This unique species is distinguished by the thin stems, grassy leaves, inflorescence generally shorter than the apical leaf, with partly spreading petals and sepals, the apices of the sepals recurved, the elliptical to suborbicular lip with evident laminar keels, and the prominent clinandrium-hood with the margin erose. *Epidendrum cystosum* is most similar to *E. macroclinium* Hágsater, but the latter has succulent, ovate-lanceolate leaves, inflorescences much longer that the apical leaf, reflexed petals, an obreniform lip with a single low keel, and a prominent clinandrium-hood with a fimbriate-dentate margin. It may also be related to *E. physodes* Rchb.f., which can be distinguished by the wider, lanceolate, short-acuminate leaves, the inflorescence longer than the apical leaf, the lip transversely elliptic, with a single low keel, and an obsolete clinandrium-hood with a thick and crenate margin (Santiago & Hágsater 2010).

5. ***Epidendrum* × *sandiorum*** Hágsater, Karremans & L.Sánchez, *nothosp. nov.*

Type: Costa Rica. Puntarenas: Coto Brus, Sabalito, Zona Protectora Las Tablas, 10 km al noreste de Lucha, Sitio Coto Brus, camino a la Finca de Miguel Sandí, 8°56'07.4" N 82°45'13.9" W, 1862 m, bosque muy húmedo montano bajo, epífitas a orillas del camino, colectado 5 junio 2010, floreció en cultivo en agosto 2011, *A. P. Karremans 2781 & D. Bogarín* (holotype, JBL-spirit!; figure 13).

Planta inter Epidendrum ciliare L. *et E. oerstedii* Rchb.f. *quasi intermedia et verisimiliter ex hybridatione harum specierum orta, cum Epidendro ciliare sed lobulo apicali labelli ad medium dilatato, lanceolato, clavato, manifeste acuminato, margine vix eroso, cum Epidendro oerstedii sed lobulis lateralibus labelli margine profunde fimbriato ad laciniatum, lobo apicali labelli longiore et aliis characteribus inter parentes mediis.*

Epiphytic, sympodial, caespitose *herb*, up to 20 cm tall. *Roots* basal, fleshy, 3 mm in diameter. *Stems* thickened into a sub-spherical to ovoid homoblastic pseudobulb, 4.0-6.0 × 1.5-3.0 cm. *Leaves* 1 at the apex of the pseudobulb, coriaceous; blade ovate-elliptic, bilobed, 7.5-12.0 × 3.5-6.0 cm. *Spathaceous bract* lacking. *Inflorescence* apical, racemose, born from the undeveloped new growth, with at least 3 flowers; peduncle laterally compressed, 2.5 cm long; covered by triangular, obtuse bracts. *Floral bract* about half the length of the ovary, triangular, acuminate, 3.5 cm. *Ovary* terete, not inflated, smooth, exceeding the length of the sepals, 6.5 cm. *Flowers* simultaneous, resupinate, sepals and petals yellowish green, lip white, column white turning green close to the base, calli white; flowers turn completely yellow with age. *Sepals* spreading, narrowly elliptic-lanceolate, acuminate, 5-7 veined, margin entire, revolute, 5.5 × 0.9 cm. *Petals* incurved, embracing the column and lip, linear-lanceolate, acuminate, 5-veined, margin entire, 5.2 × 0.8 cm. *Lip* basally united to the column, 3-lobed, base truncate; bicallose, the calli laminar, prominent, narrowly elliptic, 5 mm; disc with numerous evident veins; lateral lobes obliquely oblong, inner margin entire, outer margin prominently fimbriate to laciniate, 20 × 6 mm; mid-lobe separate from the lateral lobes by deep sinuses, lanceolate-clavate, widened beyond the middle and that portion trullate, acuminate, margin shallowly erose, 45 × 7 mm. *Column* straight, dilated towards the apex, 1.6 cm long; *clinandrium-hood* prominent, margin dentate-fimbriate, rostellum apical, cleft, forming a slit-like aperture *anther* ovoid, 4-celled. *Pollinia* 4, obovoid, the inner margin straight, laterally compressed.

Distribution: Known only from Costa Rica; however, as it was found a few km from the border it could also occur in Panama.

Etymology: The name honors Miguel Sandí and his family; the plant that served as the type was collected on the road leading to their property.

Habitat in Costa Rica: This natural hybrid is only known from the very humid lower montane forests of the Pacific watershed of the Cordillera de Talamanca at an elevation of around 1900 m.

Phenology: Flowering at least in August and September in cultivation.

Several species of *Epidendrum* (e.g., *E. ciliare* L. *E. falcatum* Lindl., *E. nocturnum* L., *E. oerstedii* Rchb.f., and *E. parkinsonianum* Hook.) have star-like, white or greenish flowers with a deeply 3-lobed, white lip. They were traditionally considered close

relatives, but DNA studies (Hágsater & Soto 2005b) showed that species with this floral morphology are found in five different groups within *Epidendrum*, and that probably their pollination by nocturnal sphyngid moths has led to the development of similar floral features. The fact that they may all be pollinated by the same type of moth has led to occasional natural hybrids, such as *E. parkinsonianum* × *E. falcatum* (Hágsater 1990) and *Epidendrum* × *dorotheae* P.H. Allen (Hágsater & Sánchez 2008a). The latter case is interesting because the putative parent species belong to different groups, *E. nocturnum* being in the Nocturnum group and *E. ciliare* in the Coilostylis Group.

Both putative parents of *Epidendrum* × *sandiorum*, *E. oerstedii* and *E. ciliare*, are members of the Coilostylis Group that is characterized by the sympodial, caespitose plants, the stems forming a fusiform pseudobulb, with an apical, racemose, distichous inflorescence, the peduncle covered by large bracts (but not spathaceous), and flowers with the above-mentioned morphology. The hybrid is recognized by the sub-spherical to ovoid pseudobulbs with a single apical leaf and the inflorescence produced from the immature stem. The outer margins of the lateral lobes of the lip are fimbriate to laciniate, the mid-lobe trullate beyond the middle, 45 mm long, apically long-acuminate, and the margin erose. *Epidendrum oerstedii* ranges from Honduras to central Panama, produces the inflorescence from the immature, short pseudobulb. The margin of the lip is entire, and the mid-lobe shorter (25-33 mm long), widened beyond the middle. *Epidendrum ciliare* is widely distributed from western Mexico (Nayarit) south to Peru and Brazil and the Antilles, also produces the inflorescence from the immature, more elongate pseudobulb, but the outer margins of the lip are deeply fimbriate, and the mid-lobe is linear, not widened in the middle (Sánchez & Hágsater 2008b; 2010). The putative parents have not been recorded yet at the same location were the hybrid was found.

6. ***Epistephium ellipticum*** R.O.Williams & Summerh., Bull. Misc. Inform. Kew 1928(4): 145. 1928. Type: Trinidad: Valencia Road, Mora forest end, Sept. 1926, *Freeman, William & Cheesman s.n.* (holotype, TRIN no. 11324; isotype, K).

Distribution: Belize, Costa Rica, Venezuela, Trinidad, Guyana and Peru. Likely occurs (but not yet collected) in Colombia, Ecuador, Panama, and other Central American countries.

Etymology: From the Latin *ellipticus,* elliptic, in reference to the elliptic leaf shape of the type specimen.

Habitat in Costa Rica: Known from a single collection in the coastal lowlands of the Caribbean close to the Panamanian border. The specimen label does not describe the habitat, but species of *Epistephium* grow terrestrially, typically in open, grassy areas (Cameron 2003).

Costa Rican material studied: Limón. Talamanca, Sixaola, Gandoca, El Llano entre Filas Manzanillo y Rio Mile Creek. 09°37'00" N, 82°41'00" W, 50-100 m. 27 Mar. 1995. Terrestre. Margen de la hoja liliáceos. Flor lila morado. *G. Herrera 7605 & E. Sandoval McCarthy* (CR!, MO; figure 6).

Heretofore, *E. ellipticum* had been recorded for Belize, Venezuela, Trinidad, Guyana and Peru; it had not been recorded from anywhere in Central America outside of Belize. The Costa Rican record here reported was collected a few kilometers from the Panamanian border, and the species likely occurs in Panama as well. The duplicate specimen at MO had already been identified as *E. ellipticum* by Robert L. Dressler in 2007.

Epistephium ellipticum is a short-statured herb and the flowers of the genus are short-lived (Garay 1961), so the plants are likely overlooked and undercollected. In addition, because of their reticulate leaf venation, herbarium collections are likely to be erroneously assigned to other plant families (e.g., Convallariaceae, Smilacaceae, or even Piperaceae) when not in flower or when the perianth has been damaged or lost. It is possible that *E. ellipticum* is more widespread along the Caribbean lowlands of Central America than what the few available collections suggest. *Epistephium ellipticum* is also known from Peru from a single collection made in the Amazonian lowlands of the department of Loreto (*Beltrán & Foster 567*, F). No collections of the Amazonian lowlands of Colombia and Ecuador are known to us. The size variation of the three plants included in the herbarium sheet at CR (all of them with inflorescences) is worth mentioning; two plants are only 8 cm tall, whereas the third plant is 23 cm tall.

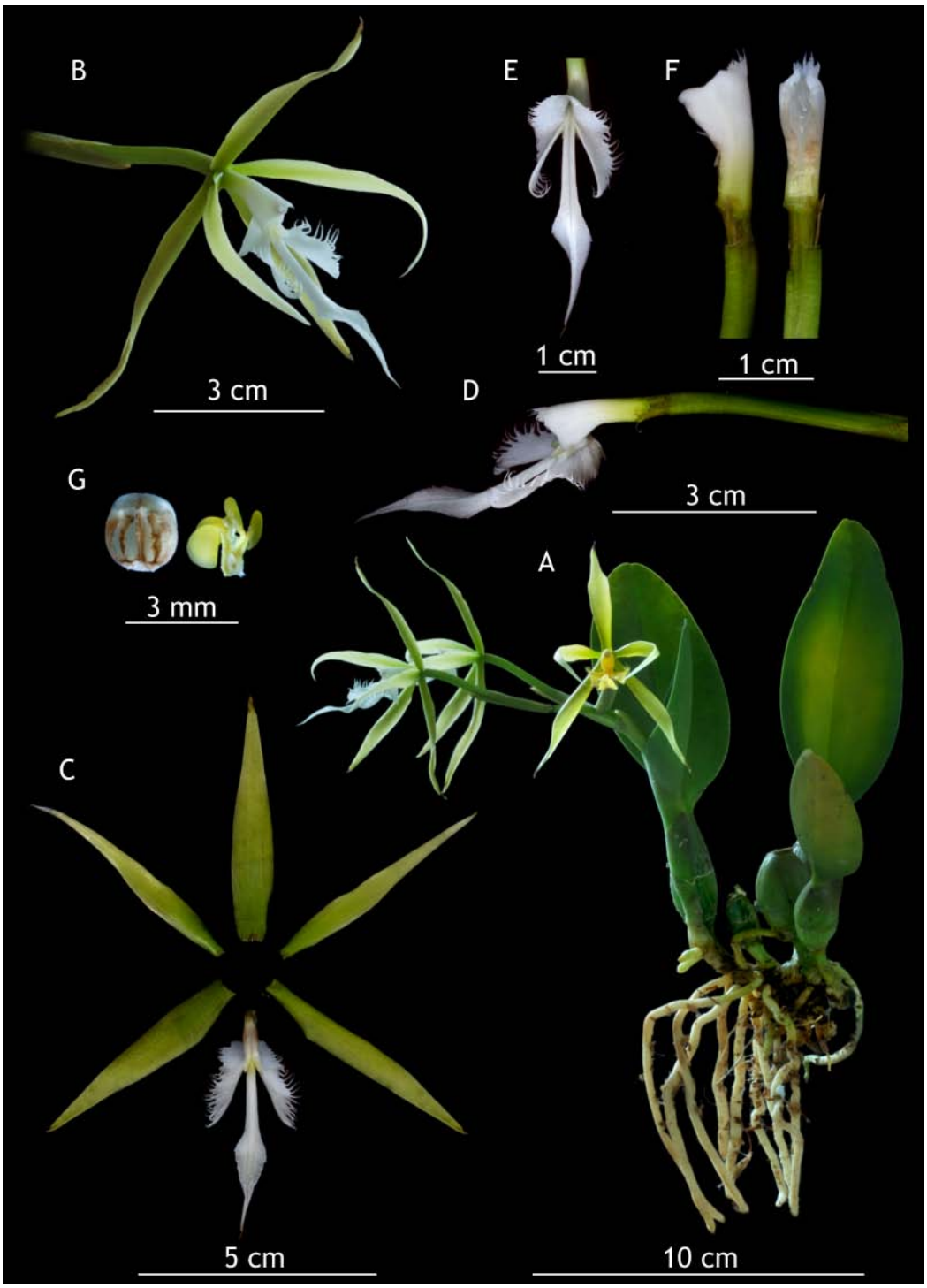

FIGURE 13. *Epidendrum* × *sandiorum* Hágsater, Karremans & L.Sánchez. A — Habit. B — Flower. C — Dissected perianth. D — Column and lip, lateral view. E — Lip, spread. F — Column, lateral and ventral views. G — Anther cap and pollinarium. Photographs by A.P. Karremans and F. Pupulin based on *A.P. Karremans 2781*.