

Crossoglossa sotoana Pupulin & Karremans, *sp. nov.*

TYPE: COSTA RICA. Alajuela: San Ramón, Ángeles, Alberto M. Brenes Biological Reserve, 10°13'06" N 84°36'11" W, 800-900 m, shores of Río San Lorencito, near the Terciopelo Trail, 22 May 2004, flowered in cultivation at Lankester Botanical Garden, University of Costa Rica, 5 Apr. 2005, *D. Bogarín 817* (holotype, USJ; isotype, JBL).

Similis *Crossoglossae barfodii* Dodson, a qua recedit foliis marginibus valde undulatis, floribus resupinatis, inflorescentia congesta multo brevior, petalis linearibus incurvis, labello obovato-sub-pandurato callo duobus transverse rectangularibus lamellis composito.

Terrestrial, erect *herb*, to 15 cm tall excluding the inflorescence. *Roots* finely pubescent, pale yellow, ca. 2 mm in diameter. *Stem* terete, 3-5 mm in diameter, 4-5 cm long, laxly concealed by the leaf bases. *Leaves* elliptic-spathulate, obtuse, from a narrow, conduplicate base clasping the stem, the margins strongly undulate, 50-80 × 15-20 mm above the middle. *Inflorescence* an erect, successively many- (to 60) flowered raceme, hexagonal in section, with distinct longitudinal keels provided with glandular trichomes, to 15 cm long. *Floral bracts* triangular, acuminate, the margins with glandular hairs, 6.0-7.0 × 2.5 mm. *Ovary* terete-subconical, glabrous, proximally white, distally green, to 6 mm long including the pedicel. *Flowers* resupinate, spreading, slightly facing downwards, sepals and petals yellowish green, lip pale greenish yellow flushed with green toward the base, the central vein and the basal calli yellow; column green, anther yellow. *Dorsal sepal* ovate, rounded, 3-veined, concave toward the apex, 2.6 × 1.6 mm. *Lateral sepals* narrowly ovate, rounded, 3-veined, 2.5 × 1.5 mm, sometimes shortly connate at base. *Petals* ligulate, obtuse, 1-veined, slightly porrect-incurved in natural

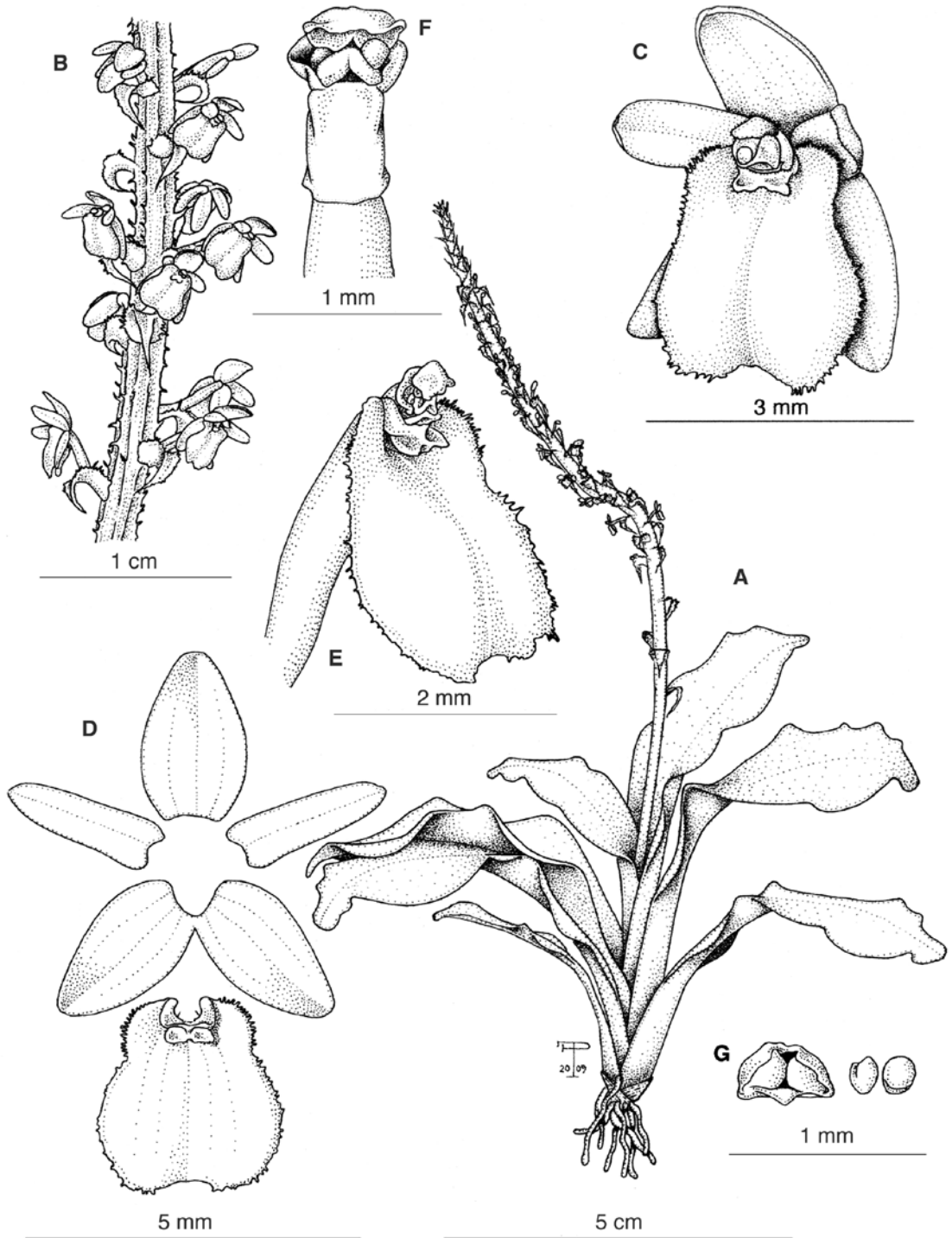
position, 2.5 × 1.0 mm. *Lip* obovate-subpandurate, retuse, 5-veined, basally concave, then convex, 3.0 × 2.8 mm, the margins finely and irregularly dentate-ciliate, the base subcordate with the auricles partially clasping the column, provided with a basal, ring-like callus around the column, the callus bearing one transversely rectangular, thickened, slightly concave projections on each side of the midvein. *Column* subterete, clavate, 1 mm long, the distal portion expanded around the subapical stigma. *Anther* cucullate, transversely elliptic-reniform, 2-celled. *Pollinia* 2, obovate-sub-spherical.

DISTRIBUTION: Known only from Costa Rica.

ECOLOGY: Plants of *C. sotoana* grow as terrestrials in loose, moist soils and leaf litter in the understory of primary vegetation. The only known population of this species was found in the premontane wet forest of the Tilarán mountain range, on the Caribbean watershed of the continental divide in central Costa Rica, at about 800-900 m elevation.

EPONYMY: Named in honor of the recently deceased Mexican botanist, Miguel Ángel Soto Arenas, to commemorate his fundamental contributions to orchidology.

Crossoglossa sotoana closely resembles the Ecuadorian *C. barfodii* Dodson, but that species has flat leaves (vs. strongly undulate along margins), nonresupinate flowers (vs. resupinate), a much longer (to 30 cm vs. 15 cm), lax (vs. congested) inflorescence, subfalcate-reflexed petals (vs. linear, incurved), and an obcordiform-pandurate (vs. obovate-pandurate) lip, provided at the base with two erect, triangular lamellae (vs. low, transversely rectangular). *Crossoglossa boylei* Dodson, also from Ecuador, can be distinguished by the long caulescent plants, longer inflorescence, broadly ovate dorsal sepal and ovate petals. In Costa Rica, *C. sotoana* can be distinguished from *C. fratrum* (Schltr.) Dressler and *C. tipuloides* (Lindl.) Ktze. by the short, nearly acaulescent plants and its distinctly lobed, obovate-subpandurate, retuse lip. *Crossoglossa aurantilineata* Pupulin has longer and narrower leaves, longer floral bracts, narrower sepals and petals, and an orange stripe along the midrib of the lip, while *C. blephariglottis* (Schltr.) Dressler presents an acute lip with longer linear petals.



Crossoglossa sotoana Pupulin & Karremans. A — Habit. B — Portion of the inflorescence. C — Flower. D — Dissected perianth. E — Column and lip, oblique view. F — Column, adaxial view. G — Anther and pollinia. Drawn by F. Pupulin and J.D. Zúñiga from the holotype.