

Two new species of *Lepanthes* (Orchidaceae: Pleurothallidinae) from Costa Rica

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Summary. *Lepanthes cribbii* and *L. whittenii*, from Costa Rica, are described and illustrated.

Despite the monumental work by C. A. Luer, which disclosed the high diversity of *Lepanthes* Sw. in Costa Rica (Luer 1987, 1995, 2003), novelties in this species-rich genus of the *Orchidaceae* are continuously arising from botanical exploration in the country (Pupulin 2001, 2003; Blanco 2003). This may sound obvious for less known areas, relatively difficult to access, but it is also true for well-explored regions such as Monteverde. More than 3000 species of vascular plants were recorded there by Haber (2000), 400 of which are orchids according to Atwood (2000). The area of El Empalme, along the Pan-American Highway is similar; botanists have made important collections here for at least the last 50 years. This paper describes two new species of *Lepanthes* from the continental divide of the Cordillera de Tilarán and the Talamanca range in central Costa Rica. All cited specimens have been seen by the authors. Descriptive terminology follows Luer (1996).

***Lepanthes cribbii* Pupulin, sp. nov.** affinis *Lepanthidi mentosae* Luer sed sepalis maculis cinnabarinis notatis (versus sepalis flavis immaculatis), petalis labelloque scarlatinis (versus petalis aurantiacis rubro suffusis et labello rubro-aurantiaco), labelli corpo tenui emarginato (versus in mento prominenti protrudenti) dignoscenda. Typus: Costa Rica, Pupulin & Barboza 3211 (holotypus USJ; isotypus USJ-Spiritus).

Plant epiphytic, caespitose, patent to pendent, to 8 cm tall. *Roots* flexuous, about 0.5 mm in diameter. *Ramicauls* 1.4–5 cm long, covered by 5–11 lepanthiform, microscopically ciliate sheaths, the ostia obliquely dilated with microciliate margins. *Leaf* pendent, coriaceous, narrowly ovate, 2.3–3.1 × 0.9–

1.5 cm, emarginate, abaxially provided with a short apiculus, the base widely cuneate to subrounded, narrowed into a petiole 1 mm long. *Inflorescence* racemose, distichous, congested, successively flowered, borne behind the leaf, to 3 cm long; peduncle filiform, to 1.5 cm long. *Floral bracts* triangular-ovate, muriculate, about 1 mm long. *Pedicel* 1.5 mm long. *Ovary* clavate, rounded in section, 1 mm long. *Flowers* about 10 × 5 mm, the sepals hyaline, pale yellow, blotched with blood-red between nerves; the petals, the lip and column red. *Dorsal sepal* 5.5 × 3 mm, ovate, acuminate, concave, dorsally carinate, with denticulate margins, connate to the lateral sepals for about 1 mm. *Lateral sepals* obliquely subfalcate-ovate, 5 × 2.5 mm, acuminate, concave, dorsally carinate, with denticulate margins, the apices convergent, connate at the base 1.5 mm. *Petals* transversely bilobed, 0.5 × 3 mm, the lobes subfalcate-linear, rounded. *Lip* bilaminate, 1.3 × 1.0 mm, minutely pubescent, the blades dolabriform, acute, the connectives connate to the base of column, the body emarginate, provided with a tooth-like, puberulent, reflexed appendix, born under the apex of body. *Column* 1.5 mm long, with the anther dorsal, the stigma subapical (Fig. 1).

COSTA RICA. Puntarenas: Monteverde, Los Puentes, 1500 m, lower montane cloud forest, 2 June 2001, flowered in cultivation at Jardín Botánico Lankester, Universidad de Costa Rica, 11 July 2003, F. Pupulin & G. Barboza 3211 (holotype, USJ; isotype, USJ-Spirit). Monteverde, without collector, flowered in cultivation at Jardín Botánico Lankester, Universidad de Costa Rica, 21 Jan. 2004, F. Pupulin 5078 (paratype, USJ-Spirit).

HABITAT. Epiphytic in premontane, transition to lower montane cloud forest.

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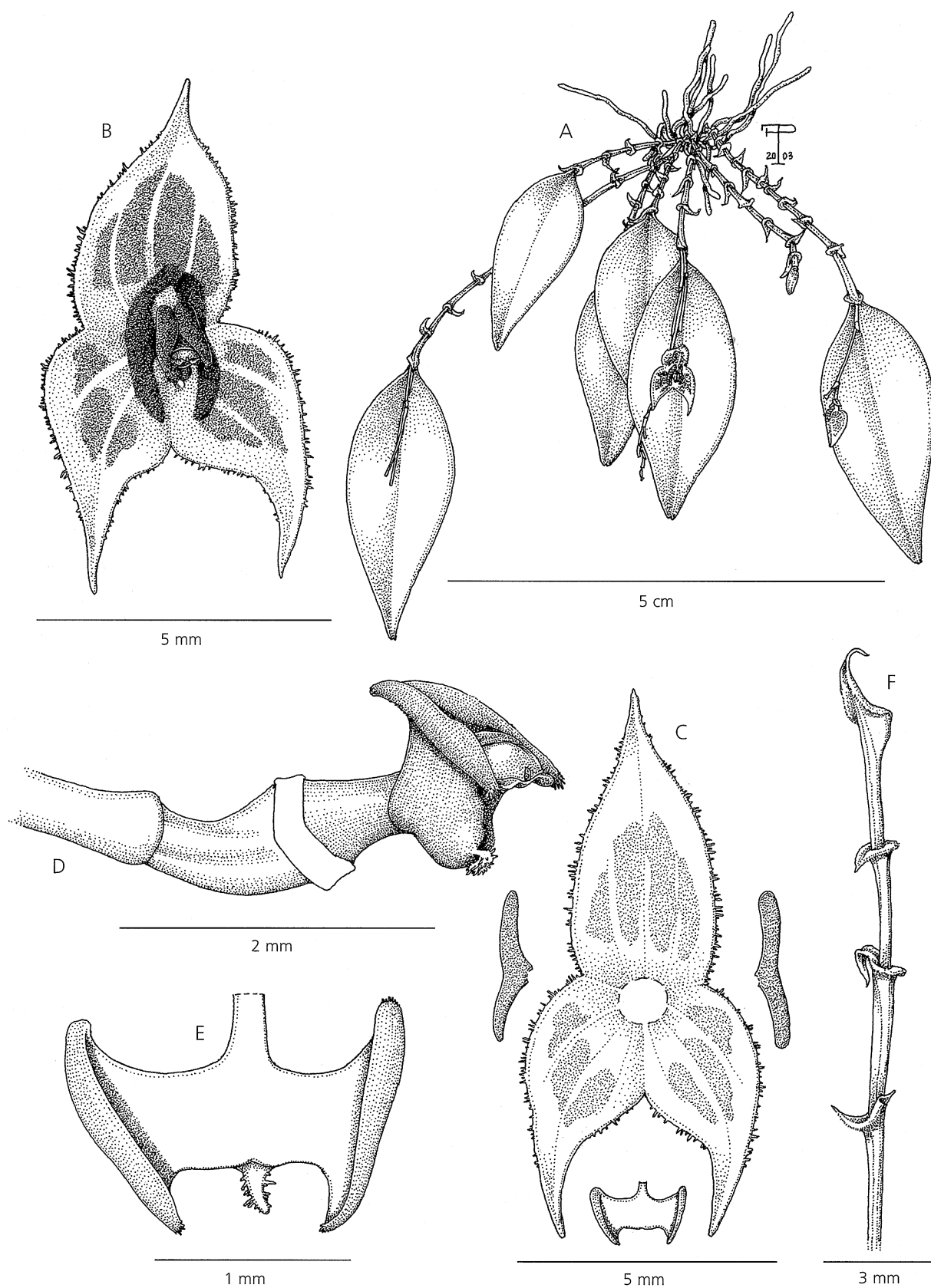


Fig. 1. *Lepanthes cribbii*. **A** habit; **B** flower; **C** perianth dissected; **D** lip and column, lateral view; **E** lip; **F** ramicaul. All from *Pupulin & Barboza* 3211. DRAWN BY F. PUPULIN.

DISTRIBUTION. Known only from Costa Rica.

DERIVATION OF NAME. In honour of Dr Phillip Cribb, Curator of the Orchid Herbarium at the Royal Botanic Gardens, Kew, and recognised taxonomic authority in the *Orchidaceae*.

Lepanthes cribbii is allied to *L. mentosa*, with which it is sympatric around the continental divide in Cordillera de Tilarán, northern Costa Rica, but is readily distinguished by the sepals that have large, blood-red blotches between nerves (versus yellow in *L. mentosa*), and the bright, scarlet-red colour of petals and lip (versus petals orange suffused with red and lip red-orange in *L. mentosa*). Furthermore, the lip of *L. mentosa* has a proportionally large, thick (about 0.5 mm) body, protruding into a mentum 0.7 mm long (from which the specific epithet *mentosa*), whereas the body of the lip in *L. cribbii* is thin (0.1 mm), with the sinus emarginate.

Lepanthes whittenii Pupulin & Bogarín, *sp. nov.* inter species generis *Lepanthidis* sepalis petalisque valde reflexis, petalis anguste bifalcatis acuminatis, labello magno bilaminato apicibus superpositis dignoscenda; a *Lepanthidi mephistophelidis* Luer & Hirtz similis, sed vaginis ramicaulibus ostia non dilatata (versus dilatata), folio ovato subacuto (versus abrupte acuminatum), lobis petalorum subequalis (versus lobo superno quam lobo infero multo majore), forma labelli dissimilis recedit; a *Lepanthidi quetzalense* Luer & Behar petalis acuminatis (versus acutis) multo majoribus, labelli lobis latioribus apicibus convergentibus differt. Typus: Costa Rica, Whitten, Blanco & Bogarín 2164 (holotypus USJ-Spiritus; isotypus USJ-Spiritus).

Plant epiphytic, caespitose, erect, to 9 cm tall. *Roots* flexuous, about 1 mm in diameter. *Ramicauls* 4–6.5 cm long, enclosed by 5–6 lepanthiform, microscopically pubescent sheaths, the ostia obliquely slightly dilated, with ciliate margins. *Leaf* erect, coriaceous, convex, abaxially spotted with purple, widely ovate to suborbicular, subacute, emarginate, abaxially provided with a short apiculus, 2.1–3.8 × 1.4–2.6 cm, the base cuneate to subrounded, narrowing into a petiole 1 mm long. *Inflorescence* racemose, distichous, congested, successively flowered, borne under the leaf, to 3 cm long; peduncle filiform, about 1.5 cm long. *Floral bracts* conduplicate, ovate, acute, muriculate, about 1 mm long. *Pedicel* 1 mm long. *Ovary* subglobose, rounded in section, 1 mm long. *Flowers* about 10 × 6 mm, the sepals pale reddish brown with the nerves tinged brownish red, spotted brownish red between nerves, the petals pale yellow, transversely striped with brownish red, the lip yellow. *Dorsal sepal* widely elliptic, acuminate, reflexed,

concave, 5 × 4 mm, connate to the lateral sepals for about 1 mm. *Lateral sepals* obliquely elliptic, acuminate, reflexed, concave, 5 × 3 mm, connate at the base 1.5 mm. *Petals* transversely bilobed, the apices reflexed, 1.2 × 8.5 mm, the upper lobe falcate, acuminate, 1 × 4 mm, the lower lobe narrowly falcate, 0.6 × 4 mm. *Lip* bilobate to sub-bilaminar, 1.5 × 1.8 mm, the blades narrowly ovate-falcate, poorly defined under the middle of blade, the rounded apices convergent, overlapping, the connectives linear-ligulate, the body rectangular, retuse, provided with an external appendix, borne under the base of body. *Column* 1.2 mm long, with the anther dorsal, the stigma apical. Anther cucullate, obcordate. Pollinia 2, obovate-obpyriform, on an elliptic caudicle (Fig. 2).

COSTA RICA. Border of San José and Cartago provinces: Pan-American Highway, km 52, El Empalme, c. 300 m after the turning to Santa María de Dota, 09°42'49.1"N, 83°56'58.2"W, 26 July 2003, W. M. Whitten, M. A. Blanco & D. Bogarín 2164 (holotype USJ-Spirit; isotype USJ-Spirit).

HABITAT. Epiphytic in roadside trees in lower montane wet forest along the ridge of the Cordillera de Talamanca in central Costa Rica; 2,295 m.

DISTRIBUTION. Known only from Costa Rica.

DERIVATION OF NAME. In honour of Dr W. Mark Whitten, of the Florida Museum of Natural History, University of Florida, who participated in the type collection, in recognition of his outstanding contributions to the systematics of advanced groups of the orchid family.

Lepanthes whittenii is distinguished by the strongly reflexed sepals and petals, the petals with narrowly falcate, acuminate lobes, and the large bilaminar lip with the apices overlapping. It differs from *L. mephistopheles* Luer & Hirtz, in the apices of the ramicaul sheaths addressed to the stem (versus dilated in *L. mephistopheles*), the subacute apex of the leaf (abruptly acuminate in *L. mephistopheles*), the subequal lobes of the petals (the upper lobe much larger than the lower lobe in *L. mephistopheles*) and the differently shaped lip. *Lepanthes quetzalensis* Luer & Behar, has shorter, acute petals and narrower lobes of the lip, with the convergent apices not overlapping.

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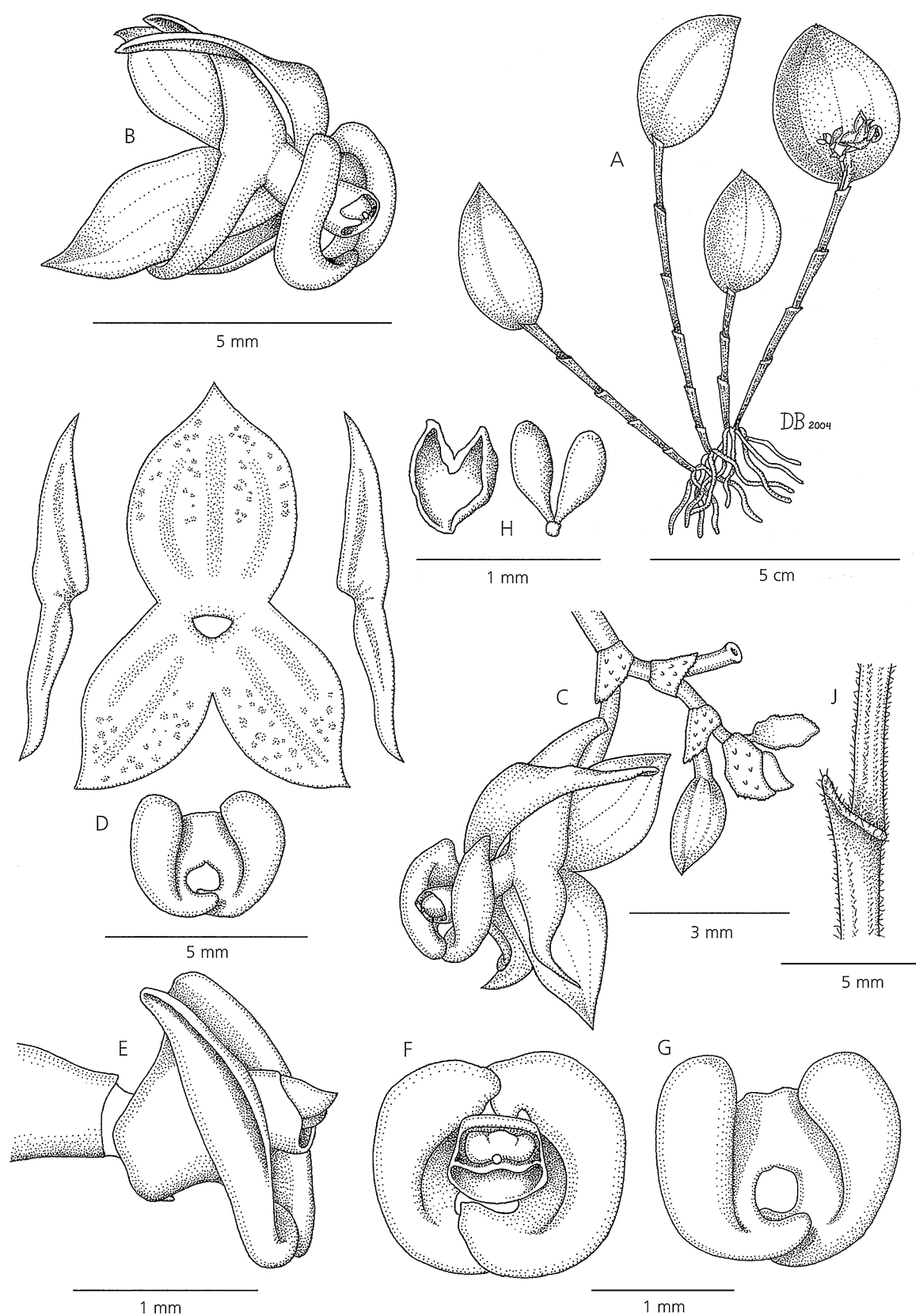


Fig. 2. *Lepanthes whittenii*. **A** habit; **B** flower; **C** apex of inflorescence; **D** perianth dissected; **E** lip and column, lateral view; **F** lip and column, frontal view; **G** lip, frontal view; **H** anther and pollinarium; **J** ramicaul. All from Whitten, Blanco & Bogarín 2164. DRAWN BY D. BOGARÍN.

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