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## ***LEPANTHES ARENASIANA* (PLEUROTHALLIDINAE: ORCHIDACEAE), A NEW SPECIES FROM COSTA RICA**

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**ABSTRACT.** *Lepanthes arenasiana* from the Talamanca range in Costa Rica is described and illustrated. It is most similar to *L. lancifolia* but differs in having denticulate sepals, the petals with the upper lobe oblong, narrowing at apex and terminating as a short apicule, and the lower lobe basally ovate and straight, filiform towards the apex.

**RESUMEN:** Se describe e ilustra *Lepanthes arenasiana* de la Cordillera de Talamanca en Costa Rica. Es similar a *L. lancifolia* pero difiere en los sépalos denticulados, los pétalos con el lóbulo superior oblongo, estrechándose hacia el ápice y terminando en un corto apículo, y el lóbulo basal ovado, recto y filiforme hacia el ápice.

**KEY WORDS/PALABRAS CLAVE:** Orchidaceae, Pleurothallidinae, *Lepanthes arenasiana*, new species, Costa Rica, taxonomy

With 112 species currently recognized, *Lepanthes* is one of the most diverse genera of the Pleurothallidinae in Costa Rica. After Luer (1996), the genus has not been treated formally by botanists for the flora of Costa Rica, however during the past 10 years, studies on *Lepanthes* yielded 13 new species and two new records (Pupulin 2001, Blanco 2003, Pupulin & Bogarín 2004; Pupulin *et al.*, 2009). It is worth noting that 80% of the species registered are endemic (Ossenbach *et al.* 2007, Pupulin *et al.* 2009). Because of the narrow geographic distribution of most of the species, the number of undescribed species increases when specimens are gathered in little explored areas. As an example, three new species were recorded from a single field trip in the Queverí region of Tapantí National Park, a rich plant species area but poorly sampled botanically (Pupulin *et al.* 2009).

The awareness of the great diversity concerning *Lepanthes* has increased through the systematic field trips carried out by the researchers of Lankester Botanical Garden. As a result of two ongoing projects: Inventory and taxonomy of Neotropical Orchidaceae and Systematic studies on the Pleurothallidinae of Costa Rica, it has been possible to survey unexplored areas of the country. Another *Lepanthes* from the

vicinities of Queverí, in the Talamanca mountain range is described here:

***Lepanthes arenasiana*** Bogarín & M. Fernández, *sp. nov.*

**TYPE:** Costa Rica. Cartago: Cartago, San Francisco, Muñeco, 5.6 km south of Muñeco, between Alto Belén and Alto Cedral, 9°44'54.5"N 83°53'21.7"W, 2112 m, lower montane rain forest, epiphytic in secondary forest, 27 may 2009, *D. Bogarín 6624, R. Gómez, Y. Kisel & R. Trejos* (holotype: JBL; isotypes: CR, USJ). FIG. 1

Species habitu cum *Lepanthes lancifolia* Schltr. optime congruens, sed sepalis ciliatis, acutis, lobo superno petalorum oblongo apice decrescenti in breve apiculum, lobo infero in base ovato deinde usque ad apicem filiformi differt.

Epiphytic, caespitose, pendent *herb*, up to 10 cm long. *Roots* slender, flexuous, to 1 mm in diameter. *Ramicauls* slender, pendent, 4.0—10.5 cm long, enclosed by 7–12 glabrous, lepanthiform sheaths, the ostia minutely ciliate, ovate, acuminate and slightly dilated. *Leaves* subcoriaceous, narrowly ovate, conduplicate, acuminate, emarginate, with a short apiculus, 1.0—4.0 x 0.7—1.1 cm, the rounded

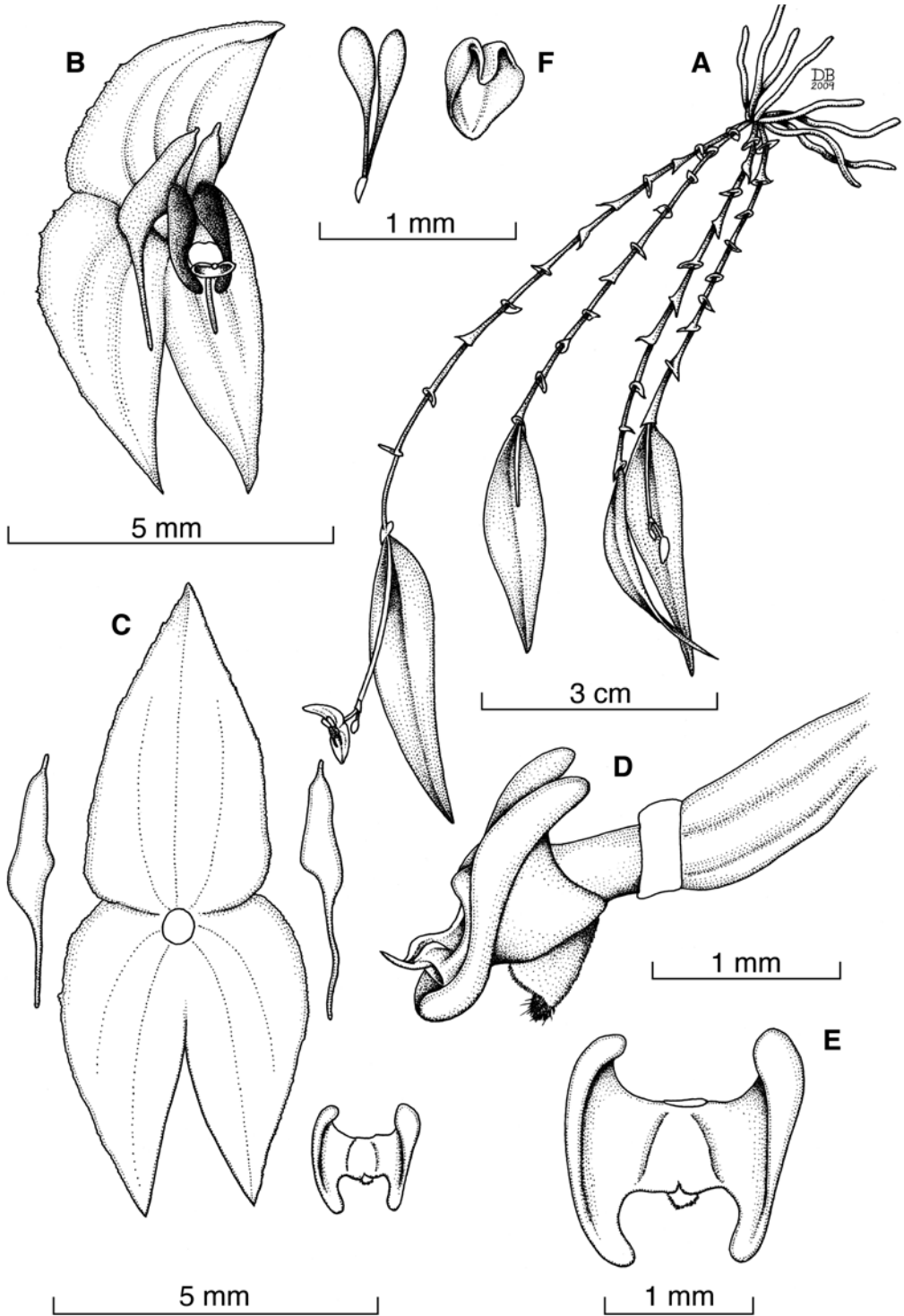


FIGURE 1. *Lepanthes arenasiana* Bogarín & M. Fernández. A — Habit. B — Flower. C — Dissected perianth. D — Lip and column, lateral view. E — Lip, frontal view. F — Pollinarium and anther cap. Drawing by D. Bogarín from the holotype.

base narrowing into a petiole less than 1 mm long. *Inflorescence* racemose, distichous, glabrous, successively flowered, borne above the leaf, shorter than leaves, up to 3 cm long, peduncle 2.2 cm long, rachis 7 mm long. *Floral bracts* ovate, acuminate, conduplicate, membranaceous, 2 mm long, glabrous. *Pedicels* 2 mm long, persistent. *Ovary* to 1 mm long, provided with trichomes along the keels of the carpel divisions. *Flowers* with the sepals yellowish, the petals bright yellow, the lip scarlet red, the column white. *Dorsal sepal* ovate to oblong, acute, denticulate, slightly concave, dorsally with three ciliate keels, connate to the lateral sepals for about 1.2 mm, 5.0 x 2.5 mm. *Lateral sepals* narrowly ovate, acute, denticulate, dorsally with three ciliate keels, connate for 1.2 mm, 2.3 x 5.0 mm. *Petals* transversely bilobed, ciliolate, 1 x 4 mm, the upper lobe oblong, narrowing at apex and terminating as a short apicule, the lower lobe basally ovate, filiform towards the apex. *Lip* bilobate, adnate to the column, the blades oblong with rounded ciliolate ends and falcate apex, embracing the column 1.3 x 2.0 mm, the connectives terete, oblong to 6 mm long, the body thick, oblong, connate to the base of the column, the appendix thick, oblong, pubescent, apically with a minute pubescent apicule. *Column* cylindrical, 1.2 mm long, mucronate, the anther and stigma ventral. *Pollinia* two, ovoid, basally filiform. *Anther cap*, triangular, cucullate.

**DISTRIBUTION:** only known from the northwestern part of the Caribbean watershed of the Talamanca mountain range in Costa Rica, in the drainage of Río Macho, southern of Cartago Province.

**HABITAT AND ECOLOGY.** The only known population was found growing epiphytically in lower montane rain forest, in secondary vegetation, on twigs and branches covered by mosses in shady condition, at 2100 m elevation.

**EPONYMY:** The specific epithet honors Miguel Ángel Soto Arenas, a Mexican orchidologist who did great contributions to the knowledge of the family in the Neotropics.

In Costa Rica, *L. arenasiana* resembles the habit of *L. clarae* Luer & J. Hermans, *L. demissa* Luer, *L. lancifolia* Schltr., *L. machogaffensis* Pupulin & D.

Jiménez and *L. tridens* Ames, all having plants 5-15 cm long and narrowly elliptic-ovate, acuminate leaves (Luer 2003). The flowers are most similar to those of *L. lancifolia* (Schlechter 1923) but differ in the denticulate sepals (vs. entire), the petals with the upper lobe oblong (vs. obovate), narrowing at apex and terminating into a short apicule (vs. obtuse), and the lower lobe basally ovate and straight, filiform towards the apex (vs. oblong, obtuse, subfalcate).

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