



A new species of *Stelis* (Orchidaceae, Pleurothallidinae) from Guerrero, Mexico

Una nueva especie de *Stelis* (Orchidaceae, Pleurothallidinae) de Guerrero, México

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Abstract. A new species of *Stelis* from the cloud forest of Guerrero, Mexico, is described and illustrated as *S. desantiagoi*. This species is similar to *S. rubens*, but is distinguished by its larger plants, the stems proportionally longer, the leaves wider, the sepals internally papillose (vs. pubescent), the petals flabellate (vs. cuneate), the labellum slightly arcuate with the apex straight (vs. geniculate with the apex strongly incurved), and the clinandrium entire (vs. trilobate).

Key words: cloud forest, endemism, Guerrero, Orchidaceae, Sierra Madre del Sur, *Stelis desantiagoi*.

Resumen. Se describe e ilustra una nueva especie de *Stelis* del bosque nublado de Guerrero, México como *S. desantiagoi*. Esta especie es similar a *S. rubens*, pero se distingue por las plantas de mayor tamaño, los tallos proporcionalmente más largos, las hojas más anchas, los sépalos interiormente papilosos (vs. pubescentes), los pétalos flabelados (vs. cuneados), el labelo ligeramente arqueado con ápice recto (vs. geniculado con el ápice fuertemente incurvado) y el clinandrio entero (vs. trilobado).

Palabras clave: bosque nublado, endemismo, Guerrero, Orchidaceae, Sierra Madre del Sur, *Stelis desantiagoi*.

Introduction

The genus *Stelis* Sw. s. str. includes over 500 species of epiphytic orchids found throughout the Neotropics, with the highest diversity in Andean South America. A molecular phylogenetic study (Pridgeon et al., 2001) showed that several groups of species previously assigned to a broadly defined *Pleurothallis* R. Br. are instead more closely related to *Stelis* s. str. and, accordingly, have been transferred to the latter (Pridgeon & Chase, 2001, 2002), increasing considerably both, the size and the morphological diversity of the genus. Nevertheless, *Stelis* s. str. (including *Apatostelis* Garay) is a monophyletic group easily recognized by its relatively constant floral morphology and in this paper we refer to the genus in this restricted sense.

Twenty-nine species of *Stelis* s. str. were recorded previously in Mexico (Solano, 1993, 1999, 2000), but during a revision of newly collected orchid material from a little-explored area of the state of Guerrero, Mexico, we

discovered an additional species that is described here for the first time.

Description

Stelis desantiagoi Solano et Salazar, *sp. nov.* (Fig. 1-2). *Holotype:* MEXICO. Guerrero: municipio Atoyac de Álvarez, El Molote, 17°25'23'' N, 100°10'8.7'' W, 1870 m, collected 11 Oct. 2004, pressed in cultivation 22 Sep. 2006, J. Rojas & R. de Santiago 653 (MEXU). Figs. 1-2.

A *Stelide rubente* *Schltr. similis*, *sed caulibus longioribus, foliis latioribus, floribus descendentibus, sepalis intus papillois (non pubescentibus), labello non geniculato nec valde incurvato ad apicem, et clinandrio integro differt.*

Epiphytic, caespitose herb up to 23 cm in height. Roots slender, flexuose, whitish, 1-1.3 mm in diameter. Stems erect, terete, formed by two internodes, 5-10 cm long, 1.4-2 mm in diameter, with a thickened annulus 3-4 mm below the apex, almost completely covered by narrow tubular, scarious, obtuse, carinate sheaths. Leaves fleshy, narrowly

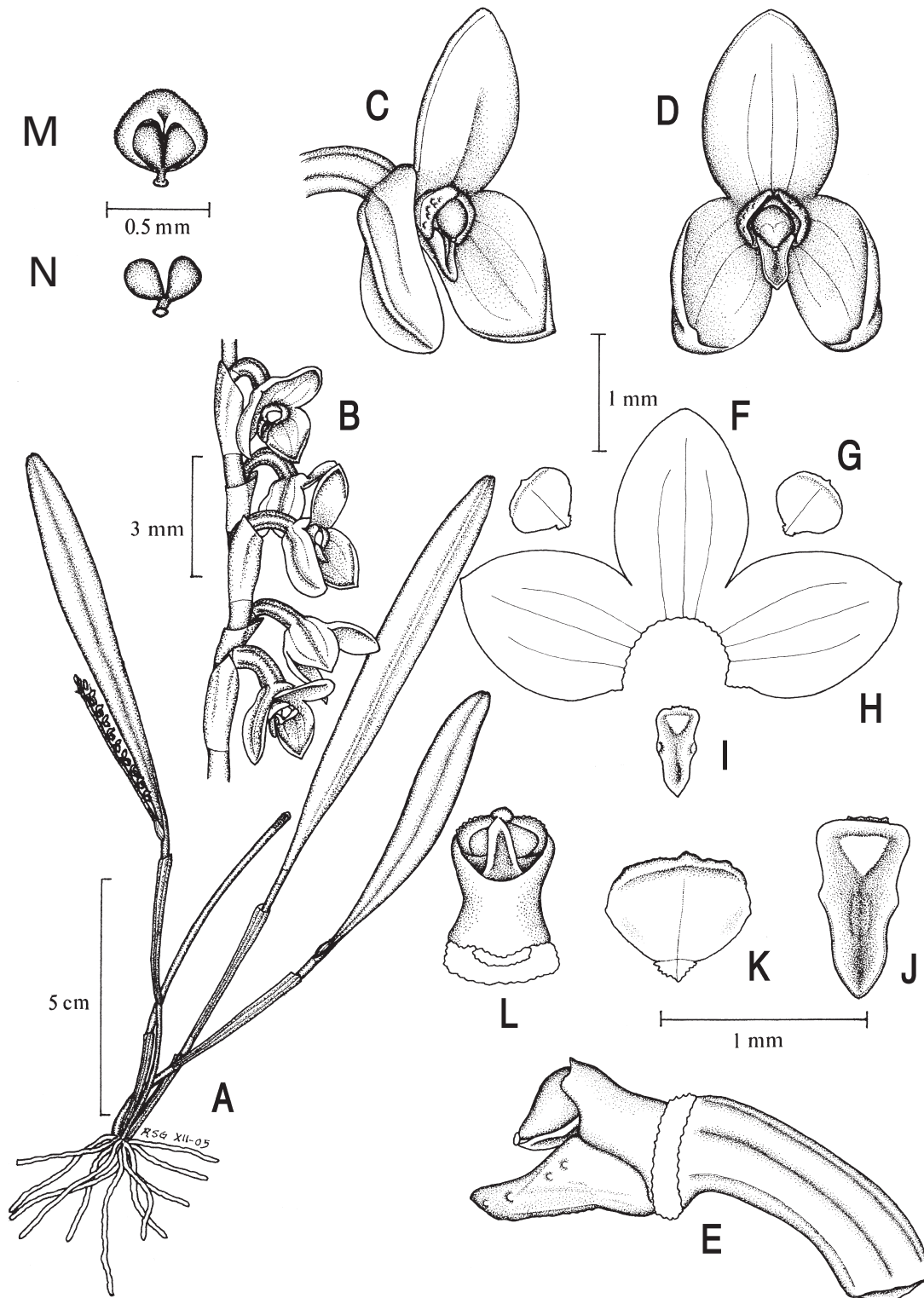


Figure 1. *Stelis desantiagoi*. A, habit. B, detail of inflorescence. C, flower, three-quarter view. D, flower, frontal view. E, column, ovary and labellum, lateral view. F, dorsal sepal. G, petal. H, lateral sepal. I, labellum. J, enlarged labellum. K, enlarged petal. L, column, ventral view. M, anther and pollinarium, from below. N, pollinarium, from above. Drawn with camera lucida by R. Solano from *Rojas et de Santiago 653*.

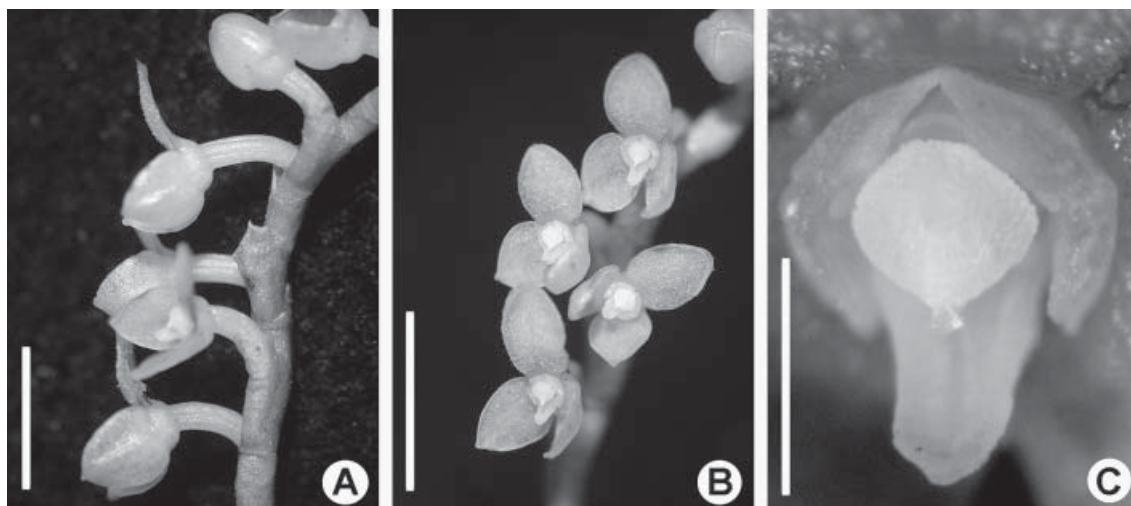


Figure 2. *Stelis desantiagoi* (from Rojas & de Santiago 653). A. Inflorescence, lateral view (scale bar = 3 mm). B. Inflorescence, frontal view (scale bar = 3 mm). C. Close-up of labellum, petals, and column (scale bar = 0.5 mm). Photographer: G. A. Salazar.

elliptic, rounded, shortly 2-lobulate at apex with a minute mucro between the lobules, sulcate on the upper surface, carinate on the lower surface, 8.5-14 cm long, 8-16 mm wide; base attenuate into a short, channeled petiole 8-15 mm long. Inflorescence arising from the annulus of the stem, racemose, erect, about half as long as the leaf, 4.5-8 cm long; a single stem can produce inflorescences during several years; peduncle 4-7 mm long, 0.6 mm in diameter, enclosed at base by a conduplicate, triangular, scarious, carinate bract 4.5-7.3 mm long and provided with another two bracts similar to the floral bracts but hidden within the basal bract, 1.9-2 mm long; rachis densely many-(20-28)flowered. Floral bracts shortly tubular, narrow, membranaceous, oblique and obtuse at apex, 1.8-3.2 mm long. Flowers simultaneous, descending, secund, pale green, 1.8 mm in tall, 3.2 mm long, 2 mm wide. Ovary stout, subtrigonus, slightly arcuate, 0.8-1.3 mm long, 0.45-0.6 mm in diameter, articulated to a terete, arcuate pedicel completely enclosed by the floral bract, 1.2-2.3 mm long. Sepals elliptic-ovate, shortly connate at base, fleshy, 3-veined, carinate along the mid-vein on the external surface, papillose on the internal surface; dorsal sepal obtuse-rounded, spreading, convex, 2.1-2.4 mm long, 1.1-1.5 mm wide; lateral sepals inflexed, slightly oblique, obtuse and shortly apiculate, concave, 1.7-2.1 mm long, 1.4-1.6 mm wide. Petals erect, slightly shorter than the column, somewhat concave, fleshy and rigid, flabellate, subtruncate and shortly apiculate, erose on the distal margin, 1-veined, 0.5-0.6 mm long, 0.7 mm wide. Labellum fleshy, thickened, appressed to the column, slightly deflexed above the middle, narrowly triangular in outline with a minute, upturned lobule at each side of

the middle, apex obtuse and slightly incurved, sulcate-concave on the distal 2-thirds, 3-veined, slightly carinate on the lower surface along the midvein, 0.8 mm long, 0.4-0.5 mm wide. Column erect, terete, narrowed near the middle, 0.55-0.8 mm long, 0.4-0.5 mm wide, with a short column foot; clinandrium entire, shortly apiculate; stigma a transverse excavation on the ventral surface near the column apex; rostellum subapical, erect, triangular. Anther apical, incumbent, more or less hemispherical, minutely papillose, 0.35 mm long, 0.4 mm wide. Pollinarium made up of 2 obovoid, yellow pollinia 0.25-3 mm long, united to an elastic caudicle, this in turn attached to a translucent, viscid drop.

Distribution and habitat. Endemic to Mexico. So far this species is known only from a single locality in the Sierra Madre del Sur, Guerrero, within a region that stands out because of its diverse orchid flora, including many narrow endemics such as *Helleriella guerrerensis* Dressler & Hagsater, *Kraenzlinella hintonii* (L.O.Williams) Solano, *Malaxis molotensis* Salazar & R. de Santiago, *Mormodes sanguineoclastra* Fowlie, *Sigmatostalix mexicana* L.O.Williams, and *Stelis aristocratica* (L.O.Williams) Solano & Soto Arenas, among others (see Soto, 1996). *Stelis desantiagoi* is an epiphyte in cloud forest at 1870 m elevation. Flowering occurs in September and October.

Remarks

Stelis desantiagoi is similar to *S. rubens* Schltr., which is widespread in lowland tropical rain forests and cloud forests in southeastern Mexico (Puebla, Veracruz, Oaxaca,

and Chiapas), Belize, Guatemala, Honduras, Nicaragua, and the Antilles, with disjunct populations in Guerrero and Jalisco (Solano, 1993). However, in *S. rubens* the stems are shorter (1.5-4.5 cm long), the leaves narrower (5-12 mm wide), the inflorescence is longer than the leaf, the flowers face directly outwards horizontally, the sepals are pubescent on the inner surface, the labellum is geniculate with a strongly incurved apicule, and the column is conspicuously three-lobed. The Guerrero population of *S. rubens* (as represented by specimen *Valverde 95*, FCME!) occurs in the same general area as *S. desantiagoi* but in a semi-evergreen tropical rain forest at a lower elevation (1250 m) and is easily distinguished from the latter by the linear leaves up to 6 mm wide and the minute flowers with sepals 1-1.3 mm long. Florally this population is indistinguishable from other populations of *S. rubens*.

The new species is named after botanist Ricardo de Santiago, from the Facultad de Ciencias, Universidad Nacional Autónoma de México, one of its original collectors.

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