TWO NOVELTIES IN GENUS PLATYSTELLE (ORCHIDACEAE: PLEUROTHALLIDINAE) FROM COSTA RICA

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ABSTRACT. Two new species of Platystele allied to the P. oxyglossa complex are described from Costa Rica. Platystele carl-lueriana can be distinguished from P. catiensis and P. oxyglossa by the compact inflorescence that barely exceeds the leaf, from P. pedicellaris by the large plants with long leaves and small flowers, and from P. tausensis by the yellowish sepal and petals (vs. purple stained) and the minutely glandular (vs. apically hirsute) lip. The second species, Platystele jane-lueriana, can be easily distinguished by the glabrous flowers, and the conspicuously inflated, bulbous lip, with an incurved apex. Among the other members of the complex, it is most closely resembles P. pedicellaris in the compact inflorescence that is subequal to the leaves, but is distinguished by tail-less sepal and the linear-ligulate petals. With these additions, the total number of Costa Rican Platystele reaches twenty species.

KEY WORDS: Flora of Costa Rica, new species, Platystele carl-lueriana, Platystele jane-lueriana, taxonomy

Introduction. Platystele Schltr. belongs to subtribe Pleurothallidinae and currently includes about 110 species (Karremans et al. 2016). The genus is closely related to Scaphosepalum Pfitzer and Teagueia (Luer) Luer, all belonging to the Specklinia Lindl. affinity (Pridgeon, Solano & Chase 2001, Karremans 2016). Species of Platystele can be recognized by the small plants, the tiny flowers, which are frequently flat, with free and spreading sepals and petals, a simple lip with a basal glenion, a short column with an apical anther and bilobed stigma (Luer, 1990).


While revising material of Platystele in preparation for a revision of the genus from Costa Rica, we encountered two unnamed entities. Unfortunately, we were unable to retrieve any additional material for study, and have to rely on what is currently available to name these two distinct taxa. They are described here forth bringing the total number of species of Costa Rican Platystele to twenty.

TAXONOMIC TREATMENT

Platystele carl-lueriana Karremans & Bogarin, sp. nov. (Fig. 1–2).


Platystele carl-lueriana is florally similar to P. catiensis and P. oxyglossa Schltr., but can be easily distinguished the compact inflorescence that barely exceeds the leaf (versus an elongate, loosely flowered inflorescence).

Plant minuscule, epiphytic, caespitose, erect, up to 2.4 cm tall, including the inflorescence. Roots basal, flexuous, filiform. Ramicauls erect, slender, abbreviated, enclosed by tubular, imbricating, slightly compressed, membranous sheaths, becoming brownish

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and papery with age. Leaf narrowly-elliptic to ligulate, erect, conduplicate, subacute, emarginate, abaxially keeled and terminating in a short apiculus, 1.9–2.1 × 0.1–0.2 cm, narrowed at the base into a conspicuous, conduplicate petiole. Inflorescence racemose, distichous, congested, successively flowered, with one flower open at a time, shortly surpassing the leaf, up to 2.2 cm long, peduncle to 1.8 mm long, pedicels 2–3 mm long. Floral bracts acute, conduplicate, to 0.1 mm long. Ovary terete, smooth, to 0.6 mm long. Flower with the sepals and petals yellowish, the lip and column red. Dorsal sepal narrowly ovate to lanceolate, acute-acuminate, margin erose-dentate, spreading, 2.3 × 1.0 mm. Lateral sepals subequal to the dorsal sepal, slightly oblique, ovate, acute, shortly apiculate, margin erose-dentate, spreading, 1.7–1.8 × 1.0–1.1 mm. Petals obliquely lanceolate to narrowly-ovate, margin erose-dentate, spreading, acute, 1-veined, 1.8–1.9 × 0.7–0.8 mm. Lip narrowly-ovate, acute, margin erose-dentate, glandular, with a small glenion at the base, 1.2–1.3 mm × 0.6 mm. Column short, sub-cylindrical, 0.3–0.4 mm long. Anther apical cucullate, pollinia two, laterally flattened. Stigma subapical, transversely bilobed at each side of the anther.

Eponymy: The name honors Carlyle A. Luer on his 95th birthday. Luer has dedicated four decades to the study of Pleurothallidinae, his work set a solid base for other authors to study the species of this tremendously diverse and complex subtribe. It is in great part thanks to his monographs that we are now able to reveal the novelties here described.

Phenology: Plants were registered to flower in August.

Habitat and Distribution: Apparently endemic to Costa Rica, where it is known only from the type locality. Plants grow in secondary forest, at about 457 m in elevation.

The new species is a member of the Platystele oxyglossa species complex. It can be easily distinguished from the florally similar P. cattensis (Fig. 3) and P. oxyglossa Schltr. (Fig. 4) by the compact inflorescence that barely exceeds the leaf (versus an elongate, loosely flowered inflorescence). The most vegetatively similar species are P. pedicellaris (Schltr.) Garay (Fig. 5) and P. tausensis (Fig. 6), the first is...
easily distinguished by the shorter plants and larger flowers (sepals 1.7–2.0 × 1.0–1.1 mm vs up to 6 × 2.0 mm), and the second by the purple stained sepals and petals (vs. yellow-green) and the hirsute lip apex (vs. glabrous). The new species is also somewhat reminiscent of *P. propinqua* (Ames) Garay (Fig. 7), but differs in the narrow, acuminate lateral sepals, petals and lip (vs. lateral sepals and lip ovate and acute).
Platystele jane-lueriana Karremans & Bogarin, sp. nov. (Fig. 8).


Similar to Platystele pedicellaris, but is distinguished by tail-less sepal and the linear-ligulate petals (vs. acuminate sepals and elliptic petals).

Plant minuscule, epiphytic, caespitose, erect, up to 1.3 cm tall, including the inflorescence. Roots basal, flexuous, filiform. Ramicauls erect, slender, abbreviated, enclosed by tubular, imbricating, slightly compressed, membranous sheaths. Leaves elliptic, erect, thick, conduplicate, subacute, emarginate, abaxially keeled and terminating in a short apiculus, 6.5–9.0 × 2.1–2.7 mm, narrowed at the base into a conduplicate petiole. Inflorescence racemose, distichous, successively flowered, with one flower open at a time, up to 1 cm long, peduncle to 8.5 mm long, pedicels 1 mm long. Floral bracts acute, conduplicate, to 3–5 mm long. Ovary terete, smooth, to 5 mm long. Dorsal sepal narrowly lanceolate-elliptic, acute, with a conspicuous mid-vein, spreading widely, 4.8 × 1.4 mm. Lateral sepals subequal to the dorsal sepal, narrowly ovate, with a conspicuous mid-vein, acute, with a conspicuous mid-vein, spreading widely, 4.3–4.5 × 1.8–2.0 mm. Petals spreading widely, narrowly linear-ligulate, acute, 1-veined, 4.5–4.8 × 0.8–1.1 mm. Lip ovate-elliptic, shortly acuminate, apically incurved (in the only specimen), glabrous, with a small glenion at the base, 4.0 × 1.7 mm. Column short, subcylindrical, 0.6 mm long. Anther apical, Pollinia not seen. Stigma subapical, transversely bilobed at each side of the anther.

Eponymy: The name honors Jane Luer, wife and long life companion of Carl Luer, and who undoubtedly has played a key role in these four decades of Luer’s studies of the Pleurothallidiniae.

Phenology: The plant was registered to flower in June, however, likely its flowering period is much longer.

Habitat and distribution: Apparently endemic to Costa Rica, where it is known only from the type locality around Moravia de Chirripó in the Caribbean watershed of Cordillera de Talamanca. Plants grow in secondary forest at 1135 m in elevation.

Among the species of the P. oxyglossa complex, P. jane-lueriana can be distinguished by the glabrous flowers, and the conspicuously inflated, bulbous lip, with an incurved apex (at least in the studied specimen). It most closely resembles Platystele pedicellaris in the compact inflorescence that is subequal to the leaves, but is distinguished by tail-less sepal and the linear-ligulate petals (vs. acuminate sepals and elliptic petals).

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Literature cited


Figure 8. *Platystele jane-lueriana* Karremans & Bogarin. A. Habit and flower. B. Dissected perianth. C. Ovary, column and lip, lateral view. Drawing by A.P. Karremans and Joan Ramírez from the holotype.


