

FIGURE 2. Distribution map of *Myoxanthus sotoanum* (Δ) and *Myoxanthus scandens* (\square) in Costa Rica.

data available, this species flowers from December to February.

Myoxanthus scandens is distinguished by the elliptic leaves, dark purple flowers, the purple striped petals, lateral lobes of lip triangular, acute, erect with two keels extending to the apex of the lip, and the long, acuminate processes that flank the stigma.

We are not including here *Pleurothallis pennellia* in the synonymy of *M. scandens*. The species was described in 1976 from Ecuador, on the basis of a specimen flowered in cultivation at the Marie Selby Botanical Gardens (Luer, 1976). Luer (1976) noted the vegetative similarity to *M. scandens*, but described the new species as much less prolific. This, however, may be an artifact due to the juvenile, immature condition of the holotype specimen, and Luer later included it in the synonymy of *M. scandens* (Luer, 1992). The petals of *P. pennellia* are narrowly ovate and shortly obtuse at the apex, while in both *M. scandens* and *M. sotoanum* they are apically contracted into a thickened, acute tail. The lip of *P. pennellia* has two low keels above the middle, while these structures extend from the lower third to the middle of the lip in *M. sotoanum*, and from the base to near the apex in *M. scandens*. Furthermore, the clinandrium of *P. pennellia* is short, leaving the anther partially exposed, while *M. scandens* and *M. sotoanum* have a long, hooded clinandrium, completely covering the anther cap. In our opinion, *P. pennellia* is a

true member of *Myoxanthus*, likely distinct from other species of the genus. It is perhaps co-specific with a Peruvian (or perhaps an Ecuadorian), unvouchered specimen illustrated in Zelenko & Bermúdez (2008). However, we refrain to make the new combination in *Myoxanthus* until we can study more material from the type locality.

Myoxanthus sotoanum Pupulin, Bogarín & M. Fernández *sp. nov.*

TYPE: Costa Rica. Cartago: Jiménez, Pejibaye, La Marta, shore of Río Pejibaye, 9°47'47"N 83°42'55"W, 690 m, epiphytic in secondary vegetation along the river, premontane wet forest, 10 Jan. 2004, F. Pupulin 5044, S. Dalström & H. León-Páez (holotype, CR; isotype, JBL-spirit). Fig. 2—3.

Species *Myoxantho scandenti* (Ames) Luer aemulans, sed foliis linearibus, sepalis brunneis, petalis labelloque flavis, lobis lateralibus labelli obtusis subfalcatis, duobus carinis extensis fere dimidium labelli, dentibus lateralibus columnae acicularis acuminatis praecipue differt.

Plant epiphytic, caespitose, scandent, up to 90 cm long. *Roots* slender, flexuous, to 1 mm in diameter. *Ramicauls* slender, cylindric, 0.5 cm in diameter, 1-23 cm long, enclosed by 2-6 tubular, pubescent sheaths 0.8-4.0 cm long. *Leaves* straight with the ramicaul, coriaceous, elliptic, conduplicate, acute, 2.5-9.0 x 0.15-0.3 cm, narrowly cuneate, subpetiolate. *Inflorescence* a fascicle of successive, single flowers, borne at the apex of the ramicaul from a spathe 1.0-1.5 x 0.1-0.25 mm, with flowers usually produced singly, 4-6 mm long including the peduncle 2 mm long. *Floral bracts* tubular, ovate, acute, conduplicate, pubescent, 1 mm long. *Pedicels* 2 mm long, persistent. *Ovary* cylindric, 2 mm long. *Flowers* with brownish-yellowish sepals and yellow petals and lip. *Dorsal sepal* ovate, acute, entire, concave, 5.0 x 2.0-2.5 mm, 3 to 5-veined. *Lateral sepals* ovate, acute to obtuse, entire, concave, 4.5 x 2.0 mm, 2 to 3-veined, connate and pubescent at the center of their common surface. *Petals* ovate, wider at the basal half, gradually contracted into a thickened, apical, serrulate, acute tail, 4-6 mm long, 1-2 mm wide at the basal half. *Lip* oblong, trilobed, 2.5 mm long, hinged to the column foot, the lateral lobes basal, perpendicular to the disc, erect, the disc with a

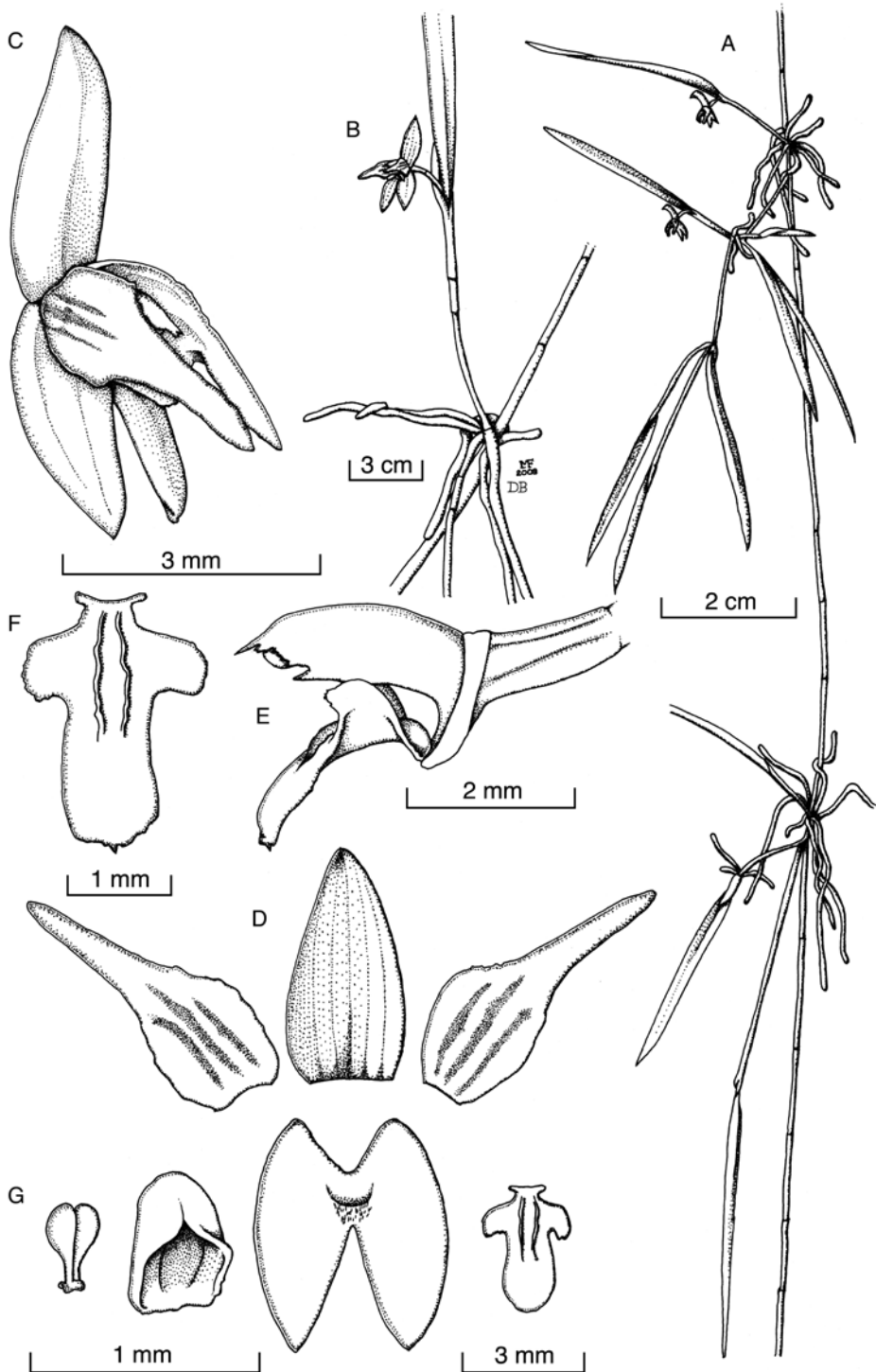


FIGURE 3. *Myoxanthus sotoanum* Pupulin, Bogarín & M. Fernández. A — Habit. B — Detail of the habit. C — Flower. D — Dissected perianth. E — Ovary, column and lip, lateral view. F — Lip, spread. G — Pollinarium and anther cap. Drawn by D. Bogarín and M. Fernández from the holotype.

longitudinal pair of parallel lamellae from the lower third to the middle, the base subtruncate with a pair of small lobules, the apex obtuse, the apex minutely and irregularly erose. *Column* short, stout, semiterete, 2 mm long, provided a triangular, acute tooth on each side of stigma, the clinandrium denticulate with a pair of slender, apical teeth, the anther incumbent, the stigma ventral. *Pollinia* two, pyriform, on a rounded viscidium.

PARATYPES: Costa Rica. **Cartago:** forest on Casa de Tejas Ridge above río Gato, 9°47'N 83°41'W, 800 m, 28 December 1973, *W. Lent 3710* (CR). Jiménez, Pejibaye, Taus, Río Pejibaye, 1 km después de la escuela de Taus, 9°46'51.7"N 83°43'00.4"W, 707 m, 30 abril 2009, *D. Bogarín et al. 6920* (JBL-Spirit). Turrialba, Parque Nacional Barbilla, cuenca del [río] Matina, sendero Principal por río Dantas, 9°58'20.0"N 83°27'10.0" W, 300–400 m, epífita, flor blanca, 11 Noviembre 2000, *G. Mora & E. Rojas 1655* (INB). Turrialba, Parque Nacional Barbilla, cuenca del [río] Matina, sendero Barbilla, hasta la loma, 9°58'20.0"N 83°27'10.0" W, 300–400 m, epífita, flor blanca, 20 Noviembre 2000, *G. Mora & E. Rojas 1722* (INB). **Heredia:** Finca La Selva, OTS Field Station near junction of Puerto Viejo and Sarapiquí rivers, 40–100 m, Camino Circular Lejano 750, 19 marzo 1991, *K. Richardson 111* (CR). Finca La Selva, OTS Field Station near junction of Puerto Viejo and Sarapiquí rivers, 40–100 m, Camino Circular Lejano 750, 19 Marzo 1991, *K. Richardson 113* (CR). Sarapiquí, La Virgen, Magsasay, banks of Río Peje, 10°24'03.9"N 84°02'53.5"W, 110 m, tropical wet forest, 25 August 2007, *F. Pupulin et al. 6888* (JBL-Spirit). **Limón:** Cerro Coronel, east of Laguna Danto, 10°41'N 83°38'W, 20–170 m, tall evergreen forest on gentle to moderately steep slopes, scandent epiphyte in canopy, flowers white, 15–20 September 1986, *W. D. Stevens 24568* (CR). Siquirres, Siquirres, Guayacán, en potreros bajando el camino frente el bar Guayacán, en las orillas de la Quebrada Quebrador, 10°02'1.44"N 83°32'13.5" W, 477 m, 25 enero 2008, *D. Bogarín 4049 & A. Karremans* (JBL-Spirit). Siquirres, Guayacán, en potreros bajando el camino frente el bar Guayacán, en las orillas de la Quebrada Quebrador, 10°02'1.44"N 83°32'13.5" W, 477 m, 25 enero 2008, *A. Karremans 2311 & D. Bogarín* (JBL-Spirit). Pococí, Cuenca

del [río] Sarapiquí, Guápiles, finca INBio, sendero de Las Aves, 10°11'39.624"N 83°51'39.0980" W, 300–400 m, epífita, flores blanco y morado, 07 Junio 2007, *M. M. Flores et al. 24* (INB). **San José:** [Parque Nacional Braulio Carrillo], sendero "La Botella", 750 m, floreció en cultivo en el Jardín Botánico Lankester, 10 Diciembre 2000, *M. Blanco 1725* (JBL-Spirit, USJ). Sin datos de recolecta, floreció en cultivo en el Jardín Botánico Lankester, 30 setiembre 2009 (JBL-21345-Spirit). Without collecting data, flowered in cultivation at Jardín Botánico Lankester, flowers pale yellow suffused with brown, 18 December 2000, *F. Pupulin 2742* (USJ). Vásquez de Coronado, Parque Nacional Braulio Carrillo, along sendero "La Botella", in primary forest, 10°10'00"N 83°57'20"W, 750 m, epiphytic on liana, sepals translucent white suffused with purple, petals dull white, arching with apices meeting in front of lip, lip yellowish-white, 16 November 1990, *S. Ingram 712 & K. Ferrell* (CR). Vásquez de Coronado, Parque Nacional Braulio Carrillo, along sendero "La Botella", in primary forest, 10°10'00"N 83°57'20"W, 750 m, pale green-yellow suffused with purple spots, 02 January 1991, *S. Ingram 828 & K. Ferrell* (INB).

DISTRIBUTION : Known only from Costa Rica along the Caribbean slopes of the Central Volcanic Cordillera to about 800 m

EPONYMY: Dedicated to the memory of Miguel Angel Soto Arenas (1963-2009), for his outstanding contributions to the knowledge of Neotropical orchids.

HABITAT AND ECOLOGY: Plants have been found epiphytic in tropical wet and very wet forests, premontane rain forest, and premontane wet and very wet forest from near sea level to about 800 m. Flowers between March and September.

Myoxanthus sotoanum is similar to *M. scandens* Ames, from which it differs in the linear leaves (vs. elliptic), brownish-yellowish flowers (vs. dark purple), the yellow petals and lip (vs. purple striped), oblong, obtuse, subfalcate lateral lobes of lip (vs. triangular, acute, erect) with two keels extending nearly to the middle of the lip (vs. extending to the apex of the lip), and the triangular, acute teeth (vs. acicular, acuminate) that flank the stigmatic cavity. It also generally occurs at lower elevations.