

New species and varieties in *Sesbania* (Leguminosae-Papilionoideae-Robinieae) from Madagascar and the Comoro Islands

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ABSTRACT

Morphological characters support the description of a new species and a new variety of *Sesbania* Adans. from Madagascar and the Comoro Islands: *Sesbania madagascariensis* Du Puy & Labat and *S. bispinosa* var. *grandiflora* Du Puy & Labat.

MOTS CLÉS

Leguminosae,
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Madagascar.

RÉSUMÉ

L'étude des caractères morphologiques permet la description d'une nouvelle espèce et d'une nouvelle variété de *Sesbania* de Madagascar et de l'Archipel des Comores : *Sesbania madagascariensis* Du Puy & Labat et *S. bispinosa* var. *grandiflora* Du Puy & Labat.

Of the 21 genera recognised in the tribe Robinieae (Benth.) Hutch. (POLHILL & SOUSA 1981), only *Sesbania* is native to Madagascar. It is a genus of about 55 species, distributed throughout the tropics and subtropics, often occurring in seasonally damp or marshy habitats. The genus is represented in Madagascar by 3 native species, including 1 endemic species described here. They can occur in all vegetation zones, although they are less frequently recorded from the humid eastern domain. The species can be difficult to distinguish: the shape of the appendages on the base of the standard petal is the most reliable and frequently used character.

***Sesbania bispinosa* (Jacq.) W. Wight**

U.S. Dept. Agric. Bur. Pl. Ind. Bull. 137: 15 (1909). *Aeschynomene bispinosa* Jacq., Ic. Pl. Rar. 3: 13, tab. 564 (1792).—Type: Illustration in Jacquin, Ic. Pl. Rar. 3: tab. 564 (1792), from a plant of unknown origin cultivated in Vienna.

Coronilla aculeata Willd., Sp. Pl. 3, 2: 1147 (1802), nom. superfl., based on *Aeschynomene bispinosa* Jacq. *Sesbania aculeata* (Willd.) Poiret in Lam., Encycl. 7: 128 (1806), as "*Sesban aculeatus*", nom. illeg.

An erect, annual or short-lived perennial herb ca. 1-3 m tall; stems pithy within, becoming slightly woody with age, glabrous; minute prickles often present on the stems, leaf rachises and inflorescences. Leaves mostly 10-34 cm long, with ca. 20-48 pairs of leaflets; rachis often with minute prickles beneath; leaflets narrowly oblong, 8-30 × 2-5 mm, distinctly mucronate apically, glabrous or almost so.

Racemes 2-11 cm long, with 3-10 flowers, the peduncle often with minute prickles. Flowers 10-18 mm long, yellow, the standard flecked with purple-brown behind. Calyx 3-4 mm long, with 5 short, broadly triangular teeth. Standard oblong-elliptic, tapering basally, with 2 narrow appendages on the claw which are rounded to obtusely angled apically but not extended into free tips; wings about as long as the keel; keel limb oblong, almost twice as long as the claw. Staminal sheath 9-17 mm long.

Pods linear, subcylindrical, 130-280 × 2.5-3 mm, with an apical beak 5-15(-20) mm long,

pale brown, the seed chambers 5-6 mm long. Seeds ca. 3 × 2 × 2 mm, brown.

S. bispinosa is widespread in Madagascar, particularly in western Madagascar and the lower altitudes of the Central Plateaux. The type variety also has a widespread distribution including the Comoro Islands, the Mascarenes, E & S Africa, SE Asia and S America. In Madagascar this species occurs in open, marshy areas or as a ruderal species growing on damp, disturbed land around fields and habitations, at up to ca. 900 m altitude. The flowering time is from (October-) February to May (-July). It is sometimes used as a ground cover species in agricultural stations. This species is known in Madagascar under the vernacular names of Katsakatsa (W, central & S) and Ramanjato (E).

Two distinct variants can be distinguished in Madagascar, one of them with unusually large flowers for this species and often with fewer prickles. GILLET (1963) recognised an African variant with small flowers as var. *micrantha* (Chiov.) Gillett. The large-flowered variant from Madagascar is similarly recognised here as a distinct variety differing as follows:

Flowers 10-14 mm long (from the calyx base to the tip of the wing petals), the staminal sheath 9-13 mm long var. ***bispinosa***
Flowers 15-18 mm long, the staminal sheath 14-17 mm long var. ***grandiflora***

S. bispinosa* var. *bispinosa

The flowers of this variety in Madagascar seem to be identical to those which occur outside of Madagascar. This variety is cultivated in Madagascar, or is associated with cultivated ground. It is possible that it is introduced and naturalised, although there is some evidence that it may be native in the south and south-west.

***S. bispinosa* var. *grandiflora* Du Puy & Labat, var. nov.**

A var. bispinosa floribus majoribus, 15-18 mm longis, differt.

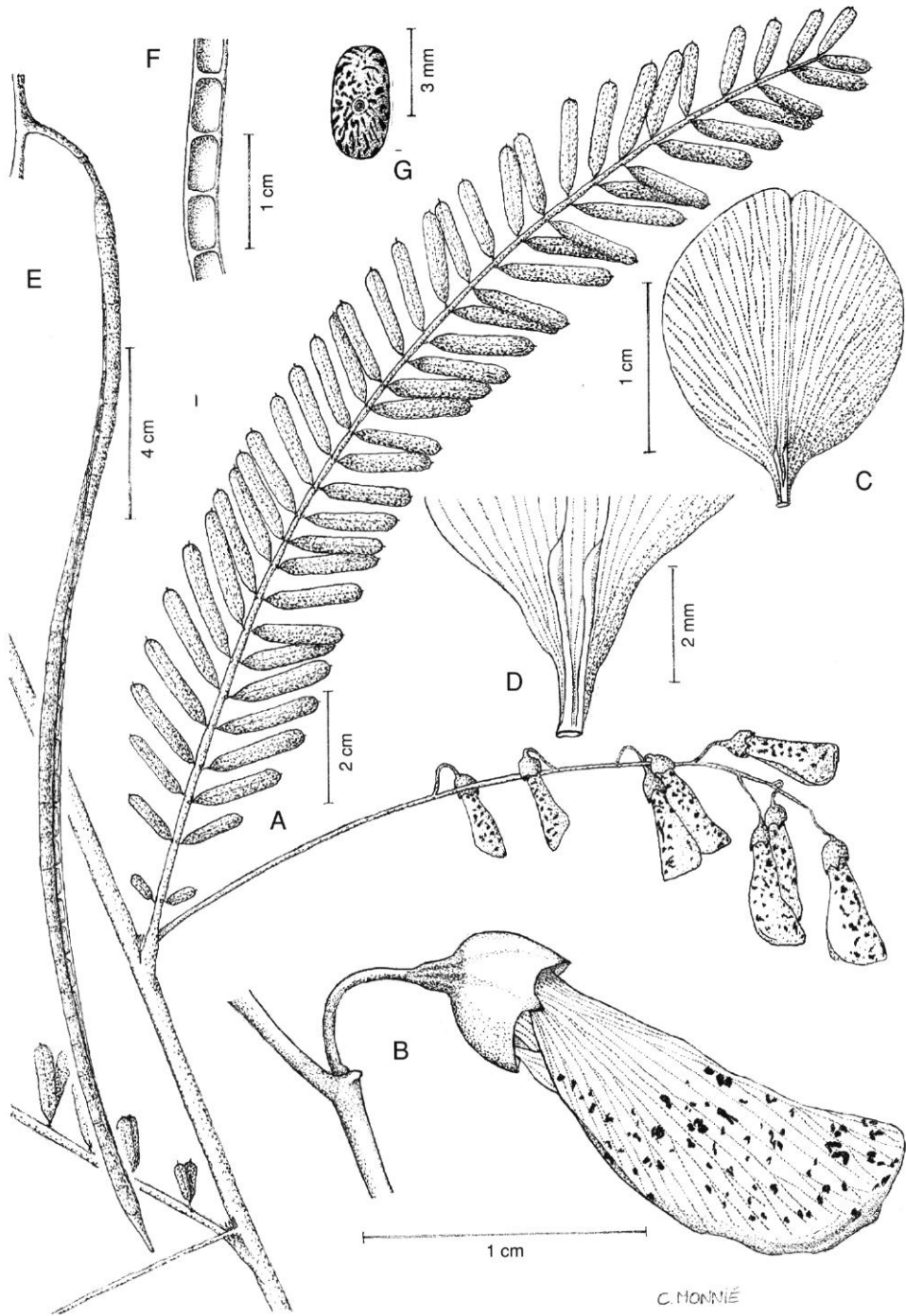


Fig. 1.—*Sesbania bispinosa* var. *grandiflora*: A, habit; B, flower; C, standard petal; D, base of the standard petal; E, pod; F, seed chambers; G, seed. (A-D drawn from Peltier 5045; E-G from Grévé 21).

TYPUS.—J.-N. Labat, D.J. Du Puy & A. Couté 2637, Province de Mahajanga, Antsalova, Ambinda, Ambodiriana, au NE d'Antsalova, Réserve Naturelle 9 Tsingy de Bemaraha, 18°41'18"S-44°42'30"E, 100 m, 27 Feb. 1995, fl. (holo-, P; iso-, K, MO, P, TAN).

PARATYPES.—MADAGASCAR: *Afzelius* s.n. (P0003479), Majunga [Mahajanga], 1 Apr. 1912, fl. (P); *Boivin* 2216, Nossi-bé [Nosy Be], June 1847, fl., fr. (P); *Decary* 1639, Maromandia, 2 Apr. 1923, fl. (P); *Gautier & Be* 2868, Réserve spéciale de Manongarivo: Besinkara, au-dessus d'Ambalafary, 14°4'S-48°17'E, 400 m, 24 Mar. 1996, fl. (G, P, TAN); *Grévé* 21, s.loc. 1889, fl., fr. (K, MO, P, PRE, TAN, WAG); *Peltier* 2724, Ihosy, 11 Feb. 1961, st. (P); *Peltier* 5045, Mahatsinjo (Rte Nat. 4), 26 Mar. 1964, fl. (K, MO, P, TAN); *Peltier* 5820, Mahaboboka, 30 Mar. 1966, fl. (K, MO, P); *Perrier de la Bâthie* 16357, Ouest, Près de Majunga [Mahajanga], s.d., fl., fr. (P); *Service Forestier* 3, Tsingy de Namoroka (8^e Réserve), s.d., fl. (MO, P).—COMORO ISLANDS: *Boivin* 47, Mayotte, s.d., st. (P); *Boivin* 3434, Mayotte, bord du Lac Zéann à Pamanzi, July 1848, fl., fr. (P).

Sesbania bispinosa var. *grandiflora* has flowers closely resembling those of *S. bispinosa* var. *bispinosa* in the oblong shape of the keel limb, the oblong-elliptic standard petal with a tapering base, and the narrow, rounded or truncate appendages on the standard petal base. It appears to differ only in its larger flower size (Fig. 1). It has a similar distribution to var. *bispinosa* in Madagascar, and although this latter may be introduced there is no firm evidence that the original distributions differed: this large-flowered variant is therefore considered here to be a distinct variety, endemic to Madagascar and the Comoro Islands.

Sesbania madagascariensis Du Puy & Labat, sp. nov.

Affinis *S. sericeae* (Willd.) Link *sed floribus fere duplo majoribus, appendicibus vexilli carentibus.*

TYPUS.—D.J. Du Puy, B.P. Du Puy & P. Ravonjariisoa M158, S central Madagascar, south of Betroka, ca. 12 km north of Isoanala, just south of the village of Mananovy, on Route Nationale 13 to Ihosy, 23°44'S-45°46'E, 675 m, 19 Feb. 1989, fl., fr. (holo-, K; iso-, MO, P, PRE, TAN, WAG).

An erect, short-lived perennial shrub to ca. 4 m tall; main stem becoming softly woody, often with whip-like secondary branches, pubescent especially on the young shoot tips, becoming thinly pubescent or glabrescent. Leaves often distantly spaced, 3-10 cm long, with 10-24 pairs of leaflets; rachis shortly hairy; leaflets narrowly oblong, 6-15 × 1.5-3.5 mm, mucronulate apically, glabrous above, thinly covered in short hairs beneath or with the hairs confined to the margins and midvein, deep green above and beneath.

Racemes mostly 5-10 cm long, with (4-)5-10 flowers, the peduncle and axis sparsely pubescent. Flowers 15-18 mm long, bright yellow, the standard mottled and flecked with purple-brown behind, the keel pale greenish white. Calyx 5-6 mm long, with 5 short, broadly triangular teeth. Standard subcircular, the base shallowly cordate, completely lacking appendages on the claw; wings about as long as the keel; keel limb semicircular, about as long as the claw. Staminal sheath 14-16 mm long.

Pods linear, subcylindrical (150-)200-300 × 2.5-3.5 mm, with a short apical beak ca. 5 mm long, pale brown finely mottled with darker brown, the seed chambers 5-6 mm long. Seeds ca. 3 × 2 × 2 mm, brown.—Fig. 2.

PARATYPES.—MADAGASCAR: *Académie Malgache* s.n. (P0003502), Ambatondrazaka, Mar. 1905, fl., fr. (P); *Allorge* 575, Ivohibe à Ihosy route 27, km 18, 3 Oct. 1992, fr. (P); *Alluaud* 1, Berongo, bords de la Tarasy, Sep. 1900, fl. (P); *Alluaud* 31, Berongo, bords de la Tarasy, Sep. 1900, fl., fr. (P); *Baron* s.n. (P0003509), s.loc., June 1889, fr. (P); *Baron* 1456, s.loc., s.d., fl., fr. (K, P); *Baron* 2384, s.loc., s.d., fl. (K, P); *Baron* 3493, s.loc., June 1889, fl., fr. (K, P); *Baron* 4530, s.loc., s.d., fl., j.fr. (K); *Baron* 6889, s.loc., s.d., fl., fr. (K); *Basse* s.n. (P0003511), environs d'Ihosy, Apr. 1931, fl., fr. (P); *Bosser* 1928, Ouest, Beronono, Nov. 1951, fr. (TAN); *Bosser* 3282, Anjiajia, District d'Ambato-Boeni, Aug. 1952, fl., fr. (TAN); *Bosser* 3552, Anjiajia, District d'Ambato-Boeni, Aug. 1952, fl., fr. (TAN); *Bosser* 8428, Ouest, Marovoay, Sep. 1955, fr. (K, P); *Bosser* 8429, Ouest, Maintimaso (District de Marovoay), Sep. 1955, fl., fr. (P, TAN); *Bosser* 9727, Ouest, environs de Morondava, Sep. 1956, fl., fr. (P, TAN); *Catât* 4351, Ankaramena, se trouve également sur tout le plateau de l'Horombe,

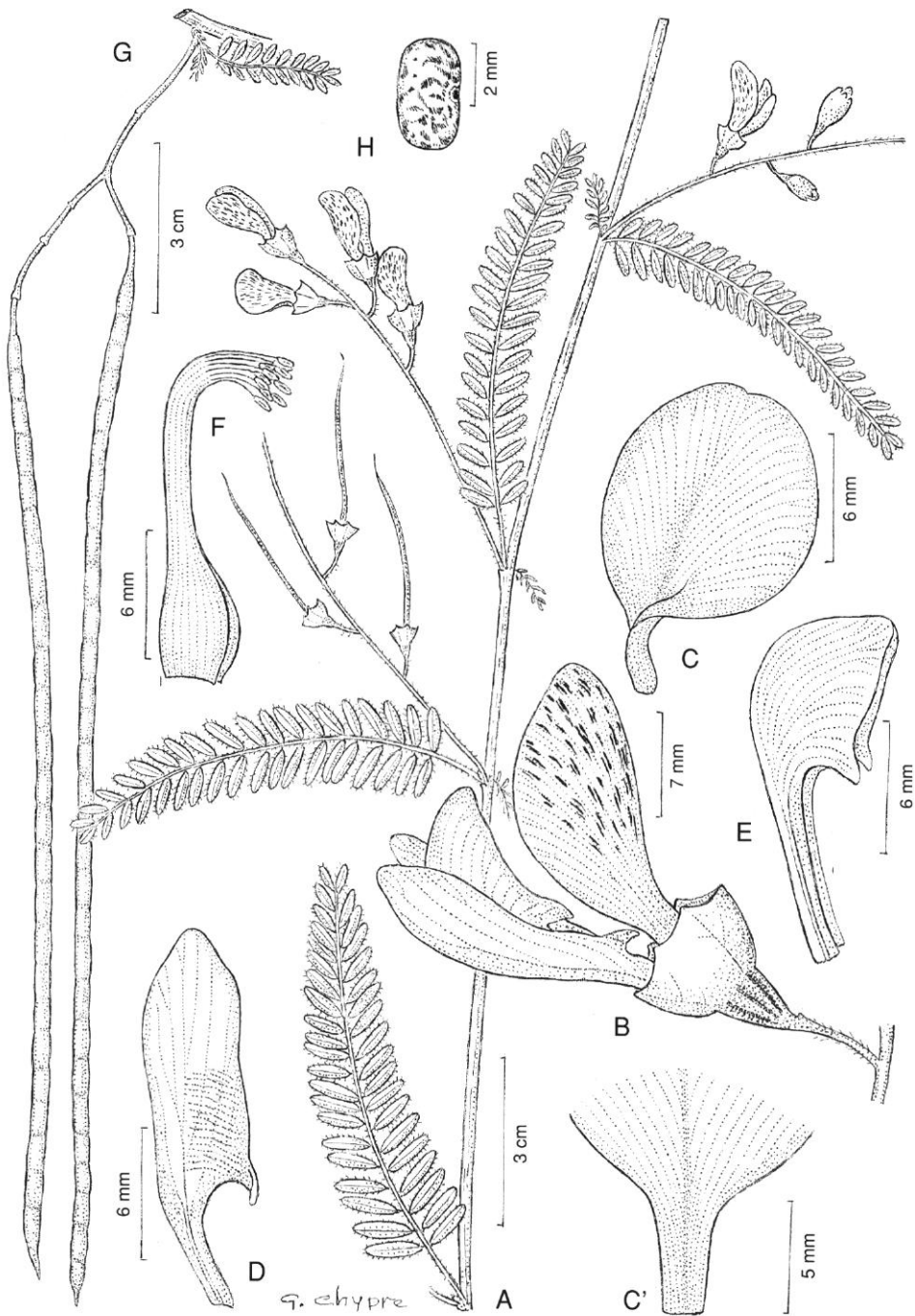


Fig. 2.—*Sesbania madagascariensis*: A, habit; B, flower; C, standard petal; C', base of the standard petal; D, wing petal; E, keel petal; F, staminal sheath; G, pod; H, seed. (A-F drawn from Du Puy, Du Puy & Ravonjaroiso M158; G-H from Labat, Deroin, Edmond, Rabarison & Laivao 2170).

June 1890, fl., fr. (MO, P); *Croat* 30546, Fianarantsoa, along the Hazofotsy River ca. 27 km east of Ranohira on Route Nationale 7 east of Tuléar, 840 m, 3 Feb. 1975, fl., fr. (MO, P, TAN); *Decary* 353, Ambatondrazaka, 19 June 1921, fl. (P); *Decary* 4214, Antanimora, Fort-Dauphin, 12 July 1926, fl., fr. (P); *Decary* 4481, Antanimora, Fort-Dauphin [Tôlanaro], 20 July 1926, fl., fr. (P, TAN); *Decary* 8900, vallée de l'Ikonda au N d'Antanimora, 30 Apr. 1931, fl. (P, TAN); *Decary* 14504, massif de l'Ankara, 23 July 1939, fl., fr. (MO, P); *Decary* 14544, massif de l'Ankara, 25 July 1939, fl., fr. (K, P, TAN); *Decary* 14902, Ankarafantsika, bord de rivière, 8 Aug. 1939, fr. (P); *Decary* 15031, Miandrivazo (Rég. Occid.), 12 Oct. 1939, fr. (P); *Decary* 15603, Antsingimavo, District de Maintirano, 12 Sep. 1940, fr. (B, K, MO, P); *Descoings* 3735, km 18, route d'Amanda le long de la vallée d'Ihoso vers l'est, 17 July 1958, fl., fr. (K, P, TAN); *Douliot s.n.* (P0003527), Ambiabe, 6 July 1891, fl., fr. (P); *Douliot s.n.* (P0003529), Kantsakantsa à Mahovahiriky, Aug. 1891, fl., fr. (P); *Geay* 6356, au S de la Sakamena, s.d., fl., fr. (P); *Grandidier s.n.* (P0003531), bords du Taheza, 14 Aug. 1898, fl., fr. (P); *Grevé* 12, s.loc., s.d., fl., fr. (K, MA, NY, P, PRE); *Hildebrandt* 3031, Nossi-bé [Nosy Be], Sep. 1879, fl., fr. (K, P); *Hildebrandt* 3131, Nossi-bé [Nosy Be], Sep. 1879, fl., fr. (P); *Humbert* 2652, vallée de l'Onilahy, vers l'embouchure, 10-50 m, 27/30 Sep. 1924, fl., fr. (MO, P); *Humbert & Swingle* 4395, vallée de la Betsiboka, en aval de Maevatanana, 30-80 m, 5/6 July 1928, fl., j.fr. (K, P); *Jardin Botanique* 3568, dans les vallées de la montagne de Fiva, 15 Aug. 1938, fr. (K, P); *Jardin Botanique* 5289, Antafiandakana, Ampombilava, Befandriana N, 23 Aug. 1942, fr. (P); *Labat, Deroin, Edmond, Rabarison & Laivao* 2170, Réserve Naturelle 9 Tsingy de Bemaraha, route Antsalova-Tsiandro, Berano, 18°39'S-44°44'E, 100-200 m, 24 Nov. 1992, fr. (K, MO, P, TAN, WAG); *Kitching s.n.*, Bara country, s.d., fl., fr. (K); *Leandri & Chauvet* 3737, vallée de l'Onilahy en aval de Tongobory, 0-300 m, 8 Nov. 1960, fr. (K, MO, P, PRE, WAG); *Morat* 877, route de Marovoay, Mitsinjo, Nov. 1964, fr. (TAN); *Peltier* 1136, Andranofasika, à la bifurcation Ambato-Boeni Majunga, 21 Sep. 1959, fl. (G, P); *Peltier* 1140, Mangaroa, District d'Ambato-Boeni, 22 Sep. 1959, fr. (NY, P); *Peltier* 2027, entre Ranomafana et Soavina, 17 Mar. 1960, fl. (BR, MA, P, PRE); *Peltier* 2537, Anjamala (District de Tuléar), 19 Aug. 1960, fl., fr. (P); *Peltier* 2595, Bevilany (District d'Amboasary), 26 Aug. 1960, fl. (MO, P); *Peltier* 2734, Ihoso, terrain d'aviation, 11 Feb. 1961, fl. (MA, P); *Peltier* 2904, radier d'Andiolava (District d'Ihoso), 18 Feb. 1961, fl. (P); *Peltier* 3076, km 530 route de Tuléar, 23 Feb. 1961, fr. (P); *Peltier* 3305, Ampijoroa-Ankarafantsika, 6 Aug. 1961, fl., j.fr. (MO, P); *Peltier* 4834, P.K. 40, route Ihoso-Farafangana, 22 Feb. 1964, fr. (P, WAG); *Peltier* 5032, Tetezankazo (Andriba), 26 Mar. 1964, fl. (P,

WAG); *Peltier* 5323, Marokoloy (Antsiabafositra), 14 Mar. 1965, fl., j.fr. (K, MO, P); *Peltier* 5344, Berivotra (Majunga), 2 Jan. 1965, fl., j.fr. (K, MO, NY, P, PRE); *Perrier de la Bathie* 226 (P0003555), Suberbiéville, May 1897, fl., fr. (P); *Perrier de la Bathie* 226 (P0003558), Ouest, bord de la Betsiboka (Boina), May 1899, fr. (P); *Perrier de la Bathie* 4079, Ouest, Ambonga et Boina, s.d., fl., fr. (P); *Perrier de la Bathie* 4356, Ouest, Ambongo et Boina, s.d., fl., fr. (P); *Rahantamalala* 181, Morondava, 1990, fl., fr. (P); *Rakotozafy* 1011, Réserve Naturelle 9, Bekopaka, 8 July 1970, fr. (TAN); *Randriamampionona* 264, Toliara, Tôlanaro, Andohahela, Réserve Intégrale 11, Parcelle 3, 25°4'S-46°41'E, 100-300 m, 8-10 Apr. 1993, fl., j.fr. (MO, P, TAN); *Réserves Naturelles 1-80*, Menarahaka-Ihoso, 22 Aug. 1953, st. (P); *Réserves Naturelles (Rakotoavao)* 4197-RN, Réserve Naturelle 8, Andranomavo, District de Soalala, 12 July 1952, fl., fr. (P); *Réserves Naturelles (Rakoto Jean)* 9038-RN, Lohony, Antambohobe, District d'Ivohibe, 11 May 1957, fl. (P); *Service Forestier* 1927-SF, Ankaramena, Ambalavao, 19 June 1949, fl. (P); *Service Forestier* 3620-SF, Samiravo, 10 Jan. 1951, fr. (P); *Service Forestier* 4754-SF, Forêt de Menarahaka, Canton de Sakalahila, District d'Ihoso, 16 Nov. 1951, fr. (P); *Waterlot* 322, Diégo-Suarez, Ambilobe, s.d., fl., fr. (P).

S. madagascariensis most closely resembles *S. sericea* (Willd.) Link, but it differs in its flowers which are almost twice as large, and in the complete absence of appendages at the base of the standard petal. This latter character is very distinctive within the genus *Sesbania*.

This species can be found throughout W Madagascar, particularly in the Boina, and in the lower altitudes of S central Madagascar in the region around Ihoso. It is present in marshy areas, along rivers and around rice fields, on sand or clay soils, from sea level up to ca. 1000 m altitude. The flowering time is from January to September. This species is known in Madagascar under the vernacular names Katsakatsa, Kasakasa (W & S central), Kitsakitsana (W), Manjato, Manjatolahy (N) and Tambazotra (W).

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