

5. *Sigmatostalix integrilabris* Pupulin, *sp. nov.*

TYPE: COSTA RICA. Heredia: camino a Puerto Viejo de Sarapiquí, junto a una laguna, ca. 600 m, junio 1991, *D.E. Mora-Retana & F. Pupulin s.n.* (holotype, USJ 48464), Fig. 7.

Synonym: *Sigmatostalix ramulosa* Kraenzl., Ms. (Reichenbach Herbarium, W).

Usage synonym: *Sigmatostalix hymenantha* of authors, *non* Schltr. 1918.

Species Sigmatostalici adamsii Dodson *similis floribus omnino majoribus laminae labelli multo latior e callo cyathiformi ad dimidium inferiore laminae attingens, columna elongata alis columnae minoribus differt.*

Plant epiphytic, small, caespitose, erect, to

about 18 cm tall. **Roots** filiform, glabrous, with green apex, about 1 mm in diameter. **Pseudobulbs** elliptic to ovoid, compressed, unifoliate at apex, surrounded at the base by 2–4 distichous, foliaceous sheaths, 1.5–3.3 cm long, 1.4–2 cm wide. **Leaves** green, subcoriaceous, linear-lanceolate, acute, to 17 cm long, 0.5–1.3 cm wide, narrowing toward the base into a short conduplicate petiole to 1.5 cm long. **Inflorescence** lateral, to 20 cm long, a panicle with condensed lateral branches when young, the lateral branches progressively longer in older inflorescences, 1- (apical branches) to 4 cm long (basal branches), the flowers produced in successive fascicles at each node from dense clusters of bracts. **Floral bracts** short, membranaceous, triangular-ovate, acute, 2–2.3 mm long. **Ovary** linear-clavate, 5 mm long including the pedicel. **Flowers** spreading, the sepals and petals white to pale yellow, the lip white to yellow with a reddish bar at the base of callus. **Dorsal sepal** reflexed, lanceolate, acute, concave toward apex, to 2.3 mm long, 0.6 mm wide. **Lateral sepals** shortly connate at the base, obliquely lanceolate, acute, concave toward apex, 2 mm long, 0.6 mm wide. **Petals** lanceolate to lanceolate-elliptic, acute, 2 mm long, 0.7 mm wide. **Lip** sessile, entire, ovate-subtrapezoidal, acute, concave toward apex, 2.5 mm long, 3 mm wide, the margins undulate; disc with a suborbicular, cup-shaped callus extending from the base to less than half of the length of lamina, the fleshy margins projecting into a distinct, retrorse tooth in front, the inner part of the cup with two lateral, conical, rounded projections, the basal margin provided with a linear series of elaiophores. **Column** short, terete, straight, dilated at apex, 1.4–2 mm long, with a pair of subquadrate, rounded, transverse wings; rostellum bilobed. **Anther cap** decumbent, elliptic-ovate, cucullate, glabrous, 1-celled. **Pollinia** 2, obpyriform, on a triangular stipe; viscidium elliptic.

Paratypes: COSTA RICA. Cartago: Turrialba, Pejibaye, 600 m, flowered in cultivation at Jardín Botánico Lankester, May 1998, *D.E. Mora-Retana s.n.* (USJ); near Pavones, about 15 km east of Turrialba, 600 m, May 7, 1956, *L.O. Williams 19720* (SEL); road from Turrialba to Siquirres at midpoint, 300 m, 17 February 1966, *C.H. Dodson 3541* (SEL); trees along Río Pejibaye, 83°42'N 9°04'W, 720 m, 5.5 km SW of Pejibaye, 22 km from Siquirres # 10 turn off, 25 March 1984, *M.W. Chase 84384* (SEL); Peralta, May 18, 1924, *C.H.*

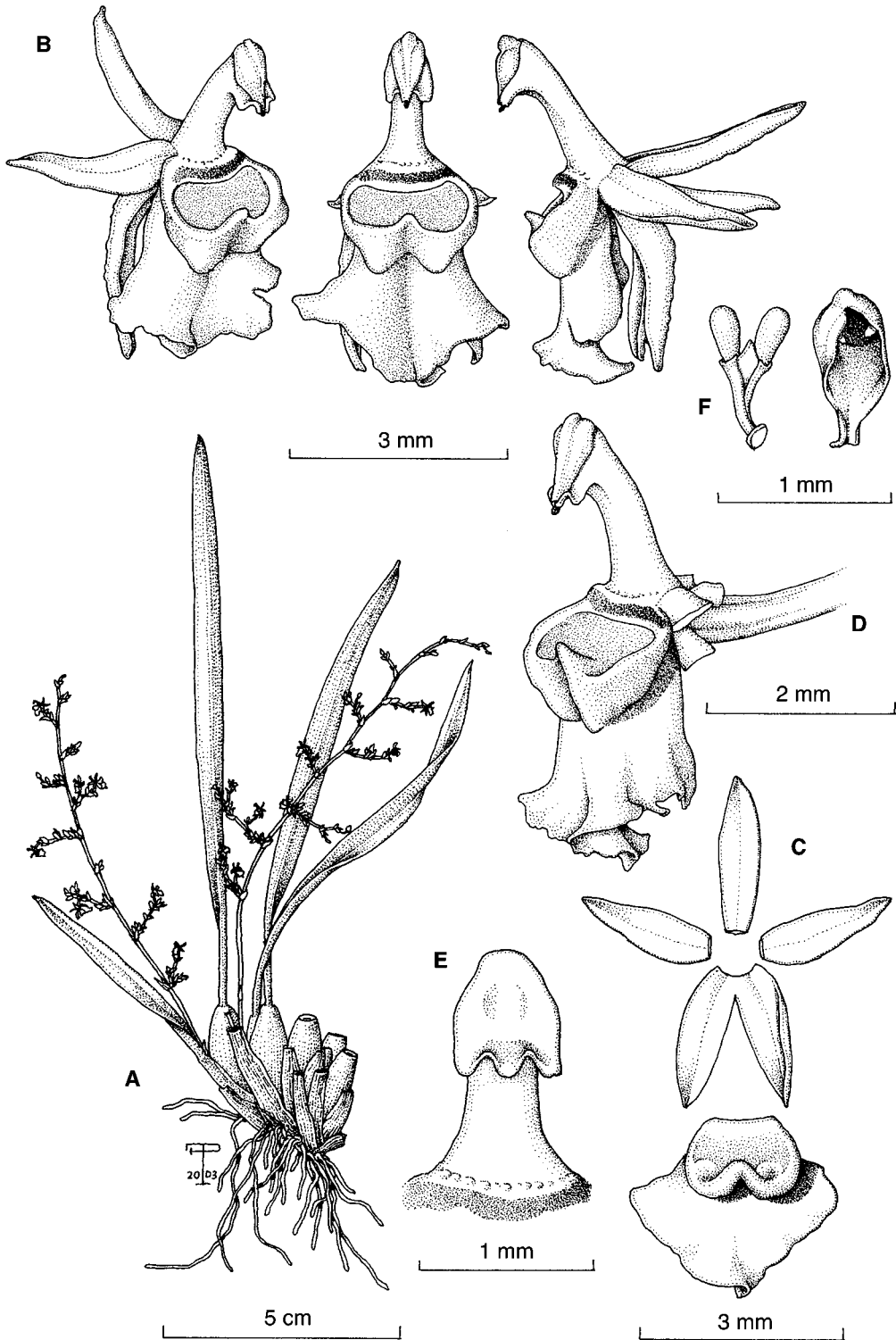


FIGURE 7. *Sigmatostalix integrilabris* Pupulin. A. Habit. B. Flower, three views. C. Dissected perianth. D. Column and lip, lateral view. E. Column, abaxial view. F. Pollinarium and anther cap. Based on *Mora-Retana* & *Pupulin* s.n. (USJ). Drawn from the holotype.

Lankester 851 (AMES). Callejón de Angostura, May, *A.R. Endres 535* (W). Limón: El Progreso, entre Cerro Muchilla y Cerro Avioneta, cabeceras de Río Suruy, Fila Matama, Valle de la Estrella, 9°47'25"N 83°06'30"W, 550 m, *G. Herrera & A. Chacón 2640* (SEL). San José: Pérez Zeledón, El Alto de San Juan, flowered in cultivation at Jardín Botánico Lankester, May 1998, *D.E. Mora-Retana s.n.* (USJ). Dota, crest of Cerro Nara, 950–1000 m, premontane wet forest, 2 March 2001, *F. Pupulin, D. Castelfranco & A. Olmi 3016* (Jard. Bot. Lankester, spirit). PANAMA. Darién: vicinity Chepigana, Cana-Cuasi trail, 2000 ft., *Terry & Terry 1437* (MO); Panama: epiphytic along the Altos de Pácoro road, 650 m, 4 March 1976, *R.L. Dressler, C. & J. Luer & P. Taylor 728* (SEL); Veraguas: NW of Santa Fé, 4.2 km from Escuela Agrícola Alto de Piedra, 25 February 1975, *S. Mori & J. Kallunki 4822* (SEL).

Habitat and Ecology: A rather common epiphyte of shaded branches and twigs in premontane moist forest at 300–1000 m elevation. Flowering mostly occurs February to May.

Distribution: Costa Rica and Panama.

Etymology: From the Latin *integri-*, entire, and *labium*, lip, in reference to the entire lip.

Sigmatostalix integrilabris has long been confused with *S. hymenantha* Schltr. (see above, under treatment of *S. hymenantha*), mainly on account of Kränzlin's interpretation, but the two species may be set apart on the basis of their different flower morphology. *Sigmatostalix hymenantha* has a clawed, distinctly 3-lobed, acute lip, the margins of the suborbicular lateral lobes crenulate, and the bilobed callus is comparatively small, less than one fifth of lip length. On the contrary, the lip of *S. integrilabris* is sessile, entire, obtuse, and the massive callus occupies more than one third of the lip lamina. *Sigmatostalix integrilabris* shows close affinities with *S. adamsii* Dodson from northern South America, and the two species (the former under the name of *S. hymenantha*) have been distinguished mainly for the shape of their inflorescence (i.e., Mora-Retana 1999). However, the relative length of lateral branches in *S. integrilabris* is quite variable. In some specimens (i.e., Pérez Zeledón, El Alto de San Juan, *Mora s.n.*, USJ 48950; San Rafael de Platanar, *Dressler & Mora s.n.*, USJ) the branches' internodes are extremely reduced, so that they appear as simple tufts of papery bracts, from which new flowers are born in succession. In other cases (i.e., Sarapiquí, Puerto

Viejo, *Mora & Pupulin s.n.*, USJ; *Mora s.n.*, USJ), the branches develop longer internodes, and the inflorescence assumes the characteristic shape of a secondary panicle. Inflorescences of *S. integrilabris* (and probably also *S. adamsii*) produce flowers for many seasons, and it is likely that lateral branches grow up in length during all their life. Moreover, the lip of *S. adamsii* does not exceed 1 mm in length, the concave callus is longer than half of the lip, and the column presents two conspicuous, dolabriform wings toward the apex, whereas *S. integrilabris* has a lip 2.5 mm long, a callus shorter than half of the lip and a blunt, transversal rostellum at column apex.