

LEPANTHES NOVAE TAPANTIENSES

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WITH MORE THAN 900 SPECIES, *Lepanthes* Sw. is one of the largest genera in the Orchidaceae and among the largest in the whole plant kingdom. Among the orchids, only *Bulbophyllum* Thouars, *Dendrobium* Sw. s.l., *Epidendrum* L., and *Stelis* Sw. can rival *Lepanthes* in number of species. Our knowledge of *Lepanthes* diversity is still largely incomplete. Despite their broad geographic distribution, ranging from southern Mexico to the West Indies and to Bolivia and northern Brazil in South America, species of *Lepanthes* are mostly characterized by a high degree of endemism. Distribution patterns assessed on the basis of geo-political boundaries are often quite deceptive, and species lists arranged by country convey a somewhat useful but incomplete view of *Lepanthes* distribution. Of the approximately 250 species recorded from Mesoamerica, almost 80 percent do not cross national borders (Ossenbach et al. 2007). Eighteen taxa, which are not endemic to any country according to political boundaries, are in fact strictly endemic to the Chiriquí region in southern Talamanca range, spanning Costa Rica and western Panama (Ossenbach et al. 2007). Less than ten percent of the Mesoamerican taxa can be considered to be of “broad distribution,” found in three or more countries of the Central American isthmus, but this figure is likely flawed, at least in some cases, by misidentifications of the concerned species (see, for example, the clarification of the *Lepanthes schizocardia* group in Pupulin et al. 2010a). Usually, with few exceptions, *Lepanthes* are restricted to very specific habitats and it is not uncommon that a given species could be found exclusively in a single valley, or on the slopes or the top of a particular hill or mountain.

Even though some botanists are skeptical about taxonomic novelties that are based on just one or a few specimens, this is most often the rule rather than the

exception with *Lepanthes*. Sometimes one is lucky enough to find a “large” population with over fifty individuals, but more commonly the number of available specimens is limited to the inhabitants of a few host trees or shrubs. Careful searches over large areas around the spot of a particular discovery often fail to reveal other populations of the same species and, in our experience, it is not at all uncommon to find a given species of *Lepanthes* just on a single tree, with “populations” sometimes limited to one-to-five individuals (Tremblay & Ackerman 2001, Fernández et al. 2003).

Such a highly specific preference in habitat and phorophytes (hosts), together with a pollination syndrome based on pseudocopulation (Blanco & Barboza 2005), makes *Lepanthes* a particularly vulnerable group of plants and a difficult subject for monographic studies. The frequency with which new species of *Lepanthes* are discovered and described is a direct result of their apparently random distribution patterns. New species of *Lepanthes* are discovered not only by exploring lesser-known areas in orchid-rich regions, but also by the random sampling of different phorophytes in previously studied areas. On the basis of our experience, and taking into account the increasing number of new findings derived from our field activity (Pupulin 2001, 2003, Pupulin & Bogarín 2004, Bogarín & Fernández 2010, Pupulin et al. 2010a, 2010b), it is perhaps not exaggerated to estimate that half of the *Lepanthes* species from Costa Rica remain undescribed.

With over 5,000 hectares (ca. 12,356 acres), the Tapantí-Macizo la Muerte National Park (TNP) in Costa Rica was established between 1992 and 2000 to protect a largely forested area in the northern Talamanca mountain region, with highly rugged terrain crisscrossed by numerous rivers and streams (over 150 originate there), canyons, and waterfalls. Ranging from 1,400 to almost 3,000 meters in elevation (4,000-



Along the left margin of the pastures, a living fence (now cut) was the habitat of *Lepanthes ruberrima*. In the background, the entrance of TNP.



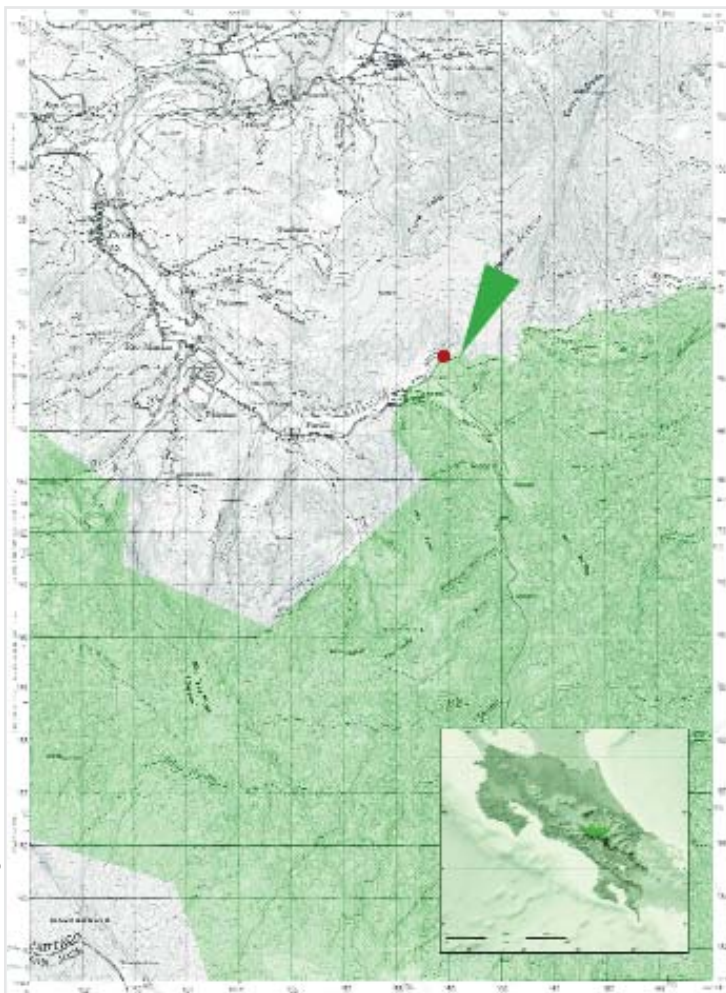
On the right side of the Grande de Orosi River, the pristine forest of TNP still covers most of the mountains.

All photos ©F. Pupulin

8,400 feet), TNP is one of the rainiest areas in Costa Rica, with 6,500-8,000 millimeters (256-315 inches) of rainfall annually. The protected area encompasses two life zones, premontane and montane rain forest, and supports very dense primary forest with medium-sized evergreen species and mostly *Quercus* species in the highest elevations (Boza 1992). Botanical exploration of TNP, made particularly difficult by the extreme climatic and physical conditions of the region, has been hampered by limited access, and it is not surprising that field activities along new routes reveal a large number of orchid novelties (Pupulin et al. 2009, Pupulin & Bogarín 2010). Finding previously unrecorded and undescribed species within the limits of traditionally well botanized areas at TNP seems less likely, but the species we describe here are from one of the most visited spots in the Park.

In November 2010, we organized a trip to the area of Tapantí in search of the elusive *Lepanthes johnsonii* subsp. *costaricensis* Pupulin in order to obtain tissue material for DNA analyses. Plants of this taxon had been previously found only in a few likely looking places (and failed to appear in a dozen others), growing epiphytically on small trees forming a fence along the road that goes from Purisil to the main entrance of TNP. Trees delimited a large pasture area, bordered to the south by the shores of the Grande de Orosi River, which in turn marks the limits of the dense, mostly pristine forest of the Park. Plants of *L. johnsonii* subsp. *costaricensis* are very small, sharing the same hosts with other species of the genus, like *L. aff. disticha* Garay & R.E. Schult., *L. elegans* Luer, *L. jugum* Luer, *L. pygmaea* Luer, *L. blephariglossa* Schltr. (Pupulin 2003b), and other orchidaceous plants (mostly *Campylocentrum*, *Comparettia*, *Jacquinella*, *Leochilus*, *Maxillaria* s.l., and *Stelis* s.l. species). When not in flower, it is almost impossible to distinguish a plant of *L. johnsonii* subsp. *costaricensis* from other epiphytic plants and from the juveniles of other species of *Lepanthes*. We found it in flower only three times over a number of years, always on the short trees of the fence, about one kilometer

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Portion of the northwestern side of TNP. The red dot marks the main entrance to the Park, with the rangers' houses. The arrow is where the three new *Lepanthes* were found. On the bottom, the location of TNP in Costa Rica.



A waterfall in the pristine forest, as seen from the "Mirador."



A closer view to the waterfall.

before the Park's entrance. Flowering was recorded in February, May, and August, but it is probable that the species, like many other *Lepanthes*, could flower at any time of the year. Our last search was unfruitful, as the entire fence was recently removed all along the pastures up to the river's shores. Even though populations of this rare species might be found in some pristine areas around the original type locality, the likelihood of collecting other specimens after the destruction of the fence is quite low. In common with other species of *Lepanthes* commonly encountered as epiphytes in highly perturbed vegetation, where the plants are exposed to strong sunlight and constant wind, "natural" populations are probably restricted, within the primary forest, to the terminal branches of the upper canopy. In the case of *L. johnsonii* subsp. *costaricensis*, it is probable that other populations inhabit the high canopy of TNP pristine forest across the Grande de Orosi River, but these areas are almost inaccessible and extensive searches of the upper canopy, even with the aid of specialized tree-climbing gear, are today beyond the possibilities of real field work.

Bert Klein's internship at Lankester Botanical Garden was a perfect opportunity to revisit the site and show him some interesting spots within the TNP. Our first stop was at the renowned "Mirador" (viewpoint), where you can appreciate a magnificent view of the dense forest of Tapantí, with a crystalline waterfall in the background.

On a single tree just a few meters from the parking area of the Mirador, where a gate limits the entrance to the "research" area of the Park, we found two previously unknown species of *Lepanthes*, and another one within a radius of ten meters of the previous tree (Fig. 6-8).

We are describing them as new to science and also promoting an earlier recognized subspecies to specific status:

Lepanthes kleinii Bogarín & Pupulin, *sp. nov.*

TYPE: COSTA RICA. Cartago: Paraíso, Orosi, Tapantí, Tapantí National Park, near the Mirador Point, Alto



A few meters from the "Mirador," a sign marks the entrance of the area for scientific use. Fortunately, plants do not respect signs.

Patillos, 9°44'04.22"N 83°46'41.17" W, 1470 m, epiphytic on small trees along the main road, premontane rain forest, mature vegetation, F. Pupulin 7999, D. Bogarín, R. Gómez, A. Karremans, B. Klein & G. Meza (holotype, JBL-spirit). Figs. 9-10.

Species habitu et inflorescentia cum Lepanthes atrata Endrés ex Luer sed *stirpibus molto minoribus, colore floribus et petalis acutis recedit.*

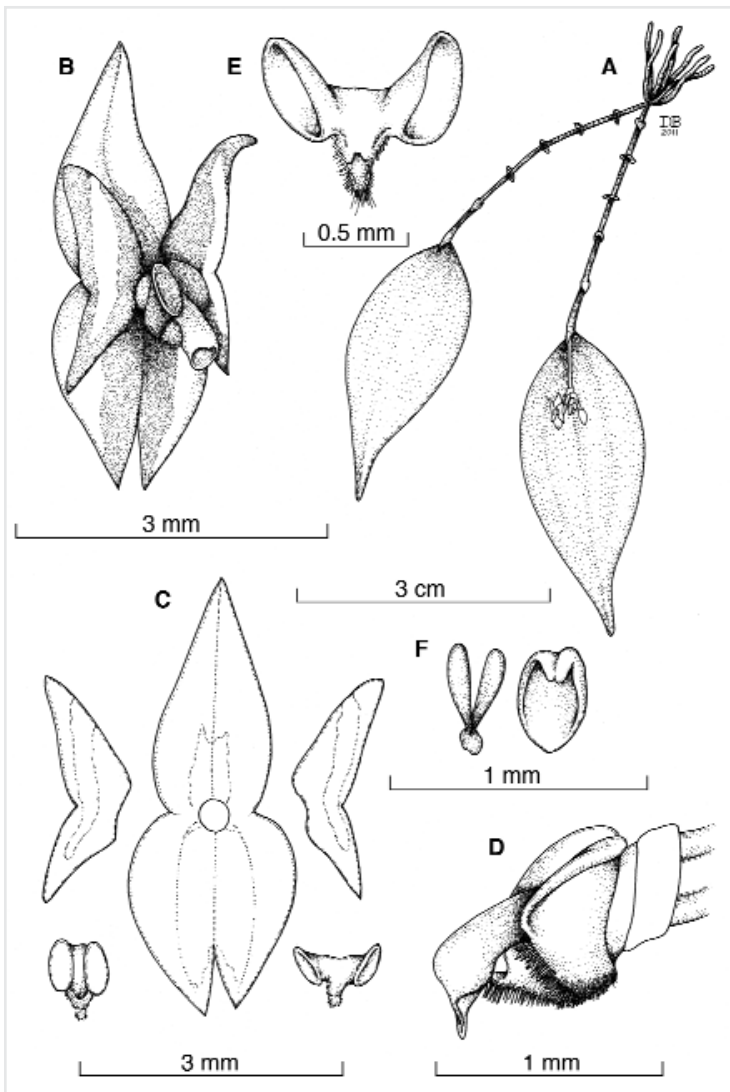
Epiphytic, small, pendent **herb**, about 7 cm tall. **Roots** glabrous, flat, to about 1 mm in diameter. **Ramicauls** drooping, weak, slender, to 3.5 cm long, enclosed by 6 minutely scabrous, brown, tightly clasping tubular sheaths, terminating in rather conspicuous, infundibuliform, glabrous, acuminate ostia. **Leaf** subcoriaceous, ovate to elliptic, acuminate, minutely tridenticulate at apex, 3.2 x 1.6 cm, cuneate-narrowed at the base into an indistinct petiole about 1 mm long. **Inflorescence** produced singly above the leaf at any new growth season, a loose, distichous, successively flowered raceme, 12 mm long; peduncle filiform, 3-4 mm long, with a small tubular sheath in the middle; rachis fractiflex. **Floral bracts** infundibuliform, 1 mm long, muricate; pedicel 1 mm long; ovary 1.5 mm long. **Flowers** tiny for the genus in Costa Rica, inconspicuous, yellow sepals suffused with red basally and towards the midveins, petals yellow edged in red, the lateral lobes of the lip red, the column and anther yellow. **Dorsal sepal** ovate, acute, 2.8 x 1.4 mm, entire, 3-veined, connate to the lateral sepals for 0.2 mm. **Lateral sepals** 2.3 x 1.0 mm, connate for about 1.5 mm, entire, ovate, acute, connate to the dorsal sepal for 0.2 mm. **Petals** transversely bilobed, 0.7 x 2.5 mm, the upper lobes ovate, acute, 1.7 x 0.7 mm, the lower lobes subsimilar but smaller than the upper lobes, ovate, acute, entire, 1.2 x 0.6 mm. **Lip** 3-lobed, 0.6 x 1.0 mm across the lateral lobes when spread, the blades oblong with ends rounded, adpressed to the column, the connectives oblong, rounded, basally ciliate, the appendix conical, rounded, ciliate, touching the apex of the column. **Column** short, arcuate, 0.8 mm long, the anther apical, the stigma subapical. **Pollinia** 2, oblong-pyriform.

HABITAT: Epiphytic in premontane wet forest on the Caribbean slopes of Cordillera de Talamanca in Tapantí National Park, Costa Rica.

DISTRIBUTION: Known only from the type locality in Costa Rica.

DERIVATION OF NAME: Dedicated to our friend Bert Klein, head orchid gardener at the München-Nymphenburg Botanical Garden, Germany, who participated in the type collection.

Lepanthes kleinii is superficially similar to *L. atrata*. Both species have small flowers developed from inflorescences that are borne on top of the leaf; the sepals are ovate-triangular, acute; and the lip is small with a protuberant body. The column is arcuate and projects far



Lepanthes kleinii Bogarín & Pupulin. A: Habit. B: Flower. C: Dissected perianth. D: Ovary, column and lip, lateral view. E: Lip, flattened. F: Pollinarium and anther cap.



Lepanthes kleinii, a flower from the plant that served as the holotype

away from the blades of the lip. However, the new species differs in the smaller plants, up to 7 cm tall (vs. up to 20 cm tall); the triangular, acute petals yellow edged in red (vs. ovate, obtuse, yellow suffused with red basally); the basally pubescent connectives; and the appendix is more prominent and ciliate than that of *L. atrata*.

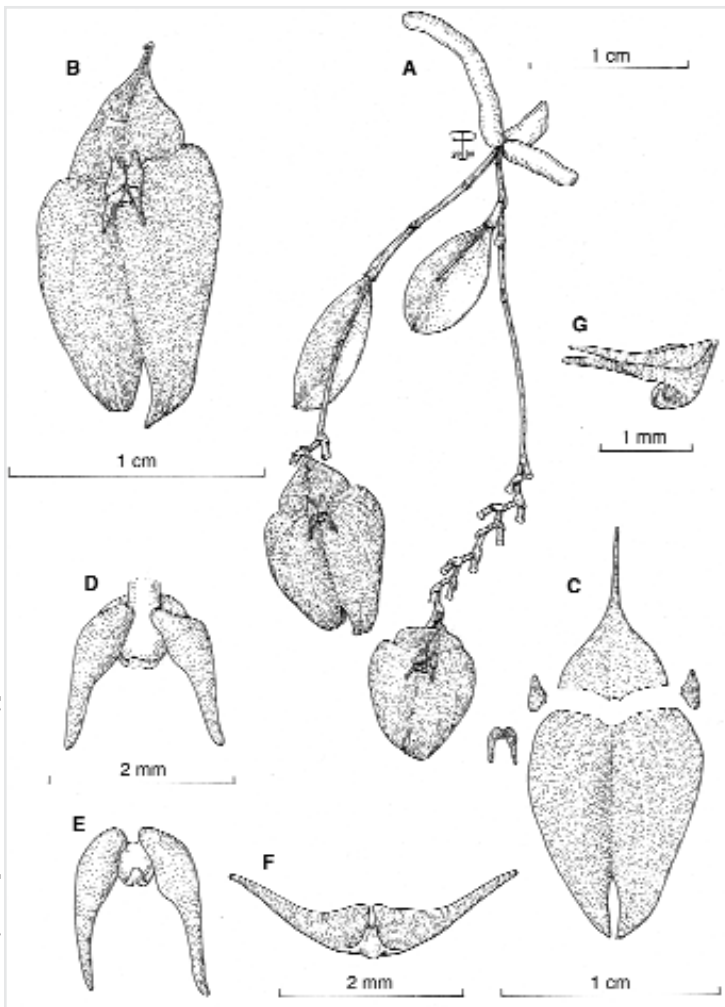
Lepanthes ruberrima Pupulin, sp. nov.

Based on *Lepanthes johnsonii* subsp. *costaricensis* Pupulin, Harvard Pap. Bot. 6(1): 291. 2001.

TYPE: COSTA RICA. Cartago: Orosi, road to the Tapantí National Park, about 1 km before the entrance of the park, 1160 m, epiphytic on a short tree along the roadside, 6 Feb. 2000, F. Pupulin 1979 [holotype, US], apparently lost; neotype designated here: Costa Rica. Cartago: Orosi, Tapantí, Purisil, road to Tapantí National Park, between restaurant Kirí and the entrance of the Park, about 1 km before the entrance, 9°45'50.4"N 83°47'24.4"W, 1245 m, epiphytic on short fence trees along the roadside, premontane wet forest, 20 August 2007, F. Pupulin 6859, M. Pupulin & C. Pupulin (CR)]. Figs. 11-13.

Ab Lepanthe johnsonii Ames *vaginis ramicaulium glabris, folio distincte brevior, floribus concoloribus ruberrimis, sepalibus lateralibus connatis in lamina late ovata bifida apicibus acutis, lobis supernis petalorum triangulari-rotundatis distincta.*

Epiphytic, small, caespitose, erect to pendent **herb**, to 2.5 cm tall. **Roots** thick, glabrous, 1.5-1.8 mm in diameter. **Ramicauls** slender, 0.6-1.2 cm long, enclosed by 2-3 glabrous, brown sheaths. **Leaf** thinly coriaceous, elliptic, obtuse, minutely tridenticulate at apex, 7-8 x 4 mm, cuneate at the base into a petiole about 1 mm long. **Inflorescence** 1-2 per growth, produced singly behind the leaf at any new growth season, a loose, distichous, successively few-flowered (to 11 flowers) raceme to 32 mm long; peduncle filiform, to 15 mm long, covered at the base by a tubular sheath; rachis fractiflex. **Floral bracts** widely ovate, 0.8 x 0.7 mm, glabrous; pedicel 1.8 mm long; ovary 1 mm long. **Flowers** large for the genus, with purple sepals, petals red-purple, the lateral lobes of the lip red-purple with yellow apex, and red-purple column. **Dorsal sepal** very broadly triangular-ovate, contracted at the apex into an acuminate tail 4 mm long, 8.5 x 5.5 mm including the tail, 3-veined, connate to the lateral sepals for 2.5 mm. **Lateral sepals** connate for three quarters of their length into a broadly ovate, bifid lamina with acute apices, 11 x 8.5 mm, connate to the dorsal sepal for 2.5 mm. **Petals** transversely bilobed, 0.8 x 1.9 mm, the upper lobes obliquely triangular, 1.2 x 0.6 mm, the lower lobes smaller, semicircular, 0.5 x 0.6 mm. **Lip** 3-lobed, 0.6 x 3.2 mm across the lateral lobes when spread, the lateral blades narrowly triangular-falcate, acute, 1.7 mm x 0.5 mm, appressed



Lepanthes ruberrima Pupulin. A: Habit. B: Flower.

C: Dissected perianth. D: Column and lip from above.

E: Lip in natural position. F: Lip, flattened. G: Lip, lateral view.

to the column, the connectives triangular, the appendix oblong, incurved, cleft abaxially from revolute sides, glabrous. **Column** short, winged, 0.8 mm long, the anther subapical, the stigma ventral. **Pollinia** 2, ovoid.

PARATYPE: Costa Rica. Cartago: Orosi, road to the Parque Nacional Tapanti, about 1 km before the entrance of the Park, 1170 m, epiphytic on short trees along the roadside, bordering a pasture, 7 May 2000, F. Pupulin 2409 & Curso de Orquideología (USJ!).

DISTRIBUTION. Endemic to Costa Rica.

DERIVATION OF NAME: From the Latin *ruberrimus*, "very red," in allusion to the color of the flower.

Originally described as a subspecies of *Lepanthes johnsonii* Ames (Pupulin 2001), a species ranging from Mexico to Guatemala, *L. ruberrima* is here recognized at specific rank on the basis of consistent morphological differences between the two taxa. The sheaths of the ramicauls of *L. ruberrima* are glabrous (vs. *hispidulous* in *L. johnsonii*), the leaf is distinctly shorter (less than 8 mm vs. more than 10 mm), the lateral sepals form a broadly ovate, bifid lamina with acute apices (vs. lateral sepals with the lobes distinctly caudate), and the petals have the upper lobe triangular-rounded (vs. nar-



Lepanthes ruberrima photographed in situ near Tapantí National Park (F. Pupulin 6859).



Lepanthes ruberrima. Photo of the flowers from F. Pupulin 1979, the plant that served as the holotype of *L. johnsonii* subsp. *costaricensis*.

rowly triangular, acute). Furthermore, the flowers of *L. ruberrima* are completely red-purple, while those of *L. johnsonii* vary from pink to yellow, with the tails of the sepals suffused with rose-purple, the petals usually purple, and the laminae of the lip yellow, flushed with red only at the bases.

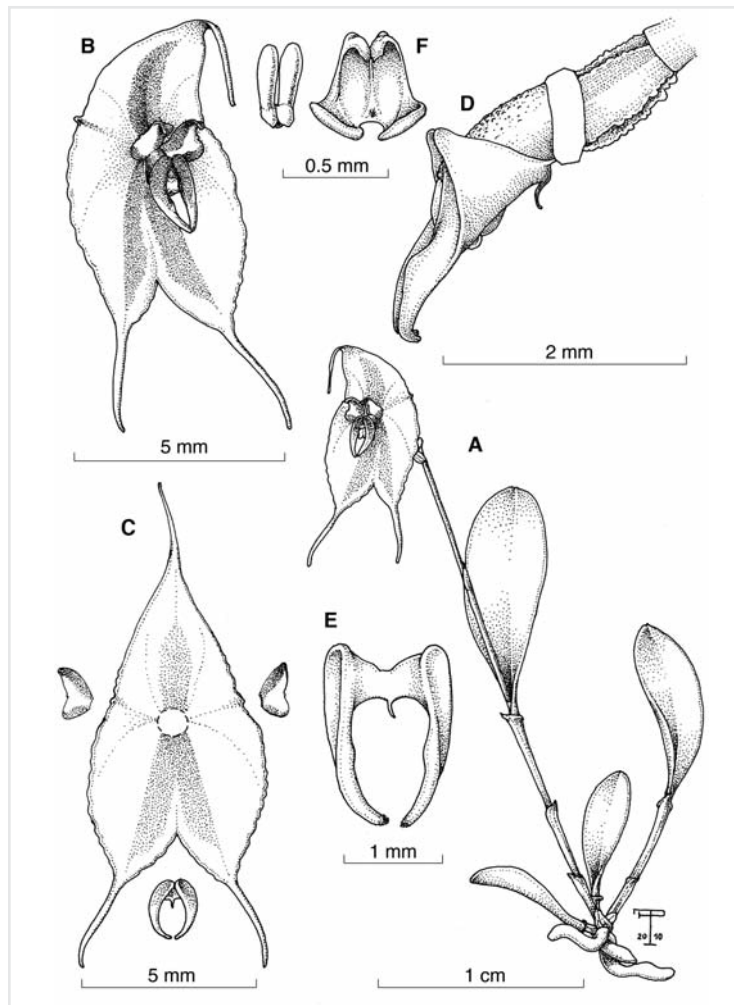
In their catalogue of the types preserved at the Herbarium of the University of Costa Rica (USJ), Morales and Villalobos T. (2004) claimed that all the original material of *Lepanthes johnsonii* subsp. *costaricensis* was lost and not deposited at USJ. For this reason, we designate here a neotype for this taxon. However, Morales and Villalobos T. (2004) also indicated that the type specimen of *Trichocentrum estrellense* was not deposited at USJ, but the holotype was misplaced in the herbarium collection and subsequently found there. For this reason, it is possible that the type material of *L. johnsonii* subsp. *costaricensis* will also be found in the future, along with other misplaced sheets.

***Lepanthes tapantiensis* Pupulin & Bogarín, sp. nov.**

TYPE: COSTA RICA. Cartago: Paraíso, Orosi, Tapantí, Tapantí National Park, near the Mirador Point, Alto Patillos, 9°44'04.22"N 83°46'41.17" W, 1470 m, epiphytic on small trees along the main road, premontane rain forest, mature vegetation, 18 November 2010, F. Pupulin 8010, D. Bogarín, A. Karremans, R. Gómez, B. Klein & G. Meza, (holotype, JBL). Figs. 14-15.

Species Lepanthes johnsonii Ames affinis, vaginis ramicaulibus glabris, marginibus sepalorum crenulatis, petalis obrheniformibus lobulis apiculo rotundato disjunctis, laminis labelli apicaliter papillosis appendiceque plana extensa non incurvata, colore floribus recedit.

Plant epiphytic, caespitose, erect, to 2 cm tall. **Roots** coarse, glabrous, to 1.5 mm in diameter. **Ramicauls** slender, 7-12 mm long, enclosed by 2-3 concealing, glabrous, whitish, lepanthiform sheaths, slightly dilated at the acute apices. **Leaf** elliptic to obovate-elliptic, rounded, minutely retuse, with a short abaxial apicule, thin-coriaceous, cuneate at the base into a short, conduplicate petiole, 6.5-11.0 x 3.0-6.5 mm including the petiole. **Inflorescence** a distichous, loose, successively 1- to 2-flowered raceme to 15 mm long, produced in front of the leaf by a slender, terete peduncle, 1.3 cm long, with 2-3 brownish, adpressed, lanceolate, acute bracts to 1.3 mm long. **Floral bracts** glumaceous, glabrous, broadly lanceolate, 0.7 x 0.5 mm; pedicels terete, to 1.5 mm long; ovary subclavate, winged, ca. 1 mm long, the margins of the crests cartilaginous, irregularly crenulate. **Flowers** large for the plant, spreading, resupinate, the sepals yellow, the dorsal one suffused with purple-red along the midvein, the lateral ones suffused with purple-red along the labellar side of the midvein, the petals yellow, blotched with red on the proximal margins, the apex of the upper lobe violet, the lip yellow, the blades red at the base, the column violet, the anther yellow.



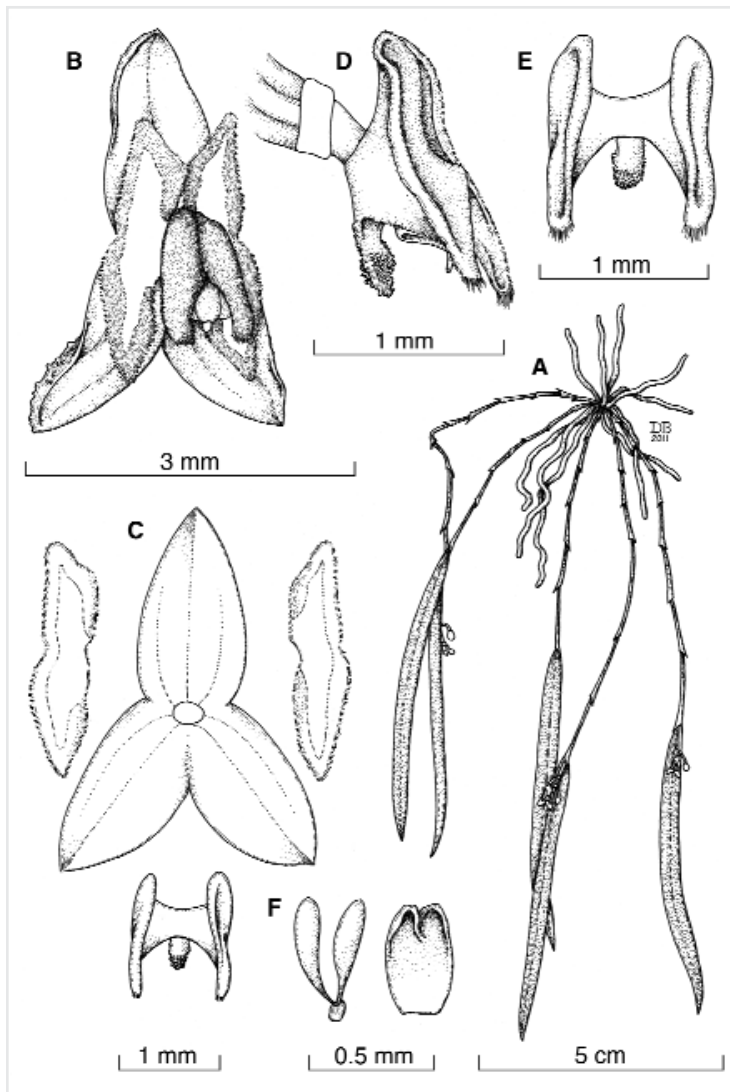
Lepanthes tapantiensis Pupulin & Bogarín. A: Habit. B: Flower. C: Dissected perianth. D: Ovary, column and lip, lateral view. E: Lip, flattened. F: Pollinarium and anther cap.



Lepanthes tapantiensis, a flower from the plant that served as the holotype.

Drawn by F. Pupulin from the holotype.

All photos ©F. Pupulin



Lepanthes tristis Bogarín & Pupulin. A: Habit. B: Flower. C: Dissected perianth. D: Ovary, column and lip, lateral view. E: Lip, flattened. F: Pollinarium and anther cap



Lepanthes tapantiensis, a flower from the plant that served as the holotype.

Sepals connate, forming a spreading 3-lobed calyx with caudate lobes. **Dorsal sepal** triangular, 3-veined, ending in a filiform tail 2.5 mm long, connate at the base to the lateral sepals for 1.7 mm, irregularly and shallowly crenulate along the basal margins, 7 x 4 mm including the tail. **Lateral sepals** ovate, abruptly constricted at the apices into filiform tails 3 mm long, connate to each other for ca. 3 mm, the margins crenulate, 8.0 x 2.7 mm including the tails. **Petals** transversely bilobed, sub-obreniform, the lobes separated by a rounded apicule, glabrous, 0.7 x 1.5 mm, the upper lobe obliquely triangular-ovate, minutely rounded, 1.2 x 0.8 mm, the lower lobe smaller, elliptic, rounded, 1.0 x 0.5 mm. **Lip** 3-lobed, bilaminar, 1.7 x 1.4 mm across the lateral lobes when spread, the lateral blades narrowly triangular-falcate, slightly concave adaxially, the acute, papillose apices approximate, basally adpressed to the column, 1.7 x 0.4 mm, the connectives obcuneate, the appendix filiform, glabrous, white. **Column** terete, minutely papillose, ca. 1 mm long, the anther subdorsal, the stigma ventral. **Anther** cap ovate, 2-celled, the base deeply emarginate, the apex with 2 flap-like, subquadrate, diverging lobes. **Pollinia** 2, narrowly linear-oblong, strongly complanate, with a rounded viscidium.

HABITAT: Epiphytic in premontane wet forest on the Caribbean slopes of Cordillera de Talamanca in Tapantí National Park, Costa Rica.

DISTRIBUTION: Known only from the type locality in Costa Rica.

DERIVATION OF NAME: Named from the region of Tapantí and the homonymous National Park.

Lepanthes tapantiensis is similar to *L. johnsonii*, but can be distinguished vegetatively by the glabrous sheaths of the ramicaul (vs. hispidulous), and florally by the crenulate margins of the sepals (vs. smooth), the distinctly bilobed, obreniform petals with the two lobes separated by a small, rounded apicule (vs. subentire, narrowly triangular, without an apicule), the lip provided with blades that are papillose at the apices (vs. glabrous), and the color of the perianth. While in *L. johnsonii* the sepals are yellow, sometimes with the tails' apices tinged with red, and the petals and column purple-red, in *L. tapantiensis* the dorsal sepal is suffused with purple-red along the midvein and the lateral ones are suffused with the same color along the labellar side of the midvein, the petals are yellow, blotched with red on the proximal margins, the apex of the upper lobe violet, and the column is violet.

Lepanthes tristis Bogarín & Pupulin, *sp. nov.*

TYPE: COSTA RICA. Cartago: Paraíso, Orosi, Tapantí, Tapantí National Park, Mirador point, Alto Patillos, 9°44'04.22"N 83°46'41.17" W, 1468 m, premontane rain forest, "ocurrit in arborum truncis ramulisque ad arborum versuras in prope Mirador in Tapantí," 18 November 2010, D. Bogarín 8241, R. Gómez, A.

Karremans, B. Klein, G. Meza & F. Pupulin (holotype, JBL; isotype, CR). Figs. 16-18.

Quoad habitum et marginem foliorum replicatum ad Lepanthes exasperatam Ames & C. Schweinf. accedit, sed ab ea differt foliis longioribus linearibus, floribus minoribus, sepalis petalisque acutis leviter ciliatis et appendice tuberculata.

Epiphytic, small, pendent **herb**, about 12 cm tall. **Roots** glabrous, flat, to about 1 mm in diameter. **Ramicauls** drooping, weak, slender, to 8 cm long, enclosed by 8-12 minutely scabrous, brown, tightly clasping tubular sheaths, terminating in rather conspicuous, infundibuliform, glabrous, acuminate ostia. **Leaf** coriaceous, linear, very fleshy, with revolute-replicate margins, minutely tridenticulate at the apex, grayish green, suffused with purple beneath, 4.5-5.2 x 0.25-0.3 cm, cuneate-narrowed at the base into an indistinct petiole about 1 mm long. **Inflorescence** produced singly on top of the leaf at any new growth season, a loose, distichous, successively flowered raceme, 10-13 mm long; peduncle filiform, 7-8 mm long, with a small tubular sheath in the middle; rachis fractiflex. **Floral bracts** infundibuliform, 1 mm long, glabrous; pedicel 3 mm long; ovary 1.5 mm long. **Flowers** tiny for the genus in Costa Rica, inconspicuous, with whitish-yellow sepals, petals yellowish edged in red, the lateral lobes of the lip reddish, the column and anther pale pink. **Dorsal sepal** ovate, acute, 1.9 x 1.1 mm, slightly denticulate, 3-veined, dorsally carinate, muricate along the midvein, connate to the lateral sepals for 0.3 mm. **Lateral sepals** ovate, acute, 1.8 x 1.0 mm, connate at the base for about 0.6 mm, slightly denticulate, dorsally carinate, muricate along the midveins, connate to the dorsal sepal for 0.3 mm. **Petals** transversely bilobed, 0.6 x 2.3 mm, the upper lobes oblong, broadly obtuse to truncate, 1.1 x 0.6 mm, the lower lobes ovate, acute, minutely ciliate, 1.2 x 0.6 mm. **Lip** 3-lobed, bilaminar, 1.3 x 1.2 mm across the lateral lobes when spread, the lateral blades narrowly obovate to oblong, subfalcate, ciliate at the apices, adpressed to the column, 1.2 x 0.4 mm, the connectives oblong, rounded, the appendix oblong, obtuse, muriculate. **Column** 1 mm long, the anther apical, quadrate, the stigma ventral. **Pollinia** 2, oblong-pyriform.

HABITAT: Epiphytic in premontane wet forest on the Caribbean slopes of Cordillera de Talamanca in Tapantí National Park, Costa Rica.

DISTRIBUTION: Known only from the type locality in Costa Rica.

DERIVATION OF NAME: From the Latin *tristis*, "sad," in allusion to the weak, dropping stems and linear revolute gray-green leaves that give a sad appearance to the plant.

Vegetatively, this species with gray-green leaves with revolute-replicate margins is similar to *Lepanthes*



Diego and Italian student Chiara Montagnani checking the single tree where *L. tapantiensis* and *L. tristis* were found.



Within the forest at Tapantí. On the trunk of the foreground tree, a plant of *Oncidium klotzschianum* Rchb. f.

exasperata. The species is easily distinguished by the pendent plants (up to 12 cm long), with linear leaves (vs. ovate). The flowers are smaller with acute, minutely ciliate sepals and petals (vs. obtuse, ciliate). The sepals are concave (vs. convex) and whitish-yellowish (vs. reddish-brown), and the petals are oblong, acute (vs. ovate, obtuse), yellow, edged in red (vs. red to orange).*

Acknowledgments

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