

4.5–5.5 cm, deeply cordate at the base, grass green, matte. *Inflorescence* a solitary flower, from a reclined, rectangular, acute, spathaceous bract to 1.7 cm long, brown, dry-papyraceous when mature, eventually dissolving with age. *Pedice*l terete, green, 8–12 mm long. *Ovary* terete-subclavate, curved, rounded in section, 3–5 mm long. *Flowers* spreading, becoming partially reflex with age, with distinct temporary activity, short-lived (to 5 days), solid purple. *Dorsal sepal* erect, ovate, obtuse, 10–11 × 7.0–7.5 mm, 7–9 veined, the lateral margins reflexed. *Lateral sepals* connate into a broadly ovate, obtuse synsepal, 9.0–9.5 × 8.0–8.5 mm when spread, 9–11 veined, the margins reflexing at maturity. *Petals* narrowly triangular-subfalcate, acute, 6.0–7.0 × 0.9–1.1 mm, 3-veined, reflexed. *Lip* unguiculate, hinged to the column foot, peltate, basally truncate with rounded angles, obtuse, with the apex slightly infolded, 6–7 × 3.0–3.5 mm, conduplicate at the base, the apical margins thickened; glenion recessed between the thickened basal lobes of the lip, ca. 0.8 mm long. *Column* short, transversely subrectangular, dorsiventrally complanate, ca. 1.2 × 2.5 mm, the anther apical, bent, the stigma apical, bilobed. *Anther cap* obtriangular, acute, bilobed at the base, 2-celled, ca. 0.5 × 0.3 mm. *Pollinia* 2, narrowly oblong-pyriform, 0.5 mm long, attached to an elliptic viscidium through a short, cylindrical caudicula. *Fruit* not seen.

PARATYPE: Costa Rica. Cartago: Cartago, San Francisco, Muñeco, Navarro, ca. 5 km south of the Navarro church, between Río Sombrero and Quebrada Patarrá, road to Alto Belén, 9°45'38.28"N 83°53'56.81"W, 1808 m, 3 Feb. 2017, flowered in cultivation at Lankester Botanical Garden, 31 Jan. 2018, *D. Bogarín 12228*, *M. Cedeño*, *M. Fernández* & *E. Kaes* (JBL).

HABITAT: Epiphytic in premontane wet forest on the Caribbean slopes of Cordillera de Talamanca, Costa Rica, where populations have been found in damp and shady places.

DISTRIBUTION: KNOWN only from the northern end of the Cordillera de Talamanca in Costa Rica, at 1300–1800 meters elevation.

DERIVATION OF NAME: Named from Tapantí National Park, where the species was originally found. In the indigenous Cabécar language, the word *tapantí* has several meanings, mostly related to water: “clear water”, “a zone of many waters”, “torrent from the heavens”.

Among the species of *Pleurothallis* close to *P. cardiothallis* provided with a peltate lip, which besides *P. cardiothallis* also includes in Costa Rica *P. navisepala* Pupulin, J. Aguilar & M. Díaz, *P. tapantiensis* may be easily recognized by the lip that is glabrous and concolorous purple underneath, (vs. papillose, whitish), with the apical margins straight (vs. involute, forming a pseudoapicule), provided for all its length with thin, irregular, transverse grooves. As most other species in this group, the flowers of *P. tapantiensis* are temporarily active, likely in response to the levels of light and environmental humidity (Pupulin *et al.* 2017). The flowers open early in the morning, and usually remain fully spread until noon, when the petals incurve and the lateral sepals lose turgor and fold over each other. The process repeats for 4 to 6 days, after which the flower fades and eventually detaches from the pedicel.

Left

*Pleurothallis tapantiensis* Pupulin, M. Díaz & Pridgeon

Costa Rica. Cartago: Paraiso, Orosi, Tapantí, Tapantí National Park, Oropéndola trail, shores of Río Grande de Orosi, 9°44'13.5"N 83°46'49.6"W, 1376 m, 11 December 2014, flowered in cultivation at Lankester Botanical Garden, *D. Bogarín 11273*, *M. Fernández*, *L. Taylor* & *J. Sharma*. Photographed: 6 March 2017. Reproduction ratio: 5:1.

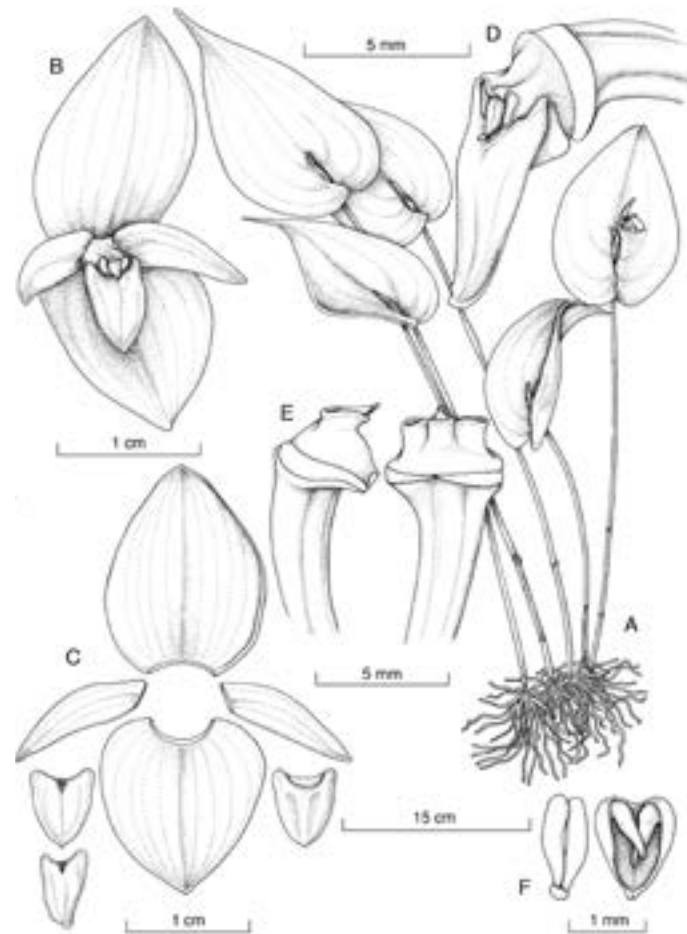


Plate 6. *Pleurothallis gonzaleziorum* Pupulin, M. Díaz & Pridgeon. A - Habit. B - Flower. C - Perianth flattened (three views of the lip). D - Column and lip, lateral view. E, F - Column in three quarters and abaxial views. G - Anther cap and pollinarium. Drawn by F. Pupulin and S. Poltronieri from the holotype.

*Pleurothallis gonzaleziorum* Pupulin, M. Díaz & Pridgeon, *sp. nov.*

TYPE: Costa Rica. Alajuela: Zarcero, Palmira, Bosque de Paz Biological Preserve, growing in the orchid garden, 10°12'15.70"N, 84°19'00.02"W, 1534 m, flowers concolorous pale yellow, 20 August 2016, *M. Díaz 269*, *N. Belfort* & *A. Karremans* (holotype, JBL). Plate 6, photo on p. 857.

*A Pleurothallidi cardiothallidi* Rchb.f. *sepalis petalisque non reflexis, labello triangulari recedit, a Pleurothallidi oncoglossa* Luer *apice labelli ecalloso protenso non hamato differt.*

Epiphytic, caespitose, erect to suberect, large *herb* to 60 cm tall. *Roots* slender, flexuous, ca. 1 mm in diameter. *Ramicauls* terete, slender, 25–40 cm long, 2.5–3.0 mm in diameter, yellowish green, provided with two tubular, short, truncate sheaths to 3.8 cm long at the base, and a longer, tubular, tightly adpressed, broadly obtuse sheath below the middle, to 7.6 cm long, the bracts glumaceous, pale green when young, becoming brown, dry-papyraceous with age. *Leaf* borne horizontally at the apex of the ramicaul, becoming subpendent with age, thinly coriaceous, flexible, sessile, ovate, acuminate, 12.5–16.6 × 6.5–8.3 cm, deeply cordate at the base, grass green, matte. *Inflorescence* a solitary flower, usually produced singly, rarely in pairs, from a prostrate spathaceous bract 2.0–2.6 cm long, brown, dry-papyraceous when mature, eventually dissolving with age. *Pedice*l terete, pale green, 17–22 mm long. *Ovary* subclavate, terete, 8.5–9 mm long. *Flowers* glabrous, mostly solid pale yellow, sometimes red with

the center fading yellow, short-lived (usually 5, rarely to 6 days), with distinct temporary activity. *Dorsal sepal* broadly ovate, obtuse, 15.5–18.5 × 12.5–16 mm, 9–11 veined. *Lateral sepals* connate into a broadly ovate, obtuse to subacute synsepal, 14.5–16.0 × 13–16 mm, 10 veined. *Petals* narrowly triangular-falcate, acute, 11.5–12.0 × 3.0–3.5 mm, 3 veined. *Lip* unguiculate, hinged to the column foot, geniculate, peltate, basally truncate with rounded angles, obtuse, 5.5–6.2 × 4.7–5.2 mm, conduplicate at the base, the apical margins thickened; glenion deeply recessed between the thickened basal lobes of the lip, ca. 1 mm long. *Column* short, transversely subrectangular, dorsiventrally complanate, ca. 2.5 × 3.0 mm, the anther apical, bent, the stigma apical, bilobed. Anther cap obtriangular, acute, bilobed at the base, 2-celled, ca. 1.3 × 1.0 mm. *Pollinia* 2, narrowly oblong-pyriform, ca. 1.2 mm long, attached to an elliptic viscidium through a short, cylindrical caudicula. *Fruit* 5.1 × 0.8 cm long.

PARATYPE: Costa Rica. Alajuela: Zarcero, Palmira, Bosque de Paz Biological Preserve, Gallery trail, 10°12'18.01"N, 84°19'5.09"W, 1585 m, flowers red, fading yellow in center, 19 November 2016, M. Díaz 281, N. Belfort & M. Kolanowska (JBL). Photo on p. 856.

HABITAT: Epiphytic in lower montane rain forest along the Caribbean slopes of the Central Volcanic mountain range in Costa Rica.

DISTRIBUTION: Known only from Costa Rica, at 1500–1600 meters elevation.

EPONYMY: The name honors the González family from Bosque de Paz Biological Preserve where the species was found, and who avidly support orchid research in the preserve.

*Pleuroballis gonzaleziorum* differs from *P. cardiothallis* by its distinctly triangular lip (vs. peltate), glabrous on the underside (vs. papillose), with the apical margins non-involute. The lip is more similar to that of *P. oncoglossa*, but in the latter species the lip apex is thickened into a conical callus, bent back as a hook, whereas in *P. gonzaleziorum* it is straight and thin. By its triangular lip it is also similar to *P. scotinantha* Pupulin, M. Díaz & J. Aguilar, which however has much smaller, concolorous dark purple flowers. As with other allied taxa close to *P. cardiothallis*, also *P. gonzaleziorum* presents two different color morphs, one red and the other yellow, which grow sympatrically at the type locality.



*Pleuroballis gonzaleziorum* Pupulin, M. Díaz & Pridgeon

Alajuela: Zarcero, Palmira, Bosque de Paz Biological Preserve, Gallery trail, 10°12'18.01"N, 84°19'5.09"W, 1585 m, 19 November 2016, M. Díaz 281, N. Belfort & M. Kolanowska. Photographed: 27 January 2019. Reproduction ratio: 5:1.



*Pleuroballis gonzaleziorum* Pupulin, M. Díaz & Pridgeon

Alajuela: Zarcero, Palmira, Bosque de Paz Biological Preserve, orchid garden, 10°12'15.70"N, 84°19'00.02"W, 1534 m, M. Díaz 269, N. Belfort & A. Karremans.  
Photographed: 20 August 2016. Reproduction ratio: 10 :1.