

## A NEW SPECIES OF *STELLILABIUM* SECTION *TAENIORHACHIS* (ORCHIDACEAE) FROM COSTA RICA

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RESUMEN. Se describe e ilustra *Stellilabium smaragdinum* de los bosques montanos de encino de la Cordillera de Talamanca. *S. smaragdinum* se distingue de otras especies de la sección *Taeniorhachis* por su inflorescencia con 1 a 3 (4) flores simultáneas, los lóbulos basales del labelo oblongos a ovoides y redondeados en el ápice y la peculiar coloración de la setas en los lóbulos laterales de la columna, marfil con bandas púrpura.

ABSTRACT. The new species *Stellilabium smaragdinum* is described and illustrated from the montane oak forests of the Cordillera de Talamanca, Costa Rica. Among the species of Sect. *Taeniorhachis*, *S. smaragdinum* may be recognized for the inflorescence bearing 1-3 (4) simultaneous flowers, the oblong to ovoid, rounded basal lobules of the lip, the non-ciliate margins of the lip midlobe and the peculiar colour of the column setae, cream banded with purple.

KEY WORDS / PALABRAS CLAVE: *Stellilabium smaragdinum*, *Stellilabium* sect. *Taeniorhachis*, Orchidaceae, Costa Rica.

Mesoamerican species of the genus *Stellilabium* Schltr. (Orchidaceae) are not easy plants to spot in the field. In many cases they lack leaves and also when the leaves are present they are usually very small, rarely reaching 3 cm in length, so one needs to rely on inflorescences to distinguish them among the rich epiphytic vegetation of Neotropical forests. It is likely this is the main reason why two thirds of Mesoamerican species of the genus were only described in the last twelve years (Atwood 1989; Salazar-Chávez & Hágsater 1991, Atwood & Dressler 1995, Dressler 1999, 2001), thanks to the help of resident botanists carrying out systematic collections and studies intended for large floristic projects.

Generic circumscription of *Stellilabium* was revised by Braas & Lückel (1982b), Garay & Romero-González (1998) and Dressler (1999). *Stellilabium* in the strict sense, characterized by flowers with simple column, is a group eminently

Andean in distribution, perhaps closely allied to *Trichoceros* Kunth and *Telipogon* Kunth, which includes *Cordanthera* L.O. Williams, *Darwiniella* Braas & Lückel, and *Sodiroella ecuadorensis* Schltr. A formal reinstatement of *Dipterostele* Schltr. was proposed by Braas & Lückel (1982a, 1982b) to include those species presenting narrowly triangular-acuminate lip and bristles of the column short. Garay & Romero-González (1998) adopted a much wider circumscription of the genus *Dipterostele* Schltr. and formally assigned to it all the *Stellilabium* species with distinct lateral lobes on the column and a cucullate clinandrium. Dressler (1999) interpreted *Stellilabium* in a broad sense, including *Dipterostele* Schltr., and identified four distinctive groups within the genus giving them sectional status. Section *Stellilabium* and Sect. *Dipterostele* (Schltr.) Dressler, both with persistent leaves, mainly terete or triangular rhachis, and margins of floral bracts not decurrent on rhachis, are exclusively South American. Species of

*Stellilabium* from Mesoamerica, on the contrary, present ephemeral leaves and margins of floral bracts decurrent on the rhachis, so that the flowers are borne on face rather than on the edges of the flattened rhachis. Although their relationships are yet unclear, among species from Central America two main groups may be distinguished. In Section *Taeniorhachis* Dressler the column is 3-lobed, and the fleshy stigma is adnate to the base of the lip, whereas species of Sect. *Ramphosteles* Dressler have simple column and a porrect stigma free from the lip. With the notable exception of *S. lankesteri* Ames, flowers of the latter section are completely glabrous (Dressler 1999).

Samples of DNA sequences for the genus are still scanty, but they support distinction between sections *Stellilabium*, *Dipterosteles* and *Taeniorhachis* (com. by N.H. Williams, in Dressler 2001), though the three groups may eventually prove to be subgroups of *Telipogon*. It should be noted that if *Stellilabium* Sect. *Taeniorhachis* is ever elevated to the generic rank it would have to be renamed, since that name is already occupied by one species in Poaceae (Cope 1993).

A species pertaining to *Stellilabium* section *Taeniorhachis* from the Talamanca range in Central Costa Rica is here described as new to science:

***Stellilabium smaragdinum*** Pupulin & M.A. Blanco, *sp. nov.*

FIG. 1.

TYPE. COSTA RICA. Cartago. El Guarco, La Chonta, Turbera, 09°42'00"N 83°56'20"W, 2400 m, epífita sobre *Quercus* sp., en ramas bajas, 17 julio 2001, M. Blanco 1965, F. Rizo-Patrón, A. Vasco & O. Vargas (holotype, USJ!, USJ-Spirit!; isotypes, CR!, SEL!).

Inter species sectionis *Taeniorhachidi* floribus 1 vel 4 simultaneis lobulis lateralibus labelli oblongis vel ovoideis, rotundatis, marginibus lobi intermedi labelli integris, setis columnae eburneis purpureo striatis dignoscenda.

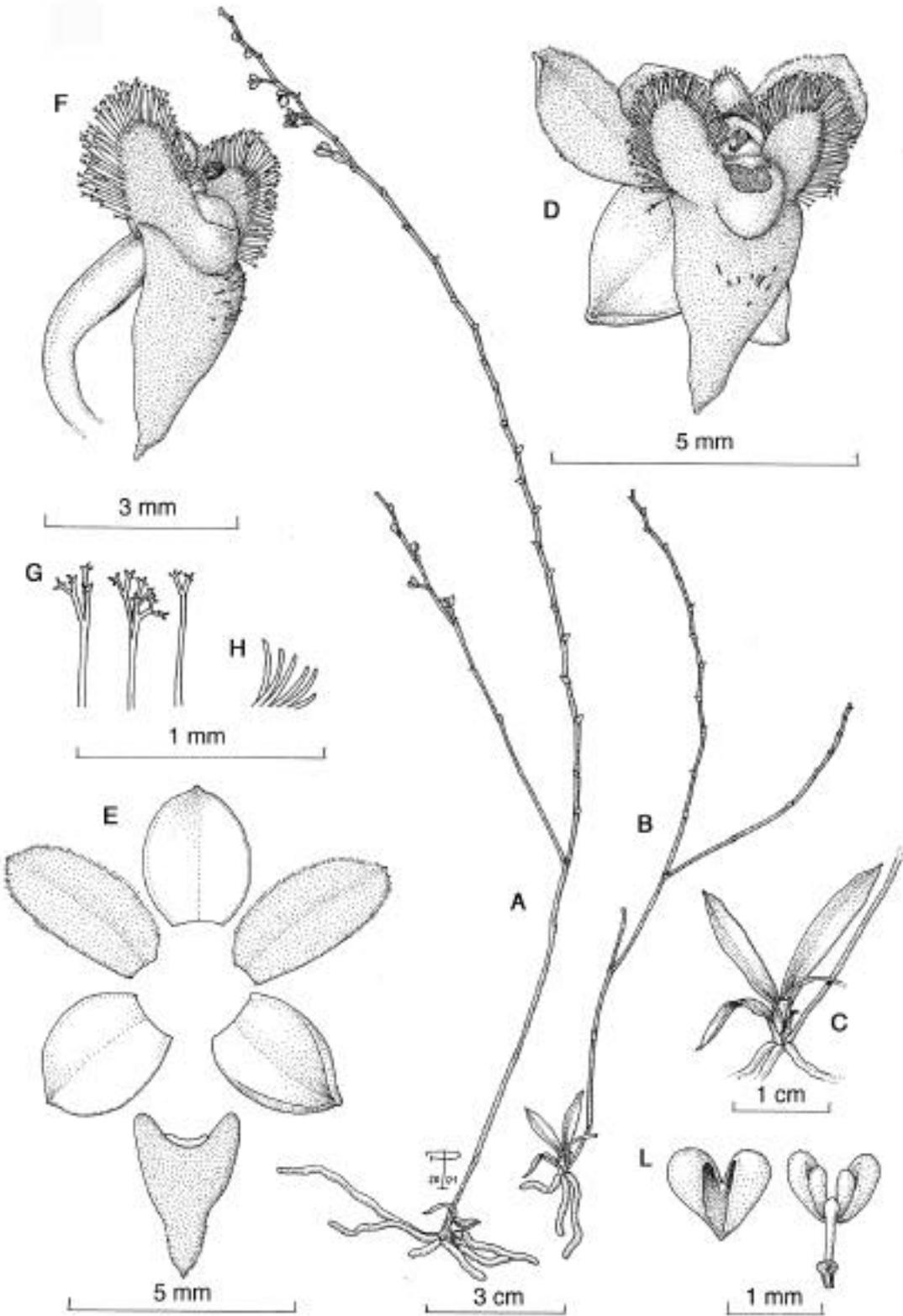
*Plant* epiphytic, small, nearly acaulescent, the abbreviated stem about 5 mm long. *Roots* thick, flexuous, rounded in section, ca. 1 mm wide. *Leaves* 3-4, distichous, narrowly elliptic to lanceolate, acute, minutely apiculate, 15-18 mm long, 2-3 mm wide, the

base enclosing the subterete stem, sometimes absent at flowering. *Inflorescence* a primarily simple raceme 10-33 cm long, producing secondary branches in succession from the lower bracts of the previous axis; *peduncle* terete, 5-9 cm long, with 3-4 triangular, acute bracts about 4 mm long; *rhachis* flattened, 1-1.3 mm wide, successively many-flowered (to 27), with 1-3 (4) flowers simultaneously opened; *floral bracts* triangular, acute, from the margin of the flattened rhachis, 2 mm long, 1.2 mm wide. *Ovary* linear-subclavate, 3.6-4.6 mm long including the pedicel. *Flowers* small, with olive-green sepals and petals, the lip and column emerald green, the dendroid hairs of the column cream, banded purple. *Dorsal sepal* widely elliptic, obtuse, with a rounded apicule, 2.9 mm long, 2.4 mm wide. *Lateral sepals* obliquely widely elliptic-suborbicular, rounded, provided with a rounded apicule, the apical margins somewhat involute in natural position, 2.7 mm long, 2.4 mm wide. *Petals* narrowly elliptic, slightly falcate, subobtuse, apiculate, the margins ciliate, 3.7 mm long, 1.7 mm wide. *Lip* sagittate, 3.4 mm long, 2.3 mm wide, covered with sparse, stiff hairs, the basal lobules oblong to ovoid, rounded, flattened, the median lobe ligulate, velutine, with a prominent, acute apicule, the margins minutely ciliate. *Column* 3-lobed, the lateral lobes elliptic, flattened, 1.5 mm long, 1 mm wide, the dorsal margins covered with dendroid-stellate setae ca. 0.6 mm long, the median lobe helmet-shaped, rounded, 0.8 mm long, 0.7 mm wide, covered with simple setae 0.2-0.3 mm long; stigma globose, rounded. *Anther cap* cucullate, deeply cordate, 2-celled. *Pollinia* 4 in two pairs of different size, obovate, laterally complanate-concave, on a narrow, ligulate stipe; viscidium uncinata. *Fruit* an elliptic-globose capsule, 4 mm long.

ETIMOLOGY: From the Latin *smaragdinus*, emerald-green, in reference to the bright green color of lip and column.

ECOLOGY: Epiphytic on shady, lower branchlets amidst a dense cover of mosses and other epiphytes in wet montane oak forest at 2400 m altitude. More plants possibly grew higher up the tree, where they would be virtually impossible to detect from the ground.

Figure 1. *Stellilabium smaragdinum* Pupulin & M.A. Blanco. A, B – Habit. C – Plant. D – Flower. E – Dissected perianth. F – Column and lip, lateral view. G – Setae of lateral lobes of column. H – Setae of midlobe of column. L – Anther cap and pollinarium.



Among the species of *Stellilabium* Sect. *Taeniorhachis*, *S. smaragdinum* may be recognized for the inflorescence bearing 1-3 (4) simultaneous flowers, the elliptic, rounded lateral lobes of lip, the non-ciliate margins of the lip midlobe and the peculiar colour of the column setae, cream banded with purple. *Stellilabium smaragdinum* is closely related to other species of Sect. *Taeniorhachis* presenting dendroid-stellate bristles on the lateral lobes of column and simple setae on the midlobe (which sometimes is only glandular-papillose), i.e. *S. butcheri* Dressler, *S. erratum* Dressler, *S. helleri* L.O. Williams, and *S. minutiflorum* (Kraenzl.) Garay. However, plants of the latter species are much smaller (the type, *Endrés s.n.*, W-R 2006!, 2007!, 2011!) and the flower presents a smaller lip with

short, narrowly triangular basal lobes (illustration of type, W!). See discussion on *S. minutiflorum* in Dressler 1999: 471). *Stellilabium helleri* has a fringe of hairs in front of the column that are absent in *S. smaragdinum*, and the column midlobe is obscurely muricate. *Stellilabium erratum* has dark wine-purple flowers with comparatively narrower petals and a markedly hastate lip. The Panamanian *S. butcheri* presents a convex lip with papillose-hispid margins and narrow basal lobules.

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