

FIGURE 2. Comparison of the dissected perianth of: A — *Elleanthus cynarocephalus* (Dressler 6697). B — *E. carinatus* (Dressler 7069). Scale bar = 1 cm.

Until recently, we believed that there was only one member of Section *Cephalelyna* in Central America, but one of the “Sobralias” collected near Esperanza, in Cartago Province, developed a clearly capitate inflorescence, suggestive of Section *Cephalelyna*. As the inflorescence developed, it was clearly not the same as that of *E. cf. cynarocephalus*<sup>1</sup> that grew near it in the greenhouse. In both plants, the basal bracts of the inflorescence were green, but in *E. cf. cynarocephalus* the upper bracts are rose-purple. In our plant from near Esperanza, the upper bracts may best be described as “pinkish *café con leche*.” Further, the upper bracts are clearly carinate, with each keel ending in an apicule or a mucro. The upper bracts of the *E. cynarocephalus* are without keels, apicule or mucro. The flowers of these two plants are also distinct. In *E. cynarocephalus* the petals are linear or ligulate, as indicated by Garay (“linear-oblong”) for this species (Fig. 2). In *E. carinatus*, the base of the column (basal to the mentum) is much shorter than the rest of the column, while these are subequal in *E. cynarocephalus*; also, the mentum is larger in

<sup>1</sup> We have not seen authentic *E. cynarocephalus* from northern Central America or Mexico. For now, we treat our one species with rose-purple bracts as *E. cf. cynarocephalus*, though it may actually be referable to an unnamed species, or a South American species.



FIGURE 3. Comparison of the column of: A — *Elleanthus cynarocephalus* (Dressler 6697). B — *E. carinatus* (Dressler 7069). Scale bar = 5 mm.

*E. carinatus* than in *E. cynarocephalus* (Fig. 3). A striking difference in the available material is that the flowers of *E. carinatus* open from the base of the head upwards (Fig. 8A), while those of *E. cynarocephalus* open from the apex downward.

DISTRIBUTION: only known from Costa Rica.

ETYMOLOGY: from the Latin *carinatus*, keeled, referring to the marked keels on the bracts of the inflorescence.

***Sobralia fragilis* Dressler & Bogarín, *sp. nov.***

TYPE: COSTA RICA. San José: Dota, Falda este del Cerro Nara, 740-840 m, F. Pupulin 1099, D. Castelfranco & L. Spadari, 14 Jan. 1999, flowered in cult., 11 August 2009, *R.L. Dressler 7170* (holotype: CR; isotype: JBL-spirit). FIG. 4, 8B.

Species numerosis (circa 22) carinis farinosis labelli a congeneribus diversa.

*Roots* 3-6 mm in diameter. *Stems* 75-100 cm, 4-5 mm in diameter basally, 3.5-4 mm distally, dark purplish green mottled with pale green spots, young sheaths similar; leaves broadly elliptic, acute to acuminate, with 7 prominent veins beneath, 15-26.5 × 4-8.6 cm. *Inflorescence* ellipsoid, 3.5-5 × 0.8-1.2 cm, with 2-3 subtending foliar bracts 6-13 × 1.8-5.2 cm. *Ovary* sessile, 1.1-2.2 cm. *Sepals* greenish

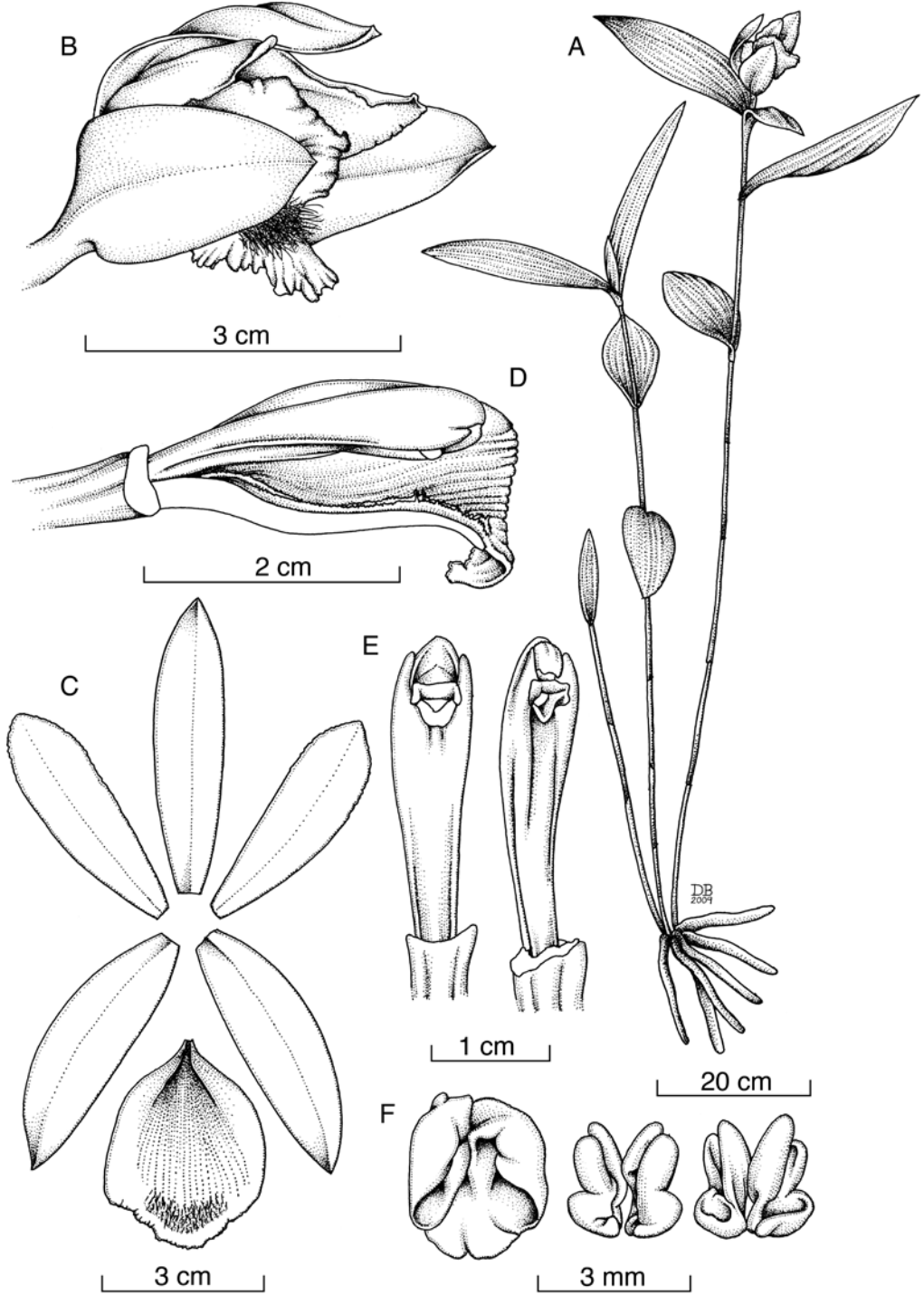


FIGURE 4. *Sobralia fragilis* Dressler & Bogarín. A — Habit. B — Flower. C — Dissected perianth. D — Column and lip, lateral view. E — Column, frontal and side view. F — Pollinarium and anther cap. Drawing by D. Bogarín from the holotype.

white without, with green apices. *Petals* white or cream with a green median vein without; midlobe of lip yellow. *Lip* with a purplish submarginal band on each side; base of lip minutely striped with white and brown within; sepaline tube 4-8 mm. *Dorsal sepal* elliptic-oblong to oblanceolate, obtuse, apiculate, 3.5-5 x 1.1-1.5 cm. *Lateral sepals* ovate-lanceolate or oblanceolate, obtuse, apiculate. *Petals* narrowly obovate or oblong-elliptic, obtuse, 2.8-4.7 x 1-1.5 cm. *Lip* subquadrate-subobovate, 3.2-4 x 3-3.8 cm, basal calli 7-9 mm; base of lip with ca. 23 low ridges, these becoming higher and more ornate distally. *Column* 20-27 cm x 4.5-6 mm laterally, 5-5.5 cm. dorsoventrally, lateral arms 1-2 mm.

This species is one of the most distinctive known to us. It does not resemble any other species known from Central America. It is, in fact, one of the most difficult to deal with. The base of the lip has about 22 low keels. The keels and the alternating grooves appear as narrow stripes. The keels become much higher in the distal portion of the lip, but they are actually soft and mealy. It is difficult to handle the lip without rubbing off the “keels.” All *Sobralia* flowers are delicate, but it is almost impossible to handle the lips of this species without destroying the surface. Thus, we have chosen the epithet “*fragilis*” for this species. It is quite possible that this species is related to a Colombian species that has been called “*S. suaveolens*.” The so-called “*S. suaveolens*” has prominent “crests” on the lip that are actually a powdery, yellow substance, and may act as pseudopollen to attract female bees that gather the pseudopollen as food for their brood. This Colombian species has the lip very much more deeply divided than either *Sobralia fragilis* or the true *S. suaveolens*. It is quite possible that *S. fragilis* and the misidentified Colombian species are related to each other and they may both attract pollinators by pseudopollen.

We have only two plants of *S. fragilis*, but the species clearly show synchronized flowering, with both plants usually flowering on the same days.

DISTRIBUTION: only known from Costa Rica.

ETYMOLOGY: from the Latin *fragilis*, “fragile”, referring to the delicate, easily damaged surface of the lip.

***Sobralia geminata* Dressler & Bogarín, *sp. nov.***

TYPE: COSTA RICA. Cartago: Paraíso, Cachi, Peñas Blancas, camino a Cerros Duán, 9°49'51.3"N 83°46'13.1"W, 1400 m, bosque muy húmedo premontano, terrestre cerca del camino, flowered in cult. 1 October 2009, R.L. Dressler 7173 (holotype: CR; isotype: JBL-spirit). FIG. 5, 6, 8C.

A *Sobralia chrysostoma* Dressler similis, floribus minoribus, labello maculis brunneis plerumque aliquantum albo notato recedit.

*Roots* 5-7 mm in diameter; stems 20-140 cm, basally 5-6 mm in diameter, distally 3.5-5 mm in diameter. *Stems* dark greenish purple mottled with pale green, young sheaths similar, especially opposite the next leaf blade. *Leaves* elliptic or broadly elliptic, acuminate, apiculate, 11-25 x 4-7.4 cm, with 7-9 raised veins beneath. *Inflorescence* ellipsoid, 3.5-4 x 0.7-1 cm; smaller foliar bracts 3-10 x 1.5-5 cm; ovary 10-22 mm, sepaline tube 1-2 cm. *Sepals* greenish cream with green mid-veins, apically green. *Petals* white without, lip yellow with white margins and usually some white on disk, disk with pale brown spots or streaks. *Dorsal sepal* oblong-elliptic or oblanceolate-elliptic, apiculate, 4.2-6.6 x 1.25-1.8 cm. *Lateral sepals* oblong-elliptic or narrowly obovate, acute, 4.5-6 x 1.5-2.3 cm. *Petals* oblong-elliptic or narrowly obovate, subobtusate to subacute; 4.3-7.1 x 1.6-2.5 cm. *Lip* obovate, 5.3-6.5 x 4.2-4.8 cm, basal calli 0.8-1.8 cm, median keels 4-9, low, sometimes with 1-2 shallow grooves, midlobe crisped. *Column* 2.8-4 cm x 5-9 mm laterally x 5-8 mm dorsoventrally; lateral lobes (arms) small, tooth-like, 1.5-1.6 mm.

PARATYPES: Costa Rica. **Alajuela:** San Ramón, Piedades, Piedades Norte, road to Bajo La Paz, ca. km 3, along the Río San Pedro, 10°08'58.7"N 84°34'03.3"W, 1300 m, premontane wet forest, secondary and remnants of primary vegetation, R.L. Dressler 7011, A. Karremans & F. Pupilin, 19 February 2008, flowered and pressed in cult. in Lankester Botanical Garden, July 2009, R.L. Dressler 7172 (CR). **Cartago:** Jiménez, Pejibaye, Alto del Humo, 23 May 2005, R.L. Dressler 6561, flowered and pressed in cult. in Lankester Botanical Garden, 14 August 2007, R.L. Dressler 6947 (CR). Paraíso, Orosi,