

***LEPANTHES GERARDENSIS (ORCHIDACEAE),
A NEW SPECIES FROM COSTA RICA***

MARIO A. BLANCO

University of Florida, Department of Botany, 220 Bartram Hall, Gainesville, Florida 32611-8526, U.S.A.

Research Associate, Jardín Botánico Lankester, Universidad de Costa Rica

and Instituto Centroamericano de Investigación Biológica y Conservación, Costa Rica

mblanco@flmnh.ufl.edu

ABSTRACT. *Lepanthes gerardensis* from north-central Costa Rica is described and illustrated. It is most similar to the Mexican *L. ancylopetala* Dressler, from which it differs in shorter habit, petiolate leaves with broadly elliptic blades, and different lip shape. It appears to be a specialized twig-epiphyte.

RESUMEN. Se describe e ilustra *Lepanthes gerardensis*, de la parte central norte de Costa Rica. Es semejante a *L. ancylopetala* Dressler de México, de la cual difiere en el hábito menor, hojas pecioladas con láminas anchamente elípticas y forma del labelo diferente. Parece ser una epífita de ramitas, especializada en ramas terminales delgadas.

PALABRAS CLAVE / KEY WORDS: Orchidaceae, *Lepanthes*, twig-epiphytism, Costa Rica.

Costa Rica has been relatively well explored for species of *Lepanthes* (see the interesting introductory accounts by Luer 1987, 1995). More than 90 species are known already for the country (Pupulin 2002, Luer, in press); however, new species based on both new and old collections are continuously being described (e.g. Pupulin 2001). In the present paper, yet another species is described as new to science. Floral and vegetative terminology follows Luer (1996).

Lepanthes gerardensis M.A. Blanco, *sp. nova*

TYPE: COSTA RICA. Puntarenas: Monteverde, Valle de San Gerardo, entre Santa Elena y Arenal, vertiente atlántica, ca. 10°23'00"N, 84°47'50"W, 1000 m, 23 enero 1999, M. Blanco & V. Arias 924 (holotype, USJ).

FIG. 1

Lepanthes ancylopetalae Dressler primo aspectu similis, sed habito minore, foliis petiolatis, late ellipticis, labello relative magno, bilaminato, cum laminis glabris, deltoideis, una contra alteram dispositis difert.

Plant a caespitose epiphytic herb. *Roots* up to 5 cm long, 0.5 mm thick, terete. *Ramicauls* erect, terete, 1-10 mm long, 0.3 mm thick, clasped by 1-4 cataphylls, with a single terminal leaf. *Cataphylls* 1-4 mm long,

pale brown (dry at maturity), lepanthiform, glabrous to minutely ridged, acute apically; ostia oblique and expanded (up to 1 mm in diameter). *Leaves* petiolate, thick, green with purple dots on the abaxial surface. *Petiole* 1-3 mm long, 0.3 mm thick. *Blade* conduplicate, widely elliptic when spread, 7-9 mm long, 5-6 mm wide, about 1 mm thick, cuneate basally, obtuse apically, mucronate, with 7 longitudinal veins, margin entire. *Inflorescence* terminal on the ramicaul, a pedunculate raceme; peduncle terete, 4 mm long, 0.1 mm thick; the raceme up to 3 mm long, distichous, sequentially flowered (up to at least 15 flowers produced). *Flower bracts* triangular, 0.5 mm long. *Flowers* showy, large for the plant, resupinate; sepals pale greenish yellow, petals yellow with upper lobe and inner margin of lower lobe red, lip and column dark red, anther and appendix white. *Dorsal sepal* ovate-lanceolate, acute, 3-veined, 3.0 mm long, 1.5 mm wide, glabrous, margin entire. *Lateral sepals* obliquely lanceolate, 2-veined, connate for half their length, acute, each 2.5 mm long and 1.5 mm wide, glabrous, margin entire. *Petals* two-lobed, with a minute median apicule, minutely papillose, 1.5 mm wide, 0.6 mm long; the upper lobe oblong, rounded apically, the base expanded, 1 mm long; lower lobe subtriangular, rounded, 0.4 mm long; glabrous, margin entire. *Lip* bilaminate, surrounding the column;

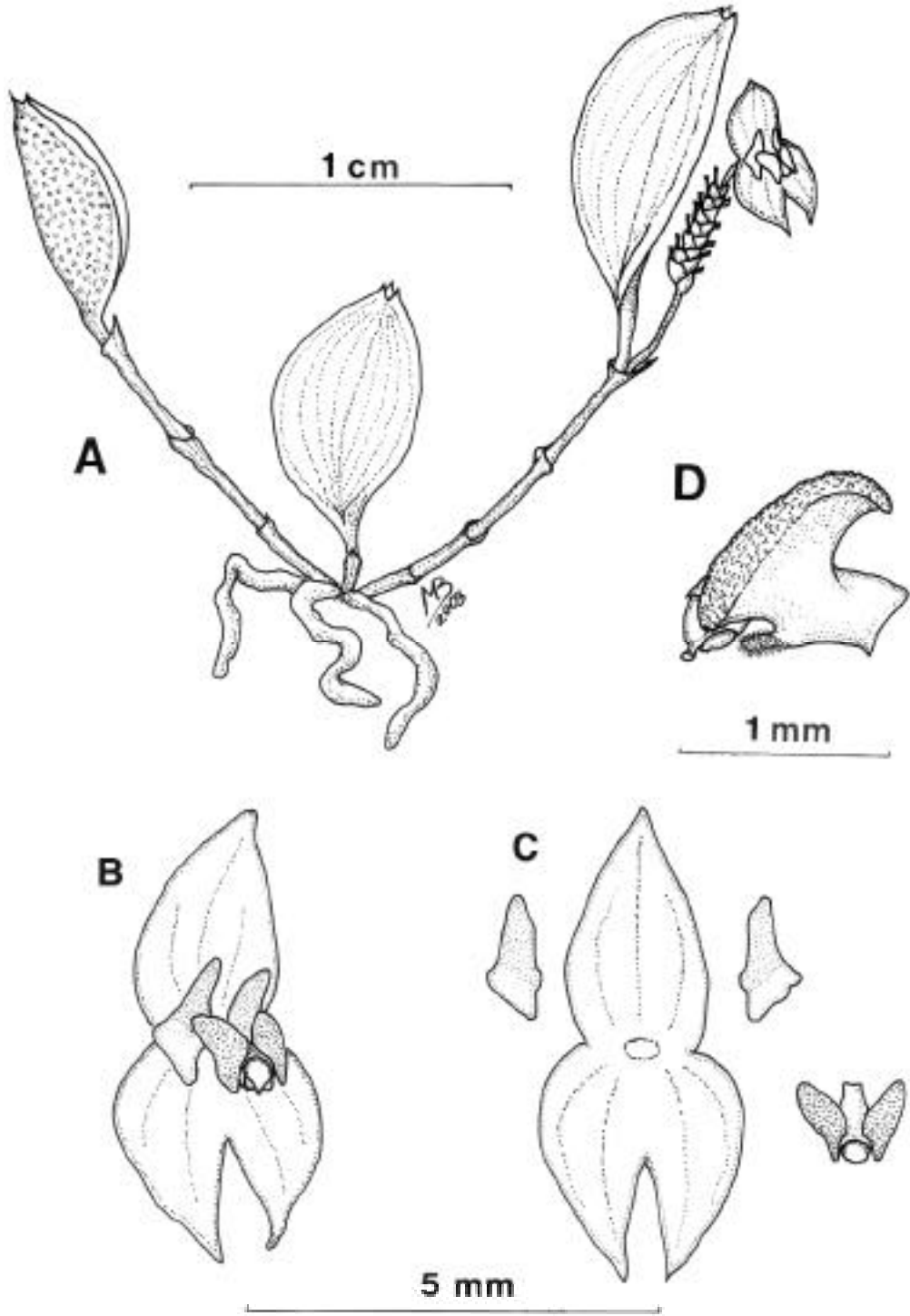


Figure 1. *Lepanthes Gerardensis* M.A. Blanco. A – Habit. B – Flower. C – Dissected perianth. D – Lip and column, lateral view. ILLUSTRATION VOUCHER: Blanco & Arias 924 (USJ).

blades rounded-deltoid, with the angles directed inwards, minutely papillate, each 1 mm long, 0.5 mm wide, margin entire; appendix digitiform, pointing toward stigma, minutely ciliate, 0.2 mm long. *Column* clavate, slightly curving downward, fused with the lip at its base, 1 mm long, anther terminal, 0.2 mm long; stigma ventral, partially bilobed. *Pollinarium* not seen. *Fruit* not seen.

Lepanthes gerardensis can be recognized by its short habit (less than 2 cm tall), widely elliptic leaves, relatively large flowers, and petals with a small lower lobe and red upper lobe. Otherwise, the flower morphology is typical of most species in the genus.

Its flowers are most similar to those of the Mexican *L. ancyclopetala* Dressler, but that species has a concave dorsal sepal and a smaller lip with pilose blades; furthermore, plants of *L. ancyclopetala* are taller (up to 6 cm tall) with narrowly elliptic leaves (figure 8 in Salazar-Chávez & Soto-Arenas 1996). Vegetatively, *L. gerardensis* resembles *L. papillipetala* Dressler, also from Mexico (figure 54 in Salazar-Chávez & Soto-Arenas 1996).

Behar & Tinschert (1998: 96) present a color photograph of a Guatemalan *Lepanthes* identified as *L. papillipetala* (the same flower and the whole plant are also illustrated in Balistrieri 1998: 53); this is consistent with Luer's interpretation of *L. papillipetala* (C. Luer, pers. commun. 2003). However, it is different from the interpretation of *L. papillipetala* in Salazar-Chávez & Soto-Arenas's (1996) revision of the Mexican species of *Lepanthes*; it is more similar to their illustration of *L. ancyclopetala*, and even more similar to *L. gerardensis*, at least in floral shape and color. Because Salazar and Soto not only studied the types of both species, but also studied populations of the type locality in Chiapas (the same for both *L. ancyclopetala* and *L. papillipetala*), I choose to follow their taxonomic interpretations.

Among its Costa Rican congeners, *Lepanthes gerardensis* resembles *L. excedens* Ames & Correll (= *L. empis* Luer) in plant size and leaf shape. The flowers are superficially similar, but the petals of the latter species are crescentiform, with angular upper and lower lobes, and the lip has narrow (non-peltate) strongly arching blades continuous with the connectives, as well as a stouter appendix.

ETYMOLOGY. Named after the San Gerardo Valley near Monteverde, where the species was found.

ECOLOGY: Apparently endemic to the Caribbean slopes of the Tilarán Cordillera of Costa Rica, in cloud forest at around 1000 m elevation.

Many plants were found growing on guava trees (*Psidium guajava*, Myrtaceae) in a pasture adjacent to primary forest. It appears to be a specialized twig epiphyte; the many plants observed were restricted to terminal branches of 1 cm or less in diameter, almost devoid of mosses or liverworts. Other well-known twig epiphytes such as *Erycina (Ptygmorchis) pusilla*, *Epidendrum vincentinum*, and *Hybochilus inconspicuus* also occurred on the same twigs.

Flowering occurs at least in January in the field, and possibly throughout the year. Several plants brought to Lankester Botanical Garden survived for about two years, flowering constantly under more or less uniform humidity conditions.

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