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Three new species of *Mucuna* (Leguminosae: Papilionoideae: Phaseoleae) from South America

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Summary. Three new species of *Mucuna* from South America are described and illustrated. All present a morphological characteristic that is restricted to some neotropical species of this genus: a condensed primary inflorescence axis, with all the flowers closely inserted at the inflorescence apex. *M. argentea* occurs in Colombia, Ecuador and Peru, *M. klitgaardiae* in Ecuador and Peru, whilst *M. cajamarca* is endemic to Peru. These three new species highlight the diversity and high endemism of *Mucuna* in South America.

Key Words. Colombia, Ecuador, Fabaceae, Neotropical flora, Peru, taxonomy.

Introduction

Mucuna comprises approximately 100 species distributed pantropically and presents a noteworthy morphological diversity. The highest number of species is in the Old World. Currently we recognise 24 species of *Mucuna* in the Americas, with the highest diversity in South America. Three new species have been published recently (e.g. Tozzi *et al.* 2005; Ruiz 2009; Moura *et al.* 2012), but others await description (T. M. Moura, unpublished data).

Only one species of *Mucuna* occurs in both the Neotropics and the Paleotropics, namely *M. sloanei* Fawc. & Rendle (Fawcett & Rendle 1917: 36) (in Africa, America and Pacific Islands). Some morphological characteristics are shared by Old and New World species, for instance a 'zig-zag' inflorescence rachis is present in *M. flagellipes* Vogel ex Benth. (Hooker & Bentham 1849: 307) from Africa and in *M. mitis* (Ruiz & Pav.) DC. (De Candolle 1825: 405) and *M. urens* (L.) Medik. (Medikus 1787: 399) from Central and South America. On the other hand, some morphological traits are restricted geographically; for example, a condensed primary axis of the inflorescence occurs only in neotropical species.

Within the American species of *Mucuna* most present a pseudo-racemose inflorescence sometimes with a highly reduced axis and the flowers tightly clustered at the apex so that the inflorescence appears pseudo-umbelliform. Two species with this morphological characteristic have already been published, namely *M. cuatrecasasii* Hern. Cam. & C. Barbosa ex L. K. Ruiz (2009: 387 – 417), which is endemic to Colombia, and *M. elliptica* (Ruiz & Pav.) DC. (De Candolle 1825: 405), which is widely distributed in South America (Bolivia, Brazil, Ecuador and Peru). Our studies show that this trait is more widespread than previously known and three new species with pseudo-umbelliform inflorescences are described and illustrated below. A distribution map is also given.

Mucuna argentea *T. M. Moura, G. P. Lewis & A. M. G. Azevedo* **sp. nov.** Type: Colombia, Caquetá Peña Roja, *Kats & Dulmen* AVD265 (holotype K!; isotypes COAH!, MO!).

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Lianas; stems sericeous. *Leaves* alternate, 3-foliolate; stipules c. 5 × 1 mm, triangular, sericeous; pulvinus cylindrical, 10 × 3 mm, with a dense indumentum of erect or appressed hairs; petiole 10 – 12 cm long, angular, sericeous; rachis 1 – 3 cm long, angular, sericeous; stipels linear, 3 mm long, sericeous; petiolules 5 – 10 mm long, sericeous, the hairs more dense than on the petiole and rachis; leaflet blades ovate to elliptic, occasionally obovate, apical leaflet 12 –

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17 × 9 – 12 cm, lateral leaflets 12 – 15 × 7 – 10 cm, asymmetrical, all blades obtuse or rounded at base, acuminate or cuspidate at apex, sparsely sericeous adaxially, densely silvery sericeous abaxially, venation eucamptodromous, secondary veins in 7 – 8 pairs per leaflet. *Inflorescence* axillary, pseudo-umbelliform, pendent; peduncle 7 – 10 cm long, sericeous; primary axis condensed, all flowers inserted close together at the apex; primary bracts (at base of whole inflorescence axis) caducous (3 cm long, which fall before anthesis); secondary bracts (at base of each node or individual flower) absent; pedicels 1.5 – 2 cm long sericeous; flowers 8 – 9 cm long. *Calyx* campanulate, 2 – 2.5 cm long, with long appressed hairs on both surfaces; lobes 4, the adaxial lobe formed by two connate sepals, 5 × 3 mm, apex obtuse, the other three lobes 5 – 7 × 3 mm long, apex acute. *Corolla* reported to be yellow [*Dulmen* 265 (K); *Klug* 2265 (K); *Cardenas et al.* 6116 (K)]; standard 5 – 6 × 3 cm, broadly elliptic, base attenuate, apex retuse, the claw c. 1 – 2 mm long, glabrous; wing petals 7 – 9 × 1 – 1.5 cm, oblong-obovate, base attenuate, apex obtuse, pubescent at base, the claw c. 7 – 10 mm; keel petals 7 – 8.5 × 0.7 – 0.8 cm, oblong, base attenuate, apex acute, pubescent at base, the claw c. 1 mm long. *Stamens* 10, diadelphous, with nine fused for about 75% of their filament length, one free; filaments 8 cm long, glabrous; anthers oblong, basifixed, 4 mm long, the connective tomentose. *Gynoecium* 9 – 10 cm long; ovary sessile, oblong, 10 × 2 mm, densely sericeous, 3 – 4-ovulate; style 8 – 9 cm long, densely sericeous, glabrescent at apex, stigma villous. *Young fruits* 17 × 3 cm, base attenuate, apex apiculate, valve surfaces with an indumentum of long urticating hairs and shorter, dense, dark-coloured hairs, but lacking lamellate ornamentation and without winged margins. *Immature seeds* 2 – 4 per pod, with the hilum extending around most of the seed circumference; mature seeds not seen. Fig. 1.

RECOGNITION. *Mucuna argentea* has a pseudo-umbelliform inflorescence; a peduncle 7 – 10 cm long; flowers 8 – 9 cm long; a yellow corolla; fruits with a dense indumentum, but no lamellate ornamentation; rounded seeds, with the hilum extending around nearly the whole circumference of the seed. This species is distinct because of the combination of primary bracts 3 cm long, which fall before anthesis, and the dense, appressed silvery hairs on the abaxial surface of the leaflets. *M. argentea* is morphologically most similar to *M. elliptica*, but the latter has erect, golden hairs on the abaxial surface of the leaflets and persistent bracts.

DISTRIBUTION. *Mucuna argentea* occurs in Ecuador, Peru and the Amazonian region of Colombia (Map 1).

SPECIMENS EXAMINED. COLOMBIA. Caquetá: Caquetá Peña Roja, cerca al Centro Experimental Araracuara, Amazonas, orilla del rio Caquetá, 18 Aug. 1994 (fl., fr.), *Kats & Dulmen* AVD265 (holotype K; isotypes COAH, MO); Cauca: Guayuyacu, 23 July 1984 (fl.), *Laferriere* 205 (MO); Meta: La Macarena, vereda 'Yarumales arriba', finca bordando ciénaga de Río Guayabero, 12 Aug. 1988 (fl.), *Callejas & Marulanda* 7092 (COAH, MO); Putumayo, selva higrofila del Rio Putumayo, 24 Nov. 1940 (fl., fr.), *Cuatrecasas* 10797 (US); Cordillera la Macarena, mesa del rio Sansa, 23 Jan. 1951 (fl.), *Idobr & Schultes* 1279 (US); Acacías, en selva, 1 Jan. 1946 (fl.), *Jaramillo et al.* 406 (US); Lejanías, vereda el triunfo, 20 July 1998 (fl.), *Lopéz & Martinéz* 4009 (COAH); zona de preservacion del AMEN, 1 Aug. 2000 (fl., fr.), *Lopéz et al.* 6737 (COAH); Vaupés: Taraira, 22 Nov. 1994 (fl.), *Cárdenas, Giraldo & Yukuna* 6116 (K, COAH). **PERU.** Loreto: Rio Putamayo, May – June1931 (fl.), *Klug* 2265 (K). **ECUADOR.** Napo: Puerto el Carmen de Putumayo, August 1980 (fl.), *Andrade* 33014 (AAU); Napo, Rio Cuyabeno, 17 Aug. 1981 (fl., fr.), *Brandbyge, Asanza, Werling & Leth-Nissen* 33631 (AAU, MO); 17 July 1978 (fl.), *Madison, Lowan & Besse* 5401 (AAU).

HABITAT. Field labels report the species from 'selva' and secondary forest, frequently close to rivers. In general it occurs at low elevations, alt. 160 – 450 m; it also has been reported at 1300 m in Meta, Colombia.

CONSERVATION STATUS. *Mucuna argentea* occurs predominantly in Amazonian forest, especially close to rivers, where it prefers undisturbed habitats. Based on herbarium specimens it appears that *M. argentea* is relatively common in Colombia but rare in Ecuador and Peru and, according to IUCN criteria (2001), this species can be temporarily assessed as Endangered (EN).

PHENOLOGY. Flowering June – Jan., with most flowering specimens in herbaria reported to have been collected in Aug.; fruiting Aug. – Nov.

ETYMOLOGY. The specific epithet refers to the silvery indumentum on the abaxial surface of the leaflets.

NOTES. Among the South American species with a pseudo-umbelliform inflorescence, *Mucuna argentea* is the only one that has a silvery indumentum on the abaxial surface of the leaflets. The presence of large sericeous bracts, which fall before the flowers open, is also distinctive. Specimens in herbaria are often encountered under the name *M. elliptica*, but in that species the hairs on the abaxial surface of the leaflets are golden-coloured and erect and the bracts are generally persistent. Only two American species have silver-coloured hairs on the abaxial surface of their leaflets as a strong taxonomic characteristic: *M. argentea* and *M. argyrophylla* Standl. (Standley 1922: 504); the latter does not have pseudo-umbelliform inflorescences (they are pseudo-racemose) and it occurs only in Central America.

Mucuna cajamarca *T. M. Moura, G. P. Lewis & A. M. G. Azevedo* **sp. nov.** Type: Peru, Cajamarca. San Ignacio

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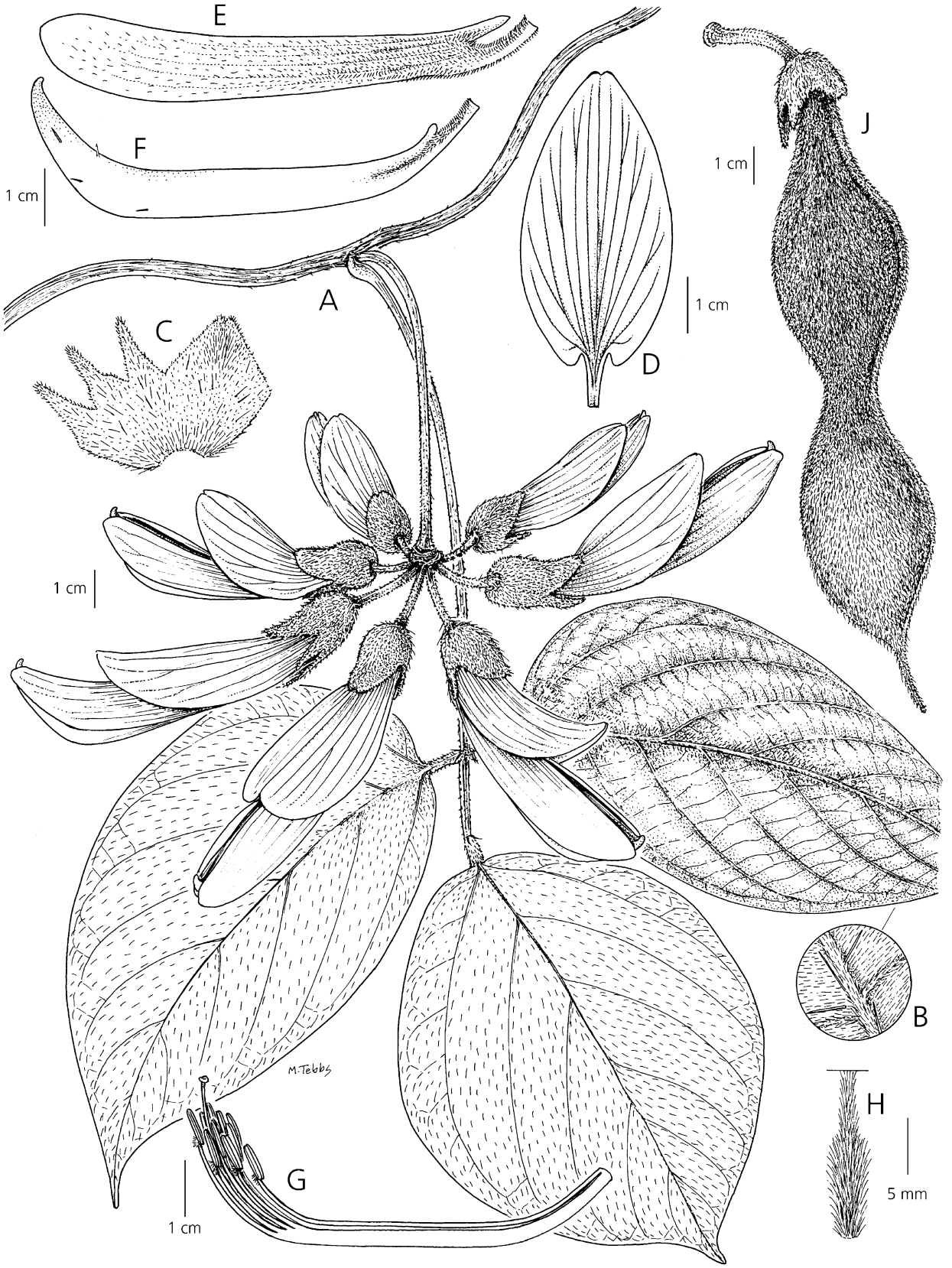

Fig. 1. *Mucuna argentea*. **A** leaf and inflorescence; **B** indumentum on abaxial surface of leaflet; **C** calyx opened out; **D** standard petal; **E** wing petal; **F** keel petal; **G** androecium (9+1) and apex of gynoecium; **H** ovary; **J** immature fruit. **A**, **B** & **D** from *Cardenas et al.* 6116 (K); **C** & **E** – **J** from *Kats & van Dulmen* AVD 265 (K). DRAWN BY MARGARET TEBBS.

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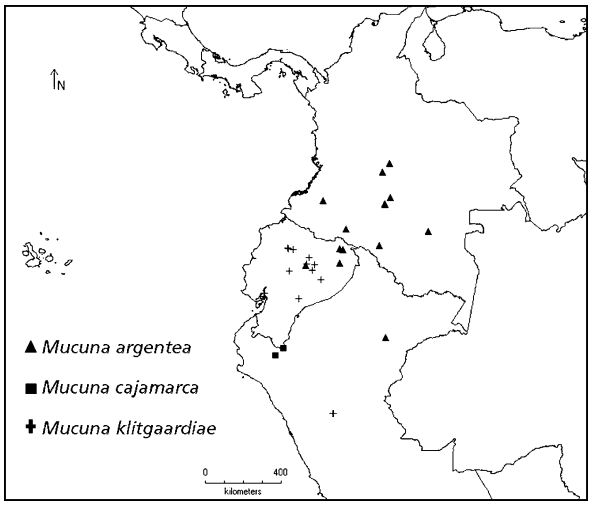

Map 1. Geographical distribution of the three species of *Mucuna* described here: ▲ *M. argentea* (Colombia, Ecuador and Peru), ■ *M. cajamarca* (Peru) and ✚ *M. klitgaardiae* (Ecuador and Peru).

province, San José de Lourdes, *Campos & Corrales* 3451 (holotype K!; isotype MO!).

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Lianas; stems with dense, appressed or erect hairs. *Leaves* alternate, 3-foliolate; stipules c. 3 × 2 mm, triangular, sericeous; pulvinus cylindrical, 5 – 10 × 2 – 3 mm, tomentose; petiole 9 – 16 cm long, angular, densely tomentose; rachis 1 – 2 cm long, angular, densely tomentose; stipels absent; petiolules 5 – 10 mm long, densely tomentose (even more so than on the petiole and rachis); leaflet blades ovate, obovate or elliptic, apical leaflet 12 – 14 × 7 – 8.5 cm, lateral leaflets 11 – 14 × 7 – 9 cm, asymmetrical, all blades obtuse or rounded at base, acuminate or cuspidate at apex, with dense, erect hairs on the abaxial surface, venation eucamptodromous, secondary veins in 5 – 6 pairs per leaflet. *Inflorescence* axillary, pseudo-umbelliform, pendent; peduncle 60 – 100 cm long, with short appressed hairs, these becoming denser nearer the apex; primary axis condensed, all the flowers closely inserted at the apex; bracts foliaceous, 6 – 8 × 3 – 4 cm, sericeous; pedicels 2 – 2.5 cm long, sericeous; flowers 9 – 10 cm long. *Calyx* campanulate, with long, appressed hairs on both surfaces, 2 – 2.7 cm long; lobes 4, the adaxial lobe formed by two connate sepals, these shorter than the other lobes, 5 × 3 mm, apex obtuse, the other three lobes 10 – 14 × 2 – 4 mm, apex acute. *Corolla* reported as yellowish-green [*Campos & Cano* 4710 (K, MO)]; standard petal 7 – 7.5 cm long, broadly elliptic, basally attenuate, apically retuse, the claw c. 4 – 7 × 3 – 5 mm, glabrous; wing petals 9 – 10 × 2 – 3 cm, oblong-obovate, basally attenuate, apically obtuse, pubescent at base, the claw 3 – 5 mm long; keel petals 9 – 9.5 × 1.5 cm, oblong, attenuate at base, acute at apex, pubescent at base, the claw 2 – 4 mm long. *Stamens* 10, diadelphous, nine of them fused for approximately 60% of the filament length, the tenth stamen free; filaments 8.5 – 9.5 cm long, glabrous; anthers ovate to oblong-elliptic, basifixed, 5 mm long. *Gynoecium* 10 – 10.5 cm long; ovary sessile or stipitate, oblong in outline, 2 × 0.3 cm, densely sericeous, c. 10-ovulate; style 8 – 8.5 cm long, densely sericeous, glabrescent at apex, stigma villous. *Fruits* stipitate, pubescent, with urticating golden hairs; stipe c. 1 cm long; valves 16 – 25 × 3.5 – 4 cm, oblong, laterally compressed, attenuate at base, acuminate at apex, the surface prominently transverse-ridged, and with a lignified wing along the margins. *Seeds* 2.5 × 2 cm, round, black; the hilum black, circling c. 85% of the seed circumference. Fig. 2.

RECOGNITION. *Mucuna cajamarca* is diagnosed by a pseudo-umbelliform inflorescence on a pendent peduncle 60 – 100 cm long; bracts 6 – 8 cm long; flowers 9 – 10 cm long, corolla yellowish-green; fruits with a dense covering of urticating hairs, transverse lamellate ornamentation on the valves and a lignified wing along the margins; circular seeds (somewhat laterally compressed) with a hilum nearly the length of the seed circumference. This species is closely related to *M. cuatrecasasii*, but differs by the hairs on the abaxial surface of the leaflets (appressed in *M. cuatrecasasii*; erect in *M. cajamarca*), the pod ornamentation (slightly and obscurely ornamented in *M. cuatrecasasii*; strongly ornamented by transverse lamellae in *M. cajamarca*). *M. cuatrecasasii* is endemic to Colombia, whereas *M. cajamarca* is endemic to the Cajamarca region of Peru.

DISTRIBUTION. *Mucuna cajamarca* is endemic to San Ignacio province, Cajamarca, Peru (Map 1).

SPECIMENS EXAMINED. PERU. Cajamarca: San Ignacio province, Tabaconas, La Berjameja, margen derecha de la quebrada Torohuaca, 5°21'07"S, 79°17'01"W, 1400 – 1700 m, 20 Nov. 1997 (fl.), *Campos & Cano* 4710 (K); San José de Lourdes, selva Andina, 12 Feb. 2000 (fl.), *Campos & Vásquez* 6379 (MO); San José de Lourdes, Santo Tomás, 05°01'00"S, 78°54'00"W, 1800 m, 5 March 1997 (fr.), *Campos & Corrales* 3451 (holotype K, isotype MO).

HABITAT. In primary and secondary forest; alt. 1300 – 1700 m.

CONSERVATION STATUS. *Mucuna cajamarca* has a very restricted geographical distribution. Cajamarca department, and especially the Marañón Valley within it, is well known to be high in endemic taxa (e.g. Lewis *et al.* 2010) and thus deserves conservation attention. Only three specimens of *M. cajamarca* are known to date, suggesting that the species is not common. According to IUCN criteria (2001) this species can be temporarily assessed as Vulnerable (VU).

PHENOLOGY. Known to flower Nov. – Feb.; collected in fruit in March.

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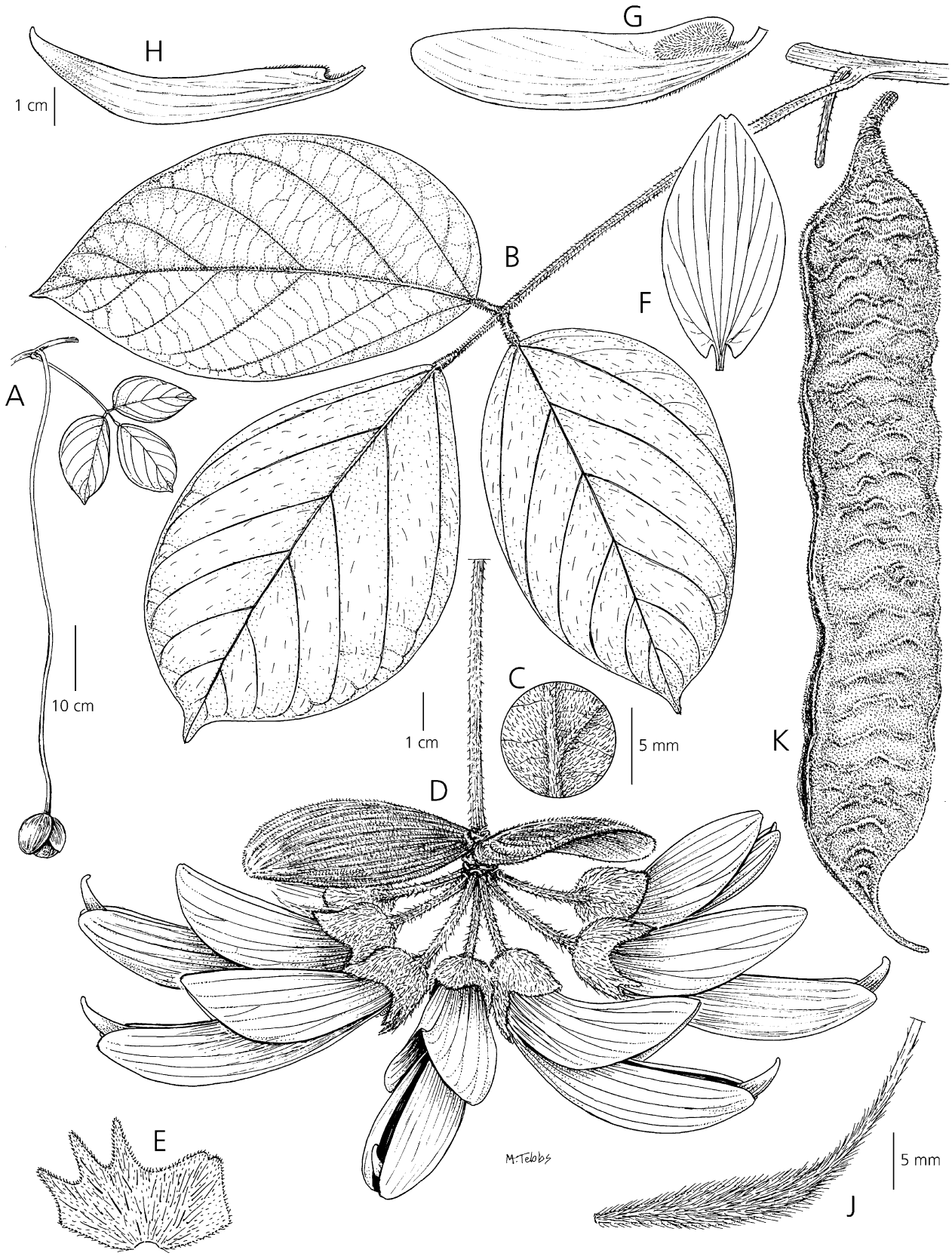

Fig. 2. *Mucuna cajamarca*. **A** leaf and inflorescence in bud, emphasising length of peduncle; **B** leaf; **C** indumentum on abaxial surface of leaflet; **D** inflorescence, including bracts; **E** calyx opened out; **F** standard petal; **G** wing petal; **H** keel petal; **J** gynoecium; **K** fruit. **A** – **J** from *Campos & Cano* 4710 (K), **K** from *Campos & Corrales* 3451 (K). DRAWN BY MARGARET TEBBS.

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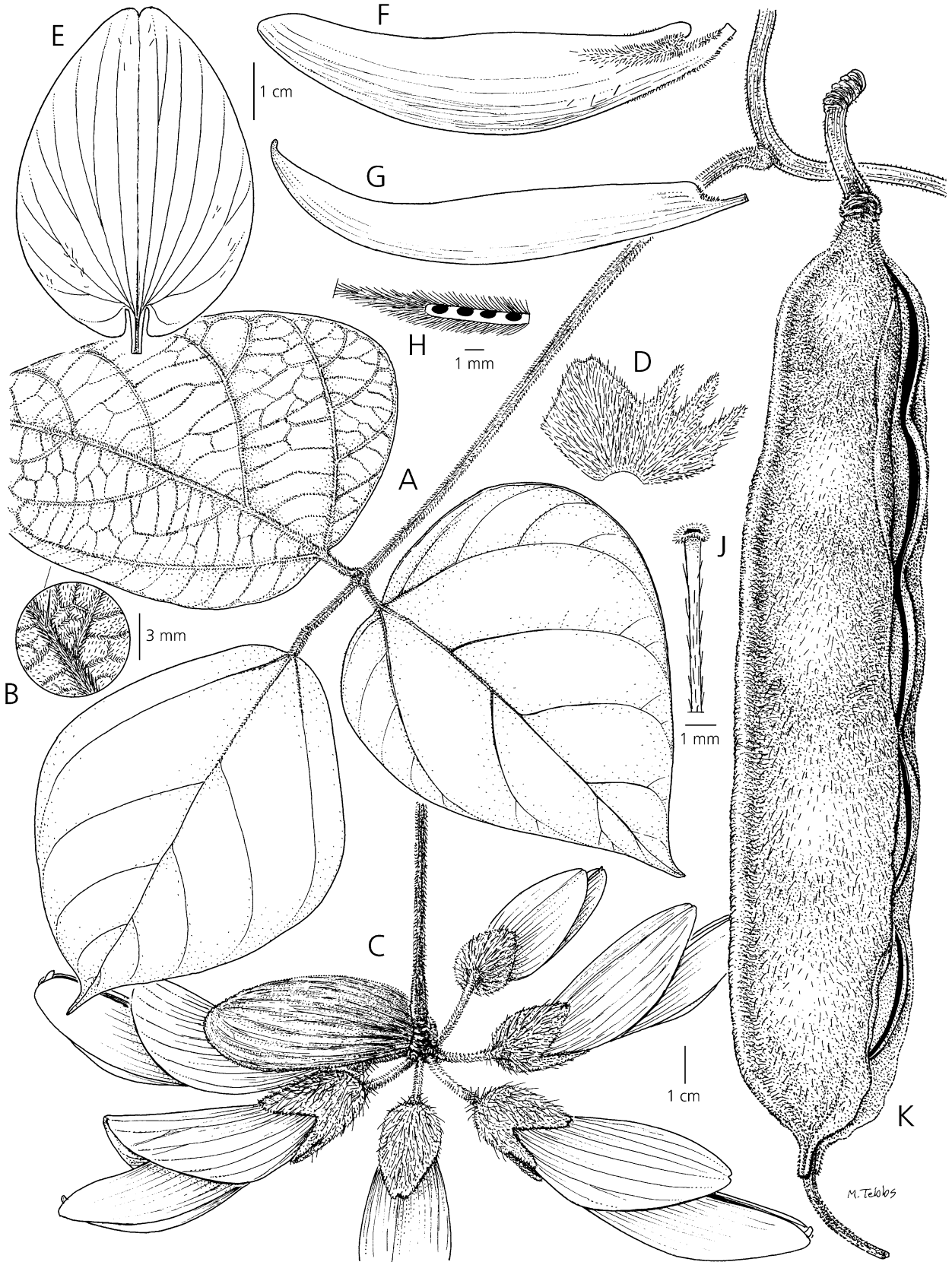

Fig. 3. *Mucuna klitgaardiae*. **A** leaf; **B** detail of indumentum on abaxial surface of leaflet; **C** inflorescence, including bract; **D** calyx opened out; **E** standard petal; **F** wing petal; **G** keel petal; **H** ovary, cut open to show the ovules; **J** apex of style and stigma; **K** fruit. **A**, **B** & **K** from *Lozano et al.* 1088 (K); **C** – **J** from *Klitgaard et al.* 653 (K). DRAWN BY MARGARET TEBBS.

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ETYMOLOGY. The epithet is based on the name of the department of Peru to which this species is endemic.
VERNACULAR NAMES. *ojo de carnero* and *ojo de venado.*

Mucuna klitgaardiae *T. M. Moura, G. P. Lewis & A. M. G. Azevedo* **sp. nov.** Type: Ecuador, Province Pichincha, Road Calacalí, *Klitgaard, Lozano & Bruneau* 653 (holotype K!; isotypes AAU!, NY!).

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Lianas; stems with dense, erect golden hairs. *Leaves* alternate, 3-foliolate; stipules absent; pulvinus cylindrical, 10 × 2 mm, tomentose; petiole 7 – 15 cm long, angular, with dense, erect, golden hairs; rachis 1 – 2.5 cm long, angular, hairs as on the petiole; stipels absent; petiolules 5 – 7 mm long, angular, with dense, erect, golden hairs (denser than on the petiole and rachis); leaflet blades ovate to elliptic, apical leaflet 10 – 15 × 5.5 – 8.5 cm, rounded at base, cuspidate at apex, lateral leaflets 9 – 12 × 5.5 – 10 cm, asymmetrical, subcordate at base, cuspidate at apex, with golden appressed hairs on the adaxial surface, and denser, erect golden hairs on the abaxial surface, venation eucamptodromous, secondary veins 4 – 5 pairs per leaflet. *Inflorescence* axillary, pseudo-umbelliform, pendent; peduncle 20 – 40 cm long, with dense, erect golden hairs; primary axis condensed, all flowers clustered together at the apex; bracts foliaceous, 5 – 7 × 3 – 4 cm, sericeous; pedicels 2 cm long, sericeous; flowers 8 – 10 cm long. *Calyx* campanulate, 2 – 2.5 cm long, with long appressed hairs on both surfaces; lobes 4, the adaxial lobe formed by two connate sepals, 10 × 8 mm, apex obtuse, the other three lobes 10 × 4 mm, apex acute. *Corolla* reported as white [*Asplund* 19206 (S); *Davis* 459 (S)], cream [Klitgaard *et al.* 653 (K)] or greenish-white [*Holm-Nielsen et al.* 24506 (AAU, MO)]; standard petal ovate, 6.4 × 5 cm, base attenuate, apex retuse, the claw c. 5 mm long, glabrous; wing petals 9 × 2.2 cm, oblong-elliptic, base attenuate, apex obtuse, pubescent at base, the claw c. 4 mm; keel petals 9 × 1.5 cm, oblong, base attenuate, apex obtuse, pubescent at base, the claw c. 1 mm. *Stamens* 10, diadelphous, with nine fused for c. 65 – 70% of their filament length, the tenth stamen free; filaments 9 cm long, glabrous; anthers ovate to oblong-elliptic, basifixed except for the dorsifixed anther on the free stamen, 4 – 5 mm long, the connective tomentose. *Gynoecium* 9.5 cm long, ovary sessile, oblong, 15 × 3 mm, densely sericeous, 5-ovulate; style 8 cm long, densely sericeous, glabrescent at apex, stigma peltate, villous. *Fruits* oblong, laterally compressed, 28 × 5 cm, attenuate at base, caudate at apex, pubescent, with dense erect golden hairs, the valve surfaces lacking lamellate ornamentation, the margins of the fruit with a somewhat lignified wing. *Seeds* 5 per pod, dark brown, round, 2.5 – 3.0 × 2.5 – 3.0 cm; hilum black, circling nearly the total circumference of the seed. Fig. 3.

RECOGNITION. *Mucuna klitgaardiae* is diagnosed by its pseudo-umbelliform inflorescences; pendent peduncles 20 – 40 cm long; bracts 5 – 7 cm long; flowers 8 – 10 cm long, with the corolla white, cream or greenish-white; fruits densely covered with hairs and possessing a marginal wing but lacking lamellate ornamentation; round seeds with the hilum extending nearly the total length of the seed circumference. It is similar to *M. cuatrecasasii* and *M. cajamarca* as all three species have persistent bracts; white to greenish-yellow corollas; and the margins of the valves have a lignified wing. *M. klitgaardiae* differs from the other two in lacking transverse lamellae on the fruit valves.
DISTRIBUTION. *Mucuna klitgaardiae* occurs in Ecuador (provinces of Napo, Pastaza, Pichincha, Morona Santiago, Tungurahua and Zamora-Chinchipe) and San Martín, Peru (province Mariscal Caceres) (Map 1).
SPECIMENS EXAMINED. ECUADOR. Province Morona Santiago: 5 kmN de Yunganza, on Medéz-Limón Road, 18 June 1989 (fl.), *Dorr & Valdespino* 6352 (US); Province Napo-Pastaza: 6 Nov. 1952 (fl.), *Fagerlind & Wibom* 1081 (S); Province Napo: road from Archidona to Cotundo, 15 Dec. 1976 (fl.), *Davis*

Table 1. Main morphological characters of the five species of *Mucuna* with pseudo-umbelliform inflorescences. + = presence, and - = absence.

	M. argentea	*M. cajamarca*	*M. cuatrecasasii*	*M. elliptica*	*M. klitgaardiae*
Colour of indumentum on leaflets	silver	golden	golden	golden	golden
Type of indumentum on abaxial surface of leaflets	appressed	erect	appressed	erect	erect
Presence of Stipels	+	-	-	+	-
Peduncle length (cm)	7 – 10	60 – 100	30 – 120	6 – 30	20 – 40
Bract length (cm)	3 cm long, which fall before anthesis	6 – 8	4 – 12.5	2 – 3	5 – 7
Flower colour	yellow	greenish-yellow	white	yellow or orange	white, cream or greenish-white
Pod surface	not ornamented	ornamented	ornamented	not ornamented	not ornamented
Marginal wing on pod	-	+	+	-	+

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459 (COL, GH, S); along river Cosanga, vicinity of village Cosanga, cordillera de Hucamayos, 8 July 1987 (fl.), *Hekker & Hekking* 10377 (NY); km 36 on road Hollín-Loreto, just passing the bridge over river Huamaní, 8 Dec. 1991 (fl.), *Klitgaard* 99502 (AAU, GB, MO); Province Pastaza: orilla del Rio Pastaza, cercania de Shell, 31 Jan. 1994 (fr.), *Cornejo & Bonifaz* 1561 (NY); between Rio Blanco and Rio Verde along road from Banos to Puyo, 7 Jan. 1962 (fl.), *Dodson & Thien* 1974 (MO); Province Pichincha: Road Calacalí, 0°10'S, 78°40'W, 2000 m, 2 Oct. 1997 (fl.), *Klitgaard, Lozano & Bruneau* 653 (holotype K; isotypes AAU, MO, NY); Quito Catón, main road to Los Bancos, 2 km before Tie Polo, fundation Tandayapa, 19 Oct. 1996 (fl.), *Clark* 3055 (US); road Nanegalito, 5 km N of Tulipe, 22 July 1980 (fl.), *Holm-Nielsen et al.* 24506 (AAU, MO); Province Tungurahua: Hacienda Rio Verde Grande, 4 Feb. 1956 (fl.), *Asplund* 19206 (S); Colonia Mexico, vicinity of El Topo, c. 10 km NW of Mora, 4 March 1969 (fl.), *H. Lugo* 656 (GB, NY, MO); Province Zamora-Chinchipe: Estacion el Padmi, 03°44'S, 78°36'W, 900 m, 3 June 1998 (fr.), *Lozano, Laegaard, Delgado & Torres* 1088 (K). **PERU.** San Martín: Mariscal Cáceres, district Tocache Nuevo, puerto Pizana, margen derecha del río Huallaga, 300 – 400 m, 22 June 1974 (fr.), *Vigo* 6990 (MO); vicinity around Tocache, 08° 11'03"S, 76°30'45"W, 400 – 600 m, 25 May 1975 (fl.), *Vigo* 8610 (MO); Rio de la Plata, fundo del Sr. Manúel Fatica, 550 – 700 m, 18 Aug. 1980 (fl.), *Vigo* 12165 (MO).

HABITAT. *Mucuna klitgaardiae* frequently occurs along rivers or in humid areas along roadsides; alt. 900 – 2000 m.

CONSERVATION STATUS. *Mucuna klitgaardiae* has a restricted area of occupancy (AOO=52 km^2) in both countries. According to IUCN criteria (2001) this can be considered an Endangered (EN) species.

PHENOLOGY. Flowering March – Dec.; fruiting Jan. – June.

ETYMOLOGY. The species is named after Bente B. Klitgaard, a legume systematist with a detailed knowledge of the Ecuadorian flora and the plant family Leguminosae, who collected the type specimen.

The three new species of *Mucuna* described here belong to a group of five taxa from South America that have pseudo-umbelliform inflorescences. Although morphologically similar to one another, they can easily be distinguished (see Table 1). Two of the five are narrowly restricted endemics: *M. cajamarca* from Peru and *M. cuatrecasasii* from Colombia, whereas *M. klitgaardiae* occurs in Ecuador and Peru, *M. argentea* occurs in Colombia, Ecuador and Peru, and *M. elliptica* is found in Bolivia, Brazil, Ecuador and Peru. In Brazil, this latter species is also found in herbaria under the name *Mucuna huberi* Ducke (1925: 90 – 91) (e.g., holotype: *Ducke* 17264 RB!), but we consider this to be a synonym of *M. elliptica*. We anticipate putting this name formally into synonymy in a future paper, when all the types have been studied.

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