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***PLEUROTHALLIS CHICALENSIS*, A NEW SPECIES IN SUBSECTION *MACROPHYLLAE-FASCICULATAE* (ORCHIDACEAE: *PLEUROTHALLIDINAE*) FROM NORTHWESTERN ECUADOR**

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ABSTRACT. A new species of *Pleurothallis* in subsection *Macrophyllae-Fasciculatae* from Ecuador is described, illustrated and its relationship with other species is discussed. *Pleurothallis chicalensis* is compared with *P. dewildei*, from which is distinguished by the ovate leaves, the yellow flowers with broadly obovate synsepal and the transversely cordate lip with apiculate apex.

RESUMEN. Una especie nueva de *Pleurothallis* de la subsección *Macrophyllae-Fasciculatae* de Ecuador es descrita, ilustrada y su afinidad con otras especies es discutida. *Pleurothallis chicalensis* se compara con *P. dewildei*, de la cual difiere por las hojas ovadas, las flores amarillas con el sinsépalo ampliamente obovado y el labelo transversalmente cordado con el ápice apiculado.

KEY WORDS: Andes, Carchi, *Pleurothallis bovilingua*, *Pleurothallis dewildei*, taxonomy

Introduction. In the genus *Pleurothallis* R.Br. *sensu* Pridgeon *et al.* (2005) there are between 478 and 625 species (Wilson unpubl. data), depending on synonymy, making it the third largest genus in Pleurothallidinae, after *Lepanthes* Sw. and *Stelis* Sw. The genus is distributed from Central America and the Caribbean Islands to South America, where most of the species are epiphytes in cloud forests of the Andes (Doucette *et al.* 2016).

Section *Macrophyllae-Fasciculatae* Lindl. was created as part of *Pleurothallis* infrageneric classification by Lindley (1859), which was later considered by Luer (1986) in his initial systematics of genus *Pleurothallis* and subsequently demoted to a subsection of the same name (Luer 1988). However, in 2005 he resurrected the genus *Acronia* C.Presl,

grouping the subsections *Acroniae* (C.Presl) Luer and *Macrophyllae-Fasciculatae* (Lindl.) Luer (Luer 2005).

Recently, phylogenetic relationships of *Pleurothallis* have been evaluated from DNA sequence analysis (Pridgeon *et al.* 2001, Wilson *et al.* 2011, 2013, unpubl. data). The studies revealed the close relationship of subsection *Macrophyllae-Fasciculatae* with the type species *Pleurothallis ruscifolia* (Jacq.) R.Br. that supports the inclusion of this group within *Pleurothallis* versus *Acronia* (Wilson *et al.* 2016).

Luer (2005) in revision of subsection *Macrophyllae-Fasciculatae* indicated that members of the group are distinguished by their sessile leaves with a cordate base, single flowers with lateral sepals connate into a synsepal, and a bilobed stigma. Since

Luer's revision, about a dozen new species have been described in this group, bringing the number to between 236 and 305 species, depending on synonymy (Wilson unpubl. data).

Northwestern Ecuador has been the source of several new orchid discoveries in the recent years. Exhaustive exploration carried out in the forests of El Carchi Province, near the Colombian border has resulted in the discovery of species like *Porroglossum raoi* Baquero & Iturralde and *Platystele baqueroi* Jost & Iturralde. In 2016, Luis Baquero found an unknown species of *Pleurothallis* from subsection *Macrophyllae-Fasciculatae* in this area. This species with intense, yellow flowers and cordate lip is described here.

TAXONOMY TREATMENT

Pleurothallis chicalensis M. Jiménez & Baquero, *sp. nov.* (Fig. 1, 2A–B).

TYPE: Ecuador: El Carchi Province, near Cerro Colorado, Chical-El Carmen road, 00°54.74'N, 78°12.34'W, 1590 m, 4 June 2016, *LB 3033* (holotype, QCNE!).

DIAGNOSIS: Similar to *Pleurothallis dewildei* Luer & R. Escobar, from which it differs in the ovate leaves, the yellow flowers with broadly obovate synsepal and the widely cordate, apiculate lip with involute margins *versus* the narrowly ovate leaves, purple flowers with ovate synsepal and the broadly cordate-ovate lip with obtuse, saccate apex of *P. dewildei*.

Plant medium in size, *ca.* 20 cm tall, epiphytic, caespitose. *Roots* numerous, slender *ca.* 1 mm wide. *Ramicauls* green, erect, slender, 10–30 cm long, enclosed by a tubular, brown sheath running through the second third from the base, and 1–2 other tubular sheaths near the base. *Leaf* green above, microscopically papillate, dull, light green underneath, perpendicular to the ramicaul, coriaceous, ovate, acuminate, 7–18 × 4–8 cm, edge entire, the base sessile, deeply cordate, with lobes connate for 1 cm. *Inflorescence* a solitary flower, resupinate, produced successively from a reclining spathaceous bract *ca.* 1 cm long; peduncle *ca.* 3–5 mm long concealed within the spathe, floral bract 3 × 2 mm,

pedicel *ca.* 6 mm long. *Ovary* 5 mm long, clavate, almost straight. *Flower* 20–23 × 13–18 mm, bright-yellow. *Sepals* glabrous to microscopically papillose; *dorsal sepal* ovate, 12–13 × 8 mm, 9-veined, obtuse, margin microscopically glandulous; *synsepal* broadly obovate, 10–11 × 8–9 mm, 10-veined, subacute, margin microscopically papillous. *Petals* obliquely triangular-ovate, acute, 7–8 × 2.0–2.5 mm, 3-veined. *Lip* broadly cordiform, obtuse with a minute rounded apiculus, 4 × 4–5 mm, 5-veined, with involute margins starting near the middle towards the apex, microscopically pubescent; the base subtruncate with a short, deflexed claw, hinged to the column-foot; *glenion* a small depression between the basal lobes of the lip, surrounded by a slightly convex disc, thickened to the sides. *Column* stout, yellow-green, 2.0 × 1.6 mm, stigma bilobed. *Anther cap* apical, yellow, narrowly deltoid. *Pollinia* 2, narrowly ovoid.

PARATYPE: Cerro Oscuro, near Chical, 00°54.445'N, 78°11.63'W, 1499 m, 29 October 2016, *Baquero 3065* (paratype: QCNE!, flowers preserved in alcohol).

EPONYMY: Named after Chical, a small town in El Carchi Province of Ecuador close to the type locality.

DISTRIBUTION AND HABITAT: *Pleurothallis chicalensis* has been found in two localities, close to Cerro Colorado on the Chical-El Carmen road and in Cerro Oscuro near the small town of Chical (Fig. 3). Two individuals were found growing at the type locality and a population of fifteen plants was found at the second locality. It was also found around La Planada Natural Reserve, Department of Nariño in southwestern Colombia (Fig. 3), based on a color photograph in the book *Orquídeas en la Niebla* (Orejuela 2011). The color and morphology of flowers is consistent between populations.

Pleurothallis chicalensis is sympatric with *P. imperialis* Luer and *P. crucifera* Luer & Hirtz, two species confined to northwestern Ecuador. In Cerro Oscuro it is also found with *Scaphosepalum swertiifolium* (Rchb.f.) Rolfe, *S. cimex* Luer & Hirtz and other pleurothallids. Near Cerro Colorado, it is found growing next to *P. imperialis*, *P. crucifera*, *Sobralia lancea* Garay, *S. crocea* (Poepp. & Endl.) Garay, *S. macrophylla* Rchb.f. and *S. ecuadorana* Dodson.

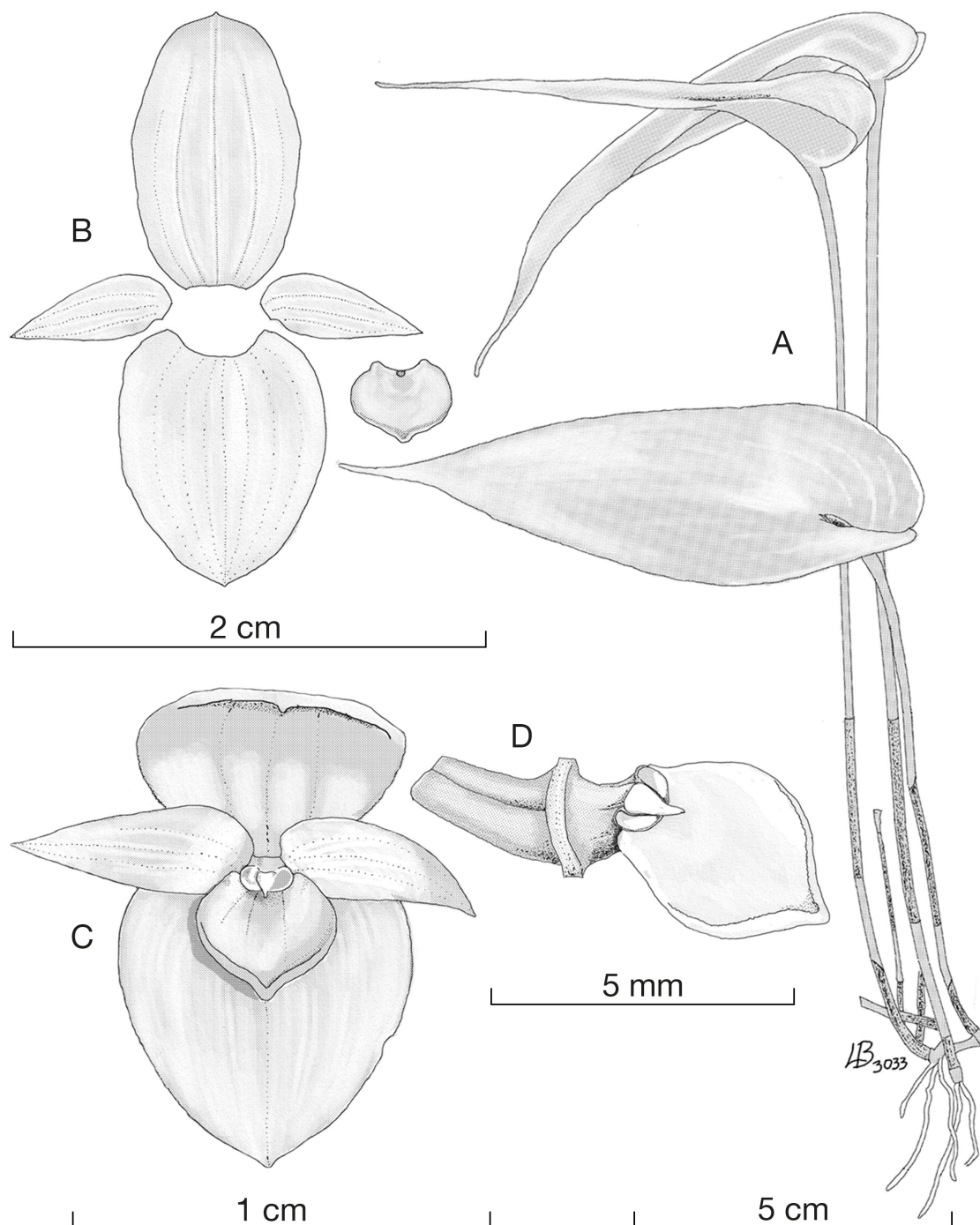


FIGURE 1. *Pleurothallis chicalensis* Jiménez & Baquero A. Habit. B. Dissected flower. C. Flower close-up. D. Column and lip, lateral view. Illustration by Luis Baquero based on the holotype.

CONSERVATION STATUS: Both Ecuadorian localities are near the Colombian border, however, the plants at the

type locality are threatened by road works, while the population of Cerro Oscuro is protected in Ecominga's



FIGURE 2. *Pleurothallis chicalensis* flower (A) and lip (B), and *Pleurothallis dewildei* flower (C) and lip (D). Photos by Andreas Kay (A–B), Sebastian Vieira-Uribe (C) and Mark Wilson (D).

Dracula Reserve. The status of the population near La Planada in Nariño, Colombia is unknown. Until further assessment can be performed, the species should be considered “data deficient” (DD) under IUCN criteria.

Discussion. Due to morphology and geographic proximity, *P. chicalensis* is probably most closely related to *P. dewildei* (Fig. 2C–D, 4–5), *P. bovilungua* Luer & R. Escobar (Fig. 4–5), and *P. calolalax* Luer &



FIGURE 3. Distribution of *Pleurothallis chicalensis* (white stars) in Ecuador and Colombia and *P. dewildei* (black star) in Colombia.

R. Escobar (Fig. 5). The vegetative and floral features shared are the unusually wide, obliquely triangular petals and the wide lip, which is remarkable in species of *Macrophyllae-Fasciculatae* subsection. However, *P. chicalensis* is easily recognized in this group of species inside the subsection, by the uniformly bright yellow flowers and the broadly cordate shape of the lip. Other significant differences between these species are detailed in the Table 1.

Both *P. chicalensis* and *P. dewildei* occur in the Pacific slopes of the Andes (Fig. 3). The type locality for *P. dewildei* is south of Pueblo Rico, Risaralda, Colombia, on the Pacific slope of the Western Cordillera (Luer 1998) (Fig. 3). Unfortunately, *P. bovilingua* was described without collection data.

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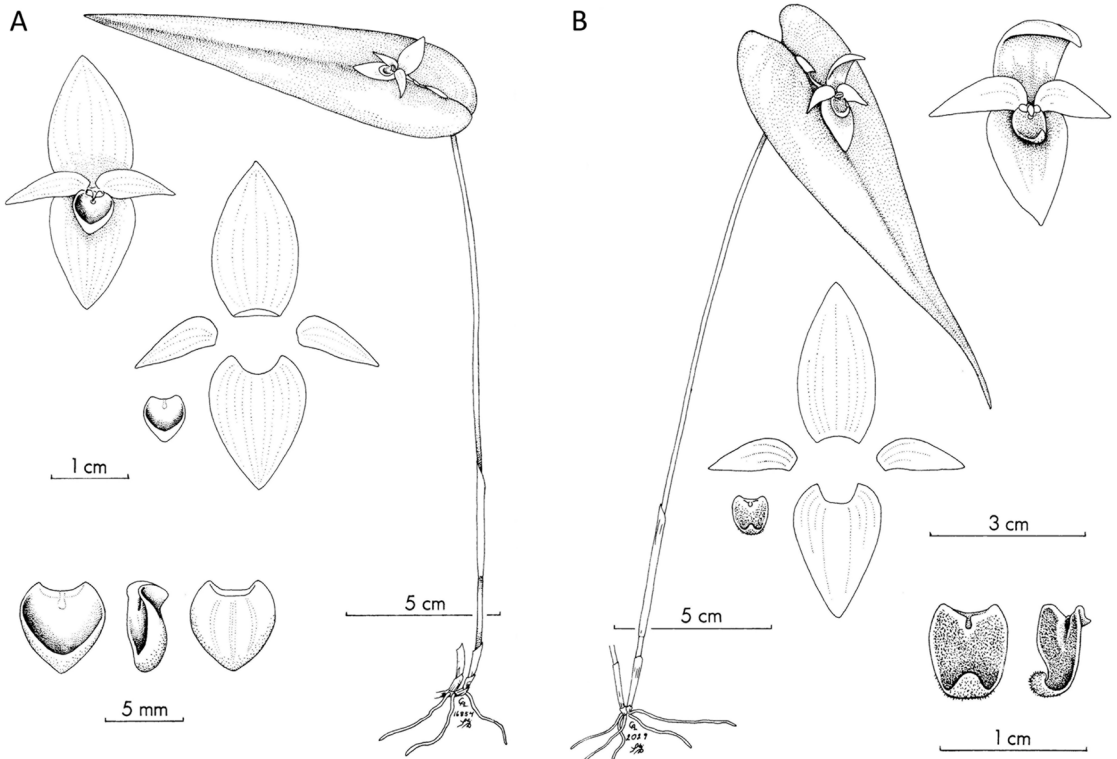


FIGURE 4. Drawings of A. *Pleurothallis dewildei* and B. *Pleurothallis bovilingua* (Reproduced from Luer (2005) courtesy of Missouri Botanical Garden Press).

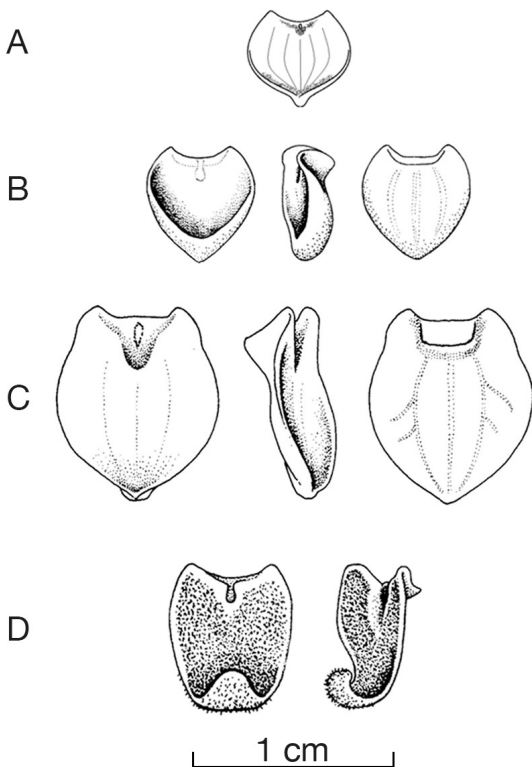


FIGURE 5. Lip drawings. A. *Pleurothallis chicalensis*, frontal view. B. *Pleurothallis dewildei*, frontal, lateral and ventral view. C. *Pleurothallis calolalax*, frontal, lateral and ventral view. D. *Pleurothallis bovilingua*, frontal and lateral view. (Modified from Luer (2005) courtesy of Missouri Botanical Garden).

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TABLE 1. Comparison of *Pleurothallis chicalensis* to *P. dewildei* and *P. bovilingua*.

Plant part	<i>P. chicalensis</i>	<i>P. dewildei</i> ^a	<i>P. bovilingua</i> ^a
Leaves	Ovate, 7–18 × 4–8 cm	Narrowly ovate, 10–15 × 3.0–4.5 cm	Narrowly cordate-ovate, 9–20 × 2.5–5.0 cm
Flowers	Bright yellow	Purple, dorsal sepal purple to yellow	Light rose-brown, lip darker
Synsepal	Broadly ovate, obtuse, 10–11 mm × 8–9 mm	Ovate, subacute synsepal, 17 × 12 mm	Ovate, acute, 24–25 mm × 17.0 mm, 8-veined
Lip	Broadly cordiform, 4 × 4–5 mm, 5-veined, with involute margins, apiculate	Broadly cordate-ovate, 6.0 × 5.5 mm, apparently 3-veined, concave with involute margins above the middle, obtuse	Ovate, 7 × 6 mm, apparently not veined, acute, incurved

^a Obtained from Luer (1998).

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