

Restrepiella lueri Pupulin & Bogarín, **sp. nov.**

Holotype: Cultivated at Jardín Botánico Lankester from the collection “Costa Rica, Alajuela, Los Ángeles de San Ramón, c. 800-1000 m, by D. Jiménez”, vouchered 14.12.2006, *D. Bogarín 3009* (CR; isotypes: Jardín Botánico Lankester [spirit], USJ [spirit]) – Fig. 1, 2.

A forma typica *Restrepiellae ophiocephalae* floribus plerumque cleistogamis statim dignoscenda; ab ea et forma *clausa* Bock sepalis lateralibus liberis marginibus irregulariter laceratis, petalis tribus carinis humilis ornatis, labello elliptico petalis aequilongo columnae duplo majore, apicaliter hirsuto marginibus ciliatis, tribus carinis ornato, lateralibus humilioribus, basi lobulis destituta, columna apoda recedit.

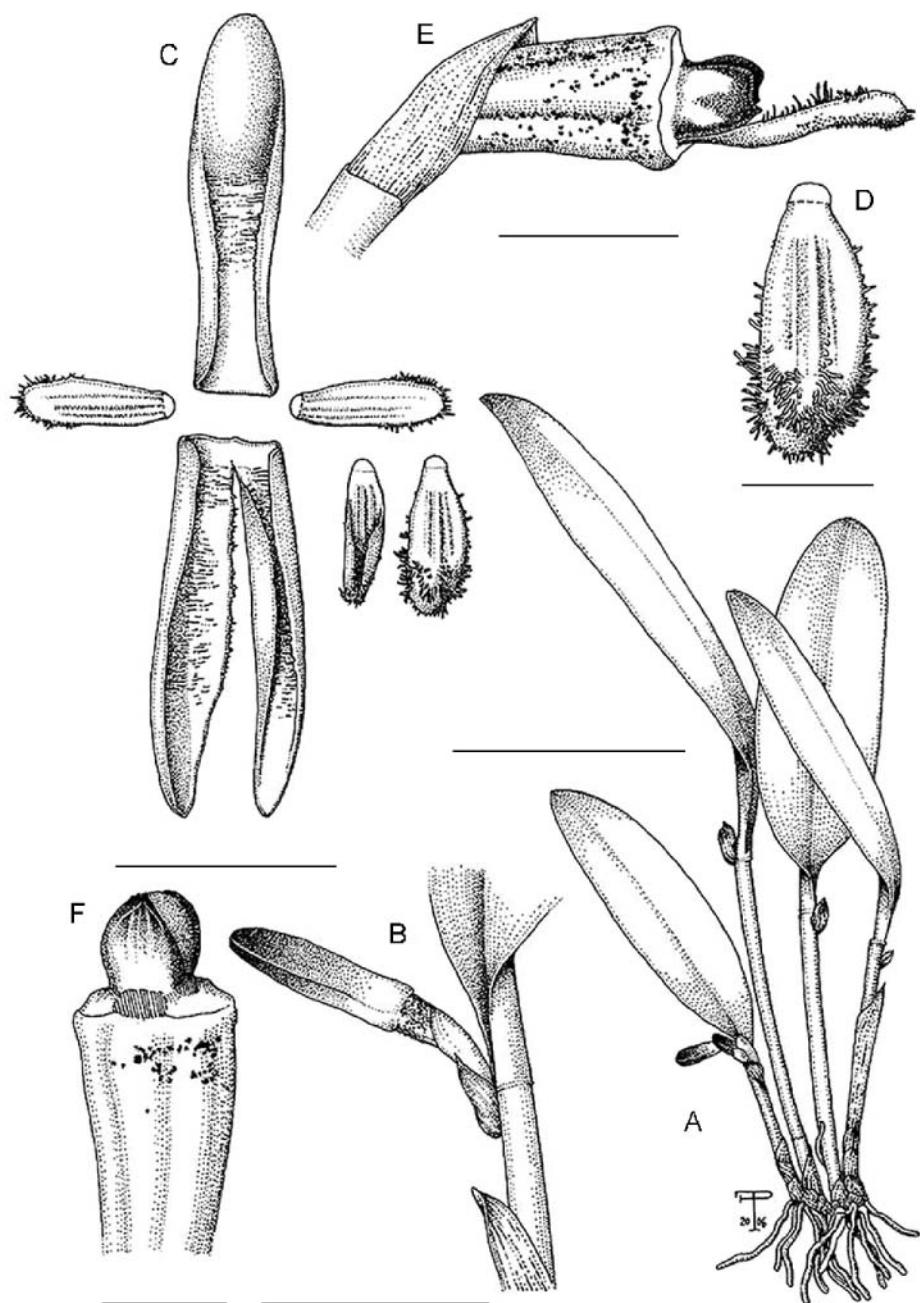


Fig. 1. *Restrepiella lueri* – A: habit; B: apex of stem and inflorescence; C: dissected perianth; the lip in natural position (left) and flattened (right); D: lip, flattened; E: ovary, column and lip, lateral view; F: column, ventral view. – Scale bar: A = 5 cm, B = 2 cm, C = 1 cm, D = 3 mm, E = 5 mm, F = 3 mm. – Drawn from the holotype.

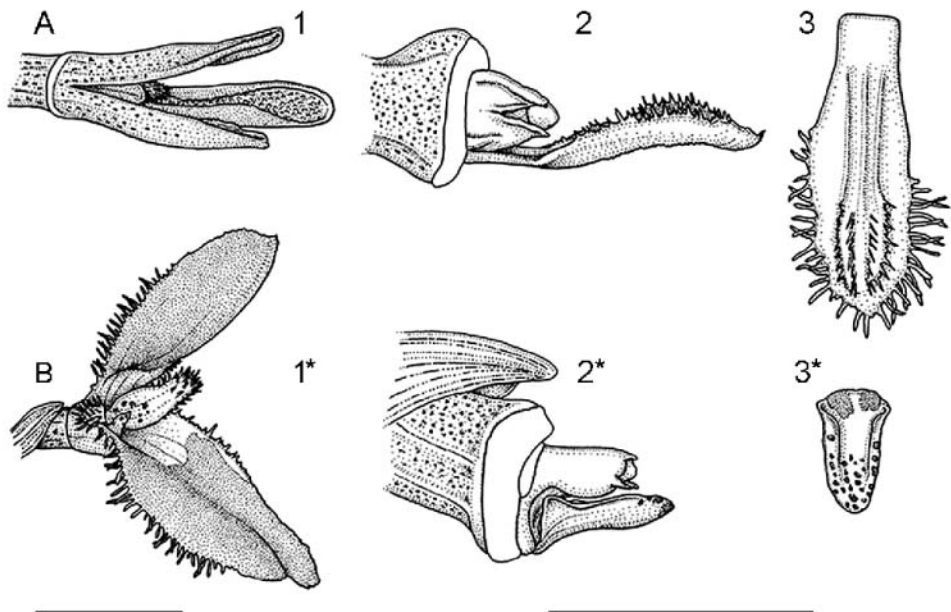


Fig. 2. Comparison between *Restrepiella lueri* (A) and *R. ophiocephala* (B) – 1-1*: flower; 2-2*: column and lip, lateral view; 3-3*: lip, adaxial view. – Scale bar: 1, 1* = 1 cm; 2-3, 2*-3* = 5 mm; A after Bogarín 3009 (Jardín Botánico Lankester [spirit]), B after Jardín Botánico Lankester 04262 (id., [spirit]).

Epiphytic, caespitose herb with monophyllous stems, to 23 cm long. *Roots* slender, flexuous, c. 1 mm in diameter. *Stems* terete, stout, erect, 3.5–8.5 cm long, 3–3.5 mm in diameter, covered by 3–4 short (to 9 mm long), imbricating, papyraceous sheaths at the base, and a tubular, apically loose, membranaceous sheath (becoming papyraceous and eventually shed with age) to 4.5 cm long, mostly exceeding half of the stem length. *Leaf* elliptic, coriaceous, erect, subacute to broadly obtuse, slightly emarginate at apex, cuneate at the base into a distinct petiole, 7–11.5 × 1.9–2.8 cm, the abscission layer a slightly protruding, rounded ring. *Inflorescence* a fascicle of 2–3 flowers produced singly in succession from a conspicuous, papyraceous, ovate-triangular, boldly nerved spathe near the apex of the stem, without an annulus, c. 1 cm long. *Peduncle* stout, cylindrical, 3 mm long. *Floral bract* membranaceous, semiamplectent, shorter than the ovary, 7 × c. 4 mm. *Ovary* cylindrical-subclavate, minutely and shortly hirsute-verrucose, 7 mm long, 3.7 mm wide at apex. *Flowers* cleistogamous, rarely partially opening and autogamous, boldly suffused with purple from a white base, externally glabrous. *Dorsal sepal* narrowly elliptic-oblong, rounded, apically convex into a distinct cushion, 15–18 × 5–6 mm, externally glabrous, the inner surface with short, transversal, low warts, the basal margins inrolled-replicate and irregularly serrulate. *Lateral sepals* narrowly elliptic-lanceolate, subacute, 16–18 × 4 mm, shortly connate at the base for less than 1 mm, adaxially marked with short, transversal, low warts, the margins strongly inrolled-tubular, irregularly ciliate-sublacerate. *Petals* linear-oblong, rounded, glabrous, 6 × 2 mm, 3-nerved, the nerves adaxially protruding into low, rounded keels, the apical margins ciliate. *Lip* elliptic from a shortly cuneate base, rounded, 4.5 × 2.5 mm, hirsute at apex, with 3 rounded keels running from the base to over the half of the blade, the lateral keels lower, the margins densely long-ciliate, apically strongly infolded in natural position. *Column* stout, quadrangular-cubic, bidenticulate on the lower apex, the margins shortly winged, the stigma ventral. Unpollinate column and *pollinia* not seen.

Eponymy. – Named in honour of Carlyle A. Luer, who more than any other botanist has contributed to the understanding of the diversity of *Pleurothallidinae* and their systematics.

Distribution and habitat. – Known only from the type locality in Costa Rica, close to the continental divide of the Tilarán mountain range, between 800 and 1000 m elevation. The species grows as an epiphyte in tropical wet forest, premontane belt transition and premontane rain forest in secondary vegetation along a small stream. According to Bock (1996), populations of *Restrepiella* are very common in Mexico but less frequent in other Central American regions. In Costa Rica, in spite of their large size compared with other pleurothallid species, plants of *Restrepiella* are poorly known ecologically and apparently rare in the field (Mora-Retana & Atwood 1992), at least judging by the few specimens represented in herbaria and living collections.

Phenology. – Flowering occurs mostly from late November to January, roughly corresponding in Costa Rica to the end of the rainy season.

Discussion

Although the number of pollinia has been traditionally emphasized as the essential diagnostic feature of *Restrepiella* (i.e., Luer 1986, Dressler 1993, 2003), the genus can be easily characterized among the *Pleurothallidinae* by a unique set of macro-morphological features, such as the caespitose plants with stem not cane-like, formed by two internodes, without an annulus, provided with cauline, tubular, not leafy nor lepanthiform sheaths, the single, not sheathing leaf attenuate at the base into a petiole, the flowers emerging near the apex of the stem, the fascicled inflorescence of solitary flowers and the sepals not united at their apices (Solano Gómez 2005).

Restrepiella lueri is distinguished from its relative, *R. ophiocephala*, as well as from the forma *clausa* of the latter species, by the free lateral sepals with irregularly dentate margins (vs. connate into a ciliate synsepal), the petals provided with three low, longitudinal keels (vs. smooth), the elliptic, simple lip with the basal margins flat, provided with three low, longitudinal keels (vs. 3-lobed, with erect, basal angles and two high keels), longer than column and as long as the petals (vs. as long as the column and shorter than petals), hirsute at apex and ciliate along the margins (vs. entire), and the column without a foot (vs. with a distinct foot). The flowers of *R. lueri* are mostly cleistogamous, but in some cases the segments of the perianth spread out slightly before self-pollination takes place, and D. Jiménez photographed a cultivated specimen of *R. lueri* with the flower almost completely open at anthesis. When they show the cleistogamous condition, plants of *R. lueri* are likely undistinguishable from those of *R. ophiocephala* f. *clausa* without dissection of the flower.

Key to the species of *Restrepiella*

1. Lip without basal lobes, hirsute at apex and ciliate along the margins, twice longer than the column and as long as the petals; column without a foot; lateral sepals free *R. lueri*
- Lip provided with erect basal lobes, entire at apex and along the margins, slightly longer than the column and shorter than petals; column with a distinct foot; lateral sepals connate into a synsepal 2
2. Flowers always opened at anthesis, not autogamous; trichomes at the apex of petals simple *R. ophiocephala* f. *ophiocephala*
- Flowers cleistogamous; trichomes at the apex of petals dendroid *R. ophiocephala* f. *clausa*