his will, his herbarium, including the Endres collection, lay incarcerated for the next 25 years (1889-1914): "My herbarium and my botanical library . . . accrue to the Imperial Hof

Museum in Vienna, under the condition that the preserved Orchids and drawings of Orchids shall not be exhibited before twenty-five years from the date of my death have elapsed" (Masters, 1889; Rolfe, 1913). In Vienna Reichenbach's collection was eventually mounted on thousands of herbarium sheets. Endres appeared both as plant collector and author of watercolor orchid drawings in the list of collections in the Reichenbach Herbarium compiled by Keißler & Reching (1916).

The beginning of World War I delayed any work on the specimens. After the war, most of the collection seems to have been largely ignored by Schlechter and Kränzlin, workers in orchids who would have had access to the collection.

After World War II, the collection of *Lepanthes* was included in a huge loan of specimens to AMES where it lay uninvestigated for the next 37 years. By 1991, when the loan of the pleurothalids was transferred to Sarasota en route back to Vienna, the hundreds of herbarium sheets of specimens and drawings were in total disarray. By using disorganized fragments of clues consisting of intended page numbers, sketch numbers (different from the collection numbers), positions on proposed pages (upper right, lower left, etc.), and occasionally numbered specimens, names, meager localities, or dates, the sheets were gradually assembled into identifiable species.

A flower of every herbarium specimen that could not be identified by available data was hydrated in ammonia solution. Not all taxa were found to be represented by both illustration and herbarium specimen. Some illustrations were obviously missing from the sheets, and some herbarium specimens were lacking, but they might never have been included originally.

After final assortment, it could be determined that Endres had collected about 60 different species of *Lepanthes*. These included the eight species described earlier by Reichenbach from the collections of Oersted and Wendland. None of the fifty-odd remaining species had been described at that time. From subsequent, twentieth century collections by Acosta, the brothers Brade, Brenes, Lankester, Standley, Tonduz and others, Schlechter and Ames eventually described many of them. Nineteen of Endres' collections that still remained unpublished, are included below. Sixteen of them are not known to have been re-collected. Nine were discovered among herbarium speci-

mens without either illustration or description by Endres. The others had been illustrated or described by him. When he had indicated a name for a species, this name has been retained.

The following list includes those species currently with names that are present in Endres' collection. Some common species such as *L. minutilabia* Ames & C.Schweinf. are not present. The identifications of a few collections are still undecided. In parentheses following the current names are those specific epithets used by Endres.

- Lepanthes acoridilabia* Ames & C.Schweinf.
- Lepanthes acostae* Schltr.
- Lepanthes atrata* Endres ex Luer
- Lepanthes blephariglossa* Schltr. (*integrilabia*)
- Lepanthes bradei* Schltr.
- Lepanthes candida* Endres ex Luer
- Lepanthes chiriquensis* Schltr.
- Lepanthes ciliisepala* Schltr. (*colubrina*)
- Lepanthes circularis* Luer
- Lepanthes coeloglossa* Luer
- Lepanthes confusa* Ames & C.Schweinf. (*limbata*, *rotundata*)
- Lepanthes costaricensis* Schltr.
- Lepanthes crossota* Luer (*hispidata*)
- Lepanthes decipiens* Ames & C.Schweinf. (*car-nosa*)
- Lepanthes deformis* Luer & Hirtz (*distrorsa*)
- Lepanthes disticha* (A.Rich. & Galeotti) Garay & R.E.Schult. (*picta*)
- Lepanthes dotae* Endres ex Luer
- Lepanthes edwardsii* Ames (*elegans*, *hookeriana*)
- Lepanthes elata* Rchb.f.
- Lepanthes elegans* Luer
- Lepanthes erinacea* Rchb.f. (*quadrinervis*)
- Lepanthes estrellensis* Ames
- Lepanthes excedens* Ames & Correll
- Lepanthes eximia* Ames
- Lepanthes falcifera* Luer
- Lepanthes fascinata* Luer
- Lepanthes fimbriata* Ames (*cinnabarina*)
- Lepanthes forcepifera* Luer
- Lepanthes fugiens* Luer
- Lepanthes glicensteinii* Luer (*alpina*)
- Lepanthes gracillima* Endres ex Luer
- Lepanthes grandiflora* Ames & C.Schweinf.
- Lepanthes guanacastensis* Ames & C.Schweinf.
- Lepanthes guardiana* Endres ex Luer
- Lepanthes hamulifera* Luer
- Lepanthes helleri* A.D.Hawkes (*inversifolia*)

- Lepanthes horichii* Luer (*comosa*)  
*Lepanthes horrida* Rchb.f.  
*Lepanthes inaequiloba* Ames & C.Schweinf.  
*Lepanthes inescata* Luer (*tabarciae*)  
*Lepanthes inornata* Schltr.  
*Lepanthes jimenezii* Schltr. (*pulcherrima*)  
*Lepanthes limbellata* Endres ex Luer (*limbata*)  
*Lepanthes lindleyana* Oerst. ex Rchb.f.  
*Lepanthes minutissima* Endres ex Luer (*microscopica*)  
*Lepanthes myiophora* Luer  
*Lepanthes mystax* Luer & Escobar (*palpebrata*)  
*Lepanthes parvilabia* Luer  
*Lepanthes poasensis* Luer  
*Lepanthes posthon* Luer (*mirabilis*)  
*Lepanthes purpurea* Luer  
*Lepanthes pygmaea* Luer  
*Lepanthes reflexa* Luer  
*Lepanthes sannio* Luer & Escobar  
*Lepanthes selliana* Endres ex Luer  
*Lepanthes tipulifera* Rchb.f.  
*Lepanthes tridens* Ames  
*Lepanthes turrialbae* Rchb.f. (*jaegeriana*)  
*Lepanthes umbonifera* Endres ex Luer  
*Lepanthes wendlandii* Rchb.f.

***Lepanthes atrata*** Endres ex Luer, *sp. nov.*  
 TYPE: COSTA RICA. Without locality, ca. 1867,  
*A. Endres 18* (Holotype: W). Fig. 1.

*Planta grandis*, ramicaulorum vaginis atratis ostiis dilatatis, inflorescentia *L. distichae* (A.Rich. & Galeotti) Garay & R.E.Schult. similis, sed labelli laminis ellipticis et corpore protuberanti cum appendice oblonga pubescenti.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 6–16 cm long, enclosed 12–14 black, lepanthiform sheaths with dilated, microscopically ciliated ostia. **Leaf** erect, purplish, thinly coriaceous, elliptical-ovate, subacute to obtuse, acuminate, 5–7 cm long, 2–3 cm wide, the base cuneate into a petiole 3–5 mm long. **Inflorescence** a congested, successively many-flowered raceme, up to 15 mm long, borne behind the leaf by a slender peduncle 15–20 mm long; floral bracts oblique, muricate, 1.5 mm long; pedicels 1.5–2 mm long; ovary 1 mm long; **sepals** translucent greenish, carinate, the dorsal sepal ovate-triangular, acute, 2.5 mm long, 1.5 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, subacute, connate 1.75 mm into a bifid

lamina, 2.3 mm long, 2.3 mm wide; **petals** yellow, suffused with red-brown medially, microscopically pubescent, transversely bilobed, 0.5 mm long, 2.5 mm wide, the upper lobe larger, triangular with the apex rounded, the lower lobe oblong, rounded at the apex; **lip** cinnabar red, bilaminar, the blades microscopically pubescent, elliptical with rounded ends, 0.75 mm long, the connectives broadly cuneate, the body broad, concave, connate to the base of the column, with the sinus protuberant, with the appendix oblong, pubescent; **column** stout, 1 mm long, the anther apical and the stigma ventral.

**ETYMOLOGY:** From the Latin *atratus*, “blackened” referring to the cauline sheaths.

This species is known only from Endres’ original collection without collection data. It was described in detail and beautifully illustrated with the intended name “atrata.” It is related to the widely distributed *L. disticha*-complex, but it is readily distinguished from the others by the larger habit with the black sheaths of the ramicauls dilated at the orifice. The congested, distichous, small-flowered inflorescence is similar, but the flower is distinguished by the protuberant body of the lip with a projecting, oblong appendix.

***Lepanthes barbosa*** Luer, *sp. nov.* TYPE: COSTA RICA. Guanacaste: Peña Blanca, alt. 1850 m, collected by G. Barbosa, flowered in cultivation at Monteverde, 21 Mar. 1995, *C. Luer 17462* (Holotype: CR; Isotype: MO). Fig. 2.

*Planta grandis*, inflorescentia racemosa congesta folio elliptico acuminato brevior, sepalis ovatis acutis, petalorum lobo superiore late oblongo, lobo inferiore brevi-falcato, labelli laminis ovatis connectivis latis cum appendice pedunculata protuberanti.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 10–16 mm long, enclosed 15–16 lepanthiform sheaths with dilated, ciliated ostia. **Leaf** erect, coriaceous, elliptical, subacute, acuminate, 7–10 cm long, 22.8 mm wide, the base cuneate into a petiole 1.5–2 mm long. **Inflorescence** a congested, successively several-flowered raceme, up to ca. 1 cm long, borne behind the leaf by a slender peduncle 3–4 cm long; floral bracts oblique, lightly muricate, 3 mm long; pedicels 3–4 mm long; ovary 2 mm long; **sepals** pale orange, carinate, the dorsal sepal ovate-triangular, 5.5 mm long, 4.5

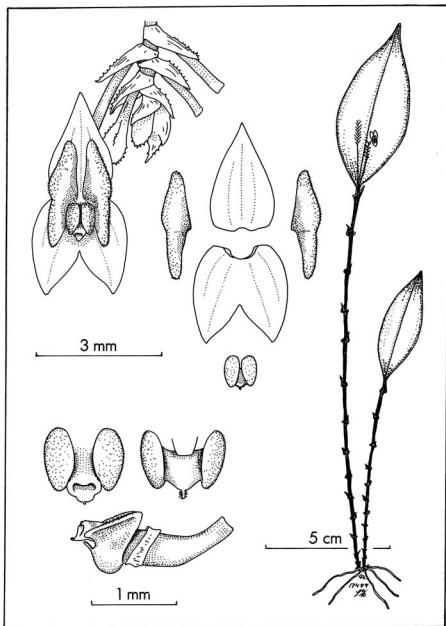


Fig. 1. *Lepanthes atrata* Endres ex Luer.

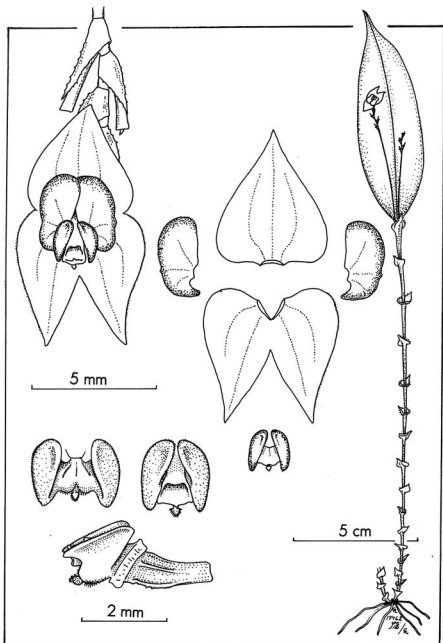


Fig. 2. *Lepanthes barbosae* Luer.

mm wide, 3-veined, connate to the lateral sepals for 1 mm, the lateral sepals ovate, oblique, acute, 5.5 mm long, 3 mm wide, 1 mm; **petals** orange with purple margins, microscopically pubescent, transversely bilobed, 1.5 mm long, 4 mm wide, 3-veined, the upper lobe broadly oblong, rounded at the apex, the lower lobe shorter, broadly falcate, incurved; **lip** orange with purple margins, bilaminate, the blades microscopically pubescent, ovate, obtuse, lightly concave, 1.75 mm long, the connectives broadly oblong, the body connate to the base of the column, the sinus notched, protuberant, with a pedunculated appendix, the apical segment triangular, pubescent; **column** stout, 1.5 mm long, the anther apical and the stigma subapical.

**ETYMOLOGY:** Named in honor of Gabriel Barbosa of Monteverde, Costa Rica, who discovered this species.

This handsome species was collected by Gabriel Barbosa and cultivated by him at his home in Monteverde. It is distinguished by the stout ramical clad in a series of brown sheaths with dilated ostia with ciliate margins, reminiscent of those of *L. erinacea* Rchb.f. The successively flowered raceme is borne near the middle of the back of the leaf by a slender peduncle. The sepals are acute; the upper lobe of the transverse petals is broadly oblong while the lower lobe is short and falcate-incurved (reminiscent of several Andean species); and the ovate blades of the lip are borne by broad, thick connectives from a broad body. The sinus is protruding and notched with a pedunculated appendix.

***Lepanthes candida*** Endres ex Luer, *sp. nov.*

**TYPE:** COSTA RICA. Cartago: epiphytic in forest above San Cristóbal Norte, alt. 1680 m, 26 Mar. 1995, C. Luer, J. Luer, R. Dressler, K. Dressler & Dora Mora de Retana 17476 (Holotype: CR; Isotype: MO). Fig. 3.

Planta parva caespitosa, inflorescentia congesta disticha foliis late ellipticis leviter convexis brevioribus, sepalis ovatis subacutis, petalorum majorum lobis triangularibus, labelli laminis ellipticis appendice proportionate grandi brevi crassa longipubescenti.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1–4.5 cm long, enclosed by 3–8 minutely ciliate, lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous,

suffused with purple beneath, slightly convex, broadly elliptical to suborbicular, obtuse, 11–22 mm long, 10–15 mm wide, the base broadly cuneate, contracted into a petiole 1.5–2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 3–7 mm long, borne behind the leaf by a filiform peduncle 3–10 mm long; floral bracts 1–1.5 mm long, muriculate; pedicels 1.5 mm long; ovary 1.5–2 mm long; **sepals** dull white to pale yellow-green, more or less lightly suffused with purple along the mid-vein, ovate, carinate, subacute, with margins entire, the dorsal sepal 2.75–3.5 mm long, 2–2.2 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, 2.5–3 mm long, 1.8 mm wide, connate 0.5–1 mm; **petals** yellow or orange with purple margins, transversely bilobed, microscopically pubescent, 1 mm long, 3.5–3.75 mm wide, 3-veined, the lobes obliquely triangular, obtuse, the upper lobe larger; **lip** red to purple, bilaminate, the blades microscopically pubescent, elliptical-ovate, slightly concave, 1.25 mm long, the bases obtuse, the apices narrowly obtuse, the connectives short, broadly cuneate, connate to the base of the column, the body thickened with the sinus obtuse, the appendix short, thick, ovoid, long-pubescent; **column** stout, 1 mm long, the anther apical, the stigma subapical.

**ETYMOLOGY:** From the Latin *candidus*, "white," referring to the basic color of the sepals.

**PARATYPES:** COSTA RICA. Cartago: heights above El Tejar, alt. 4500 ft., ca. 1867, A. Endres s.n. (W). Alajuela: San Ramón, Portillo Prungas, alt. 5000 ft., rainy season, 1867, A. Endres 33, sketch 221, 228 (W). San José: San Cristóbal, alt. 1800 m, 22 June 1981, C. Luer & A. Luer 6385 (SEL); Parque Nacional Braulio Carrillo, Zurquí Station, alt. 1680 m, 30 Oct. 1990, S. Ingram & K. Ferrell-Ingram 656 (CR, SEL). Without collection data, ca. 1867, A. Endres 50, 654, sketch 227 (W).

This species, relatively frequent in the central valley, was described and illustrated in the nineteenth century by Endres with the intended name *L. candida*. Another collection was illustrated with the intended name *L. muelleriana*.

Most closely resembling *L. confusa* Ames & C. Schweinf., *L. candida* is distinguished by the small habit with broadly elliptical leaves, and a short, distichous raceme that reaches to about the middle of the leaf. The whitish, subacute sepals,

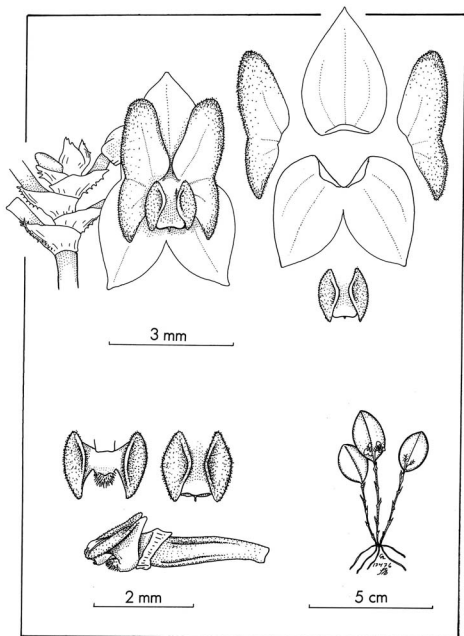


Fig. 3. *Lepanthes candida* Endres ex Luer.

about 3 mm long, are entire. The microscopically pubescent petals are proportionately large, considerably more so in some specimens. The lobes are more or less triangular and obtuse or narrowly obtuse. The blades of the lip are elliptical or ovate and microscopically pubescent, and borne to either side of the column by short, broadly cuneate connectives. The body is thick with a short, thick, oblong, long-pubescent appendix. In the lateral view, all collections of this species appear similar with the thick, densely pubescent appendix extending forward beneath the stigma.

***Lepanthes circularis*** Luer, *sp. nov.* TYPE: COSTA RICA. Cartago: heights above El Tejar, alt. 4500 ft., ca. 1867, A. Endres s.n. (Holotype: W). Fig. 4.

Planta parva, inflorescentia racemosa congesta folio circulari brevior, sepalis ovatis obtusis, petalis parvis transverse anguste oblongis lobo inferiore minuto subcirculari, labelli laminis oblongis columna longioribus.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls comparatively stout, erect, 1–2.5 cm long, enclosed by 4–5 closely fitting, blackish, lepanthiform sheaths with shortly ciliate ribs and ostia. **Leaf** erect, coriaceous, circular, with the apex broadly obtuse to round, 10 mm long, 10 mm wide to 17 mm long, 15 mm wide, the base rounded, contracted into a twisted petiole 2 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 4 mm long, borne behind the leaf by a filiform peduncle 6–7 mm long; floral bracts 1 mm long, muriculate; pedicels 1.5 mm long; ovary 1 mm long; **sepals** yellowish, violet-purple along the midrib, glabrous, subcarinate, entire, the dorsal sepal ovate, subacute, 3.3 mm long, 2.5 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, obtuse, 3.5 mm long, 2.2 mm wide, connate 1.5 mm; **petals** yellow with all margins violet, transversely bilobed, the upper lobe narrowly oblong, narrowly obtuse, 2 mm long, 0.5 mm wide, the lower lobe minute, semicircular, 0.2 mm long, 0.2 mm wide; **lip** violet purple, bilaminar, the blades oblong, obtuse to rounded at the ends, 1.5 mm long, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus obtuse with the appendix external, minute, prostrate; **column** stout, 1 mm long, the anther dorsal and the stigma subapical.

**ETYMOLOGY:** From the Latin *circularis*, "circular," in reference to the leaves.

This small species is known by a single collection apparently by Endres around 1867, but neither illustration nor description is present among his collections. *Lepanthes circularis* is characterized by the little round leaves and short, congested racemes. The sepals are broadly ovate, obtuse and entire. The transverse petals are distinguished by minute lower lobes about 0.2 mm long and broad. Other species with extremely small lower lobes include *L. inaequiloba* Ames & C. Schweinf., *L. reflexa*, described below, and *L. subdimidiata* Ames & C. Schweinf. The blades of the lip are oblong with broad connectives and a minute, external appendix.

***Lepanthes cuspidata*** Luer, *sp. nov.* TYPE: COSTA RICA. San José: Parque Nacional Braulio Carrillo, Vásquez de Coronado, along Sendero Río Patria, alt. 500 m, 13 Jan. 1991, S. Ingram & K. Ingram-Ferrell 860 (Holotype: CR; Isotype: SEL). Fig. 5.

Species haec *L. excedenti* Ames & Correll affinis, sed floribus ter majoribus et sepalis longiatenuatis differt.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 15–23 mm long, enclosed by 4–5 closely fitting, minutely ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, broadly elliptical, subacute to obtuse, margined, 10–12 mm long, 6–8 mm wide, the base cuneate into a petiole 1–1.5 mm long. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 5 mm long, borne behind the leaf by a filiform peduncle 2–4 mm long; floral bracts 0.75 mm long, muriculate; pedicels 0.5–0.75 mm long; ovary 0.75 mm long; **sepals** light yellow-green, glabrous, entire, the dorsal sepal narrowly triangular, acute, 4.5 mm long, 1.25 mm wide, connate to the lateral sepals for 0.25 mm, the lateral sepals connate 1 mm into a broadly ovate, deeply bifid lamina, 3.5 mm long, 3 mm wide, with the apices oblique, acute, acuminate; **petals** red, glabrous, transversely bilobed, 0.5 mm long, 2 mm wide, with a minute, obtuse, marginal lobe between the lobes, the upper lobe oblong with the apex rounded, the lower lobe obliquely ovate, subacute, broadly rounded on the outer margin; **lip** pink, bilaminar, glabrous, the blades oblong, 1 mm long, poorly defined on the margins of



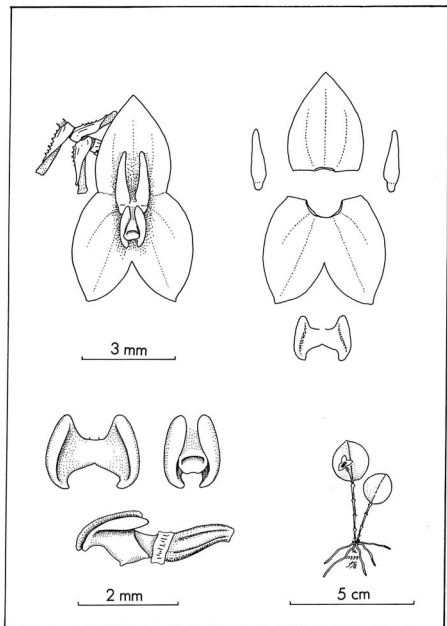


Fig. 4. *Lepanthes circularis* Luer.

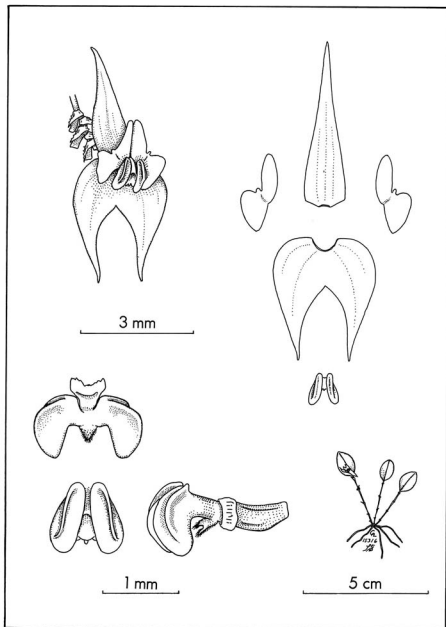


Fig. 5. *Lepanthes cuspidata* Luer.

broad connectives, with an incomplete margin, 1 mm long, with the ends broadly rounded, the connectives thickly cuneate from the bases of the blades, the body connate to the column at the base, the sinus filled with a proportionately large, pubescent, ovoid appendix.

**ETYMOLOGY:** From the Latin *cuspidata*, "with points," referring to the attenuate sepals.

This little species is closely allied to *L. excelsa*, but the thrice larger flowers with long-attenuate sepals seem sufficient for recognition. In addition, minor differences are seen in the formation of the blades of the lip. The blades of *L. cuspidata* are incomplete on the thick margins of the connectives.

***Lepanthes dotae*** Endres ex Luer, sp. nov.

**TYPE:** COSTA RICA. San José: Dota, rainy season, Sept.–Nov. ca. 1867, A. Endres 56, sketch 253 (Holotype: W). Fig. 6.

Planta mediocris caespitosa, inflorescentia congesta disticha foliis crassis leviter convexis suborbicularibus brevioris, sepalis ovatis acutis, petalorum lobis triangularibus, labelli laminis anguste subgimnoidea cum apicibus incurvatis, appendice extus minuta.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3.5–4.5 cm long, enclosed by 6–10 closely appressed, lepanthiform sheaths with oblique ostia, "microscopically velvety" on the margins and ribs. **Leaf** dark green, erect, "cartilaginous-coriaceous," broadly elliptical to suborbicular, obtuse, slightly convex, 2–3 cm long, 2–2.5 cm wide, the base rounded, contracted into a petiole ca. 1 mm long. **Inflorescence** a congested, distichous, successively 10- to 12-flowered (or more) raceme up to ca. 10 mm long, borne beneath the leaf by a filiform peduncle up to 12 mm long; floral bracts ca. 1 mm long, muriculate; pedicels ca. 1 mm long; ovary ca. 1 mm or more long; **sepals** cream-colored, tinged with violet along their midribs, ovate, carinate, acute, with margins entire, the dorsal sepal 3 mm long, 1.5 mm wide, connate to the lateral sepals for ca. 0.5 mm, the lateral sepals similar, oblique, diverging, connate ca. 0.5 mm; **petals** yellow suffused with violet medially, transversely bilobed, microscopically pubescent, 0.3 mm long, 2 mm wide, the lobes obliquely triangular, narrowly obtuse, diverging, the upper lobe larger; **lip** carmine, bilaminate, the blades mi-

nutely pubescent, oblong-subsigmoid, ca. 1 mm long, the bases obtuse, the apices narrowed, incurved, the connectives stout, cuneate, the body broad, connate to the base of the column, the sinus obtuse, with the appendix short, ovoid, barely external; **column** stout, ca. 0.5 mm long, with the anther and stigma apical.

**ETYMOLOGY:** Named for the community of Dota where the species was discovered.

This species, already declared scarce by Endres, is known only by Endres' accurate illustrations and detailed descriptions which are preserved in Reichenbach's herbarium at Vienna. His existing notes do not carry an intended name. A search through all Endres' dried collections failed to uncover a specimen of this species. Perhaps it was never sent to Reichenbach; perhaps it was sent and lost in the intervening 130 years. To my knowledge, no subsequent collection has been made.

The accompanying description was made from Endres' notes. The illustration was inked directly from Endres' original. The flowers were noted to be slightly more than one-fourth of an inch long. This is about 6 mm, so each of the ovate, acute sepals is about 3 mm long. The petals are 2 mm broad with the lobes narrowly triangular, the upper the larger. The blades of the lip are narrowly subsigmoid with the apices incurved.

***Lepanthes edentula*** Luer, sp. nov. **TYPE:** PANAMA. Chiriquí: epiphytic near the Fortuna dam site, alt. 1100 m, 16 Feb, 1985, C. Luer. J. Luer, R. Dressler & K. Dressler 10587 (Holotype: MO). Fig. 7.

Species haec *L. acostae* Schltr. affinis, sed inflorescentia breviori et sepalis glabris differt.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1–3 cm long, enclosed by 4–7 closely appressed, minutely ciliate, lepanthiform sheaths with oblique, slightly dilated ostia. **Leaf** erect, coriaceous, elliptical-ovate, acute, 10–25 mm long, 4–10 mm wide, with the base cuneate into a petiole 1 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme, up to 8 mm long, borne behind or atop the leaf by a slender peduncle 3–8 mm long; floral bracts 1 mm long, muriculate; pedicels 1–1.25 mm long; ovary 1–2 mm long; **sepals** yellow, variously suffused with red or purple, carinate, glabrous, the dorsal sepal triangular-ovate,

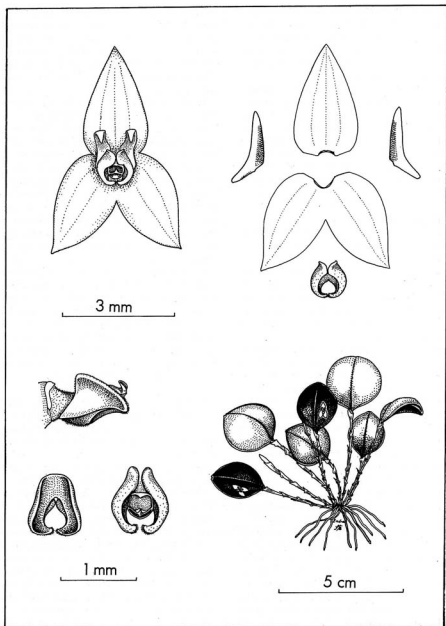


Fig. 6. *Lepanthes dotae* Endres ex Luer.

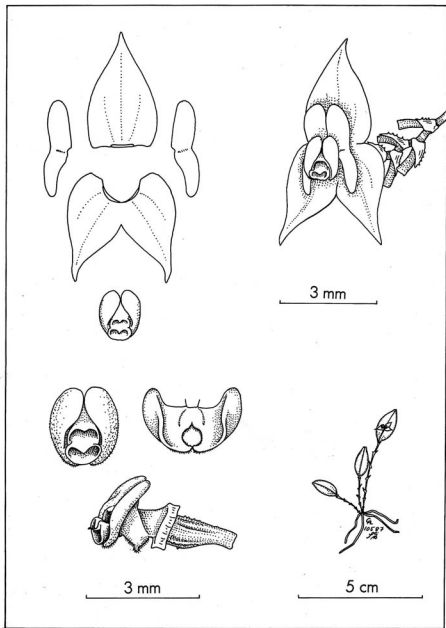


Fig. 7. *Lepanthes edentula* Luer.

acute, concave below the middle, 3.3–3.5 mm long, 2–2.3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, acute, slightly acuminate, 3–3.5 mm long, 1.5–1.75 mm wide, 2-veined, connate 0.5–0.75 mm; **petals** mostly red, microscopically cellular-glandular, transversely bilobed, 0.5–0.75 mm long, 2.5–3 mm wide, the lobes subequal, oblong, obtuse; **lip** red, microscopically pubescent, bilaminate, with the blades ovate, flat to slightly concave, rounded posteriorly, with the apices narrowly obtuse, incurved, 1.25–1.4 mm long, with the connectives cuneate, the body broad, connate to the base of the column, the sinus obtuse, the appendix minute, spherical, pubescent, located externally on the body; **column** 1 mm long, with the anther and the stigma apical.

**ETYMOLOGY:** From the Latin *edentulus*, "toothless," referring to the smooth margins of the sepals as compared to those of the very similar *L. acostae*.

**PARATYPES:** COSTA RICA. San José: Cerro de La Muerte, alt. 2530 m, July 1983, *R. Escobar et al.* 2760 (SEL); Santa María de Dota, alt. 2240 m, July 1983, *R. Escobar et al.* 3076 (SEL).

*Lepanthes edentula* is closely allied to the frequent and variable *L. acostae* and, as it occurs within the distribution of the latter, it could conceivably be considered a variation of *L. acostae*. *Lepanthes edentula* differs in the absence of the prominent, marginal denticulations that characterize *L. acostae*. Although similar in habit, *L. edentula* is smaller than the average *L. acostae*, and the inflorescence is considerably shorter. The inflorescence of *L. acostae* usually surpasses the tip of the leaf.

***Lepanthes elegans*** Luer, *sp. nov.* TYPE: COSTA RICA. Cartago: beyond the Laguna, Sitio Ortiz, Birris, Aug., ca. 1867, *A. Endres* 586 (Holotype). Fig. 8.

Planta grandis, inflorescentia racemosa congesta longipedicellata folio ovato brevior, sepalis dorsali ovato acuto, synsepalo ovato bifurcato, petalis grandibus lobo superiore ovato obtuso et lobo inferiore minore anguste triangulari acuto, labelli laminis ovatis columna minoribus apice longiciliatis.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 6–15 cm long, enclosed by 10–15 closely fitting, darkly

colored, minutely short-ciliate, lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous, more or less suffused with purple beneath, ovate, acute, lightly acuminate, 4–7.5 cm long, 1.5–3 cm wide, the base broadly cuneate to rounded, contracted into a petiole 3 mm long. **Inflorescence** a densely congested, distichous, successively many-flowered raceme up to 8 mm long, behind the leaf by a filiform peduncle 18–25 mm long; floral bracts 3 mm long, muricate; pedicels 4 mm long; ovary 1.5 mm long; **sepals** pale yellow, glabrous, carinate, entire, the dorsal sepal ovate, acute, 4.5 mm long, 2.75 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals connate 2.5 mm into an ovate, bifid lamina, 4.5 mm long, 3.2 wide, with the apices acute; **petals** yellow, marked with red on margins and base, transversely bilobed, 5 mm wide, the upper lobe obliquely ovate, obtuse, 3 mm long, 1.75 mm wide, the lower lobe obliquely triangular, acute, 2 mm long, 0.6 mm wide; **lip** orange, suffused with purple, bilaminate, the blades convex, shortly pubescent, ovate, obtuse at the ends, long-ciliate at the apex, 1 mm long, the connectives narrowly oblong, the body connate to the base of the column, the sinus obtuse with the appendix reduced to a tuft of cilia; **column** stout, 1.75 mm long, the anther dorsal and the stigma apical.

**ETYMOLOGY:** From the Latin *elegans*, "elegant," in reference to the beauty of the species.

**PARATYPES:** COSTA RICA. Cartago: Palo Blanco, Sitio Ortiz, Birris, headwaters of Río Turrialva, alt. 5000–6000 ft., Aug., ca. 1867, *A. Endres* s.n. (W); Agua Caliente near Cartago, ca. 1867, *A. Endres* s.n. (W). San José: Parque Nacional Braulio Carrillo, near Zuruquf station, alt. 1630 m, 11 Dec. 1990, *S. Ingram & K. Ingram-Ferrell* 772 (CR).

This pretty species was illustrated and described by Endres about 1869 without indicating a preferred name. It was rediscovered by the Ingrams in 1991. It is characterized by the large habit with the congested, long-pedicellate raceme shorter than the ovate leaf that is borne by dark, minutely pubescent, lepanthiform sheaths. The dorsal sepal is ovate and acute while the laterals are connate above the middle into an ovate, bifid lamina. The upper lobe of the petals is ovate and obtuse, considerably larger than the narrowly triangular lower lobe. The blades of the lip are smaller than the column, convex with long-ciliate

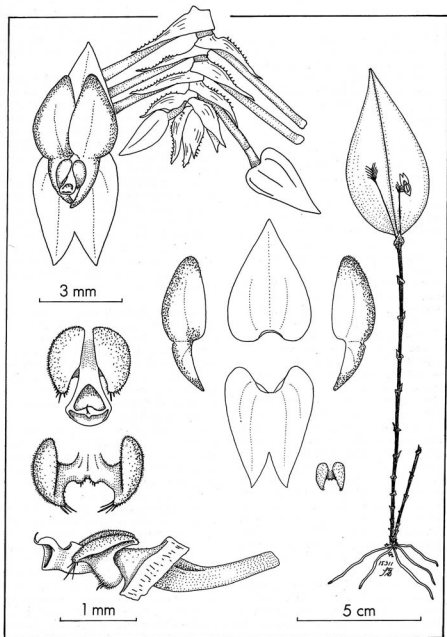


Fig. 8. *Lepanthes elegans* Luer.

apices. The appendix is reduced to a minute tuft of cilia.

*Lepanthes elegans* is closely related to *L. disticha* and *L. turrialvae*, but is readily distinguished from them by the much larger habit and ovate instead of elliptical leaves, and ciliate blades of the lip that are shorter than the column. Specimens intermediate between *L. elegans* and *L. disticha* have been seen.

***Lepanthes falcifera*** Luer, *sp. nov.* TYPE: COSTA RICA. Cartago: beyond the laguna, Sitio Ortiz, Birris, ca. 1867, A. Endres 53, sketch 663 (Holotype: W). Fig. 9.

Planta parva, racemo congesto disticho folio anguste ovato brevior, sepalis ovatis acutis acuminatis minute denticulatis, petalis transverse bilobis, lobo superiore truncato, lobo inferiore anguste triangulari, labelli lamina falcatis et appendice minuta.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, weak, 2–7 cm long, enclosed by 7–14 whitish, microscopically scarious, lepanthiform sheaths, with oblique, widely dilated ostia. **Leaf** erect, coriaceous, narrowly ovate, acute, acuminate, 2–3.5 cm long, 0.6–1.2 mm wide, the base cuneate into a 1–2 mm long petiole. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 10 mm long, borne behind the leaf by a filiform peduncle 8–14 mm long; floral bracts 1 mm long, lightly muricate; pedicels 1 mm long; ovary tall-costate, 1–1.25 mm long; **sepals** greenish brown, minutely denticulate, carinate-spiculate along the veins, ovate, subacute, acuminate, the dorsal sepal 4 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals diverging, oblique, 4 mm long, 2 mm wide, 2-veined, connate 1 mm; **petals** blood red, microscopically pubescent, transversely bilobed, 0.8 mm long, 3 mm wide, the upper lobes oblong, obliquely truncate, the lower lobes smaller, narrowly triangular, narrowly obtuse; **lip** blood red, bilaminar, the blades glabrous, ovate, 1 mm long, with the posterior ends rounded, with the apices acute, acuminate, incurved beneath the column, the connectives obliquely oblong, the body short, connate to the base of the column, the sinus obtuse, without a minute, pubescent appendix; **column** semiterete, 1 mm long, the anther and the stigma apical.

**ETYMOLOGY:** From the Latin *falcifer*, "sickle-bearing," referring to the blades of the lip.

**PARATYPE:** COSTA RICA. Cartago: Cieneegas, east of Sitio Ortiz, Birris, ca. 1867, A. Endres s.n. (W).

This species was apparently abundant locally a century ago because three herbarium sheets are filled with 14 plants. No description and only one front-view sketch of the flower is present. Whether other material existed is unknown. The species is not known to me from any other collection. Other sheets contain mixtures of this species and *L. myiophora* Luer.

*Lepanthes falcifera* is distinguished by the small, weak habit with narrowly ovate, acuminate leaves borne by slender ramicauls with the sheaths widely dilated at the apices; a congested, distichous raceme; acuminate, denticulate sepals; truncate upper lobes of the petals; and blades of the lip with uncinat apices that reach beneath the column, similar to the blades of the Panamanian *L. odontolabis* Luer.

***Lepanthes fascinata*** Luer, *sp. nov.* TYPE: COSTA RICA. Cartago: San Cristóbal, ca. 1867, A. Endres s.n. (Holotype: W). Fig. 10.

Species haec *L. myiophorae* Luer affinis, sed sepalis subdenticulatis non longi-attenuatis, petalis transverse anguste oblongis, non bifurcatis, labelli lamina oblongis perpendicularibus cum connectivis anguste oblongis longioribus, appendice oblonga extus differt.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5–4 cm long, enclosed by 6–8 lepanthiform sheaths with minutely ciliate, dilated ostia. **Leaf** erect, coriaceous, elliptical, acute, slightly acuminate, 15–18 mm long, 5–7 mm wide, cuneate below into the 1 mm long petiole. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 9 mm long, borne behind the leaf by a filiform peduncle 4–5 mm long; floral bracts 1 mm long, muricate; pedicels 1.5 mm long; ovary 1.5 mm long, subcarinate; **sepals** pale green, subdenticulate, carinate, the dorsal sepal ovate, acute, 3.5 mm long, 1.5 mm wide, connate to the lateral sepals for 0.25 mm, the lateral sepals diverging, ovate-triangular, oblique, acute, acuminate, 3 mm long, 1.6 mm wide, connate 0.5 mm; **petals** bright yellow, glabrous (microscopically pubescent), transversely bilobed, narrowly oblong, with the ends



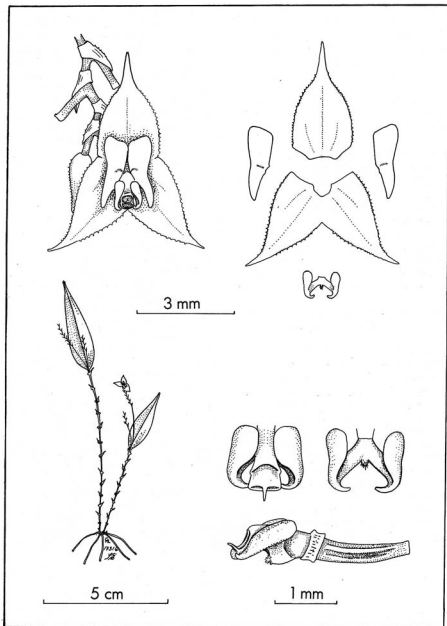


Fig. 9. *Lepanthes falcifera* Luer.

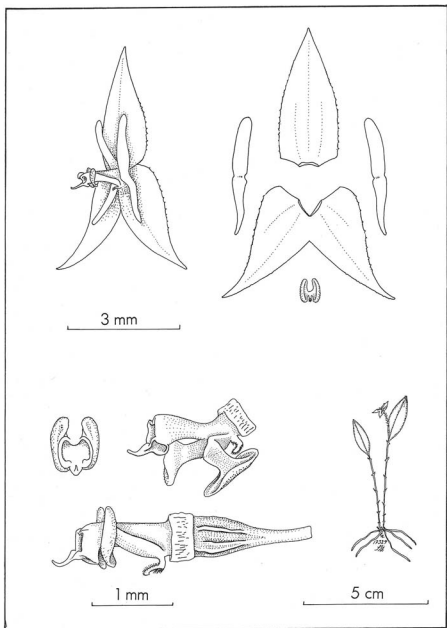


Fig. 10. *Lepanthes fascinata* Luer.

narrowly obtuse, 0.3 mm wide, 3.25 mm long, the lobes opposite 180°, equal in length, the lower slightly narrower; **lip** bright yellow, bilaminate, the blades microscopically pubescent, narrowly oblong, with the ends rounded, 0.8 mm long, perpendicular to and surrounding the column below the clinandrium, the connectives narrowly oblong, from the middle of the blade, the body oblong, connate to the base of the column, the appendix external, oblong, ciliate, incurved; **column** cylindrical, 1.5 mm long, with the anther and stigma apical.

**ETYMOLOGY:** From the Latin *fascinatus*, "fascinated," in allusion to the lip.

**PARATYPE:** COSTA RICA. Without locality, *A. Endres s.n.* (W).

This little species is related to *L. myiophora*. It was collected by Endres over a century ago, and to my knowledge it has not been recollected. Apparently, he made no illustration; the accompanying illustration was made from flowers rehydrated in concentrated ammonia.

Vegetatively, this species is similar to *L. myiophora*, but it differs from the later in having twice shorter, proportionately wider sepals. The petals are transversely narrowly oblong with the blades opposite, 180°, not bifurcate and acute. The column is cylindrical with the blades of the lip smaller and held perpendicularly below and encircling the apex of the column. The connectives are oblong and narrow, connate to each other about the middle to form an oblong body with the oblong appendix external.

**Lepanthes forcipifera** Luer, *sp. nov.* TYPE: COSTA RICA. Without locality, ca. 1867, *A. Endres s.n.* (Holotype: W). Fig. 11.

*Planta parva, racemo folio elliptico multibreviore, sepalis ovatis acutis minute denticulatis, petalis anguste bilobis, lobo superiore oblongo obtuso, lobo inferiore triangulari, labelli laminis reniformibus apice obtuse falcatis, appendice externali.*

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2–3 cm long, enclosed by ca. 5 closely fitting, microscopically scabrous, lepanthiform sheaths. **Leaf** erect, suffused with purple, coriaceous, elliptical, acute, 15–24 mm long, 6–8 mm wide, the base broadly cuneate, contracted into a petiole 1.5 mm long. **Inflorescence** a congested, distichous, successive-

ly few-flowered raceme 3–4 mm long, borne behind the leaf by a filiform peduncle 3–4 mm long; floral bract 1 mm long; pedicel 1 mm long; ovary 1 mm long; **sepals** appear to have been yellow, minutely denticulate, the dorsal sepal ovate, acute, 3 mm long, 1.8 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate-triangular, acute, oblique, 3 mm long, 1.5 mm wide, connate 0.5 mm; **petals** appear to have been red or purple, transversely bilobed, glabrous (at most cellular), 0.5 mm long, 2.5 mm wide, the upper lobe narrowly oblong, obtuse, the lower lobe narrowly triangular, about equal in length; **lip** appears to have been red or purple, glabrous, bilaminate, the blades oblong flat, 0.75 mm long, rounded posteriorly with the apices beyond the blades narrowly obtuse, incurved beneath the column, the connectives obliquely oblong, clasping the column, the body connate to the base of the column, the appendix minute, external, oblong, prostrate; **column** 1 mm long, the anther apical and the stigma subapical or ventral.

**ETYMOLOGY:** From the Latin *forcipifer*, "bearing forceps," in allusion to the lobes of the lip.

This little species is present among Endres' numerous collections with meager or no collection data. Neither illustration nor description is present. The present illustration was prepared from a flower rehydrated in concentrated ammonia.

*Lepanthes forcipifera* is characterized by the small habit with elliptical leaves and a much shorter, congested raceme. The sepals are ovate, acute and minutely denticulate. The petals are narrowly transverse with the upper lobe oblong and the lower lobe triangular. The blades of the lip are oblong, but disappearing toward the falcate apex which is curved beneath the column. The oblique connectives embrace the column and form a narrow body with a small, external appendix.

**Lepanthes fugiens** Luer, *sp. nov.* TYPE: COSTA RICA. Without locality, ca. 1867, *A. Endres s.n.* (Holotype: W). Fig. 12.

*Planta parva, inflorescentia dense racemosa disticha folio ovato plus minusve breviora, sepalis ovatis acutis, petalis bifurcatis lobis pubescentibus triangularibus, labello bilobo lobis subreni-*

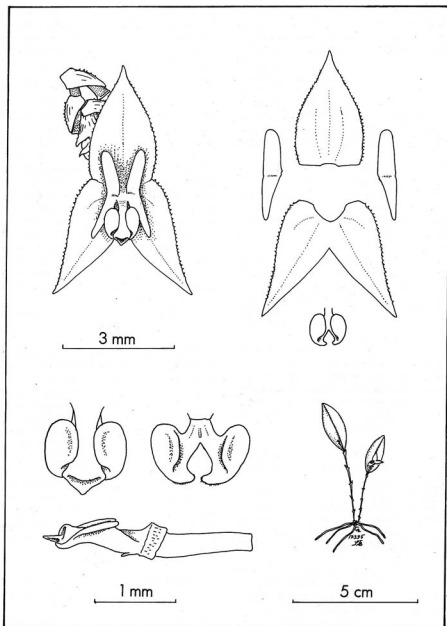


Fig. 11. *Lepanthes forcipifera* Luet.

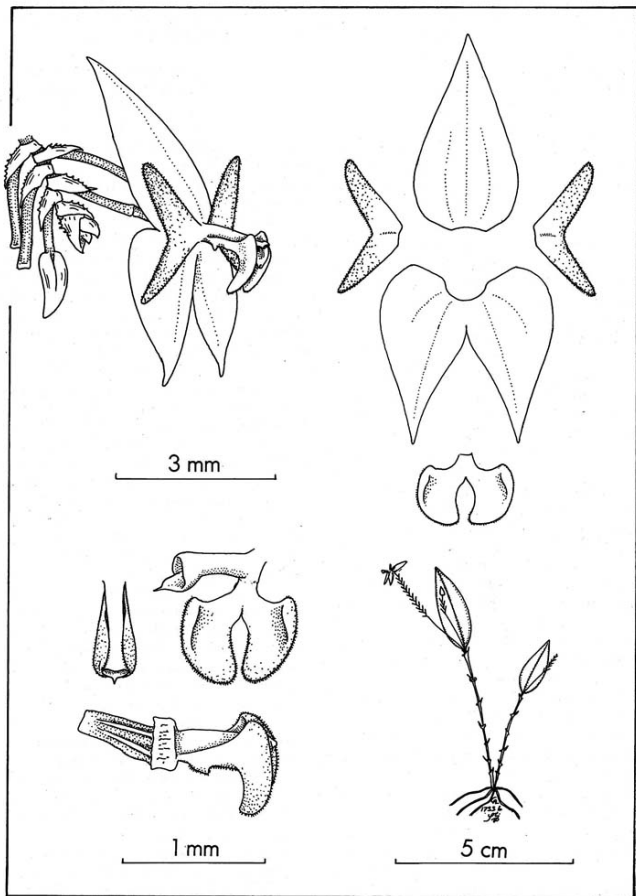


Fig. 12. *Lepanthes fugiens* Luer.

formibus ciliatis columnam erectam amplectentibus, appendice extus corpore connata.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2–4.5 cm long, enclosed by 6–8 light brown, closely clasping, minutely ciliate, lepanthiform sheaths, with oblique ostia. **Leaf** erect, coriaceous, elliptical-ovate, acute, 16–25 mm long, 8–10 mm wide, the base cuneate, contracted into a petiole 1–2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 18 mm long, held behind the leaf by a filiform peduncle 10–15 mm long; floral bracts 1 mm long, muricate; pedicels 2–3 mm long; ovary 1 mm long; **sepals** appear to have been either pale yellow or white, glabrous, carinate, entire, the dorsal sepal slightly reflexed, convex, ovate, acute, 3.5 mm long, 2 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, acute, 3.3 mm long, 1.6 mm wide, connate 0.5 mm; **petals** appear to have been red or purple, pubescent, transversely bifurcate, 0.75 mm long, 4 mm wide, with the lobes triangular, narrowly obtuse, nearly equal in length, diverging ca. 135°; **lip** appears to have been red or purple, bilobed, the lobes subreniform with the ends rounded, with a vestigial blade-like fold near the posterior angle, 1.25 mm long, ciliate, embracing the column, the connectives broadly cuneate, the body connate to the base of the column, the sinus obtuse with the appendix oblong, ciliate, longitudinally connate externally to the body; **column** cylindrical, protruding, 1.5 mm long, the anther apical and the stigma subapical.

**ETYMOLOGY:** From the Latin *fugiens*, “flying, fleeing,” in allusion to the fancied appearance of the flower.

This species is present among the numerous specimens collected by Endres around 1867, and was preserved without collection data, illustration or description. It is characterized by the small habit with ovate leaves that can be surpassed by a congested, distichous, continuously lengthening raceme. The slightly reflexed sepals are ovate and acute; the petals are bifurcate with triangular, pubescent lobes; the column, clasped by the lip protrudes erect from the center. The lobes of the lip are ciliate and reniform with a suggestion of a blade forming along the posterior margin. A prostrate appendix is connate to the external surface of the body of the lip.

The illustration was made from a flower hydrated in concentrated ammonia.

**Lepanthes gracillima** Endres ex Luer, *sp. nov.*  
**TYPE:** COSTA RICA. Puntarenas: Monteverde, epiphytic in tree in a pasture, alt. 1500 m, 21 Mar. 1995, C. Luer, J. Luer, J. Atwood, W. Rhodehamel, G. Campbell & G. Barbosa 17447 (Holotype: MO). Fig. 13.

**Plant** minute, inflorescentia racemosa congesta folio late elliptico leviter longiore, sepalis ovatis longissimicaudatis, petalorum lobo superiore oblique triangulari, lobo inferiore anguste falcato, labelli transverse bilobo, lobis suborbicularibus.

**Plant** minute, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2–3 mm long, enclosed by 2–4 thin, tubular, microscopically ciliate lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, margined, obtuse to rounded, 4–8 mm long, 3.5–5 mm wide, the base broadly cuneate to rounded, contracted into a petiole 1 mm long. **Inflorescence** a congested, successively few-flowered raceme, borne near or beyond the tip of the leaf by a filiform peduncle 6–9 mm long; floral bracts 1 mm long, finely pubescent; pedicels 1–1.5 mm long; ovary 0.5 mm long; **sepals** white, suffused with red-purple medially, carinate, sparsely spiculate, ovate, subacute, the dorsal sepal 2–2.5 mm long, 1.5–1.75 mm wide, contracted into an erect, filiform tail 8–11 mm long, the lateral sepals oblique, 2–3 mm long, 1.5–2 mm wide, connate 0.75 mm; **petals** yellow, microscopically pubescent, transversely bilobed, 0.5 mm long, 3–4 mm wide, the upper lobe ovate-triangular, acute, oblique, the lower lobe equally long, narrowly falcate, acute; **lip** transversely bilobed, the lobes microscopically pubescent, ovate-suborbicular, 0.5 mm long, 1.75–2.25 mm wide, with the apex broadly obtuse, the base connate to the base of the column; **column** stout, 1 mm long, the anther and the stigma apical.

**ETYMOLOGY:** From the Latin *gracillimus*, “very slender,” referring to the sepaline tails.

**PARATYPE:** COSTA RICA. Cartago: Heights back of Carpintería, ca. 1867, A. Endres 24 (W).

This minute species was illustrated and described by Endres with the indicated name *L. gracillima*. Not another collection was known until 1995 when two specimens came to my attention. One is a pickled flower from a plant found by Gabriel Barbosa within the Monteverde preserve.

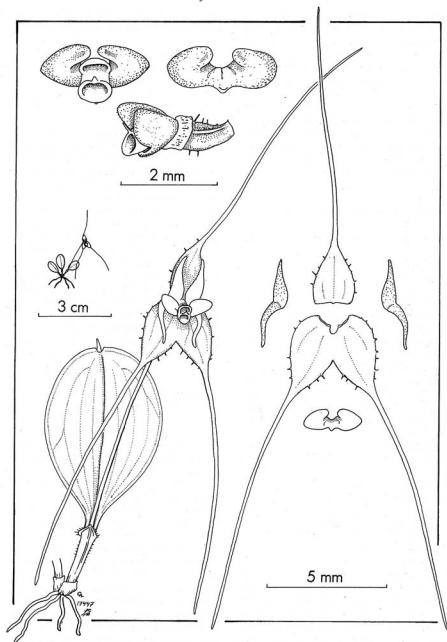


Fig. 13. *Lepanthes gracillima* Endres ex Luer.

The other is a single plant found in flower on a branch of a large tree in a pasture near the Monteverde Preserve. With the long-tailed, tiny sepals, it is unique among the species of the genus in Central America. Vegetatively, it is one of the smallest. The comparatively large, delicate flower is borne near or just beyond the apex of the distinctly margined, tiny leaf. The blades of the sepals are only 2–3 to three mm long, but the hair-like tails are 4–5 times longer. The upper lobes of the petals are obliquely triangular and the lower lobes are narrowly falcate. The transversely bilobed lip places the species in the section *Haplocheilus*.

***Lepanthes guardiana*** Endres ex Luer, *sp. nov.*  
TYPE: COSTA RICA. Without locality, ca. 1867, A. Endres 670, sketch 299 (Holotype: W). Fig. 14.

Planta grandis, inflorescentia racemosa congesta longipedicellata folio ovato acuminato brevior, sepalis ovatis acutis acuminatis, petalorum lobis triangularibus lobo superiore ter majore, labelli laminis ovatis pubescentibus, corpore crassissimo protuberanti appendice apicali breviciliata, et columna quam labello subduplo longiore.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 5–11 cm long, enclosed by 6–12 purplish black, coarsely short-pubescent, lepanthiform sheaths, with oblique, dilated ostia. **Leaf** erect, coriaceous, more or less suffused with purple beneath, ovate, subacute, acuminate, 4.5–6.5 cm long, 2–3 cm wide, the base broadly cuneate, contracted into a petiole 2–3 mm long. **Inflorescence** a densely congested, distichous, successively many-flowered raceme up to 20 mm long, borne behind the leaf by a filiform peduncle 20–35 mm long; floral bracts 1.5–2 mm long, densely muricate; pedicels 2.5–3.5 mm long; ovary 2 mm long; **sepals** pale yellow, glabrous, minutely ciliate, ovate, acute, the dorsal sepal 3.5 mm long, 2.25 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals 4 mm long, 2 mm wide, connate 2 mm, with the apices diverging; **petals** yellow, edged in red-purple, minutely pubescent, transversely bilobed, 4 mm wide, with the lobes narrowly ovate-triangular, narrowly obtuse, the upper lobe, 3 mm long, 0.9 mm wide, the lower lobe ciliate, 1.2 mm long, 0.5 mm wide; **lip** rose, bilaminar, the blades minutely pubescent, ovate, 1.2 mm long,

rounded at the bases, with the apices continuous with the thick, rounded, protuberant body, with the appendix long-ciliate at the summit, the connectives short, the body connate to the base of the column; **column** stout, 1.5 mm long, the anther dorsal, and the stigma apical.

ETYMOLOGY: Derivation unknown.

PARATYPE: Without locality, ca. 1867, A. Endres s.n. (W).

This pretty species was illustrated and described by Endres who indicated the name *L. guardiana*, but there is neither clue to the meaning nor any collection data. The accompanying description and illustration have been made from Endres' detailed sketches and colored painting. Apparently this species has not been recollected. In habit, the dark, stout, coarsely short-pubescent lepanthiform sheaths and ovate, acuminate leaves are reminiscent of those of *L. ferrelliae* Luer.

The flowers also show a close alliance, but the sepals of *L. guardiana* are minutely ciliate, with the laterals less widely diverging. The lobes of the petals are narrowed instead of broadly rounded, and the lower lobes are ciliate. The bodies of the lips of both species are thick, rounded and protuberant, but in *L. guardiana* the column protrudes far forward from the appendix instead of the column being shorter than the lip.

***Lepanthes hamulifera*** Luer, *sp. nov.* TYPE: COSTA RICA. San José: Taburcia, Candelaria, ca. 1867, A. Endres s.n. (Holotype: W). Fig. 15.

Species haec *L. volsellae* Luer & Escobar affinis, sed petalis oblique bilobis, lobo superiore erecto oblique triangulari acuto, lobo inferiore minute suborbiculari, labelli laminis similiter falcatis, columna erecta non decurva cum stigmatibus grandissimis differt.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2–4 cm long, enclosed by 6–7 closely fitting, lepanthiform sheaths with minutely ciliate ostia. **Leaf** suberect to spreading, thinly coriaceous, pale green, ovate, subacute to acute, 13–15 mm long, 7–10 mm wide, the base broadly cuneate to rounded, contracted into a petiole 1 mm long. **Inflorescence** a congested, successively few-flowered raceme up to 3 mm long, borne on top of the leaf by a filiform peduncle 2 mm long; floral bract 0.75 mm long; pedicel 0.5 mm long; ovary 1.5 mm long; **sepals** dull yellow, glabrous, the dorsal sepal el-



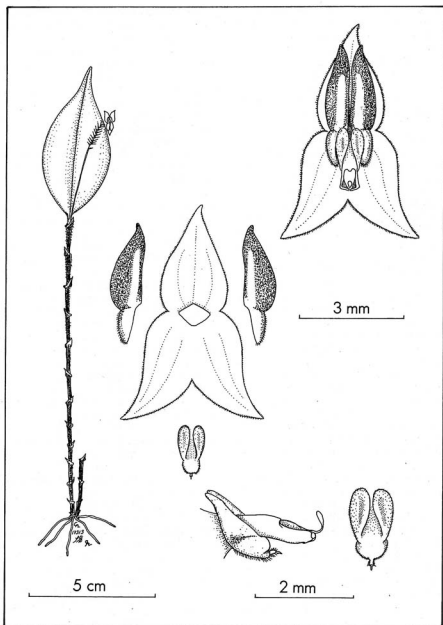


Fig. 14. *Lepanthes guardiana* Endres ex Luer.

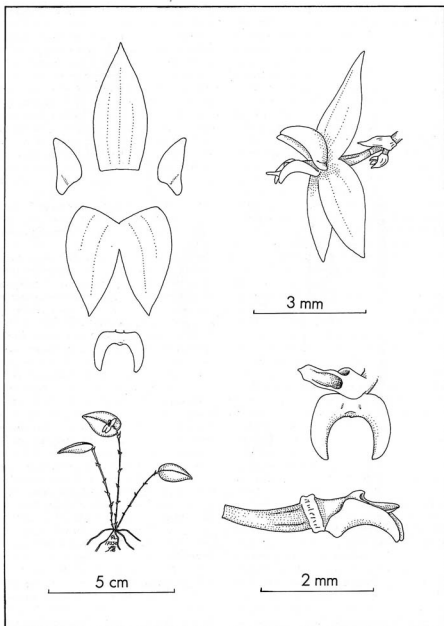


Fig. 15. *Lepanthes hamulifera* Luer.

litical-ovate, acute, 3.3 mm long, 1.5 mm wide, 3-veined, connate to the lateral sepals for 0.3 mm, the lateral sepals ovate, acute, oblique, 3 mm long, 1.3 mm wide, connate 0.5 mm; **petals** yellow with the outer margin purple-black, transversely bilobed, 0.4 mm long, 1.5 mm wide, cellular-pubescent, the upper lobe erect, obliquely triangular-oblong, dilated medially, with the apex acute, the lower lobe minute, suboblong with the apex rounded; **lip** purple, microscopically pubescent, bilobed, the lobes falcate, acute, 1.3 mm long, flanking the column, the bases oblong into a body connate to the column at the base, no appendix seen; **column** 1.3 mm long, the anther apical, the stigma large, ventral.

**ETYMOLOGY:** From the Latin *hamulifer*, "bearing a little hook," in reference to the shape of the lip.

This little species was collected and illustrated by Endres about 1867. A reference is made to "fig. p. 63. below, vol. 1867-68," but unfortunately this illustration has disappeared. The present illustration was prepared from a flower rehydrated in ammonia.

*Lepanthes hamulifera* is characterized by the small, thin, ovate leaves with a short, congested inflorescence atop the base. The sepals are ovate and acute. The petals were seen as erect and antrorse in the rehydrated flower. The upper lobe is obliquely triangular while the lower lobe is minute and suborbicular. The falcate lobes of the lip are similar to those of *L. volsella* Luer & Escobar, but the shaft of the column they flank is short and not decurved, with the clinandrium as long as the shaft with a large, ventral stigma.

**Lepanthes limbellata** Endres ex Luer, *sp. nov.*  
**TYPE:** COSTA RICA. Without locality, ca. 1867, A. Endres 12 (Holotype: W). Fig. 16.

Planta mediocris, inflorescentia racemosa congesta longipedicellata folio elliptico acuto brevior, sepalis ovatis acutis lateralibus semiconnatis, petalorum lobis triangularibus anguste obtusis lobo superiore leviter majore, labelli laminis oblongis pubescentibus, connectivis et corpore angustis appendice minuta.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4.5-8.5 cm long, enclosed by 7-9 black, tightly clasping, ribbed, essentially glabrous, lepanthiform sheaths, with oblique ostia. **Leaf** erect, coriaceous, more

or less suffused with purple beneath, elliptical, acute to subacute, 30-33 mm long, 12-13 mm wide, the base cuneate into a petiole 2 mm long. **Inflorescence** a densely congested, distichous, successively many-flowered raceme up to 12 mm long, borne behind the leaf by a filiform peduncle 8-15 mm long; floral bracts 1-1.5 mm long, densely muricate; pedicels 2-2.5 mm long; ovary 1 mm long; **sepals** translucent pale green, glabrous, ovate, acute to subacute, the dorsal sepal 2 mm long, 1.25 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals 2 mm long, connate 1 mm, 1.5 mm wide together; **petals** straw colored with crimson-purple margins, minutely pubescent, transversely bilobed, 3 mm wide, with the lobes narrowly ovate-triangular, narrowly obtuse, equal in length, but the upper lobe, 0.6 mm wide, the lower lobe 0.2 mm wide; **lip** purple, bilaminar, the blades minutely pubescent, oblong, 1 mm long, narrowly rounded at the ends, borne near the middle by narrowly oblong connectives, the body connate to the base of the column, appendix minute, ciliate, in the acute sinus; **column** clavellate, 1.2 mm long, with the anther dorsal, and the stigma subapical.

**ETYMOLOGY:** From the Latin diminutive of *limbatus*, "bordered in a different color," referring to the petals.

This species was illustrated and described by Endres who indicated the name *L. limbata*, but this epithet is occupied. The accompanying description and illustration have been made from Endres' sketch as well as a rehydrated flower. Apparently this species has not been recollected.

*Lepanthes limbellata* is distinguished by the slender ramicauls clad in closely appressed, black, ribbed sheaths that bear a small, elliptical leaf. The congested, raceme reaches about midway along the back of the leaf. The flowers are very small. The ovate sepals are described as "transparent glass green." The proportionately large petals, with the width much greater than the length of a sepal, are described as "both margins of all the 4 lobes crimson-purple, intermediate space straw-color." The blades of the lip are narrowly oblong, borne by narrow connectives, and the appendix is minute in the sinus.

**Lepanthes minutissima** Endres ex Luer, *sp. nov.* **TYPE:** COSTA RICA. Without locality, ca. 1867, A. Endres 10 (Holotype: W). Fig. 17.

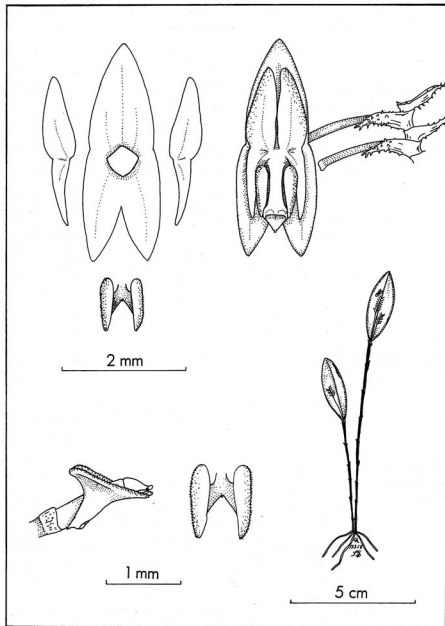


Fig. 16. *Lepanthes limbellata* Endres ex Luer.

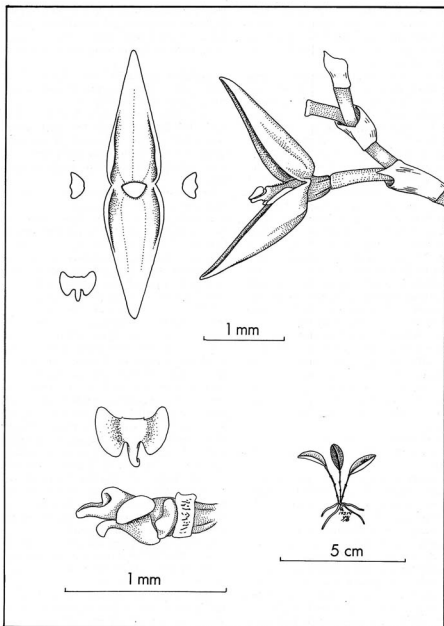


Fig. 17. *Lepanthes minutissima* Endres ex Luer.

Planta minutissima, racemo folio brevior, flore bilabiato, sepalis lateralibus omnino in synsepalum triangulari connatis sepalis dorsali simili, petalis microscopicis subtribobis et labello microscopico trilobo columna minore.

**Plant** very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10–17 mm long, enclosed by 3–5 microscopically ciliate, lepanthiform sheaths. **Leaf** purple-brown, more or less spreading, coriaceous, ovate, obtuse, more or less conduplicate, 7–11 mm long, 4–6 mm wide, the base cuneate into a 1 mm long petiole. **Inflorescence** a congested, successively few-flowered raceme up to 7 mm long including the peduncle 4 mm long, borne on the dorsum of the leaf; floral bracts 0.5 mm long, microscopically scabrous; pedicels 1 mm long; ovary 0.3 mm long; **sepals** red, purple or flesh-colored, glabrous, the dorsal sepal narrowly triangular, acute, concave toward the base, 1.6 mm long, 0.8 mm wide, obscurely 3-veined, barely connate to the lateral sepals, the lateral sepals completely connate into a synsepal similar in shape and size of the dorsal sepal; **petals** brown, glabrous, transversely subtrilobed with the angles obtuse, 0.15 mm long, 0.3 mm wide; **lip** black, bilaminate, the blades glabrous, ovoid, rounded at both ends, 0.3 mm long, clasping the column with broad, triangular connectives, the body broad, connate to the base of the column, the sinus occupied by a proportionately large, oblong, recurving appendix; **column** stout, semiterete, 0.6 mm long, the anther pure white, apical, the stigma ventral.

**ETYMOLOGY:** From the Latin *minutissimus*, "extremely small," referring to the minute size of the species.

This minute species appears to have been collected about five times as represented by five separate descriptions, all as *Endres 10*, and with the apt, intended name *L. microscopica*. The latter epithet is occupied by an Andean species. The accompanying illustration was made from a flower rehydrated in concentrated ammonia.

*Lepanthes minutissima* is distinguished by the minute habit with a few-flowered raceme borne on the dorsum of a thick, little, more or less spreading leaf. The bilabiate flowers are unusual with the lateral sepals connate into a triangular synsepal similar to the dorsal sepal. The sepals are only about 1.6 mm long. The petals are extremely minute, transversely trilobed, 0.3 mm

wide. The equally minute lip is trilobed, the lateral lobes forming vestigial, ovoid blades to either side of the much larger column. The oblong appendix is the third lobe curving under the column.

**Lepanthes parvilabia** Luer, *sp. nov.* TYPE: COSTA RICA. Without locality, ca. 1867, *A. Endres s.n.* (Holotype: W). Fig. 18.

Species haec *L. distichae* (A. Rich. & Galeotti) Garay & R.E. Schult. affinis, sed labelli laminis multiminoribus supra columnam adhaerentibus, appendice extus membranacea triangulari et columna angusta clavata clinandrio grandissimo distinguuntur.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5–9 cm long, enclosed by 8–9 closely fitting, black, glabrous (microscopic cellular) lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, acute, 3–4 cm long, 1–1.7 cm wide, the base cuneate, contracted into a petiole 3 mm long. **Inflorescence** a densely congested, distichous, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a filiform peduncle 20–22 mm long; floral bracts 1 mm long, echinate; pedicel 2.5 mm long; ovary 1.5 mm long; **sepals** yellow-green, glabrous, carinate, the dorsal sepal ovate, subacute, 2 mm long, 1 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm, the lateral sepals ovate, subacute, oblique, 2 mm long, 1 mm wide, connate 0.5 mm; **petals** deep yellow, transversely bilobed, 0.5 mm long, 2.5 mm wide, minutely pubescent, the lobes narrowly obliquely triangular, the upper lobe larger; **lip** scarlet, microscopically pubescent, bilaminate, the blades elliptical-oblong with rounded ends, adherent to each other over the column, 0.5 mm long, the connectives and body broad, connate to the column above the base, the appendix membranous, triangular, external; **column** 1 mm long, clavate, the clinandrium large, dorsal, the stigma subapical.

**ETYMOLOGY:** From the Latin *parvilabius*, "with a little lip," in reference to the labellum.

**PARATYPE:** COSTA RICA. Without locality, ca. 1867, *A. Endres s.n.* (W).

This species was collected and illustrated by Endres about 1867. A note refers to "fig. p. 71. above, vol. 1869-70," but this illustration has disappeared. The present illustration was prepared from flowers rehydrated in concentrated ammonia.

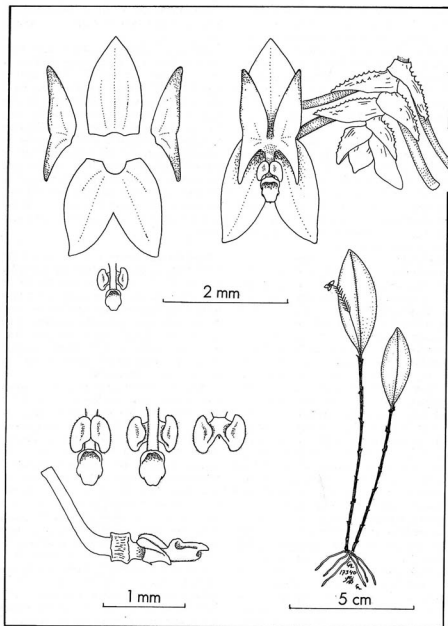


Fig. 18. *Lepanthes parvilabia* Luer.

*Lepanthes parvilabia* is similar vegetatively and florally to the variable *L. disticha*-complex, but it is distinguished from them by the column and lip. The column is clavate with the tiny, oblong blades adherent to each other over the shaft, in a manner similar to many Andean species. I know of no other instance in Central America. The appendix is a minute, membranous, triangular flap located externally outside the sinus.

**Lepanthes poasensis** Luer, *sp. nov.* TYPE: COSTA RICA. Heredia, Volcán Poás, ca. 1867, A. Endres 11 (Holotype: W). Fig. 19.

Planta mediocris grandisve, racemo congesto disticho folio elliptico breviori, sepalis late ovatis obtusis, petalis transverse bilobis, lobis triangularibus obtusis lobo superiore leviter majore, labelli laminis ovatis concavis ciliatis, appendice subnulla et ovario longissimo.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2–10 cm long, enclosed by 5–9 black, tightly appressed, glabrous to microscopically ciliate-scarious, lepanthiform sheaths. **Leaf** erect, coriaceous, suffused with purple beneath, elliptical, acute, slightly acuminate, 3.5–4.5 cm long, 1.4–1.8 cm wide, the base cuneate, contracted into a 2–3 mm long petiole. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 8 mm long, borne behind the leaf by a slender peduncle 10–22 mm long; floral bracts 1.5 mm long, lightly muriculate; pedicels 3 mm long; ovary 4 mm long; **sepals** yellow, glabrous, broadly ovate, obtuse, slightly shortly acuminate, the dorsal sepal 3.75 mm long, 3.25 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals, oblique, diverging, 3.75 mm long, 2.75 mm wide, connate 1 mm; **petals** yellow, marked with red, microscopically pubescent, transversely, bilobed, 1 mm long, 3 mm wide, 3-veined, the lobes triangular, with the apices narrowly obtuse, the lower lobe slightly smaller; **lip** red, bilaminar, the blades minutely ovate, concave, ciliate, rounded at the base, acute at the apex, 1 mm long, the connectives obliquely cuneate, the body connate to the column above the base, the sinus obtuse, the appendix external, minute; **column** terete, 1.25 mm long, the anther and stigma apical.

**ETYMOLOGY:** Named for Volcán Poás where the species was discovered.

**PARATYPE:** COSTA RICA. Volcán Poás, alt. 2000 m, 20 June 1981, C. Luer & A. Luer 6338 (SEL).

This species, apparently endemic on the slopes of Volcán Poás, was collected, illustrated and described by Endres about 1867. It was collected again in 1981. To my knowledge, there are no other collections. Vegetatively, it is similar to the variable *L. disticha*-complex with tightly fitting, blackish lepanthiform sheaths. The inflorescence is similarly a congested, distichous raceme, but the long pedicels and even longer ovary are distinctive. Together, they are 7 mm long. The sepals are broadly ovate and slightly shortly acuminate. The petals are broadly triangular, those of Endres' collection acute, those of the recent collection obtuse. The blades of the lip are ovate, concave and ciliate.

**Lepanthes purpurea** Luer, *sp. nov.* TYPE: COSTA RICA. Alajuela: La Paz near San Ramón, ca. 1867, A. Endres s.n. (Holotype: W). Fig. 20.

Planta mediocris, racemo congesto disticho folio purpureo elliptico acuminato breviori, sepalo dorsali ovato acuto, synsepalo late ovato acuminato minute bifurcato, petalis transverse bilobis, lobis triangularibus, et labelli laminis minutissimis, oblongis pubescentibus, connectivis latissimis cum sinu obtuso protuberanti.

**Plant** medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3–7 cm long, enclosed by 7–9 black, somewhat coarsely ciliate, lepanthiform sheaths with oblique ostia. **Leaf** erect, purple, coriaceous, elliptic, acute, acuminate, 3–4 cm long, 1.1–1.7 cm wide, the base cuneate, contracted into a petiole 2 mm long. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 5 mm long, borne behind the leaf by a slender peduncle 10–13 mm long; floral bracts 1 mm long, muriculate; pedicels 1.5–2 mm long; ovary 1.5 mm long; **sepals** greenish, glabrous, entire, carinate, the dorsal sepal ovate, acute, 2.5 mm long, 1.75 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm, the lateral sepals connate 1.5 mm into a broadly ovate lamina, 2 mm long, 2 mm wide, with the apex obtuse, shortly bifid and acuminate; **petals** bright yellow, transversely oblong, bilobed, 0.5 mm wide, 2.75 mm wide, the lobes triangular, the upper lobe obtuse, the lower lobe acute, smaller; **lip** cinnabar red, bilaminar, the blades micro-



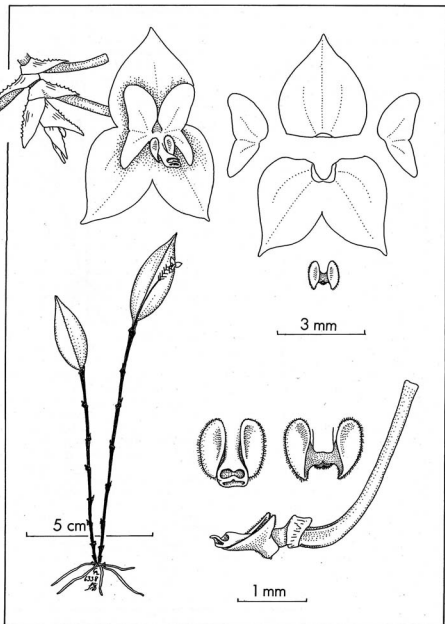


Fig. 19. *Lepanthes poasensis* Luer.

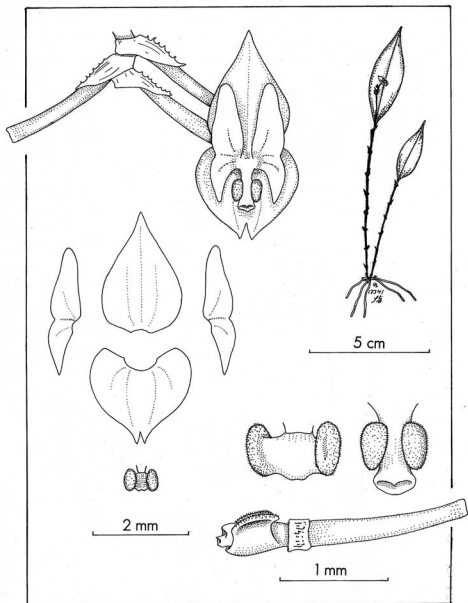


Fig. 20. *Lepanthes purpurea* Luer.

scopically pubescent, oblong, rounded at both ends, 0.4 mm long, held above the column by broad connectives, the body broad, connate to the column above the base, the sinus protuberant, obtuse, without an obvious appendix; **column** stout, terete, 0.75 mm long, the anther and stigma apical.

**ETYMOLOGY:** From the Latin *purpureus*, "purple," referring to the color of the leaves.

**PARATYPE:** COSTA RICA. without locality, ca. 1867, *A. Endres s.n.* (W).

This species must be very colorful. Endres made two collections, but neither illustration nor description, except for the color notes, is present. To my knowledge it has not been collected again. The accompanying illustration was made from flowers hydrated in concentrated ammonia.

*Lepanthes purpurea* is characterized by the purple, acuminate leaves borne by ramicauls clad in rather coarsely ciliate, black, lepanthiform sheaths. A congested raceme is borne along the back. The sepals are greenish with the laterals connate into a broadly ovate, obtuse, shortly bifid and acuminate. The petals are bright yellow. The tiny, cinnabar red blades of the lip are borne by broad connectives from a broad body that is protuberant beneath the column.

***Lepanthes reflexa* Luer & Hermans, sp. nov.**

**TYPE:** COSTA RICA. Cartago: Cerro de la Muerte, alt. 2750 m, flowered in cultivation 22 Mar. 1994, *J. Hermans & C. Hermans 2746* (Holotype: MO; Isotype: K). Fig. 21.

*Planta parva, racemo congesto disticho folio brevior, sepalis ovatis acutis dorsali reflexo, petalis erectis, lobo superiore oblongo ad basim interiorum et ad apicem rotundato, lobo inferiore brevissimo semirobundato, labelli laminis angustis, connectivis brevibus late cuneatis et corpore lato crassissimo.*

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5–5 cm long, enclosed by 5–7 dark, microscopically ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, broadly elliptical, obtuse, 2–3 cm long, 1.5 cm wide, the base broadly cuneate, contracted into a 2 mm long petiole. **Inflorescence** a densely congested, distichous, successively many-flowered raceme up to 23 mm long, borne behind the leaf by a filiform peduncle 10 mm long; floral bracts 1 mm long, muricate; pedicels 2–2.5 mm long; ovary 1

mm long; **sepals** yellow, suffused with red, glabrous, sharply carinate along the veins, ovate, acute, the dorsal sepal reflexed upon the ovary and pedicel, 3 mm long, 2 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, slightly acuminate, 3 mm long, 1.4 mm wide, 2-veined, connate 1 mm; **petals** erect, red, cellular-glandular, transversely bilobed, 1 mm long, 2.5 mm wide, the upper lobe oblong, obtuse, dilated on the inner margin above the base, the lower lobe minute, suborbicular, 0.2 mm long; **lip** red, bilaminar, the blades cellular-glandular, narrowly oblong with the ends acute, 1.25 mm long, the connectives broadly cuneate, the body broad, thick, connate to the base of the column, the sinus acute, without a visible appendix; **column** semiterete, 1.5 mm long, the anther and the stigma apical.

**ETYMOLOGY:** From the Latin *reflexus*, "reflexed," referring to the dorsal sepal.

**PARATYPE:** COSTA RICA: Cartago. South of Cartago, beyond the lime kilns of Doña Ana Clara Mayorga, rainy season, ca. 1867, *A. R. Endres 579* (W).

This species was illustrated and described by Endres in the nineteenth century, but his herbarium specimen is lacking. It was apparently not collected again until it was found by the Hermans of Enfield, England. It is distinguished by the small habit with broadly elliptical, obtuse leaves borne by ramicauls with black sheaths; an inflorescence shorter than the leaf with a very congested raceme; and acute, carinate, glabrous sepals. The dorsal sepal is reflected against the ovary and pedicel. The oblong upper lobes of the petals, nearly as long as the dorsal sepal, stand erect, while the lower lobes are minute and rounded. The blades of the lip, shorter than the column, are narrow as thickened margins of short, broadly triangular connectives. The body is thick, and the sinus is acute without an apparent appendix.

*Lepanthes reflexa* is similar to *L. subdiminiata* Ames & C. Schweinf., also characterized by a minute lower lobe of the petals, but the latter is distinguished by denticulate sepals, and blades of the lip held above the column.

***Lepanthes selliana* Endres ex Luer, sp. nov.**

**TYPE:** COSTA RICA. Without locality, ca. 1867, *A. Endres 638, sketch 279* (Holotype: W). Fig. 22.

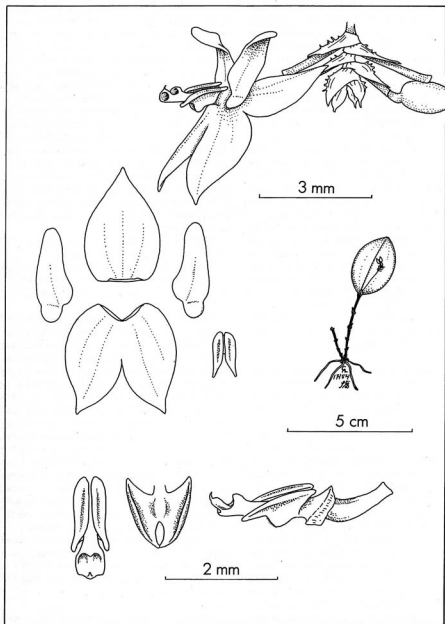


Fig. 21. *Lepanthes reflexa* Luer & Hermans.

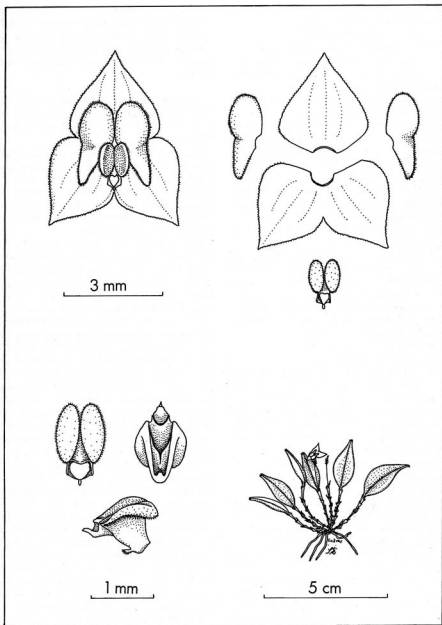


Fig. 22. *Lepanthes selliana* Endres ex Luer.

Planta parva caespitosa, inflorescentia congesta disticha foliis ovatis acutis brevioribus, sepalis late ovatis leviter acuminatis minute ciliatis, petalis transversis pubescentibus, lobo superiore late oblongo rotundo, lobo inferiore minore triangulari obtuso, labelli laminis ellipticis pubescentibus, appendice minuta.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 2–2.5 cm long, enclosed by 6–7 lepanthiform sheaths with oblique ostia. **Leaf** erect, ovate, acute, slightly acuminate, 18–23 mm long, 8–10 mm wide, the base cuneate into a short petiole. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 5 mm or more long, borne on top (?) of the leaf by a filiform peduncle up to ca. 10 mm long; floral bracts ca. 1 mm long; pedicels ca. 1 mm long; ovary ca. 1 mm or more long; **sepals** light yellow-green, broadly ovate, obtuse, slightly acuminate, minutely ciliate, the dorsal sepal 3 mm long, 3 mm wide, connate to the lateral sepals for ca. 0.5 mm, the lateral sepals similar, oblique, diverging, 3 mm long, 2.6 mm wide, connate ca. 1 mm; **petals** orange with thin purple margin, pubescent, transversely bilobed, 1 mm long, 3 mm wide, the upper lobe broadly oblong, rounded at the apex, the lower lobe smaller, obliquely triangular, obtuse; **lip** rose-purple, bilaminar, the blades pubescent, elliptical-oblong, flat to slightly concave, ca. 1 mm long, the bases and apices rounded, the connectives broadly cuneate, the body broad, connate to the base of the column, the sinus acute, with a minute, pubescent appendix; **column** stout, ca. 1 mm long, with the anther and stigma apical.

**ETYMOLOGY:** Most probably named for a contemporary acquaintance of Endres, perhaps a collector named Sell.

This species was illustrated by Endres with several pencil drawings and one flower in full color. One sheet has had something removed. Unfortunately, no corresponding herbarium specimen is present. The only description is brief and incomplete, but the flower is noted to be one-fourth inch (6 mm) long. No collection data are present. No other collection is known. The illustration was inked directly from Endres' original.

*Lepanthes selliana* is distinguished by a small habit with ovate, acute leaves. The congested inflorescence, reaching to near the middle of the leaf, appears to have been borne on top. The se-

pals are broadly ovate, acute, and minutely ciliate. The petals are broadly bilobed and pubescent. The blades of the lip are elliptical and pubescent with a minute appendix. The above features occur in numerous species, but this particular combination is unique.

**Lepanthes stenorhyncha** Luer, *sp. nov.* TYPE: COSTA RICA. Puntarenas, Monteverde, alt. 1600 m, 16 June 1989, J. Atwood 89-195 (Holotype: SEL.). Fig. 23.

Planta mediocris grandisve, racemo congesto folio ovato brevioribus, sepalis ovatis acutis divergentibus, petalis transverse bilobis trinerviis, lobis pubescentibus triangularibus, lobo superiore multijore, labelli laminis glabris angustissime oblongis incurvis, connectivis brevissimis et appendice minuta pedunculata.

**Plant** medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4–19 cm long, enclosed by 6–11 blackish minutely ciliate, lepanthiform sheaths with oblique ostia. **Leaf** erect, coriaceous, ovate, acute, 3–5.5 cm long, 1.5–3.3 cm wide, the base rounded, contracted into a 2–3 mm long petiole. **Inflorescence** a congested, distichous, successively many-flowered raceme up to 15 mm long, borne behind the leaf by a slender peduncle 15–26 mm long; floral bracts 2 mm long, muriculate; pedicels 2 mm long; ovary 2 mm long; **sepals** greenish orange, glabrous, carinate, the dorsal sepal ovate, acute, 5 mm long, 3 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, acute, shortly acuminate, oblique, diverging, more or less concave, 5 mm long, 3 mm wide, connate 0.5 mm; **petals** yellow with the outer margin red, pubescent, transversely bilobed, 1.5 mm long, 5 mm wide, 3-veined, with the lobes triangular, the upper lobe 3 mm long, 2 mm wide, obtuse, the lower lobe acute, 2 mm long, 1 mm wide; **lip** red, bilaminar, the blades glabrous, narrowly, oblong, incurved, rounded at both ends, 2 mm long, 0.3 mm wide, the connectives cuneate, extremely short, the body connate to the base of the column, the sinus obtuse with a minute, pedunculated appendix; **column** slender, terete, 2 mm long, the apex curved up with the anther and stigma apical.

**ETYMOLOGY:** From the Greek *stenorhyncha*, "a narrow nose," referring to the slender column flanked by slender blades of the lip.

This rather large species is known only from a

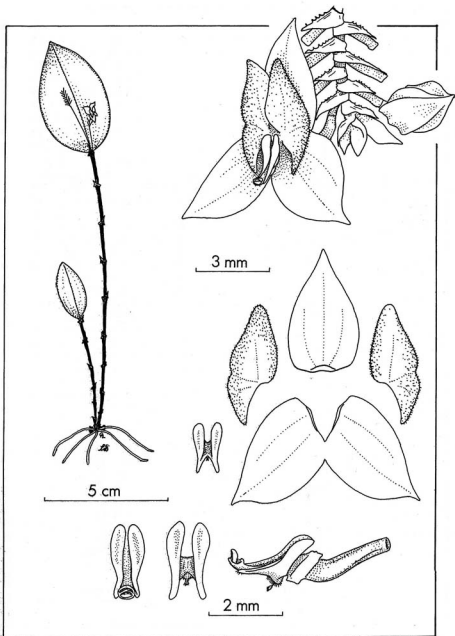


Fig. 23. *Lepanthes stenorhyncha* Luer.

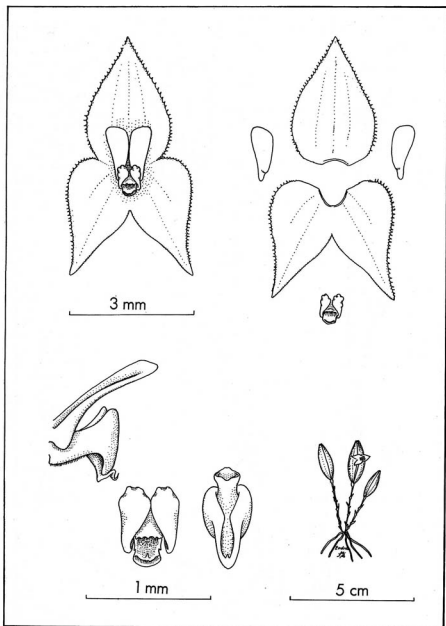


Fig. 24. *Lepanthes umbonifera* Endres ex Luer.



collection by John Atwood at Monteverde. Vegetatively it is similar to many species, especially *L. ramonensis* Schltr., but no species with similar flowers are known. The sepals are ovate, widely diverging with the laterals more or less concave. The petals are large with triangular lobes. The lip is most distinctive with the incurved slope of very narrow blades flanking a slender column. The apex of the column curves upward. The connectives are extremely short and the minute appendix is pedunculate.

***Lepanthes umbonifera*** Endres ex Luer, *sp. nov.* TYPE: COSTA RICA. Without locality, Oct., ca. 1867, A. Endres *s.n.*, figure 67 (Holotype: W), Fig. 24.

Planta parva caespitosa, racemo folio ovato acuto brevior, sepalis brunneis ovatis acutis denticulatis, petalorum lobo superiore cuneato, lobo inferiore subnullo, labelli laminis ovatis base leviter umbonatis, appendice minuta.

**Plant** small, epiphytic, caespitose; roots slender. Ramicauls slender, "nodding or prostrate," 3.5–5 cm long, enclosed by 6–8 closely fitting lepanthiform sheaths with oblique microscopically scabrous ostia. **Leaf** dark purplish green, purple beneath, erect in relation to the ramicaul, coriaceous, ovate, acute, 27 mm long, 12–14 mm wide, the base broadly cuneate into a petiole ca. 1 mm long. **Inflorescence** a subcongested ("not very close"), 10- to 12-flowered raceme borne on the "face" of the leaf by a filiform peduncle 12–18 mm long; floral bracts 1.5 mm long, muricate; pedicels 3 mm long; ovary 1 mm long; **sepals** brown, denticulate, 3-carinate-spiculate, ovate-triangular, acute, the dorsal sepal 3 mm long, 1.8 mm wide, connate to the lateral sepals for 0.5 mm, the lateral sepals oblique, 3 mm long, 1.5 mm wide, connate 1 mm; **petals** intense cinnabar red, microscopically pubescent, transversely bilobed, ca. 1.5 mm broad, the upper lobe cuneate, truncate, ca. 0.5 mm wide at the apex, the lower lobe minute, triangular; **lip** paler cinnabar red, bi-

laminar, the blades microscopically pubescent, ovate, ca. 0.5 mm long, the apex obtuse, incurved, the base rounded, "rather angled" (umbonate), the connectives oblong, ciliate, the body narrow with a minute, globular appendix in the acute sinus, connate to the base of the column; **column** violet, semiterete, ca. 1 mm long, the anther and the stigma apical.

**ETYMOLOGY:** From the Latin *umbonifer*, "bearing rounded elevations," referring to the blades of the lip.

Although described and illustrated in minute detail, Endres failed to indicate the locality where this unique, "very scarce" species was discovered. It is presently known only by Endres' illustrations and descriptions which are preserved in Reichenbach's herbarium at Vienna. His notes did not carry an intended name. A search through all Endres' collections failed to uncover a specimen. Because of its rarity, a specimen may never have been sent to Reichenbach. To my knowledge, no subsequent collection has been made.

The accompanying description was made from Endres' notes. The illustration was inked directly from his original. His illustration of the habit is considerably smaller than the dimensions given in the description. The flowers were noted to be about "one-fourth of an inch long," about 6 mm, so each of the ovate, denticulate sepals would be about 3 mm long. The upper lobe of the petals is cuneate with the lower lobe a minuscule lobule. The blades of the lip are ovate with the bases apparently with uneven, rounded elevations, a condition unknown in any other species of the genus.

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