

Plant minuscule, epiphytic, caespitose, erect, up to 2.0 cm tall, including the inflorescence. *Roots* basal, flexuous, filiform. *Ramicauls* erect, slender, 1-2 mm long, enclosed by tubular, imbricating, slightly compressed, membranous sheaths, becoming brownish and papery with age. *Leaf* elliptic, erect, conduplicate, subacute, emarginate, abaxially keeled and terminating in a short apiculus, $5-8 \times 2-3$ mm, narrowed at the base into a conduplicate petiole. *Inflorescence* racemose, distichous, successively flowered, with one flower open at a time, up to 1.2-1.3 cm long, peduncle to 6-8 mm long, pedicels 1.0-2.0 mm long. *Floral bracts* acute, conduplicate, to 0.5 mm long. *Ovary* terete, smooth, to 0.4 mm long. *Flowers* sepals and petals transparent yellowish-green, lip and column reddish-orange, about 4.5 mm in diameter. *Dorsal sepal* narrowly lanceolate-elliptic, spreading widely, acute to shortly acuminate, marginally glandulose, $2.2-2.3 \times 0.7$ mm. *Lateral sepals* subequal to the dorsal sepal, lanceolate-elliptic, spreading widely, acute to shortly acuminate, marginally glandulose, $2.0-2.1 \times 1.0$ mm. *Petals* spreading widely, narrowly elliptic-lanceolate, acute to shortly acuminate, margins glandulose, 1-veined, 2.1×0.4 mm. *Lip* ovate-elliptic, shortly acuminate, glandular-hirsute, especially at the apex, with a small glenion at the base, $1.5 \text{ mm} \times 0.7 \text{ mm}$. *Column* short, sub-cylindrical, 0.4 mm long. *Anther* apical, *stigma* subapical, transversely bilobed at each side of the anther. *Pollinia* 2, ovoid. NOTE: Description based on Karremans 30, 5442, 5443 and Bogarín 9661.

5. *Platystele catiensis* Karremans & Bogarín, *sp. nov.*

TYPE: Cartago: Turrialba, Turrialba, Campus del Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), orillas del Río Reventazón, $9^{\circ}53'38''\text{N}$ $83^{\circ}38'55.5''\text{W}$, 639 m, bosque muy húmedo premontano, epífitas bosque secundario detrás del edificio principal, 24 Mayo 2012, A. P. Karremans 5442, D. Bogarín & J. Sharma (holotype, JBL-Spirit!; isotype, JBL-Spirit!; figs. 5, 14F).

Species haec P. oxyglossa (Schltr.) Garay similis, sed floribus minoribus, petalis et labello quam sepalis aequilonguis, minutissime glandulosis, acutis, labello ovato-elliptico glanduloso differt.

PARATYPES: Costa Rica. Cartago: Turrialba, Turrialba, CATIE, río Reventazón, tramo Bajo del Chino-Espaveles. $9^{\circ}53'44''\text{N}$ $83^{\circ}39'27''\text{W}$, 600 m, 30 de enero del 2004, A.P. Karremans 30 & J. Velásquez (JBL-Spirit!). Turrialba, Turrialba, Campus del Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), orillas del Río Reventazón, $9^{\circ}53'38''\text{N}$ $83^{\circ}38'55.5''\text{W}$, 639 m, bosque muy húmedo premontano, epífitas bosque secundario detrás del edificio principal, 24 mayo 2012, A. P. Karremans 5443, D. Bogarín & J. Sharma (JBL-Spirit!). Cartago-Limón: Turrialba y Siquirres, Pacuarito-Tayutic, Parque Nacional Barbilla, sendero hacia el Río Dantas (Venado), $9^{\circ}58'27.35''\text{N}$ $83^{\circ}27'00.33''\text{W}$, 382 m, bosque pluvial premontano, epífitas en bosque primario y secundario, D. Bogarín 9661, A.P. Karremans & J. Sharma, 25 Mayo 2012

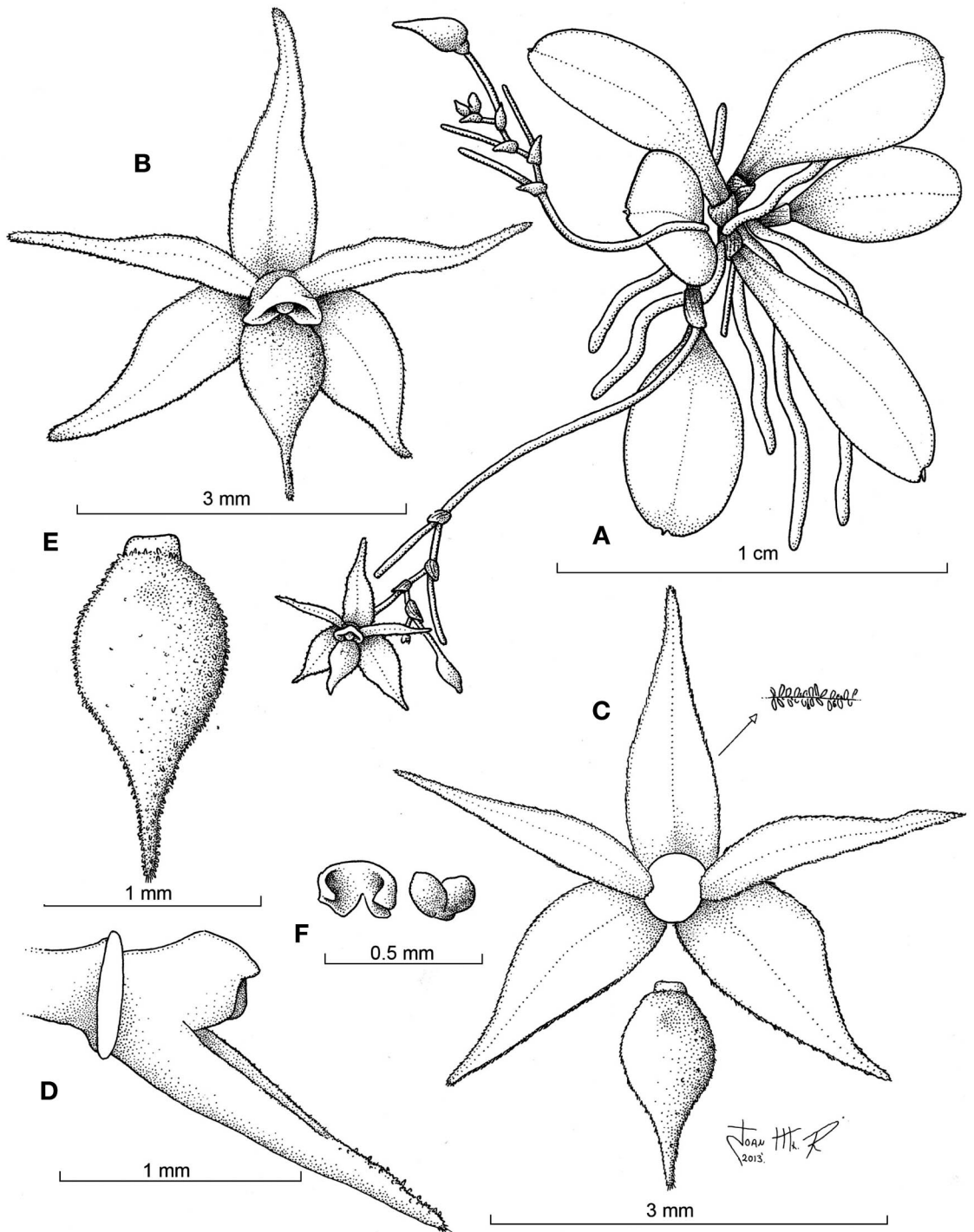


FIGURE 5. *Platystele catiensis* Karremans & Bogarín. A — Habit. B — Flower. C — Dissected perianth. D — Column and lip, lateral view. E — Lip, spread. F — Pollinarium and anther cap. G — Sepal margin. Drawing by D. Bogarín and J.M. Ramírez based on A.P. Karremans 5442 (JBL-Spirit).

(JBL-Spirit!). Heredia: Sarapiquí, Puerto Viejo, Finca La Selva, 3 km SE of Puerto Viejo de Sarapiquí, 50-150 m, 22 Nov. 1979, *C. Todzia 1035* (CR!). Sarapiquí, Puerto Viejo, Estación Biológica La Selva, OTS field station near junction of Puerto Viejo and Sarapiquí rivers. Elevation 40-100 m. Camino Circular Lejano (CCL) 950. 11 Mar. 1991, *K. Richardson* (CR!). Sarapiquí, Puerto Viejo, Estación Biológica La Selva, at the confluence of Río Sarapiquí and Río Puerto Viejo, Atlantic slope. 10°26'00"N 84°01'00"W, 50-100 m, growing on twigs near major treefall along Camino Circular Lejano, 12 Oct. 1990, *M. Grayum 9994* (INB!). Limón: shores of Caño Perreira; periodically inundated swamp forest, Piora dominant. 20 Mar. 1897, *W.D. Stevens, G. Herrera & O.M. Montiel 25151* (INB!; MO).

OTHER RECORDS: Costa Rica. Heredia: Sarapiquí, Puerto Viejo, Estación Biológica La Selva, *O. Vargas 2148* (Digital Photograph!).

DISTRIBUTION: known only from Costa Rica.

ETYMOLOGY: the name honors the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), where this species was first observed by the authors. CATIE is, like Lankester Botanical Garden, celebrating its 40th Anniversary in 2013.

HABITAT IN COSTA RICA: epiphytic in primary and mature secondary humid premontane forest, at around 300-650 m elevation. It is known from the Caribbean lowlands, especially the Sarapiquí, Siquirres and Turrialba areas. The species grows on the protected dense mature vegetation right behind the main building of CATIE, where it is found on small branches that fall from the large trees in the "Espaveles" path, which descends to the Turrialba-Reventazón river. Likewise on the path that descends to Dantas river in the Barbilla National Park.

PHENOLOGY: flowering recorded from January to October, however it is likely it flowers all year round.

Platystele catiensis has been confused in Costa Rica with the apparently widely distributed and variable *P. oxyglossa*. The latter is also found in the country (Luer 1990), but *P. catiensis* is typically found growing below elevations of 650 m in the Caribbean lowlands (vs. growing at an elevation of 1000-2500 m in the Central and Talamanca Cordillera), it has a much smaller plant

that grows up to 2 cm including the inflorescence (vs. 6 cm tall), a denser and shorter inflorescence which is up to 1.3 cm long (vs. a stingy inflorescence up to 5 cm long), with 1.0-2.0 mm long pedicels (pedicels 2.5-7.0 mm long), with less than 5 mm between each one (distance between pedicels 2.0-5.0 mm long), and smaller flowers with sepals and petals up to 2.3 mm long (vs. up to 3.5 mm long), and the lip up to about 1.5 mm long (vs. 2.5 mm long). From the Guatemalan type material of *P. oxyglossa*, *P. catiensis* can be distinguished by the shorter (2.2-2.3 mm), shortly acuminate and marginally glandular sepals (vs. sepals 2.5 mm, long acuminate, glabrous), the petals and lip are longer, subequal to the sepals, the petal margin is glandular, while the lip is elliptic, and completely glandular-hirsute, especially near the apex (vs. sepals and lip 1.5 mm, much shorter than the sepals, and are glabrous, the lip is ovate-lanceolate). It might well turn out that none of the Costa Rican material can be referred to *P. oxyglossa*. In that case the larger species found in the Central Cordillera should be referred to as *Platystele schulzeana* (Schltr.) Garay, described from La Carpintera. For the time being we only segregate the easily distinguished and morphologically constant *P. catiensis*, and point out that the name *P. oxyglossa* has been applied to two different species in Costa Rica. A few Brazilian species have been placed under synonymy of *P. oxyglossa*, but from what we have seen they are most likely not the same species, and certainly are not the same as those found in Costa Rica. The recently described *Platystele paraensis* Campacci & da Silva has the typical general flower morphology of the *P. oxyglossa* complex, and is as tiny as *P. catiensis*. It can be distinguished by the single flowered inflorescence, the sepals that are long caudate, that have an orange mid-vein and are much longer than the lip, which is apically yellow-orange. Flower morphology and size is similar to *Platystele psix* Luer & Hirtz, however the Ecuadorian species has cellular-pubescent sepals and petals. Another similar species occurs in Panama and Ecuador, *Platystele taylorii* Luer can be however recognized by the lip that is long acuminate and exceeds the glabrous sepals.

