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Stylosanthes falconensis (Leguminosae, Papilionoideae, Dalbergieae), a new species endemic to Venezuela

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Summary. During a revision of Venezuelan species of *Stylosanthes* Sw., two quite distinct specimens were found. After a detailed survey of the literature and herbarium material, it was concluded that they belong to an undescribed species. The new species *Stylosanthes falconensis* Calles & Schultze-Kr. (belonging to section *Styposanthes* Vogel), endemic to the Sierra San Luis in the State of Falcón, is here described. An illustration is provided and the differences between the new taxon and *Stylosanthes hamata* (L.) Taub., a closely related species, are presented.

Key Words. *Dalbergieae*, *Papilionoideae*, Sierra San Luis, *Stylosanthes falconensis*, *Styposanthes*, Venezuela.

Introduction

Stylosanthes Sw. (*Leguminosae*, *Papilionoideae*, *Dalbergieae*) is a mainly neotropical genus comprising c. 25 species (Klitgaard & Lavin 2005) although estimates of up to 50 species exist in the literature. Outside the Americas, only the species *S. fruticosa* (Retz.) Alston, *S. erecta* P. Beauv. and *S. sundaica* Taub. have been reported (Nooteboom 1960; Mannetje 1984). In Venezuela, nine species of *Stylosanthes* are recorded (Calles 2008) of which one is endemic (*S. sericeiceps* S. F. Blake).

Stylosanthes is of economic importance with some species, e.g. *S. hamata* (L.) Taub. and *S. guianensis* (Aubl.) Sw., used as forage, cover crops, to rehabilitate degraded soils and, recently, to produce leaf feed for monogastric animals (Shelton *et al.* 2005).

During the revision of the genus *Stylosanthes* in Venezuela, two novel specimens were identified. A field trip to the Sierra San Luis, State of Falcón in northwestern Venezuela, was conducted, aiming to collect more material of this new taxon for further analysis. After a detailed study of the material, we here describe a new endemic species from the mountains of San Luis in Venezuela.

Stylosanthes falconensis *Calles & Schultze-Kr.* **sp. nov.**, sectionis *Styposanthes* Vogel, *S. hamatae* (L.) Taub. affinis, sed duratione vitae perenni (non annua vel bienni), caulibus albo-tomentosis (non linea pubescente tenue lateraliter per caulem decurrente), bracteis primariis et secundariis opacis, setis tuberculatis (non translucidis, margine ciliis sericeis donatis), foliolis bractae margine setis tuberculatis (non ciliis sericeis praeditis), vexillo 6 – 7 mm (non 4 – 5 mm) longo, fructu rostro erecto vel suaviter flexo (non uncinato) differt. Typus: Venezuela, Estado Falcón, alrededores de Carrizalito, a unos 300 m de la salida hacia Cucaire, 11°07'49"N, 69°45'28"W, 1170 m, 12 Feb. 2006, *T. Calles & R. Schultze-Kraft* 1006, (holotypus VEN; isotypi HOH, K, M, MO, NY, US).

http://www.ipni.org/urn:lsid:ipni.org:names:77104344–1

Perennial subshrub 35 – 50 cm tall, much branched from the base; with a strong tap root. *Stems* prostrate to ascending, ligneous near the base, upper branches herbaceous, slender with a whitish tomentose indumentum. *Stipules* amplexicaul with a whitish tomentose indumentum, sheath 4.5 – 6.5 mm long with a midrib ± 0.5 mm wide, teeth needle-like, 3 – 6 mm long. *Leaves* trifoliolate with a 0.7 – 0.9 mm long pubescent rachis and pubescent 1.2 – 2.2 mm long petioles. *Leaflets* narrow lanceolate, 11 – 24 × 2.3 – 3.8 mm, glabrous or nearly so along both margins of the blade, veins inconspicuous on the upper surface, conspicuous on the lower surface. *Inflorescences* terminal and axillary, oblong, 8 – 10 mm long, 6 – 11-flowered, primary bracts trifoliolate, secondary bracts unifoliolate, sheath of the primary and secondary bracts opaque and with needle-like tuberculate bristles and silky cilia, bract "leaflets"

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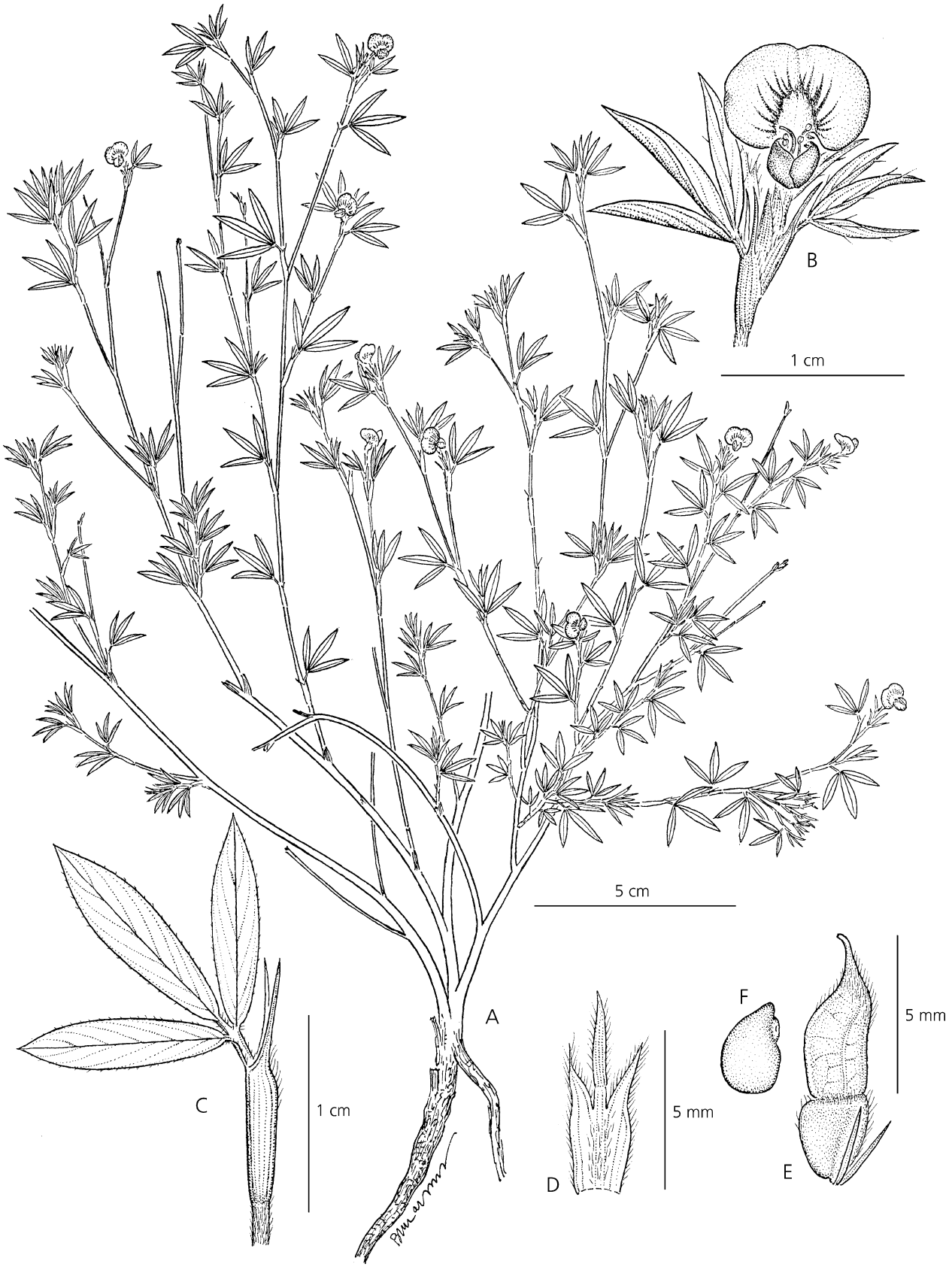

Fig. 1. *Stylosanthes falconensis*. **A** habit with inflorescences; **B** inflorescence; **C** leaf with amplexicaul, forked stipule; **D** floral bract; **E** biarticulated pod with inner bracteoles; **F** seed. From *T. Calles* & *R. Schultze-Kraft* 1006. DRAWN BY BRUNO MANARA.

lanceolate with tuberculate bristles at margins, axis rudiment ciliate, 3.5 – 4.5 mm long, inner bracteoles 2, outer bracteole 1. *Flowers* with a pedicel 5.5 – 7 mm long; corolla yellow, glabrous, standard petal suborbicular 6 – 7 mm long, wing and keel petals 4.0 – 4.5 mm long. *Pods* biarticulated (but only in 44% of the cases studied (n = 30) does the lower articulation develop), upper articulation reticulate-veined, densely whitish pubescent, glabrescent, 3.1 – 4 × 1.8 – 2 mm, beak straight to slightly curved, 2.2 – 3.3 mm long; lower articulation densely pilose. *Seeds* cream coloured, smooth, 1.8 – 2.7 × 1.2 – 1.3 mm. Fig. 1.

DISTRIBUTION. Only six collections of *Stylosanthes falconensis* are known and all are from a small area between the villages of Carrizalito and La Peña, in the State of Falcón. The species grows in an area of 4 – 5 km^2 between these villages, where it is locally very abundant. **VENEZUELA.** Estado Falcón, alrededores de Carrizalito, a unos 300 m de la salida hacia Cucaire, 11°07'49"N, 69°45'28"W, 1170 m, 12 Feb. 2006, *T. Calles & R. Schultze-Kraft* 1006 (holotype VEN; isotypes HOH, K, M, MO, NY, US); *ibid.*, entre Carrizalito y Cucaire, a unos 0.4 km de Cucaire, 11°07'49"N, 69°45'29"W, 1170 m, 23 July 2007, *T. Calles* 1019 (VEN); *ibid.*, entre Cucaire y La Peña, a unos 0.95 km de La Peña, 11°06'42"N, 69°44'52"W, 900 m, 24 July 2007, *T. Calles* 1020 (VEN); lado este del caserío Cucaire, 11°07'36"N, 69°45'27"W, 1140 m, 25 July 2007, *T. Calles* 1021 (VEN); *ibid.*, alrededores de Cucaire, carretera Coro-Churuguara, 13 Nov. 1980, *B. Trujillo et al.* 16739 (MY); *ibid.*, alrededores de Cucaire, carretera Coro-Churuguara, 13 Nov. 1980, *B. Trujillo et al.* 16741 (MY).
HABITAT. *Stylosanthes falconensis* grows in open areas of low-montane deciduous dry tropical forest (ecozone classification according to Huber & Alarcón 1988), between 900 and 1200 m on well-drained slopes. An analysis of the soil in which the species grows revealed that it is a clay loam with 1.35% organic matter content, a pH of 6.7, and nutrient contents of 3, 54, 1540 and 32 mg/kg of P, K, Ca and Mg, respectively.
CONSERVATION STATUS. *Stylosanthes falconensis* is locally abundant; however, since the estimated area of occupancy of the species is less than 500 km^2, according to the IUCN (2001) criteria the taxon is to be considered as endangered (EN). Moreover, if current agricultural activities are intensified, the species may be prone to extinction.
ETYMOLOGY. *Stylosanthes falconensis* is endemic to a small area of the Venezuelan State of Falcón from whose name the specific epithet is derived.
USES. Local people do not use *Stylosanthes falconensis* in any way. However, plants are evidently grazed by livestock. This, together with its vigorous growth, suggests that the species has good potential to be used as a forage plant.

NOTES. *Stylosanthes falconensis* is placed in section *Styposanthes* based on the presence of an axis rudiment (not shown in Fig. 1) which is a plume-like appendage derived from an abortive secondary floral axis (Taubert 1890; Mannetje 1984). The species closely resembles *S. hamata* which belongs to the same section. *S. hamata* is widespread in the Caribbean, but also can be found in southern USA and northern South America, specifically Colombia and Venezuela (Williams *et al.* 1984). *S. falconensis* is distinguished from *S. hamata* in being a perennial (*S. hamata* is annual to biennial); the stems of *S. falconensis* have a whitish tomentose indumentum while those of *S. hamata* are mainly glabrous except for a line of short white hairs along one side; the primary and secondary bracts of *S. falconensis* are opaque with tuberculate bristles and silky cilia, while *S. hamata* has translucent bracts with sericeous cilia along the margins; the bract "leaflets" of *S. falconensis* have tuberculate bristles along the margins (these resemble minute thorns under the stereomicroscope) while the bract "leaflets" of *S. hamata* have sericeous cilia along the margins; *S. falconensis* has a conspicuously larger standard petal (6 – 7 mm long) than *S. hamata* (4 – 5 mm); the pod beak of *S. falconensis* is straight to slightly curved while in *S. hamata* it is uncinate.

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