

PLEUROTHALLIS PUYOENSIS (ORCHIDACEAE: PLEUROTHALLIDINAE):
A NEW SPECIES OF SUBSECTION MACROPHYLLAE-FASCICULATAE FROM
EASTERN ANDEAN SLOPES OF ECUADOR

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ABSTRACT

Pleurothallis puyoensis (Orchidaceae: Pleurothallidinae), a new species from the eastern slopes of Andes of Ecuador in the province of Pastaza is formally described and illustrated, and their relationship to morphologically closely related species is discussed.

RESUMEN

Pleurothallis puyoensis (Orchidaceae: Pleurothallidinae), una nueva especie de las estribaciones orientales de los Andes de Ecuador es formalmente descrita e ilustrada, se discuten sus relaciones con las especies morfológicamente cercanas.

KEY WORDS: Endemics, Pastaza, *Pleurothallis cardiostola*-*P. lilijae* complex, Seikes

INTRODUCTION

Pleurothallis R. Br. (Orchidaceae) is the fourth largest genus of Neotropical Orchidaceae, comprising about 500 species of mostly epiphytic herbs (Luer 1986, 2005; Karremans & Vieira-Uribe 2020). It is distributed from sea level to more than 3000 m of elevation, from Central America to South America and also in the Caribbean Islands (Luer 1986; Pridgeon 2005). Within subgenus *Pleurothallis*, the subsection *Macrophyllae-Fasciculatae* (Lindley 1859) has been defined as the most species rich infrageneric grouping, comprising ca. 247–317 described species (Wilson et al. 2022). This subsection includes the *Pleurothallis cardiostola*-*P. lilijae* complex that comprises 27 species, and is widely distributed, from Costa Rica in the north, to Paraguay in the south (Luer 2005; Pupulin 2021; Wilson et al. 2022). The *Pleurothallis cardiostola*-*P. lilijae* complex has been circumscribed by the following features: “a mature leaf that is deflexed, highly coriaceous, ovate-to-lanceolate, somewhat conduplicate in the basal portion, with a cordate base where the edges of the basal lobes are incurved; persistent leaves of juvenile or pedomorphic form that are erect, less coriaceous, lanceolate, with a cuneate rather than cordate base, of similar size to mature leaves; an erect, papery spathaceous bract; non resupinate flowers that are concolorous and microscopically papillose-to-trichomatous; spathulate petals that are reflexed behind sepals; a lip that is concave with elevated apical and lateral edges, with a prominent glenion; and secretion of nectar-like liquid from the apical and lateral edges of the lip as well as from the glenion” (Wilson et al. 2022).

In recent years, field exploration in the eastern slopes of central and southern Andes of Ecuador has yielded the discovery of several undescribed species of *Pleurothallis* subsection *Macrophyllae-Fasciculatae* (Jiménez et al. 2021, 2023). In this paper a new species of *Pleurothallis* that belong to the *P. cardiostola*-*P. lilijae* complex of subsection *Macrophyllae-Fasciculatae* is formally presented here.

1. *Pleurothallis puyoensis* Criollo, **sp. nov.** (Figs. 1, 2). TYPE: ECUADOR. PASTAZA: Parroquia Veracruz, San Pablo de Talin, Los Seikes, Tropical premontane rainforest, ca. 1°31'44.81"S, 77°51'59.0"W, 750–800 m, 18 Oct 2024 (fl), D. Criollo 5 (HOLOTYPE: GUAY).

Diagnosis.—*Pleurothallis puyoensis* is similar to *P. lilijae* Foldats (1968), but the former new species differs from the later by petals sessile (vs. unguiculate), shorter ovary (2.3–3 mm vs. 5–8 mm long), smaller dorsal sepal (3.3–4 × 3–4.5 mm vs. 7–13 × 7–10 mm), smaller synsepal (4–4.2 × 2.5–3 mm vs. 8–12 × 3.5–5 mm), and lip adnate (vs. erect).

Description.—Plant **epiphytic**, ca. 13 cm tall, caespitose; roots slender, 1 mm diam. **Ramicauls** slender, suberect, terete, 5–8 cm long, 1–1.5 mm diam., light green, tubular sheath below the middle 2–2.5 cm, and one at base ca. 0.7 cm. **Leaf** spreading, coriaceous, lanceolate, 6–6.5 × 2.2–3 cm, the apex acuminate, the base cordate, the basal lobes not overlapping, concave, sessile. **Inflorescence** a fascicle of up to 10 successive flowers, but just one open at time, arising from a reclining spatheaceous bract arranged at the base of the leaf, 7 mm long, 1–2 mm broad, the sheath clefted or split in irregular narrow lobes at distal third; peduncle 1–1.3 mm long, floral bract ca. 3 mm long, pedicel 7–7.5 mm long; **ovary** conical-cylindric, 2.3–3 × 0.5–1.5 mm, longitudinally sulcate, cellular-glandular and with scattered black dots; **flower** resupinate, **sepals** cellular-glandular to cellular papillose, the dorsal sepal purple and slightly yellowish, broadly ovate-orbicular or suborbicular, broadly obtuse and slightly acuminate, 3.3–4 × 3–4.5 mm, faintly 5-veined, slightly convex, the lateral sepals connate into an ovate synsepal, slightly retrorse, rounded and barely notched at apex, 4–4.2 × 2.5–3 mm, purplish to purplish-yellow, inconspicuously 4-veined; **petals** cellular-glandular to cellular papillose, dark purple or burgundy, the margins hyaline, shortly lanceolate to subfalcate, sessile, acute to acuminate, 3–3.2 × 1.4–1.8 mm, inconspicuously 3-veined. Lip adnate, fused to the column foot, a subtriangular thick hood, 1.7–2.1 × 1.3–2 mm, cellular papillose, purple to burgundy, auriculate at base, broadly obtuse and adaxially channeled at apex, bearing an inner sulcus, the sulcus longitudinally thinly septate, slightly contracted at lower half, rounded to blunt at apex; **column** short and stout, 1.5–1.7 × 0.7–1.2 mm, dorsally complanate, with a couple of lateral auricular calli, **anther** narrowly pyriform, pollinia 2, clavate, ca. 0.8 × 0.4 mm, yellow; **stigma** apical, truncate. **Fruit** not seen.

Habitat and distribution.—Known only from the type locality in Los Seikes a conserved evergreen private forest that is located 800 m, 14.5 kilometers E from Puyo city, in the eastern slopes of Andes, Province of Pastaza, southeastern Ecuador.

Discussion.—*Pleurothallis puyoensis* may resemble *P. lilijae*, distributed in eastern Andes from Venezuela to Bolivia, mostly from 1800 to 3500 m, but the new species differ by the characters discussed in the diagnosis. The leaf shape, as well as the pronounced veins of the leaf of *P. puyoensis* is very similar to that of *P. baudoënsis* from the Department of Choco in Colombia. However, the two species can be distinguished by morphological differences in the flower. *Pleurothallis puyoensis* has a fully adnate lip (vs. a suberect lip in *P. baudoënsis*), and a broadly ovate, concave synsepal (vs. an oblong, convex synsepal with revolute margins in *P. baudoënsis*).

Etymology.—The epithet *puyoensis* refers to the city of Puyo that is the closest city in the area of influence where the new species occur.

Phenology.—Flowering specimens were blooming in September and October. The species has been in permanent field observation by D. Criollo since 2023, to the present no fruits have been observed.

Conservation status.—*Pleurothallis puyoensis* is known only from the type locality. As the area of occupancy of the species is less than 100 km², and the fact that to the present it has not been found fruiting, it is suggested that this new species should be assigned as Critically Endangered (CR) following the IUCN criterion B1 (IUCN 2022).

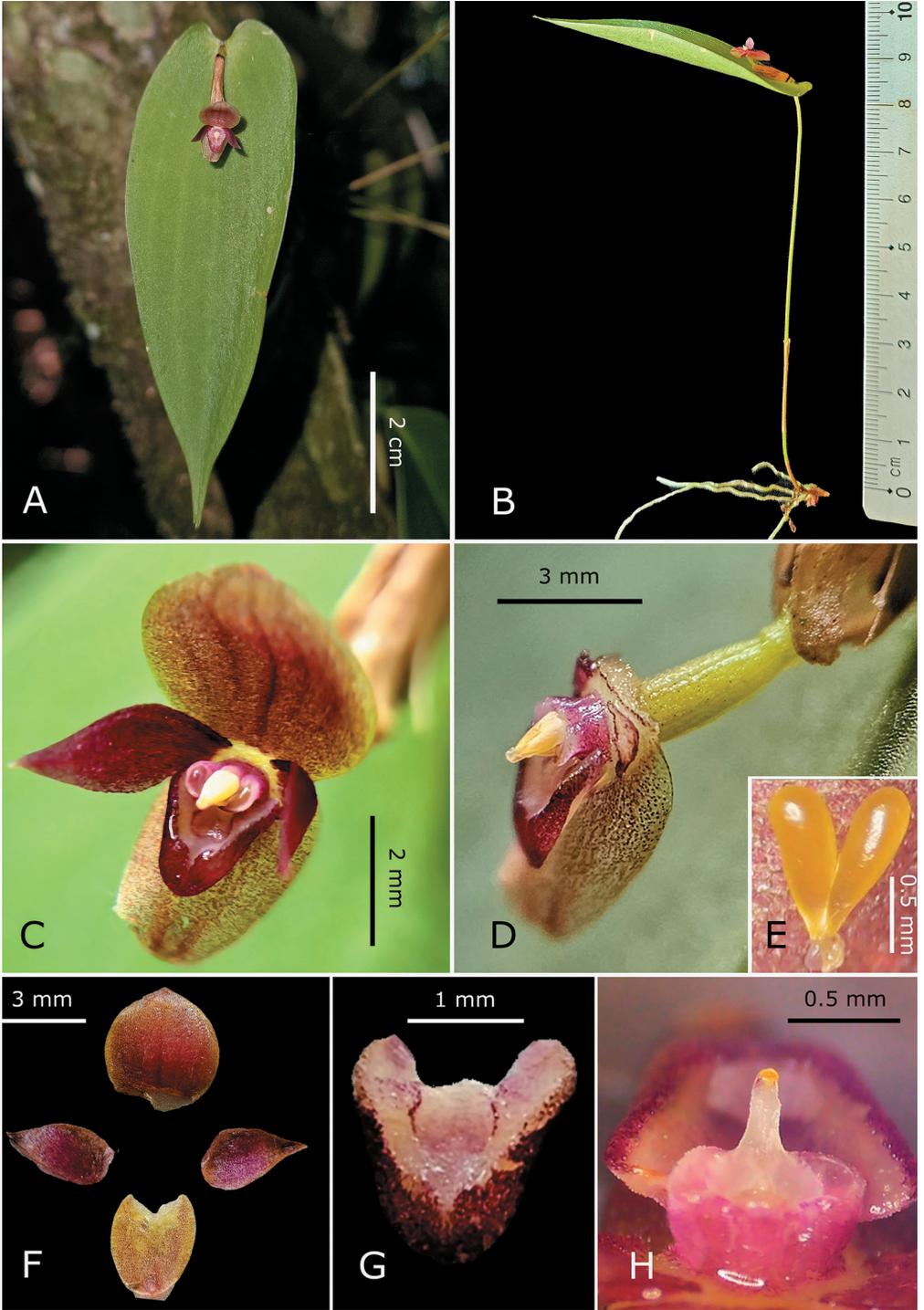


FIG. 1. *Pleurothallis puyoensis* Criollo. A. Leaf blade and flower, adaxial view. B. Lateral view of plant. C. Flower at anthesis. D. Lateral view of flower, the tepals detached. E. Pollinia. F. Detached tepals. G. Lip. H. Column and rostellum. A–H based on the type. Photos by Dayana Criollo.

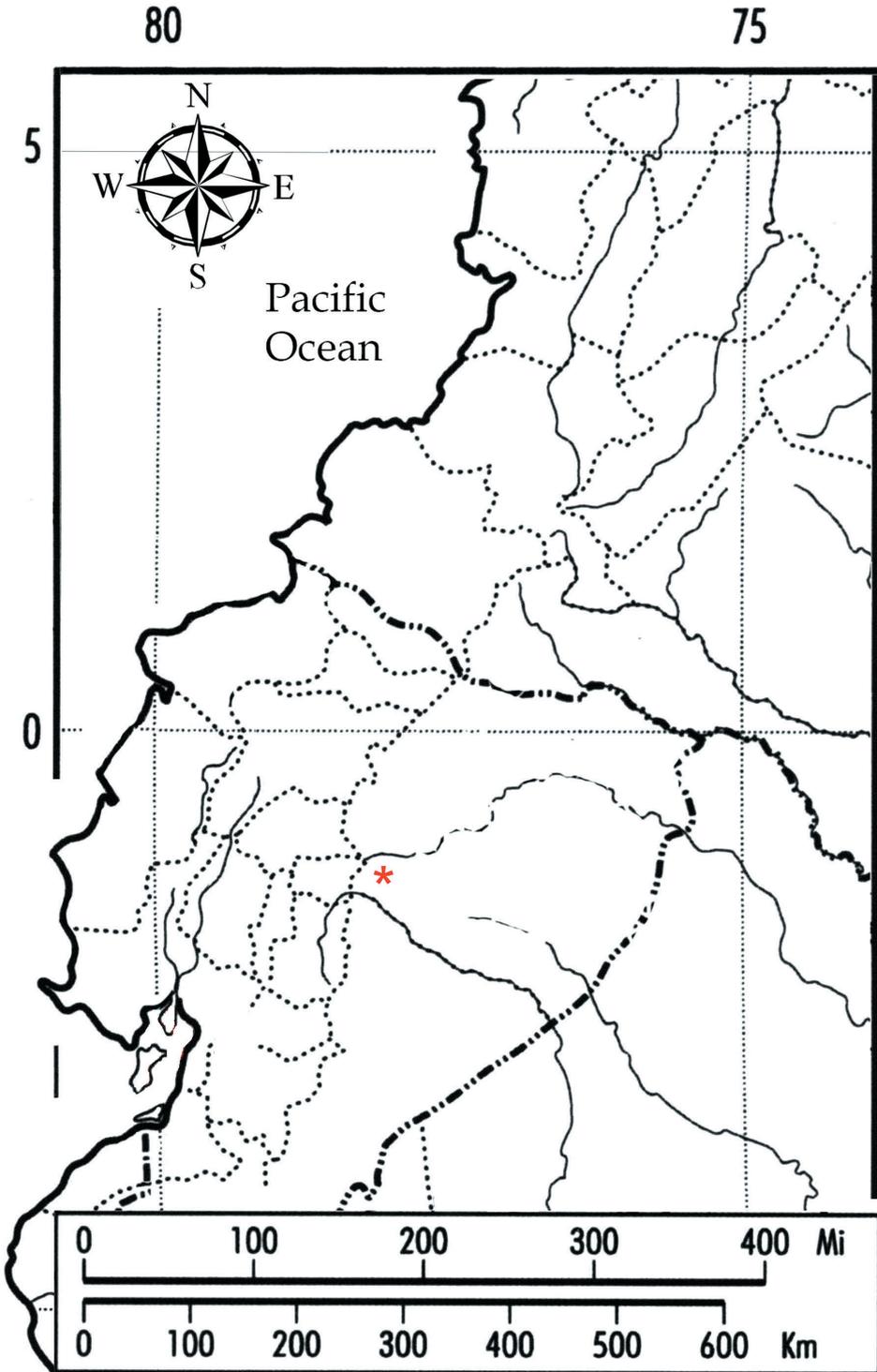


FIG. 2. *Pleurothallis puyoensis* Criollo. Map of distribution.

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