



Lankesteriana

ISSN: 1409-3871

Lankester Botanical Garden, University of Costa Rica

Baquero, Luis E.; Moreno, Juan Sebastián; Iturralde, Gabriel Alfredo
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Lankesteriana, vol. 18, no. 3, 2018, pp. 183-188
Lankester Botanical Garden, University of Costa Rica

DOI: 10.15517/lank.v18i3.34961

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THE “FOUR FOOTED” *LEPANTHES* (PLEUROTHALLIDINAE), A NEW SPECIES FROM NORTH-WESTERN ECUADOR

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ABSTRACT. A new species of *Lepanthes*, closely resembling *L. hexapus* and *L. aguirrei*, is described and illustrated. The new species is characterized by bilobed, filiform and curved petals. Ecological and taxonomic notes are given. In addition, the first known locality for *L. bibarbullata* is presented herein.

RESUMEN. Se describe e ilustra una nueva especie de *Lepanthes*, cercanamente relacionada a *L. hexapus* y *L. aguirre*. La especie nueva se caracteriza por tener pétalos bilobados, filiformes y curvados. Se proven notas ecológicas y taxonómicas. Además, se presenta por primera vez una localidad conocida para *L. bibarbullata*.

KEY WORDS: Ecuador, *Lepanthes hexapus*, new *Lepanthes*, Orchidaceae, petal lobe

Introduction. With more than 1,100 species, *Lepanthes* Sw. is one of the Neotropical genera in the Orchidaceae with most accepted species together with *Stelis* Sw. (Karremans 2016). New species are being discovered frequently (Jørgensen & Leon-Yanez 1999, Karremans 2016, Moreno *et al.* 2017, Pupulin & Bogarin 2012). Some species in the genus show a wide distribution range while others are endemic to restricted localities (Baquero 2018, Moreno *et al.* 2017). Species of *Lepanthes* are recognized by the ramicauls enclosed by commonly ciliated lepanthiform sheaths, the petals transversely bilobed or trilobed, and a complex lip that has a body which connects to a pair of blades which frequently cover the column (Luer 1996). At the base of the lip a small structure, present in most of the species in the genus, is called the appendix (Luer 1996). The shape, size, and position of the appendix has been traditionally used as a morphological trait which helps to distinguish among different species in the genus, and its importance in *Lepanthes* pollination has been confirmed by Blanco and Barboza (2005). Nevertheless, other characteristics, like the number of lobes in the petals and the shape of the lip, can also help to distinguish among species in *Lepanthes*.

Based on the number of petals and lip's lobes, some species of *Lepanthes* have received suggestive names, like *Lepanthes pentoxys* Luer, *Lepanthes hexapus* Luer & Escobar, *Lepanthes heptapus* Luer & Escobar and *Lepanthes octopus* Luer & Escobar with five, six, seven and eight filaments and lobes respectively (Dodson 2004, Luer & Thoele 2012, Luer 1996).

A rich species area of *Lepanthes* is located in Carchi province, Ecuador, very close to the limit with Imbabura and Esmeraldas provinces. In this region, a new species has been discovered. It is described and compared here with an informal group of species within the genus, that shares similar morphological characteristics, both in the plants and flowers (Luer 1996).

Lepanthes tetrapus* Baquero & J.S.Moreno, *sp. nov. (Fig. 1–4).

TYPE: Ecuador. Carchi: north-west of Lita, 0°55' 24.42.0"N 78°30'12.28"W, 754 m, 08.03.2017, *L. Baquero et al. LB 3112* (holotype, QCNE).

Diagnosis: *Lepanthes tetrapus* is vegetatively and florally similar to *L. hexapus*, from which it differs by

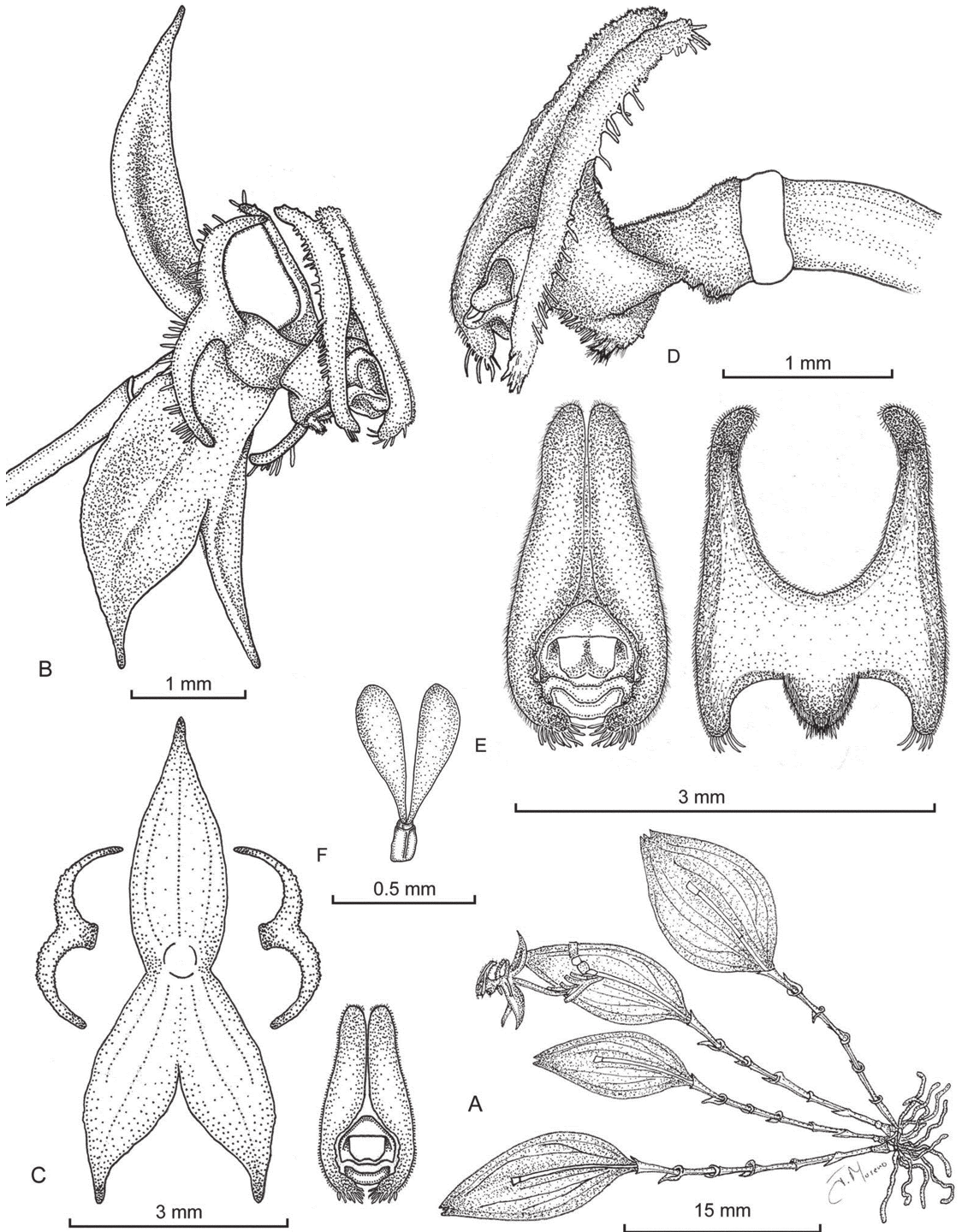


FIGURE 1. *Lepanthes tetrapus* Baquero & J.S. Moreno. A. Plant and Habit. B. Flower view in $\frac{3}{4}$ position. C. Flower dissected. D. Column and lip detail. E. Lip detail. F. Pollinarium. Line-draw by Juan Sebastián Moreno.



FIGURE 2. *Lepanthes tetrapus* Baquero & J.S.Moreno. A. Plant with flower *in situ*. B. Frontal view of the flower and comparison with biohazard international symbol. C. Close-up of the Lip and petals. D. Lateral view of the flower. Photos by Luis E. Baquero.

the petals with two curved, filiform lobes instead of three.

Epiphytic, caespitose, erect to suberect *herb*. *Roots* flexuous, to 0.5 mm in diameter. *Ramicauls* erect, 4.0–9.0 mm long, enclosed by 3–5 minutely ciliate, keeled, lepanthiform sheaths, the ostia minutely ciliate, ovate, acuminate and slightly dilated. *Leaves* erect, coriaceous, elliptic-ovate, subacute, light green, prominently reticulated along the veins, veined in purple, 1.0–3.0 × 0.6–1.0 cm, the base cuneate into a petiole 1 mm long. *Inflorescence* a congested,

distichous, glabrous, successively flowered raceme, developed above the leaf, shorter or as long as the leaves, up to 1.8 cm long; peduncle terete, 0.6 cm long. *Floral bracts* acute, 0.8 mm long. *Pedicels* 1.5 mm long, persistent. *Ovary* to 1 mm long, glabrous. *Sepals* yellowish green suffused with brown-red towards the center, spiculate at the abaxial side of the veins. *Dorsal sepal* free, obovate, obtuse, acuminate, slightly concave, 3-veined, 3.0–3.3 × 1.5–1.7 mm, the margins minutely denticulate. *Lateral sepals* obovate, acuminate, slightly concave, 2-veined, 3.0–3.3 × 1.5–1.6 mm, connate for 0.5 mm. *Petals* yellow, darker



FIGURE 3. Comparison of *Lepanthes tetrapus* Baquero & J.S. Moreno and two similar species. A. *Lepanthes tetrapus* Baquero & J.S. Moreno. B. *Lepanthes hexapus* Luer & Escobar. C. *Lepanthes aguirrei* Luer. Photos by Luis E. Baquero (A–B) and Sebastián Vieira-Urbe (C).

towards the apex, transversely bilobed, filiform, 2.5 × 0.5 mm, the lobes equal in size and shape, falcate-oblong with the apex rounded, minutely pubescent, ciliate along the margins. *Lip* purple, orange towards the margin, bilaminate, the blades narrowly ovate to elliptic-oblong, the apex long pubescent, curved towards the column, 2.5–2.7 mm long, ciliate along the margins; the connectives cuneate, oblong, the body thick, densely pubescent, rounded, connate to the middle of the column; the appendix conspicuous, thick, pubescent, ovoid, bilobulate at the apex. *Column* cylindric, to 1.5 mm long, the anther and the stigma apical. *Pollinia* two, ovoid, basally filiform. *Anther cap*, magenta, obovate.

ETYMOLOGY: From Greek “four-footed” due to the four filiform lobes of the petals.

Lepanthes tetrapus is very similar in habit and flowers to *L. hexapus* and *L. aguirrei* Luer (Fig. 3). Both species, *L. hexapus* and *L. aguirrei*, have erect leaves with purple reticulations, the inflorescence shorter than the leaf, flowers with essentially free sepals and trifurcate petals, and plants which are small for the genus. Nevertheless, the two species differ in the size of the plants (taller in *L. aguirrei*, with ramicauls reaching 4.5 cm vs. 2 cm long in *L. hexapus*) and the apex of the sepals, which is stoutly caudate in *L. aguirrei* and acute in *L. hexapus*. *Lepanthes tetrapus* is similar to both species, sharing all the characteristics mentioned above except for the two filiform lobes of each petal instead of three. Due to the characteristic shape of the petal lobes and the apex of the lip, this

species has been known so far as the “biohazard” *Lepanthes*, due to the remarkable similarity with the international alert symbol (Fig. 2). This similarity might visually help to immediately distinguish *L. tetrapus* from any other species in the genus.

DISTRIBUTION AND ECOLOGY: This species is known from a low elevation cloud-forest close to Lita, where it is fairly common. Another locality is known for the species in the province of Esmeraldas. It is found growing with several other species of *Lepanthes* including *L. filamentosa* Luer & Hirtz, *L. saltatrix* Luer & Hirtz, *L. tentaculata* Luer & Hirtz, *L. scrotifera* Luer & Hirtz and *L. bibarbullata* Luer. *Lepanthes tetrapus* grows significantly lower in elevation than *L. hexapus* and has not been observed at elevations higher than 800 m (Fig. 4).

A specific locality for *Lepanthes bibarbullata* Luer.

This species was originally described without a known locality from a specimen obtained from J&L Orchids (Luer 2002). It is here recorded for the first time with a known locality.

Lepanthes bibarbullata Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 88: 87, f. 310. 2002.

TYPE: Ecuador. Without locality: cultivated by J&L Orchids 799-593, Easton, CT, Nov 2000, C. Luer 19440 (holotype, MO).

SPECIMEN STUDIED: Ecuador. Carchi: north-west of Lita, 0°55'24.42.0"N 78°30'12.28"W, 754 m, 08.03.2017, L. Baquero et al. LB 3113 (QCNE) (Fig. 4A).

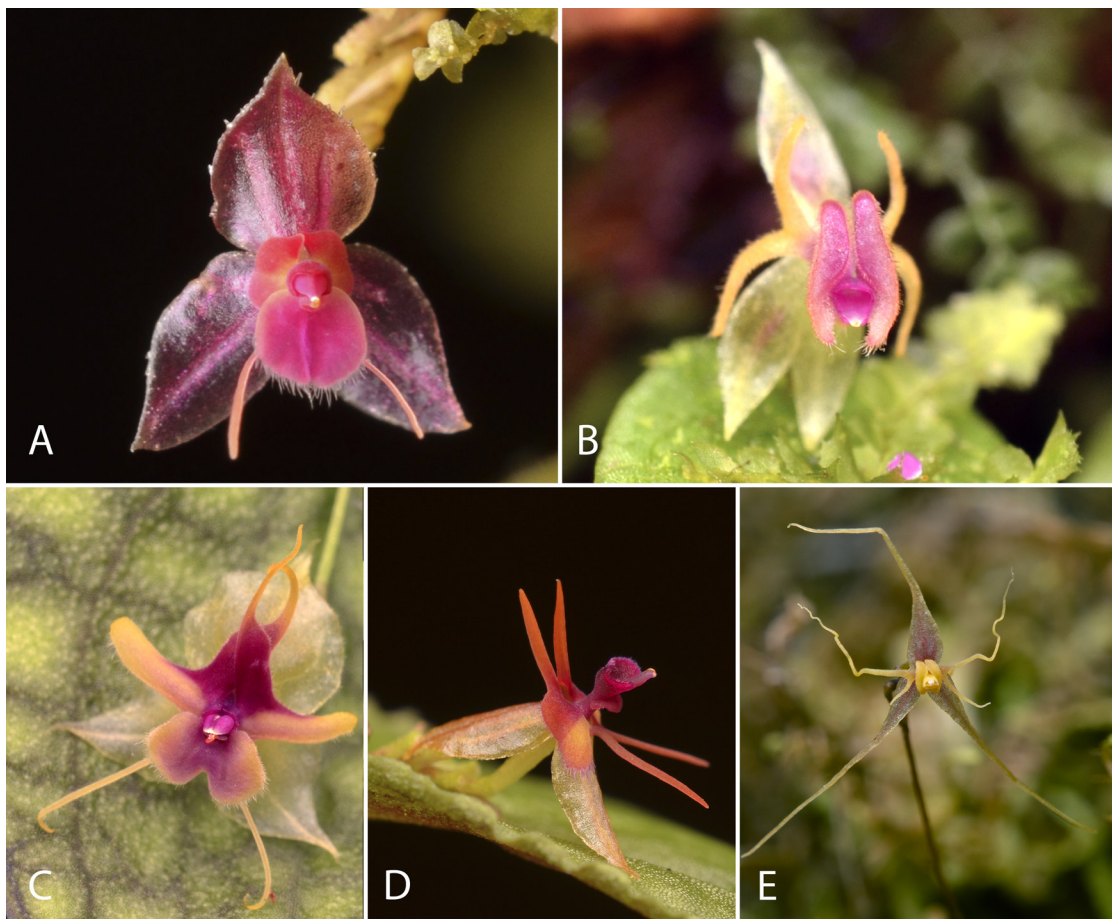


FIGURE 4. *Lepanthes bibarbullata* Luer and some sympatric species in the genus. A. *Lepanthes bibarbullata* Luer. B. *Lepanthes tetrapus* Baquero & J.S.Moreno. C. *Lepanthes saltatrix* Luer & Hirtz. D. *Lepanthes tentaculata* Luer & Hirtz. E. *Lepanthes filamentosa* Luer & Hirtz. Photos by Luis E. Baquero.

ACKNOWLEDGEMENTS. We acknowledge Universidad de Las Americas (UDLA) for funding research on orchids in Ecuador. The authors thank Sebastian Vieira-Urbe for his photo of *Lepanthes aguirrei* used in this paper. Luis E. Baquero also thanks Capitan Stalin Salazar for his support

in several trips made for obtaining plants and data from the new species *in situ* and his enthusiasm in the orchid world. The Ministerio del Ambiente del Ecuador is acknowledged for issuing the Environmental Research Permit No. 008-2016-IC-FLO-DNB/MA.

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