



An overlooked new species of *Desmodium* (Fabaceae, Papilionoideae) from Argentina

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Abstract

More than seventy years ago Arturo Burkart transferred *Meibomia riedelii* to *Desmodium riedelii* and confirmed the occurrence of this species in Argentina. His position was based only on the original description and a photo of one of the syntypes. Fieldwork in northeastern Argentina and central Brazil and examination of all syntypes of *Meibomia riedelii* revealed that these are not conspecific with Argentinean specimens and a new species, *Desmodium burkartii*, is described here. This new species is restricted to grasslands in the Province of Corrientes in northeastern Argentina and is promptly differentiated from *D. riedelii* by shape of leaflets, shape and number of articles of loment, besides quantitative traits.

Key words: Desmodieae, IUCN, lectotype, *Meibomia*

Introduction

Desmodium Desv. comprises about 300 species and is most diverse in Asia, Mexico and South America (Ohashi 2005). The genus *Desmodium* was published by Desvaux (1813), although some species had previously been described in other genera such *Hedysarum* Linnaeus (1753) and *Meibomia* Heister ex Fabricius (1759; Kuntze 1891; Hoehne 1921).

Schindler (1924a, 1924b, 1925a, 1925b, 1926, 1928) recognized *Meibomia* as distinct from *Desmodium* and published several new species and new combinations in *Meibomia* between 1924 and 1928. However, *Meibomia* was rejected against *Desmodium*, which is accepted as a conserved name. Based on this ruling, many of Schindler's *Meibomia* names required new combinations in *Desmodium*.

When Burkart (1939) published his treatment for the hedysarioid legumes of Argentina, he provided new combinations in *Desmodium* from some of the Schindler species, among them, *Meibomia riedelii* Schindl., which he confirmed grown in Argentina. The combination *Desmodium riedelii* (Schindl.) Burkart was based only on the examination of the original description and a photo of one of the syntypes (*Riedel* 526) deposited in F (negative number FOBN018397).

Vanni (2001) reviewed the genus *Desmodium* in Argentina and cited 21 species for this country, but he did not see most of the types. After a fieldwork in northeastern Argentina and central Brazil and examination of specimens (including types) of the herbaria BR, CTES, G, K, LE, LECB, OXF, P, and SI (acronyms according Holmgren *et al.* 1990), including all type collections of *Meibomia riedelii*, we concluded that specimens considered to be *Desmodium riedelii* by Burkart (1939) and Vanni (2001) belongs to an overlooked new

species. This paper thus proposes a lectotypification of *Meibomia riedelii* together with a new species from northeastern Argentina.

Taxonomy and nomenclature

Desmodium riedelii (Schindl.) Burkart (1939: 195). Basionym: *Meibomia riedelii* Schindler (1926: 281). Lectotype (here designated): BRAZIL. Mato Grosso do Sul: September 1926, *Riedel 526* (K), isolectotype (LE [2 sheets]). Remaining syntypes: BRAZIL. Mato Grosso do Sul: Rio Pardo, *Riedel 78* (K, LE - 2 sheets); *Riedel 91* (K, LE); *Riedel s.n.* (LECB, OXF).

Schindler (1926) made a mistake about the type locality of *Meibomia riedelii*. He cited in the protologue that *Riedel* collections 78, 91, and 526 were made in Rio Pardo, Rio Grande do Sul. Urban (1906) examined *Riedel*'s itinerary between 1825 and 1829, concluding that *Riedel* did not travel to Rio Grande do Sul in that period but rather went to Mato Grosso, passing by Camapuã through Rio Pardo. The correct locality of *Riedel*'s material is Rio Pardo, Mato Grosso do Sul (Vanni 2001).

More than one specimen was cited in the protologue of *Meibomia riedelii*. However, Vanni (2001) cited the specimen *Riedel 526* housed at herbarium LE as the holotype. According to article 9.21 of the ICBN (McNeill *et al.* 2006) this could not be considered a lectotypification. Thus we have now selected a lectotype from the three available syntypes.

Schindler (1926) probably based his description of *Meibomia riedelii* on the specimen *Riedel 526* deposited at B herbarium (F negative number FOBN018397). This material was probably destroyed during the Second World War. All syntypes collections (*Riedel 78, 91, 526*) were found both in K and LE herbaria. However K specimens present handwrite annotations made by Schindler while LE specimens have no annotation. Hence, we selected the specimen *Riedel 526* housed at K herbarium as the lectotype because this specimen agrees most with the protologue and there is evidence that this specimen was examined by Schindler. This selection is in accordance with art. 9.2 n.2, of the ICBN (McNeil *et al.* 2006).

When Burkart (1939) made the new combination *Desmodium riedelii*, based on photograph FM FOBN018397, he cited some morphological differences between this material and specimens from Argentina, including leaflet width. We found more morphological differences between these materials as leaflet venation, primary bract indumentum, pedicel length, and shape and number of articles of the loment. Besides, as circumscribed here, *Desmodium riedelii* is found only in the Cerrado biome of central Brazil in the state of Mato Grosso do Sul. Based on this suite of characters, we are proposing the Argentinean specimens as belonging to a new species.

Desmodium burkartii L.C.P.Lima & Vanni, *sp. nov.*, Fig. 1

Haec species D. riedelii accedit, sed foliolo elliptico-lanceolato (nec lanceolato aut oblongo), petiolo 8–11 mm longo (non 2–3 mm longus), pedicello 7–9 mm longo (non 2–4 mm longo) et lomento oblongo 2–6 articulato (nec reniformi 1–2 articulato) praecipue differt.

Type:—ARGENTINA. Corrientes: Arroyo Riachuelo, Ruta 12, Km 17, 2 December 2008, fl., fr., L.C.P.Lima & R.Vanni 444 (holotype HUEFS, isotypes CTES, K, NY, UEC)

Subshrubs with xylopodium; stem decumbent or erect, cylindrical, striate, glabrescent or puberulous-uncinate; internodes 2.6–5.3 cm long; stipule 3–4 × 2 mm, ovate, apex caudate, margin entire, glabrescent, caducous, free from each other. Leaves trifoliolate; petiole (5–)8–11 mm long, striate, puberulous-uncinate; stipels 2–3 mm long, linear, apex acute, margin entire, glabrescent, persistent; petiolule 1–2 mm long, puberulous-uncinate; leaflets elliptic-lanceolate, base rounded, apex mucronate, glabrescent or puberulous-

uncinate on both surfaces, secondary venation brochidodromous, secondary and tertiary veins conspicuous on the adaxial surface, uncinata around the main vein on the abaxial surface, terminal leaflet 2.8–5.0 × 0.5–1.2 cm, lateral leaflets 2.1–4.1 × 0.6–0.8 cm. Inflorescence a laxly flowered terminal pseudoraceme, 18.2–33.0 cm long, puberulous-uncinate, 2–3 flowers per node; primary bracts 3–4 × 1 mm, ovate-lanceolate, tomentose, striate, 5 veined, caducous; secondary bracts ca. 3.0 × 0.5 mm, narrowly-lanceolate, tomentose, striate, 1–2 veined, caducous; pedicel 7–9 mm long, tomentose-uncinate. Flowers ca. 10 mm long.; calyx bilabiate, tube campanulate, 2.0–2.5 mm long, outer surface tomentose; upper lip almost entire, ca. 1 mm long, apex sub-acute; lower lip trifid, teeth ovate-lanceolate, ca. 3 mm long; petals purple, standard ca. 9.5 × 8.0 mm, obovate, apex obtuse, claw ca. 0.5 mm long, wing petals ca. 9 × 4 mm, obovate, apex obtuse, claw ca. 1 mm long, keel petals 7–8 × 3 mm, narrowly-obovate, apex obtuse, claw ca. 4 mm long; androecium pseudomonadelphous, ca. 10 mm long; ovary ca. 8 mm long, puberulous-tomentose. Loment 2.7–6.2 cm long, stipitate, stipite 2–3 mm long, isthmi excentric, articles 2–6, 11–15 × 7–9 mm, oblong, reticulate, puberulous-uncinate. Seeds ca. 3.2 × 2.5 mm, broadly oblong, brown.

Distribution and habitat:—*Desmodium burkartii* occurs in the Province of Corrientes, northeastern Argentina, in grasslands with palms (*Butia* spp.) on sandy soil.

Phenology:—Flowering and fruiting specimens were recorded from November to February.

Conservation assessment:—According to the IUCN (2001) conservation criteria *Desmodium burkartii* can be considered as Critically Endangered (CR). It has a restricted distribution, occurring only on sandstone in grassland of northeastern Argentina, near the Riachuelo River.

Etymology:—It is named in honor of Arturo Burkart, who left an impressive contribution to legume systematics in Argentina.

Additional specimens examined (paratypes):—ARGENTINA. Corrientes: Arroyo Riachuelo, y Ruta 12, 5 December 1976, fl., fr., *C. Quarín 3513* (CTES, G). Conceição, Estância Santa Rosalia, 4 January 1955, fl., fr., *T.M. Pedersen 3107* (BR, CTES, P, SI, US); Riachuelo, 3 November 1986, fl., fr., *A. Charpin & U. Eskuche 2070* (G [2 sheets]); 12 October 1967, fl., fr., *A. Krapovickas & C.L. Cristóbal 13560* (MBM); 10 January 1976, fl., *A. Schinini & O. Ahumada 12389* (CTES, G [2 sheets]); 25 November 1978, fl., fr., *M.S. Ferruci et al. 80* (CTES, K); without date, fl., *R.M. Crovetto & A. Schinini 10240* (G); 17 December 1981, fl., fr., *R. Vanni et al. 158* (CTES, G); 27 February 1985, fl., fr., *R. Vanni 457* (CTES);

The combination of the leaflets elliptic-lanceolate, flowers ca. 10 mm long and stipitate loment with 2–6 oblong articles allows easily distinguishing *Desmodium burkartii* from other Argentinean species. Although *D. burkartii* was treated as *D. riedelii* for more than 70 years (Burkart 1939, Vanni 2001), these species are not particularly alike except for the terminal pseudoracemose inflorescence, as can be seen in the comparison presented in the Table 1. Among the species of *Desmodium* in Argentina, *D. burkartii* is most similar to *D. glabrum* (Mill.) Hitchc. They share the same large loment with ca. 7–9 mm wide, but *D. burkartii* differs by presenting leaflets elliptic-lanceolate (× rhomboid in *D. glabrum*), flowers ca. 10 mm long (× ca. 3 mm long), loment with 2–6 oblong-articles (× 2–4 reniform or rhomboid articles).

TABLE 1. Morphological differences between *Desmodium burkartii* and *Desmodium riedelii*.

Characters	<i>Desmodium burkartii</i>	<i>Desmodium riedelii</i>
Leaflet shape	Elliptic-lanceolate	Lanceolate or oblong
Leaflet venation on the adaxial surface	Secondary and tertiary veins conspicuous	Only secondary veins conspicuous
Petiole length	8–11 mm long	2–3 mm long
Flowers arrangement in pseudoracemes	Lax (flowers remotely disposed)	Densely grouped
Primary bract length and shape	3–4 mm long; lanceolate	2.0–2.5 mm long; ovate
Pedicel length	7–9 mm long	2–4 mm long
Position of the fruit isthmi	Excentric	Central
Articles number and shape	2–6; oblong	1–2; reniform

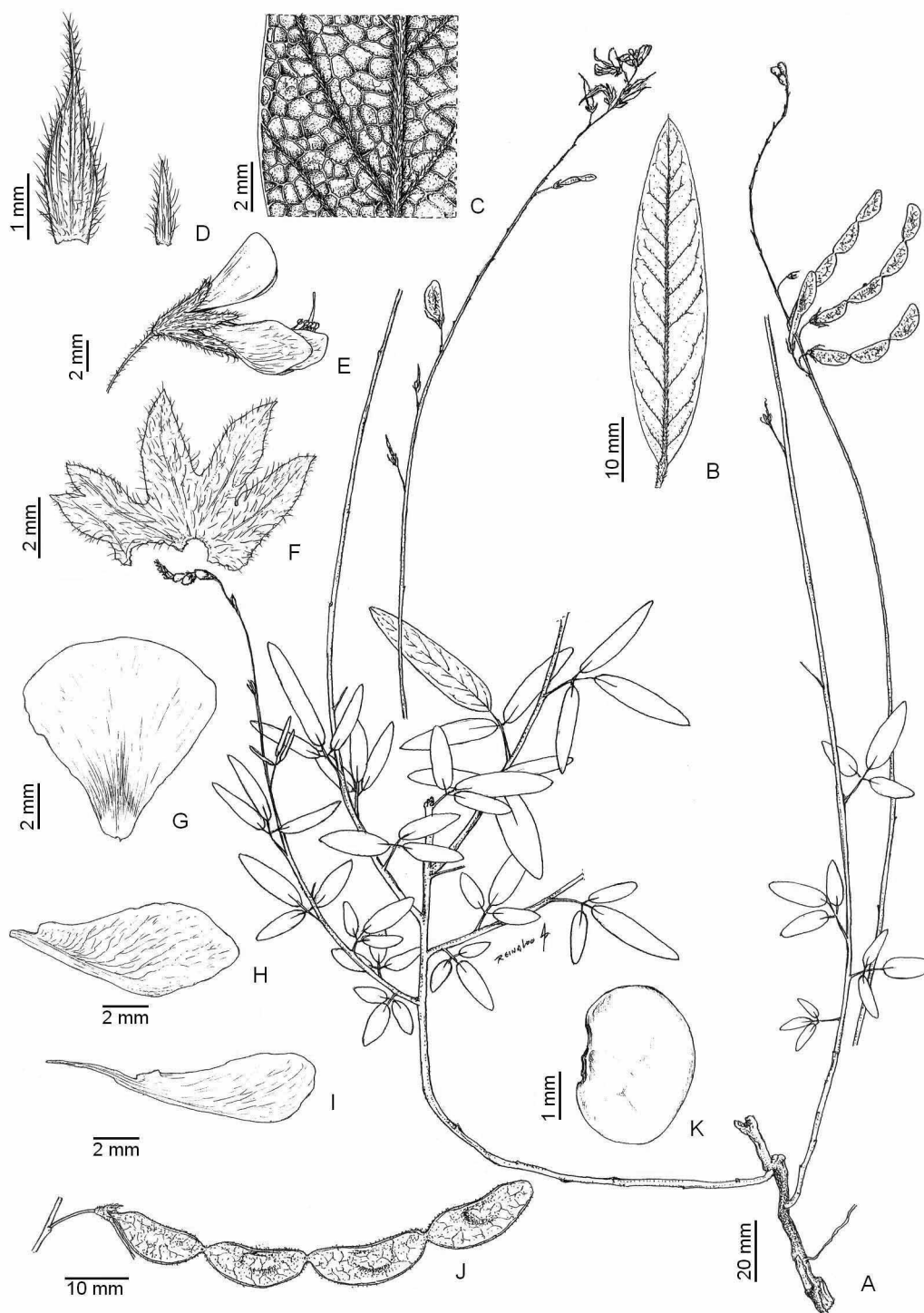


FIGURE 1. *Desmodium burkartii*. A. Habit. B. Leaflet. C. Detail of the lower surface of the leaflet highlighting indumentum and venation. D. Primary (left) and secondary bracts (right). E. Flower. F. Calyx opened out. G. Standard petal. H. Wing petal. I. Keel petal. J. Fruit. K. Seed (all from C. *Quarín* 3513, paratype). Drawn by R. Pinto.

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