

Taxonomic Studies in *Mucuna* Adans. (Leguminosae – Papilionoideae) from Peru

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Abstract—An account of the 11 species of *Mucuna* (one described as new to science: *Mucuna pseudoelliptica*) occurring in Peru is provided. Information about types and synonyms are presented, as well as the conservation status of, and a distribution map for, each species. A key to identify the Peruvian species of *Mucuna* is also presented.

Keywords—Fabaceae, Neotropics, new species, systematics, taxonomy.

Mucuna Adans. was described by Adanson (1763), based on *Dolichos urens* L. (= *Mucuna urens* (L.) DC.), and *Mucuna* is a conserved name against *Stizolobium* P. Browne (Parkinson 1987). A number of taxonomic sections have been proposed for the genus, e.g. *Mucuna* sect. *Zoophthalmum* (P. Browne) DC., *Mucuna* sect. *Stizolobium* (P. Browne) DC. (De Candolle 1825), and *Mucuna* sect. *Carpopogon* Benth. (Bentham 1859), although our current understanding of the morphology of the genus does not support these previously published sectional classifications. Two subgenera are currently recognized: *Mucuna* subg. *Mucuna* and *Mucuna* subg. *Stizolobium* (P. Browne) DC., their recognition supported mainly by seed and fruit characteristics (Wilmot-Dear 1984). Moura (2013) demonstrated that *Mucuna* is a monophyletic genus.

Although many species of *Mucuna* have irritating hairs on their fruits and calyces, a number of species are used as ornamentals because of their brightly colored, showy flowers (e.g. *Mucuna bennetti* F. Muell.). *Mucuna pruriens* (L.) DC. is of agricultural importance as forage, green manure, for biological control, controlling worms (nematodes) in soil, and as a coffee substitute (Duke 1981; Garcia and Fragoso 2003; Ortiz-Ceballos and Fragoso 2004; Ortiz-Ceballos et al. 2007a,b), as well as having medicinal properties used in the treatment of Parkinson's disease (Nagashayana et al. 2000; Singhal et al. 2003).

Currently 105 species of *Mucuna* are recognized globally, with approximately 80% of the species occurring in the Paleotropics where several regional taxonomic accounts of the genus have been published (Verdcourt 1970, 1971, 1978, 1979a,b, 1981; Wilmot-Dear 1984, 1986, 1989, 1990, 1991, 1992). In contrast, studies of Neotropical species are scarce (Ruiz 2009; Moura 2013). Our aim is to contribute a series of regional accounts and nomenclatural papers for neotropical species (e.g. Moura et al. 2012a,b, 2013a-e, 2014) and then combine these with previous Paleotropical accounts and submit a monograph of the genus across its entire distributional range.

Neotropical *Mucuna* species are recognized by a combination of lianescent habit, unarmed stems, trifoliolate leaves, stipules not extended below their point of attachment, pendent peduncle, bracts frequently persistent, calyx campanulate, corolla with the standard petal usually much shorter than the keel petals and the keel prominently beaked and usually hardened and thickened at the apex, stamens ten, diadelphous (nine and one), anthers usually

dimorphic, with five larger and (sub-) basifixed and five smaller and versatile or dorsifixed, pods usually covered with bristly irritating trichomes, and seeds large, globose, oblong, or discoid, with the hilum circling a significant part of the seed circumference in *Mucuna* subg. *Mucuna*, or reniform with a short hilum that does not circle the seed circumference in *Mucuna* subg. *Stizolobium*.

There are 24 species of *Mucuna* listed for the Neotropics (Moura 2013), and six of these have a distinct umbelliform inflorescence, which lacks an evident rachis. Two species occur in both the New and Old World: *Mucuna pruriens* (L.) DC. and *Mucuna sloanei* Fawc. & Rendle. Other New World species share morphological characteristics with Old World species, e.g. *Mucuna rostrata* Benth. (from Central and South America) is morphologically similar to *Mucuna nova-guineensis* Scheff. (from New Guinea).

The highest diversity of *Mucuna* in the Neotropics occurs in South America (Moura 2013), with 19 species (11 endemic). Moura (2013) presented an account of *Mucuna* in the Neotropics, which expanded and emended the data published by Ruiz (2009), and reported that Peru and Colombia have the highest species diversity of *Mucuna* in South America with 11 species each, followed by Ecuador (nine species), Brazil (seven species), and Bolivia (six species).

Brako and Zarucchi (1993), Ruiz (2009), and Vásquez and Van der Werff (2010) cited only five species for Peru. Moura et al. (2013a) added three recently described umbelliform species: *Mucuna argentea* T. M. Moura, G. P. Lewis & A. M. G. Azevedo, *Mucuna cajamarca* T. M. Moura, G. P. Lewis & A. M. G. Azevedo and *Mucuna klitgaardiae* T. M. Moura, G. P. Lewis & A. M. G. Azevedo. *Mucuna huberi* Ducke was reported to occur in Peru (Brako and Zarucchi 1993; Ruiz 2009; Vásquez and Van der Werff 2010), but it is now considered a synonym of *Mucuna elliptica* (Ruiz & Pav.) DC. (Moura et al. 2013b). *Mucuna mitis* (Ruiz & Pav.) DC. and *Mucuna mutisiana* (Kunth) DC. are recorded from Peru for the first time. A new species, *Mucuna pseudoelliptica*, endemic to Peru, is described in this account, bringing the total accepted species for Peru to 11. Representatives of both subgenera of *Mucuna* occur in Peru.

We present descriptions, typifications, synonymy, conservation status, and distribution maps for all 11 species of *Mucuna* occurring in Peru. An identification key to species is also presented.

KEY TO THE SPECIES OF *MUCUNA* OCCURRING IN PERU

1. Inflorescence umbelliform, all the flowers aggregated at the inflorescence apex, inflorescence rachis lacking or reduced 2
 2. Abaxial surface of leaflets with silvery hairs 1. *M. argentea*
 2. Abaxial surface of leaflets with golden colored hairs 3
 3. Bracts persistent, ≥ 5 cm 4
 4. Pod surface ornamented by lamellae 2. *M. cajamarca*
 4. Pod surface not ornamented by lamellae 4. *M. klitgaardiae*
 3. Bracts caducous, or if persistent then only up to 3 cm long 5
 5. Stipels persistent, abaxial surface of leaflets densely hairy, bracts 2–3 cm long 3. *M. elliptica*
 5. Stipels absent, abaxial surface of leaflets sparsely hairy, bracts caducous 8. *M. pseudoelliptica*
1. Inflorescence pseudoracemose, the flowers not aggregated at the inflorescence apex, rachis of inflorescence longer than 1 cm 6
 6. Flowers purple (or sometimes white), seeds reniform, hilum up to 7 mm long 7
 7. Pod surface not ornamented by ridges, covered with an indumentum of dense, long, golden and irritating hairs 7. *M. pruriens* var. *pruriens* (see comments under *M. pruriens*)
 7. Pod with one or more ridges along the valve surfaces, covered with short, silvery and non-irritating hairs 7. *M. pruriens* var. *utilis* (see comments under *M. pruriens*)
 6. Flowers yellowish, orange, greenish, or cream, seeds globose, hilum 2 cm or more long 8
 8. Peduncle up to 20 cm long, flowers yellow or orange 9
 9. Stipels absent, inflorescence rachis longer than 5 cm 9. *M. rostrata*
 9. Stipels persistent, inflorescence rachis shorter than 3 cm 10. *M. sloanei*
 8. Peduncle ca. 1 m long or longer, flowers yellowish, greenish or cream 10
 10. Stipels persistent, fruits with partial transverse lamellae comprising discontinuous undulating coriaceous ridges (each lateral ridge varying from 1–4 mm high, the ridges occasionally elevated into pointed extensions, see Fig. 1) 6. *M. mutisiana*
 10. Stipels absent, fruits with transverse lamellae (sometimes obscure) some crossing the whole of the valve surface, while others are broken half way (each lamella ca. 1 mm high) 11
 11. Abaxial surface of leaflets glabrescent, when present the hairs adpressed, pedicels 0.7–2 cm long 11. *M. urens*
 11. Abaxial surface of leaflets with erect hairs, pedicels 3–5 cm long 5. *M. mitis*

1. *MUCUNA ARGENTEA* T. M. Moura, G. P. Lewis, A. M. G. Azevedo, Kew Bulletin 68 (1): 143. 2012. —TYPE: COLOMBIA. Araracuara, 18 Aug 1994 (fl./fr.), Kats, B. & Dulmen, A. V. AVD265 (holotype: K!; isotypes: COAH!, MO!).

Liana. Leaves 3-foliolate; pulvinus 1.5×0.3 – 0.5 ; petiole 12–13 cm long; stipels triangular, 3 mm long, persistent; rachis 1.5–3 cm long; petiolules 5–8 mm long; lateral leaflets asymmetric 12–18 \times 8–11.5 cm, rounded to slightly cordate at base (sometimes slightly acute), cuspidate at apex; apical leaflets obovate or elliptic, 13–17 \times 9–12 cm, acute to rounded at base, cuspidate at apex; venation eucamptodromous, secondary veins in 7–9 pairs per leaflet; dense, adpressed silvery hairs on abaxial surface; less dense adaxially. Inflorescence axillary, umbelliform; peduncle 7–10 cm long; bracts ca. 3 cm long, caducous; rachis lacking or reduced; secondary axis of inflorescence not evident, pedicels 1.5–2 cm long. Flowers 8–9 cm long; calyx reported to be greenish yellow, 2–2.5 cm long, 4-lobed, the adaxial lobe formed by two connate sepals, 5 \times 3 mm, obtuse at apex, the other three lobes 5–7 \times 3 mm, acute at apex; corolla reported to be yellow; standard broadly elliptic, 5–6 \times 3 cm, attenuate at base, rounded to retuse at apex, claw 5–6 mm long; wings oblong-ovate, 7–9 \times 1–1.5 cm, attenuate at base, acute at apex, the claw 7–9 mm long; keel petals oblong, 7–8.5 \times 2 cm, attenuate at base, acute at apex, the claw 7–9 mm long; pubescent at base of wing and keel petals. Stamen filaments reported to be cream colored, 8–10 cm long, glabrous. Gynoecium 10 cm long; style 8–9 cm long, sericeous, except at apex; ovary 10 \times 4 mm, sericeous; stigma peltate, villous. Fruits 20 \times 3.5 cm, not ornamented by lamellae, covered with dense hairs, acute at base, cuspidate at apex. Seeds not seen.

Phenology—This species is known to flower in June.

Distribution and Habitat—*Mucuna argentea* occurs in Colombia, Ecuador, and Peru. To date there is only one collection from Peru, collected in Loreto (Fig. 2).

Conservation Status—*Mucuna argentea* was temporarily assessed as endangered (EN) following IUCN (2001) criteria (Moura et al. 2013a).

Representative Specimen Examined (only one known from Peru)—Loreto: Río Putumayo, May–Jun 1931, Klink, G. 2265 (K).

Notes—Historically, *M. argentea* has commonly been identified as *M. elliptica*. The two species differ, however, in the caducous bracts and presence of adpressed, silvery hairs on the abaxial surface of the leaflets in *M. argentea*, while in *M. elliptica* the bracts are persistent and the hairs on the abaxial surface of the leaflets are usually erect and golden (not argenteous).

2. *MUCUNA CAJAMARCA* T. M. Moura, G. P. Lewis & A. M. G. Azevedo, Kew Bulletin 68(1): 144. 2012. —TYPE: PERU. San Ignacio, San José de Lourdes. Localidad Santo Tomás, 05°01'00"S, 78°54'00"W, 1,800 m, 5 Mar 1997 (fr.), Campos, J. & Corrales, S. 3451 (holotype: K!; isotype: K!, MO!).

Liana. Leaflets 3-foliolate; pulvinus 5–10 \times 2–3 mm; petiole 9–16 cm long; rachis 1–2 cm long; stipels absent; petiolule 5–10 mm long; leaflet blades ovate, obovate, or elliptic; apical leaflets 12–14 \times 7–8.5 cm, lateral leaflets 11–14 \times 7–9 cm, asymmetric, obtuse or rounded at base, acuminate or cuspidate at apex, dense and erect golden colored hairs on abaxial surface; venation eucamptodromous, secondary veins 5–6 pairs per leaflet. Inflorescence axillary, umbelliform; peduncle 0.6–1 m long; bracts 6–8 \times 3–4 cm, persistent, sericeous; pedicels 2–2.5 cm long, sericeous. Flowers 9–10 cm long; calyx sericeous on both surfaces, 2–2.7 cm long; 4-lobed, the adaxial lobe formed by two connate sepals, 3–5 mm long, obtuse at apex; the other three lobes 1–1.4 \times 0.2–0.4 cm, acute at apex; corolla reported to be greenish-yellow; standard 7–7.5 cm long, broadly elliptic, attenuate at base, rounded at apex, the claw ca. 5 mm long; wings 9–10 \times 2–3 cm, oblong-obovate, attenuate at base, obtuse at apex, the claw ca. 8 mm long; keel petals 9–9.5 \times 1.5 cm, oblong, attenuate at base, acute at apex, the claw ca. 10 mm long; wing and keel petals pubescent at

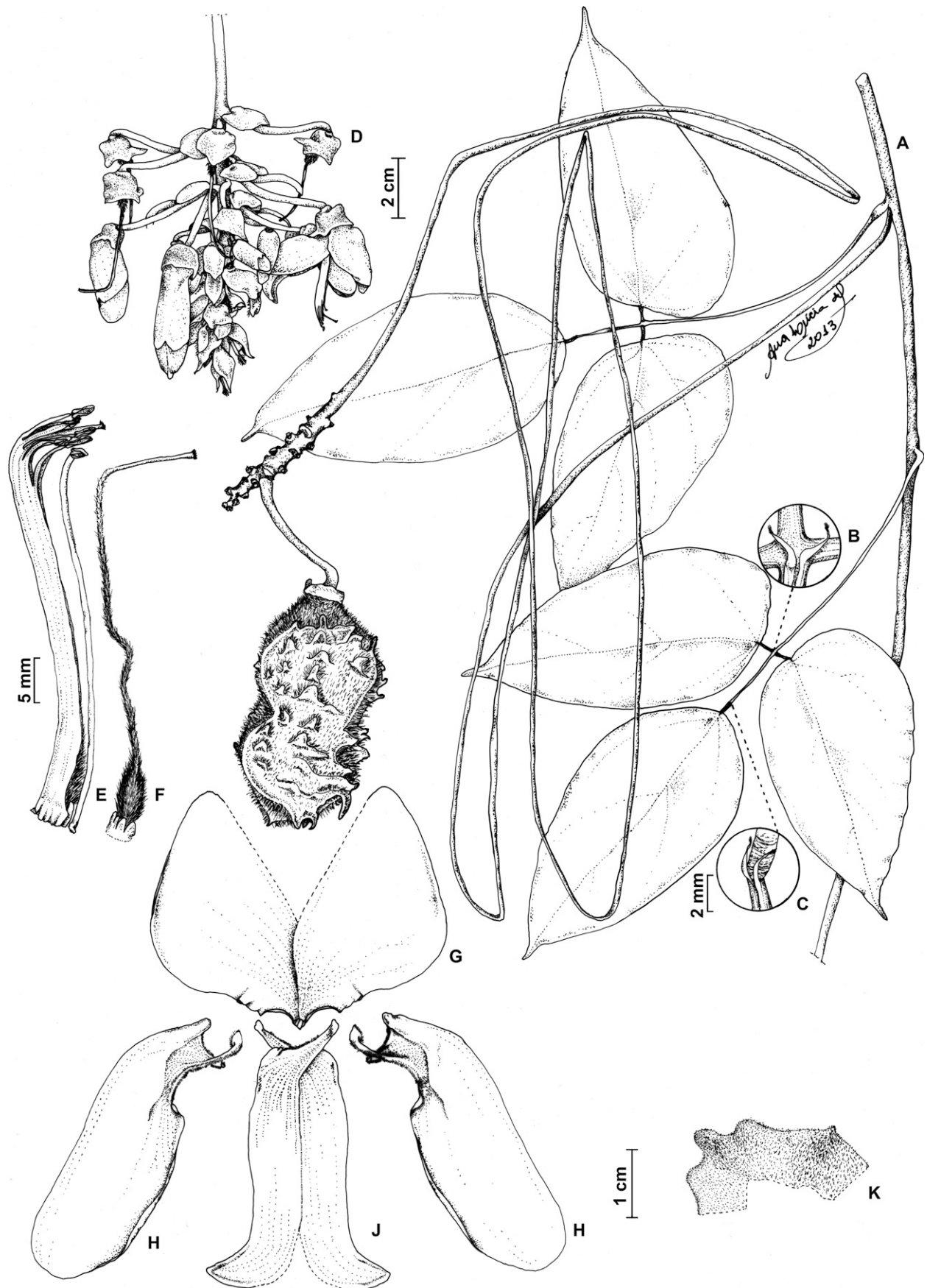


FIG. 1. *Mucuna mutisiana*. A. Stem with leaf, peduncle and fruit. B. Detail of stipels of the lateral leaflets. C. Detail of stipels of the apical leaflet. D. Inflorescence. E. Androecium. F. Gynoecium. G. Standard petal. H. Wing petals. J. Keel petals. K. Calyx opened out. A–C: R. Romero Castañeda 10762 (MO); D–K: E. Rentería-Arriaga et al. 1900 (MO). Drawn by Ana Lúcia Souza.



FIG. 2. Distribution in Peru of *Mucuna* subg. *Mucuna* species with umbelliform inflorescences (represented by solid circle *M. argentea*, plus sign *M. cajamarca*, triangle *M. elliptica*, square *M. klitgaardiae*, star *M. pseudoelliptica*). Map created by DIVA/GIS.

base. Stamen filaments 8.5–9.5 cm long, glabrous. Gynoecium 10–10.5 cm long; style 8–8.5 cm long, sericeous, except at apex; ovary oblong in outline, ca. 2 × 0.3 cm, sericeous; stigma peltate, villous. Fruits stipitate, surface covered with irritating hairs; stipe ca. 1 cm long; fruit body 16–25 × 3.5–4 cm, oblong, laterally compressed, attenuate at base, acuminate at apex, surface ornamented by transverse lamellae, lignified wings present along fruit margin. Seeds 4–5.2 × 2 × 2.5 cm, globose; hilum black, circling ca. 85% of the seed circumference.

Phenology—This species flowers from November to February; fruits in March.

Distribution and Habitat—*Mucuna cajamarca* is endemic to Cajamarca, Peru (Fig. 2). The species is reported (on field labels) to occur in both primary and secondary forest; alt. 1,400–1,800 m.

Conservation Status—*Mucuna cajamarca* was assessed as vulnerable (VU) based on IUCN (2001) criteria (Moura et al. 2013a).

Representative Specimens Examined—Cajamarca: San Ignacio, Tabaconas, la bermeja, margen derecha de la quebra, 20 Nov 1997, Campos, J. & Cano, O. 4710 (K); San Ignacio, San José de Lourdes, Selva Andina, 14 Feb 2000, Campos, J. & Vásquez 6379 (MO).

Notes—Among the species with umbelliform inflorescences, only *M. cajamarca* and *M. cuatrecasasii* Hern. Cam. & C. Barbosa ex L. K. Ruiz have fruit surfaces ornamented by transverse lamellae. However, in *M. cajamarca* the lamellae are more evident than in *M. cuatrecasasii*. The hairs on the abaxial surface of the leaflets are adpressed in *M. cuatrecasasii* and erect in *M. cajamarca*. *Mucuna cajamarca* is endemic to Cajamarca/Peru, and *M. cuatrecasasii* is endemic to Colombia.

3. *MUCUNA ELLIPTICA* (Ruiz & Pav.) DC., Prodr. 2: 405. 1825. *Negretia elliptica* Ruiz & Pav., Syst. veg. fl. peruv. chil. 176. 1798. —TYPE: PERU. Pozuza, Muña (lectotype: FI! 51700, designated by Moura et al. 2013c).

Mucuna fawcettii Urb., Symb. antill. 5(3): 371. 1908.—TYPE: Jamaica (lectotype, designated here: Wm. Harris 8818 BM 931438; isolecotypes: Wm. Harris 8818 F 174393, F 189190, Wm. Harris 9102 NY 1185459, F 92756), syn. nov.

Mucuna huberi Ducke, Archivos do Jardim Botânico do Rio de Janeiro. 4: 90–91. 1925.—TYPE: Brazil. RB 17264.

Mucuna inflexa (Ruiz & Pav.) DC., Prodr. 2: 405. 1825. *Negretia inflexa* Ruiz & Pav., Syst. veg. fl. peruv. chil. 176. 1798.—TYPE: PERU: Pozuzo e Muña, Ruiz & Pavon s. n. (lectotype: OFX, designated by Moura et al. 2013c).

Liana. Leaf 3-foliolate; pulvinus 1.5 × 0.5 cm; petiole 6–20 cm long; stipels ca. 2 mm long, persistent; rachis 1.5–2.5 cm long; petiolule 0.5–1 cm long; lateral leaflets asymmetric 13.5–18.5 × 8.5–16 cm, rounded to slightly cordate at base, cuspidate at apex; apical leaflets obovate to broadly elliptic, 15–18.5 × 10–15 cm, acute to rounded at base, cuspidate at apex; venation eucamptodromous, secondary veins 7–9 pairs per leaflet; dense erect hairs, usually golden, on abaxial surface; adpressed adaxially, less dense adaxially. Inflorescence axillary and umbelliform; peduncle 6–20 cm long; bracts 2–3 × 2 cm, rounded at apex, sericeous on both surfaces, persistent; pedicels 1–2 cm long. Flowers 7.5–10 cm long; calyx ca. 2.5 cm long, 4-lobed, the adaxial lobe formed by two connate sepals, ca. 5 × 4 mm, retuse

at apex, the other three lobes $0.7\text{--}1.2 \times 0.2$ cm, acute at apex, sericeous on both surfaces; corolla yellow-orange; standard broadly elliptic, $5\text{--}6.5 \times 3$ cm, attenuate at base, rounded to retuse at apex, the claw 5 mm long; wings oblong-elliptic $7.5\text{--}9 \times 2$ cm long, attenuate at base, rounded at apex, the claw $10\text{--}12$ mm long; keel petals oblong, $7.5\text{--}9 \times 2.4$ cm, attenuate at base, acute at apex, the claw ca. 15 mm long; wing and keel petals pubescent at base. Stamen filaments $8\text{--}10$ cm long, glabrous. Gynoecium 10 cm long; style $7\text{--}9$ cm long, sericeous, except at apex; ovary $7\text{--}10 \times 4$ mm, sericeous; stigma peltate, villous. Fruits, $10\text{--}24 \times 5.5\text{--}6$ cm, acute at base; caudate at apex; with dense ferruginous hairs; not ornamented by lamellae; 1–4-seeded. Seeds globose, $3.5 \times 3.5 \times 2.5$ cm, hilum brown to black, circling ca 80% of the seed circumference.

Phenology—This species flowers from February to August; fruits from June to October.

Distribution and Habitat—*Mucuna elliptica* occurs in Bolivia, Brazil, Ecuador, and Peru. It is widely distributed across Peru (Fig. 2). The species is frequently collected close to rivers; it also occurs in humid forest, cloud forest and along roadsides; alt. 200–2,300 m. The species is also recorded from Jamaica by one collection, the type specimen of the synonym *M. fawcettii*.

Conservation Status—*Mucuna elliptica* is assessed to be of least concern (LC) according to IUCN (2001) criteria.

Vernacular Name—This species is locally known as “vaca ñahui” and “wapai.”

Representative Specimens Examined—Amazonas: Quebrada Chichjam, Rio Cenepa, 24 May 1973, *Ancuash*, E. 437 (MO); Rio Cenepa; 8 km N of Huampami, 2 Aug 1972, *Berlin*, B. 158 (MO, XAL); N of Quebrada Huampami, approximately 10 km, 24 Jul 1974, *Berlin*, B. 1764 (MO); Monte Virgen, 400 m atrás de La Poza, Río Santiago, 22 Aug 1979, *Huashikat*, V. 129 (MO); Monte Virgen, 400 m atrás de La Poza, Río Santiago, 9 Feb 1979, *Leveau*, J. A. 23 (MO); Bagua, Distrito Imaza, comunidad Aguaurana de Kusú-Listra., 15 Sep 1996, *Diáz*, C. et al. 8164 (MO); Bagua, Distrito Imaza, region Nororiental del Maraño, 14 Jul 1994, *Vásquez*, R. et al. 18646 (MO). Ayacucho: Aina, 7 May 1929, *Kilipp*, E. P. & *Smith*, A. C. 22747 (NY, US); Rio Apurimac Valley, near Kimpitiriki, 10 May 1929, *Kilipp*, E. P. & *Smith*, A. C. 23054 (A, NY, US). Bagua: Along roadside from Chiriaco, 40 km by road NE of Chiriaco, 7 Nov 1978, *Barbour*, P. 4483 (MO, NY). Condorcanqui: Cenepa, Comunidade de San Antonio, Bosque de Ribera. Rio Cenepa, 20 Jun 1997, *Vásquez*, R. et al. 24107 (K, MO). Jujín: Valley of rio Tulumai, 5 Jun 1983, *Gentry*, A. et al. 41534 (NY). Llama: *Ruiz et Pavon s. n.* (MA). Loreto: Maynas, Caseria Alianza, Río Tamshiyacu, 1 Aug 1980, *Gentry*, A. et al. 29311 (K, MO); Maionas, Sanangal, margem direita do rio Itaya, 8 Aug 1980, *Vásquez*, R. et al. 370 (K). Madre de Dios: Manu, Parque Nacional de Manu; along forested edge, 12 Aug 1973, *Foster*, R. B. 2591 (MO); Parque Nacional de Manu, Rio Manu, cochá Cashu station, 3 May 1981, *Foster*, R. B. & *Janson*, C. 8381 (K). Pasco: Cordillera Yanachaga, E of Oxapampa, 2 Mar 1982, *Gentry*, A. & *Smith*, D. 35910 (MO); Oxapampa, Pozuzo. Parque Nacional Yanachaga Chemill, 10 Apr 2003, *Monteagudo*, A. et al. 4930 (K, MO, NY); Oxapampa, Parque Nacional Yanachaga, El Huampal, 1 Jul 2003, van der *Werff*, H. et al. 17972 (K). Pozuzo: Llamapañáquin, *Ruiz et Pavon s. n.* (MA). San Martín: Mariscal Cáceres, distrito Tocach Nuevo, 5 Apr 1975, *Vigo*, J. S. 8212 (F, MO). Ucayali: km 1 de carretera marginal, S from km 86 of Pucallpa -Tingo Maria Road, 1 Jun 1983, *Gentry*, A. & *Jaramillo*, N. 41400 (K, MO).

Notes—Among the species with umbelliform inflorescences, *M. elliptica* is easy to recognize due to its persistent, 2–3 cm long bracts. The species occurs mainly in South America, with two specimens cited from the West Indies (Jamaica): *Wm. Harris 8818*, and *9102* (both syntypes of *Mucuna fawcettii* Urb.). We could find no significant differences between the type collections of *M. elliptica* and *M. fawcettii* and we here propose *M. fawcettii* as a synonym of *M. elliptica*.

Urban (1908) cited *Harris 8818* and *Harris 9102* in the protologue of *M. fawcettii* but he did not cite an herbarium where the specimens are housed. There are specimens of *Harris 8818* in F and NY, and of *Harris 9102* in F and BM. No specimen of either collection number has been traced to B, where one might expect to find material studied by Urban; if they ever existed they are now presumed destroyed. Three specimens are equally informative morphologically and fit well the protologue of *M. fawcettii*, these are: *Harris 8818* at BM and F (174393) and *Harris 9102* at NY. On the field label of *Harris 8818* at BM is written “*Mucuna fawcettii* Urban (n. sp.)” and it is probable that this material was seen by Urban. We therefore designate *Harris 8818* at BM as the lectotype of *M. fawcettii* Urb. It is uncertain whether the type specimen of *M. huberi* (Herb. Jard. Bot. Rio n. 17264) is a holotype or an isotype, therefore at present it is simply labeled as type.

4. *MUCUNA KLITGAARDIAE* T. M. Moura, G. P. Lewis & A. M. G. Azevedo, *Kew Bulletin* 68(1): 149. 2012. —TYPE: ECUADOR. Province Pichinca, Road Calacalí, $0^{\circ}10'S$; $78^{\circ}40'W$, 2,000 m, 2 Oct 1997 (fl.), *Klitgaard*, B. B., *Lozano*, P. & *Bruneau*, A. 653 (holotype: K!; isotype: AAU!, NY!, QCNE!).

Liana. Leaves 3-foliolate; pulvinus $1\text{--}1.8 \times 0.4$ cm; petiole $8\text{--}10$ cm long; stipels absent; rachis ca. 1 cm long; petiole ca. $5\text{--}7$ mm long; lateral leaflets asymmetric, $8\text{--}16 \times 5\text{--}10.5$ cm, subcordate at base, cuspidate at apex; apical leaflet elliptic, $9\text{--}11 \times 5\text{--}10$ cm, rounded at base, cuspidate at apex; venation eucamptodromous, secondary veins 4–5 pairs per leaflet; dense, erect gold-colored hairs abaxially, less dense adaxially. Inflorescence axillary, umbelliform; peduncle 20–40 cm long; bracts $5\text{--}6 \times 3\text{--}4$ cm, sericeous on both surfaces, persistent; pedicels 1–2 cm long, 3 flowers per fleshy node. Flowers $8\text{--}10$ cm long; calyx $2\text{--}2.5$ cm long, 4-lobed, the adaxial lobe formed by two connate sepals, $5\text{--}10$ mm long, obtuse at apex, the other three lobes $4\text{--}10$ mm long, acute at apex; corolla reported to be white, greenish-white or cream; standard ovate, 6.4×5 cm, attenuate at base, rounded at apex, the claw $5\text{--}7$ mm long; wings oblong-elliptic, $8\text{--}10 \times 2$ cm, attenuate at base, obtuse at apex, the claw ca. 1 cm long; keel petals oblong, $8\text{--}10 \times 1.5\text{--}2.6$ cm, attenuate at base, obtuse at apex, the claw ca. 1 cm long; wing and keel petals pubescent at base. Stamen filaments $8\text{--}9$ cm long, glabrous. Gynoecium $8\text{--}10.5$ cm long; style $7\text{--}9$ cm long, sericeous, except at apex; ovary $1\text{--}1.5 \times 0.4$ cm, sericeous. Fruits ca. 28×5 cm, acute at base, caudate at apex; surface not ornamented by lamellae; fruit margins with lignified wings, 5-seeded. Seeds globose, brown, the hilum black, ca. $2.5\text{--}3.0 \times 2.5\text{--}3.0$ cm, circling nearly the total circumference of the seed.

Phenology—This species flowers and fruits from May to August.

Distribution and Habitat—*Mucuna klitgaardiae* occurs in Ecuador and Peru (Mariscal Cáceres province), in secondary forest; alt. 350–700 m. (Fig. 2).

Conservation Status—*Mucuna klitgaardiae* was assessed as endangered (EN) according to IUCN (2001) criteria by Moura et al. (2013a).

Vernacular Name—This species is popularly known as “vaca ñahui” (Mariscal Cáceres, Peru).

Representative Specimens Examined—Mariscal Cáceres: San Martín, Tocache Nuevo, 22 Jun 1974 (fr.), *Vigo*, J. S. 6990 (F, MO); San Martín, Tocache Nuevo, vicinity around Tocache, 25 May 1975 (fl.), *Vigo*, J. S. 8610 (MO); San Martín, Tocache Nuevo, Rio de La plata, fund del Sr. Manuel Fatica, 18 Aug 1980 (fl.), *Vigo*, J. S. 12165 (MO).

Notes—Before being described as a new species, *M. klitgaardiae* was commonly identified as *M. elliptica*. The two species differ by the color of their corolla (white, greenish-white or cream in *M. klitgaardiae* and orange or yellow in *M. elliptica*), in their bracts (longer than 5 cm in *M. klitgaardiae* and 2–3 cm long in *M. elliptica*), and by the presence of lignified marginal wings on the fruits of *M. klitgaardiae*, these lacking in *M. elliptica*.

5. *MUCUNA MITIS* (Ruiz & Pav.) DC., Prodr. 2: 405. 1825. *Negretia mitis* Ruiz & Pav., Syst. veg. fl. peruv. chil. 177. 1798. — TYPE: PERU. Chinchão. Herbário de Ruiz y Pavon [lectotype: MA! 812451, designated by Moura et al. 2013c].

Mucuna mapirensis (Rusby) J. F. Macbr., Publ. Field Mus. Nat. Hist., Bot. Ser. 13(3/1): 315–316. 1943. *Stizolobium mapirensis* Rusby, Mem. Torrey Bot. Club 6(1): 25. 1896.— TYPE: Bolivia, between Guanai and Tipuani, jun-jul, 1802 (fl.), A. M. Bang 1413 (holotype: ?; isotypes: BM, GH, K, MICH, PH, US, W).

Liana. Leaves 3-foliolate; pulvinus 1–1.5 × 0.3–0.4 cm; petiole 9–10 cm long; stipels absent; rachis 2–2.5 cm long; petiolule 5–7 mm long; lateral leaflets asymmetric, 11–14 × 6–7 cm, rounded to slightly subcordate at base, acuminate to caudate at apex; apical leaflet elliptic, 12–13 × 6–7 cm, rounded at base, acuminate to caudate at apex; venation eucamptodromous, secondary veins 4–6 pairs per leaflet; erect and dense hairs on the abaxial surface of leaflets. Inflorescence axillary, pseudoracemose; peduncle ca. 1 m long;

bracts not seen; pedicels 3–5 cm long, 7–12 nodes per inflorescence, 3 flowers per fleshy node, 0.5–1.2 cm apart, distichously arranged, sometimes in a “zig-zag” pattern. Flowers 5–6 cm long; calyx 2–2.5 cm long, 4-lobed, the adaxial formed by two connate sepals, ca. 5 × 10 mm, obtuse at apex; the abaxial lobe ca. 10 × 6 mm, acute at apex; lateral lobes 6–10 × 5 mm, rounded to slightly acute at apex; standard broadly elliptic, reported to be greenish, 4.5–5 × 2.2–2.9 cm, attenuate at base, rounded at apex, the claw ca. 10 mm long; wings oblong-elliptic, reported to be greenish yellow, 4.5–6 × 1.1–1.4 cm, attenuate at base; obtuse at apex, the claw ca. 15 mm long; keel petals oblong, reported to be greenish-yellow, 2.5–6 × 2–2.4 cm, attenuate at base, obtuse at apex, the claw ca. 10 mm long; wing and keel petals pubescent at base. Stamen filaments 4–5 cm long, glabrous. Gynoecium 5–6 cm long, style 3.5–5 cm long, sericeous except at apex; ovary oblong, 1–1.3 × 0.2 cm, sericeous. Fruits 14.5–24 × 2–4 cm, ornamented with obscure transverse lamellae, stipitate, stipe ca. 2 cm long, attenuate at base; caudate at apex; with an indumentum of dense hairs when young, the hairs lost at maturity, 2–6-seeded. Seeds globose, 2.5 × 2.5 × 1 cm; hilum black, circling ca. 80% of the seed circumference.

Phenology—This species flowers from May to October; fruits from June to December.

Distribution and Habitat—*Mucuna mitis* occurs in Bolivia, Ecuador, and Peru (in the provinces of Amazonas, Bagua, Chinchão, Huanuco, Llamapañaquin, San Martín, and Ucayali). (Fig. 3). Reported from secondary forest and close to rivers; alt. 250–450 m.

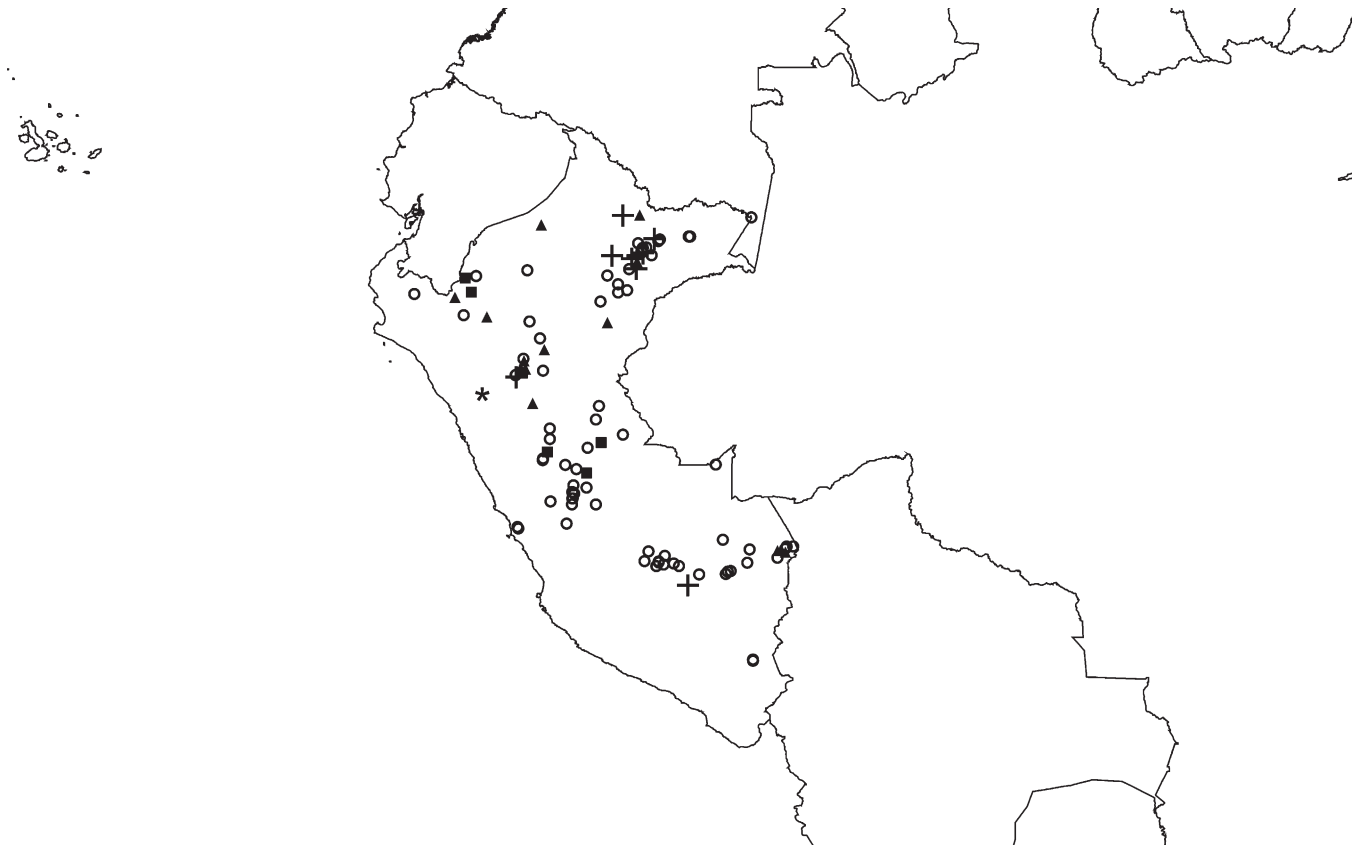


FIG. 3. Distribution in Peru of *Mucuna* subg. *Mucuna* species with pseudoracemose inflorescences (represented by square *M. mitis*, star *M. mutisiana*, open circle *M. rostrata*, triangle *M. sloanei*, plus sign *M. urens*). Map created by DIVA/GIS.

Conservation Status—*Mucuna mitis* is assessed as being of least concern (LC) according to IUCN (2001) criteria, both in Peru and globally.

Representative Specimens Examined—Amazonas: Rio Cenepa, vicinity of Huampami, cerca de Huampami, 12 Aug 1978, *Kujikat*, A. 297 (MO); Rio Cenepa, vicinity of Huampami, quebrada Aintami, 17 Aug 1978, *Kujikat*, A. 454 (MO); Bagua, Imaza, region Nororiental del Maraño, 9 Aug 1994, *Jaramillo*, N. et al. 345 (MO). Bagua: Imaza, Kampaensa, Bosque Rivera, 21 Oct 1995, *Vázquez*, R. et al. 20378 (K, MO); Imaza, Região nororiental de Maraño. Comunidade de Yamayakat, Bosque de transição, 9 Aug 1994, *Jaramillo*, N. et al. 335 (K, MO). Chinchão: Mapanaui, *Ruiz et Pavon* s. n. (MA). Huanuco: Pachitea, Codo de Pozuzo, alluvial fan floodplain, 22 Oct 1982, *Foster*, R. B. 9383 (MO). Llamapañaquin: *Ruiz et Pavon* s. n. (MA). San Martín: Mariscal Caceres, Tocache Nuevo, old trail to Limón, N of Tocache Nuevo near Granja Santa Inés, 2 Jul 1978, *Plovman*, T. & *Schunke*, J. 7550 (K); Mariscal Cáceres, Tocache Nuevo, quebrada de Huaquisha (margen derecha del río Hullaga), 12 May 2012, *Schunke*, J. 3969 (MO). Ucayali: Coronel Portillo, Cuenca del Río Iparia, afluente de Río Ucayali, bosque primario al borde de la quebrada, 8 Jun 2007, *Graham*, J. G. & *Vigo*, J. S. 4562 (K).

Notes—*Mucuna mitis* is similar to *M. urens*. The two species differ in the indumentum of the abaxial surface of the leaflets: erect and dense in *M. mitis*, adpressed and sparse or glabrescent in *M. urens*, and by pedicel length: 3–5 cm long in *M. mitis*, 0.7–2 cm long in *M. urens*. For *M. mapirensis* none of the type collections that are currently known are the holotype. In the hope that a holotype will be recovered, we do not designate any of these as lectotype at present.

6. *MUCUNA MUTISIANA* (Kunth) DC., Prodr. 2: 406. 1825. *Negretia mutisiana* Kunth, Nov. Gen. Sp. 6: 443 (ed. qto.). 1824. —TYPE: COLOMBIA. Santa Fé. Humboldt & Bonpland Herbarium in Paris (lectotype: P! 00660134, designated by Moura et al. 2013c).

Liana. Leaves 3-foliolate; pulvinus 7–10 × 2 mm; petiole 5–8.5 cm long; stipels 1–3 mm long, persistent; rachis 1.5–2 cm long; petiolule 3–7 mm long; lateral leaflets asymmetric, 4.5–10.5 × 1.7–9 cm, rounded to acute at base (rarely truncate or subcordate), cuspidate at apex; apical leaflet ovate to elliptic, 7.2–12.5 × 3.5–7.1 cm, rounded to acute at base (rarely truncate), cuspidate at apex; venation eucamptodromous, secondary veins 3–5 pairs per leaflet; sparse and adpressed hairs of abaxial surface of leaflets. Inflorescence axillary, pseudoracemose, nodes spirally arranged; peduncle ca. 1 m long; bracts 1.2–2.5 × 0.7–1.4 cm, persistent; pedicels 2.2–5 cm long, 17–48 nodes per inflorescence, 3 flowers per fleshy node, 3–10 mm apart. Flowers 3.5–5 cm long; corolla greenish or cream; calyx 1–2 cm long, 4-lobed, the adaxial lobe formed by two connate sepals, rounded at apex; the abaxial lobe ca. 3 × 3 mm, rounded at apex; lateral lobes ca. 2 × 2 mm, rounded at apex; standard broadly elliptic, 2.9–4.5 × 3.5 cm, attenuate at base, rounded to retuse at apex, the claw ca. 10 mm long; wings oblong-ovate, 3.5–5.5 × 1.5–1.7 cm, attenuate at base, rounded to obtuse at apex, the claw ca. 15 mm long; keel petals 3–4.5 × 1.6 cm, attenuate at base, obtuse at apex, the claw ca. 10 mm long; wing and keel petals pubescent at base. Stamen filaments 3.5–5 cm long, glabrous. Gynoecium 4.5–6 cm long, style 3.5–5 cm long, sericeous except at apex; ovary oblong, 5–10 × 2 mm, sericeous. Fruits 9–15 × 5 cm, acute at base (rarely rounded), acute at apex, with irritating hairs, ornamented by partial transverse lamellae comprising discontinuous undulating coriaceous ridges (each lateral ridge varying from 1–4 mm high, the ridges occasionally elevated into pointed extensions), 1–3 seeded. Seeds globose,

2.2–3.1 × 2.3–3 × 1–2 cm; hilum black, circling ca. 80% of the seed circumference. Figure 1.

Phenology—This species is known to flower in May.

Distribution and Habitat—*Mucuna mutisiana* occurs in Colombia, Costa Rica, Panamá, Venezuela, and Peru (San Martín province) (Fig. 3).

Conservation Status—*Mucuna mutisiana* is globally assessed to be of least concern (LC) according to IUCN (2001) criteria. However, within Peru it is temporarily assessed as data deficient (DD) because only two collections are known from this country.

Representative Specimens Examined—27 Dec 1878, *Martinet*, M. 692 (P). San Martín: Mariscal Cáceres, Tocache Nuevo, *Schunke*, J. 3910 (COL).

Notes—Morphologically, the species most similar to *M. mutisiana* in Peru is *M. urens* (especially in vegetative characteristics), but the two species differ by stipels persistent, inflorescence nodes spirally arranged, and wing petals longer than keel petals in *M. mutisiana* versus stipels absent, inflorescence nodes distichously arranged, and wing petals shorter than keel petals in *M. urens*.

7. *MUCUNA PRURIENS* (L.) DC., Prodr. 2: 405. 1825. *Dolichos pruriens* L., Herbarium Amboinense 23. 1754. —TYPE: INDONESIA. Herb. Amb. 5t. 142. 1750. lectotype designated by Wilmot-Dear (1984).

Mucuna pluricostata Barb. Rodr., Plant. Jard. Rio de Janeiro 6: 9, pl. 4, f. a. 1898. —TYPE: Tab IV. fig A, Pl. Jard. Rio de Janeiro, vol. VI. (1898). lectotype designated by Moura et al. (2013b).

Mucuna psittacina Miers., Proc. Roy. Hort. Soc. London 4: 160. 1864. —TYPE: COLOMBIA. Rio Magdalena, *Weir* 22 (holotype BM!).

Vine. Leaves 3-foliolate; stipels 3–4 mm long, persistent; rachis 1–2.5 cm long; petiolules 3–7 mm long; lateral leaflets asymmetric, 15.5–17.5 × 10–10.8 cm, truncate at base; acute to mucronate at apex; apical leaflet ovate to rhomboid, 10–17 × 7–12 cm, acute to rounded at base; acute to mucronate at apex; venation eucamptodromous, secondary veins 7 pairs per leaflet; adpressed hairs on both surfaces, these denser abaxially. Inflorescence axillary, pseudoracemose; peduncle 5.5–10 cm long; rachis 5–35 cm long; bracts 1–2 × 0.5–1 cm, acuminate at apex, usually caducous; pedicels 4–7 mm long, 4–12 nodes per inflorescence, 3 flowers per fleshy node, nodes 1.3–2.3 cm apart, alternately arranged. Flowers 3.5–4.5 cm long; calyx 1.2–1.7 cm long, 4-lobed, the adaxial lobe formed by two connate sepals, ca. 10 × 5 mm, acuminate at apex, the other 3 lobes ca. 8 × 2 mm, acuminate at apex; corolla purple (rarely white); standard broadly elliptic, 2–2.5 × 1.5 cm, attenuate at base, rounded at apex, the claw 1–2 mm long; wings oblong-elliptic, 3.5–4.5 × 1 cm, attenuate at base, obtuse at apex, the claw 7–9 mm long; keel petals oblong, 3.5–4.5 × 0.5 cm, attenuate at base, acute at apex, the claw 4 mm long; wings and keel petals pubescent at apex. Stamen filaments 3.7–4 cm long, glabrous. Gynoecium 3.5–4.5 cm long, style 2.5–3.5 cm long, sericeous, except at apex; ovary ca. 10 × 1–3 mm, sericeous. Fruits 7–8.5 × 1–2 cm, with a dense indumentum of long, golden and irritating hairs (in *M. pruriens* var. *pruriens*) and short, silver non-irritating hairs (in *M. pruriens* var. *utilis*), acute at base and apex, not ornamented by lamellae. In *M. pruriens* var. *utilis* one or more longitudinal ridges are present along the pod

surface; these lacking in the typical variety, where long dense hairs obscure the pod surface. Seeds 4–5 per pod, reniform, 1–1.5 × 1 cm; hilum cream or almost black, 5–7 mm long, circling less than 20% of the seed circumference.

Phenology—This species flowers from January to May; fruits throughout the year.

Distribution and Habitat—*Mucuna pruriens* is widely distributed throughout the Neotropics. In Peru it occurs in the provinces of Amazonas, Cajamarca, Cusco, Madre de Dios, and San Martín (Fig. 4). Reported to occur in primary and secondary forest, also cited in disturbed areas; alt. 170–1,500 m.

Conservation Status—*Mucuna pruriens* is assessed as of least concern (LC) according to IUCN (2001) criteria, both in Peru and globally.

Representative Specimens Examined—Amazonas: Rio Cenepa, 3 May 1973, *Ancuash, E.* 298 (MO, XAL); Bagua, Imaza, comunidad de Duship, 14 Oct 1997, *Sánchez, T.* 17 (MO). Cajamarca: San Ignacio, 29 Jan 1996, *Campos, J. & Días, O.* 2260 (MO). Cusco: Calca, Yanatile, camino a Versalles, 23 Feb 2005, *Valenzuela, L. et al.* 5129 (K); La Convención, Echarati, localidad Papelpata, 11 May 2005, *Calatayud, G. et al.* 2925 (K, MO); La Convención, Maranura, Chaullay, 19 Apr 2004, *Galiano, W. et al.* 6131 (K, MO); La Convención, Echarati, Palma Real, 26 Mar 2007, *Huamantupa, I.* 8604 (MO); La Convención, Echarati, San Antonio, 23 Mar 2006, *Valenzuela, L. et al.* 6701 (MO); Quillabamba, hillside above Río Urubamba, 4 Jun 1977, *Solomon, J.* 3099 (MO). Madre de Dios: Tambopata, Puerto Maldonado, 16 May 2003, *Valenzuela, L. & Suelli, E.* 2130 (K, MO); Tambopata, Las Piedras, Loboyoc, 27 Nov 2003, *Valenzuela, L. & Farfán, J.* 2413 (K). San Martín: Carretera Tarapoto-Juan Guerra, 28 Oct 1998, *Vigo, J. S.* 14526 (K).

Notes—The species displays a wide morphological variation, including the shape and size of leaflets, the peduncle length, and the number of flowers per inflorescence. The flowers are usually purple, although some specimen labels

report them to be white, or petals white and purple on the same flower. The pod surfaces of *M. pruriens* var. *utilis* have one or more longitudinal ridges running the length of the valves with adpressed white hairs, whereas in *M. pruriens* var. *pruriens* the pod surfaces lack ridges and are covered by long, golden, irritating hairs. Seeds can be black, brown, blotched, or whitish in color.

8. *Mucuna pseudoelliptica* T. M. Moura, G. P. Lewis & A. M. G. Azevedo, sp. nov. —TYPE: PERU. Huanuco, between Carpis and Chinchão, 22 Mar 1976 (fl./fr.), *Plowman, T. & Kennedy, H.* 5693 (holotype: F; isotype: K).

Mucuna pseudoelliptica is unique by the combination of sparse hairs on the abaxial surface of its leaflets, the umbelliform inflorescences, a peduncle 10–25 cm long, flowers 7–8 cm long, corolla yellow and stipels and bracts caducous. *Mucuna elliptica* is the most morphologically similar species, but differs by its persistent 2–3 cm long bracts, persistent stipels, and dense hairs on the abaxial surface of its leaflets.

Liana. Leaves 3-foliolate; petioles 8–9 cm long; stipels absent; rachis 2–2.5 cm long; petiolules 5–8 mm long; lateral leaflets asymmetric, 12–14.5 × 7–9.5 cm, rounded to slightly cordate at base, cuspidate at apex; apical leaflet elliptic, 13–15.5 × 7.5–8.5 cm, rounded at base, cuspidate at apex; venation eucamptodromous, secondary veins 6–8 pairs per leaflet; hairs sparse, erect and usually golden colored on the abaxial surface. Inflorescence axillary, umbelliform; peduncle 10–25 cm long; bracts caducous; pedicels 2–3 cm long. Flowers 7–8 cm long; calyx ca. 2 cm long, sericeous; 4-lobed, the adaxial lobe formed by two connate sepals,



FIG. 4. Distribution in Peru of *Mucuna* subg. *Stizolobium* (represented in the Neotropics by a single species: *M. pruriens*). Map created by DIVA/GIS.

ca. 5×3 mm, retuse at apex, lateral lobes ca. 6×2 mm, acute at apex, abaxial lobe ca. 10×2 mm, acute at apex; corolla yellow; standard broadly elliptic, ca. 4×3 cm, attenuate at base, rounded to retuse at apex, the claw ca. 5 mm long; wings oblong-elliptic, $6\text{--}6.5 \times 1$ cm, attenuate at base, rounded at apex, the claw ca. 5 mm long; keel petals oblong, 6×0.7 cm, attenuate at base, acute at apex, the claw ca. 8 mm long; wings and keel petals pubescent at base. Stamen filaments 6 cm long, glabrous; anthers dimorphic, 5 basifixed or subasifixed, ca. 4 mm long, 5 dorsifixed, ca. 2 mm long, globose; connective pubescent. Gynoecium $6\text{--}7$ cm long, style $5.5\text{--}6.5$ cm long, sericeous, except at apex; ovary ca. 5×3 mm, sericeous, 4-ovulate; stigma peltate, villous. Immature fruits ca. 16×4 cm, not ornamented by lamellae, but with dense urticating hairs covering the valve surfaces, lacking a stipe, acute at base, aristate at apex (in young fruits); 1–4-seeded. Mature seeds not seen. Figure 5.

Etymology—The species name indicates its morphological similarity with *M. elliptica*.

Phenology—This species is known to flower in March, August, and December; collected in fruit in March, May, and August.

Distribution and Habitat—*Mucuna pseudoelliptica* is endemic to the Huanuco and Pasco Provinces of Peru (Fig. 2); alt. 1,500–2,500 m.

Conservation Status—Few specimens of *M. pseudoelliptica* are known, so it is assessed as data deficient (DD) according to IUCN (2001) criteria.

Representative Specimens Examined—Pasco: Oxapampa, Ulcumanu, SW of Oxapampa; road to Maria Teresa, 31 Dec 1983, Foster, R. et al. 7667 (F); Oxapampa, Los Chacos, near Oxapampa, 11 May 1982, Smith, D. & Petrel, A. 1503 (MO); Oxapampa, along new road Oxapampa, Villa Rica, 21 May 2005, Van der Werff, H. et al. 20348 (K); Oxapampa, Villa Rica, Zona de amortiguamiento del Parque Nacional Yanachaga-Chemillén, Borde de la carretera Villa Rica-Oxapampa, 19 Apr 2006, Monteagudo, A. et al. 11980 (K). Huanuco: Chinchão, 2 Aug 1964, Dwyer, J. D. 6200 (MO).

Notes—In herbaria, *Mucuna pseudoelliptica* was previously frequently identified as *M. elliptica*. The two species differ by the density of hairs on the abaxial surface of their leaflets: dense in *M. elliptica* versus sparse in *M. pseudoelliptica*. In addition, the bracts in *M. elliptica* are $2\text{--}3 \times 2$ cm and the stipels persistent, while in *M. pseudoelliptica* the bracts are caducous and stipels absent.

9. MUCUNA ROSTRATA Benth., Fl. Bras. 15(1): 171, t. 47. 1859. — TYPE: BRASIL. Solimões, Gapó, June/1851, Spruce 1625 (lectotype K 502761, designated by Moura et al. 2013c).

Liana. Leaves 3-foliolate; pulvinus $10\text{--}15 \times 2\text{--}3$ cm; petiole $10\text{--}14$ cm long; stipels absent; rachis $1\text{--}3$ cm long; petiolules $3\text{--}8$ cm long; lateral leaflets asymmetric, $6.5\text{--}17 \times 3.5\text{--}8.4$ cm, rounded at base, cuspidate at apex; apical leaflet elliptic to ovate, $9.5\text{--}19 \times 5\text{--}10.3$ cm, rounded to acute at base, cuspidate at apex; venation eucamptodromous, secondary veins $5\text{--}7$ pairs per leaflet; with adpressed hairs on both surfaces, denser on abaxial surface. Inflorescence axillary, pseudoracemose, peduncle $3.5\text{--}15$ cm long; bracts $1\text{--}1.5 \times 1$ cm, caducous (rarely persistent on herbarium specimens); rachis $7\text{--}15$ cm long; pedicels $0.7\text{--}2.1$ cm long, 4–11 nodes per inflorescence, 3 flowers per fleshy node, these $6\text{--}22$ mm apart, alternately arranged. Flowers ($5\text{--}6\text{--}9.5$ cm long; calyx $2\text{--}3$ cm long, 4-lobed, the adaxial lobe formed by two connate sepals, 10×10 mm, apex obtuse, the other

three lobes $10\text{--}12 \times 5\text{--}6$ mm, acute or acuminate at apex; corolla orange; standard broadly elliptic, $3.5\text{--}6 \times 4$ cm, attenuate at base, rounded or retuse at apex, the claw ca. 4 mm long; wings oblong-elliptic, $5.7\text{--}8.5 \times 2$ cm, attenuate at base, obtuse at apex, the claw ca. 10 mm long; keel petals oblong, $6.5\text{--}9.5 \times 2.2$ cm, attenuate at base, retuse at apex, the claw ca. 10 mm long; wings and keel petals pubescent at base. Stamen filaments $7\text{--}9$ cm long, glabrous. Gynoecium $8\text{--}9.5$ cm long; style $7\text{--}8$ cm long, sericeous, except at apex, ovary $10\text{--}15 \times 2$ mm, sericeous. Fruits $8\text{--}20 \times 4$ cm, ornamented by transverse lamellae; surface covered by urticating hairs; acute to aristate at apex, acute at base, up to 6-seeded. Seeds subglobose $2 \times 2 \times 1.5$ cm, hilum black, circling ca. 85% of the seed circumference.

Phenology—This species flowers from May to November; fruits from June to October.

Distribution and Habitat—*Mucuna rostrata* occurs in the West Indies, Central America (Honduras, Guatemala, and Panamá), and in South America (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, and Venezuela). It is widely distributed across Peru (Fig. 3), and frequently collected close to rivers, in humid primary and secondary forest; alt. from sea level to 2,250 m.

Conservation Status—*Mucuna rostrata* is assessed globally and in Peru to be of least concern (LC) according to IUCN (2001) criteria.

Vernacular Names—This species is popularly known as “crista de gallo,” “fin fin,” “ojo de vaca,” and “ojo de toro.”

Representative Specimens Examined—La Merced; Chanchamayo, 27 Jun 1948, Aguilar, P. G. 500 (SI); 2 km S of Satipo, 24 Jun 1977, Solomon, J. C. 3267 (MO); mouth of Rio Santiago, Tessmann, G. 4063 (NY); Coipani, Urubamba Valley, 1 Jun 1915, Cook, O. F. & Gilbert, G. B. 1055 (US); Lucumayo Valley, 20 Jun 1915, Cook, O. F. & Gilbert, G. B. 1387 (US); Puinahua, Reserva Nacional Pacaya-Samiría (cuena del Pacaya, veradero “Cocha Vainilla,” Rio Pacaya, 7 Jul 1987, Grández, C. & Ruiz, J. 1162 (MO, NY); Valle do Rio Huallaga, 15 Jun 1958, Humbert, H. 31024 (NY, P). Amazonas: Baguá, Rainforest along Rio Santiago, Oct 1962, Wurdack, J. J. 2167 (GH, NY, P, US); Condorcaqui, El Cenepa, comunidad de San Antonio, Rio, 20 Jun 1997, Vásquez, R. et al. 24107 (NY). Cerro Guayaquil: 1836, Gaudichaud, M. 23 (P). Cusco: La Convencion, Santa Ana, promate, 15 Jun 2003, Calatayud, G. et al. 1448 (K, MO, NY); La Convencion, Vilcabamba, Espiritupampa, bosque primário, 22 Jul 2004, Calatayud, G. et al. 2608 (K); La Convencion, Encharate, localidad Papelpata, 16 May 2007, Calatayud, G. et al. 3802 (MO); La Convención, Huyro, 21 Jun 1982, Hoogte, L. D. & Roersch, C. 769 (MO); La Convencion, Vilcabamba, Oyara, 6 Jun 2002, Valenzuela, L. et al. 66 (K, MO); La Convencion, Santa Ana, Poromate, bosque humido, 19 Mar 2006, Valenzuela, L. et al. 6548 (K); La Convencion, Ocobamba, San Lorenzo, 21 Jun 2006, Valenzuela, L. et al. 7022 (K); Quispicanchis, forested hills 292 km from Cusco, 24 Jul 1991, Nuñez, P. 13878 (K, MO); Quispicanchis, Camanti, Maniri, 8 km W de Quincemil, 15 Jul 1990, Timaná, M. & Astete, H. 590 (MO); Santa Isabel, Valle Cosuipata, 23 Jul 1948, Scholnik, R. 932 (SI); 11 km W of Pilcopata, roadside, 30 Jun 1978, Gentry, A. et al. 23589 (INPA, MO, NY); Rio Chaupimayo, May 1937, Soukup, J. 586 (US); La Convencion, western affluent of the Vilcanota, 10 May 1936, Mexia, Y. 8037 (GH, K, MO); Paucartambo, along Rio Tambomayo, 24 Jul 1936, West, J. 7116 (GH, MO). Huanuco: 69 km NE of Tingo Maria on road to Tocache, Hualla, 16 Jul 1982, Gentry, A. et al. 37621 (MO); Castillo to Tingo Maria, 16 Aug 1959, Woytkowski, F. 5378 (MO); Huanuco, Manzón, confluencia con el Huallaga, cerca a Tingo, 21 Jun 1953, Ferreyra, R. 9314 (US); Leoncio Prado, along road between Tingo Maria and Monzón, 3.7 km, 2 Jun 1998, Croat, T. B. & Sizemore, M. 81637 (K, MO); Pachitea, Honoria, a orilla de los pantanos en Miel de Abejas, 8 May 1967, Schunke, J. 1934 (COL, NY, US); Pachitea, região de Pucallpa, W part of “Sira mountains” and adjacent lowland, from 24 km SE to ca 20 km SE of Peru Inca, valley of the river Yuyapichis between the casa “Don Victor,” 20 May 1988, Wallnofer, B. 111–20588 (K, NY); down river 2 1/2 hr to 1 d travel from Tingo Maria, 15 Jul 1937, Belshaw, C. M. 3105 (GH, US); S of Cemetary Supte, 7 Jul 1959, Mathias, M. F. & Taylor, D. 3618, (K); Tingo Maria, 19 Jul 1940, Asplund, E. 12351 (NY, P). Junín: Chanchamayo,

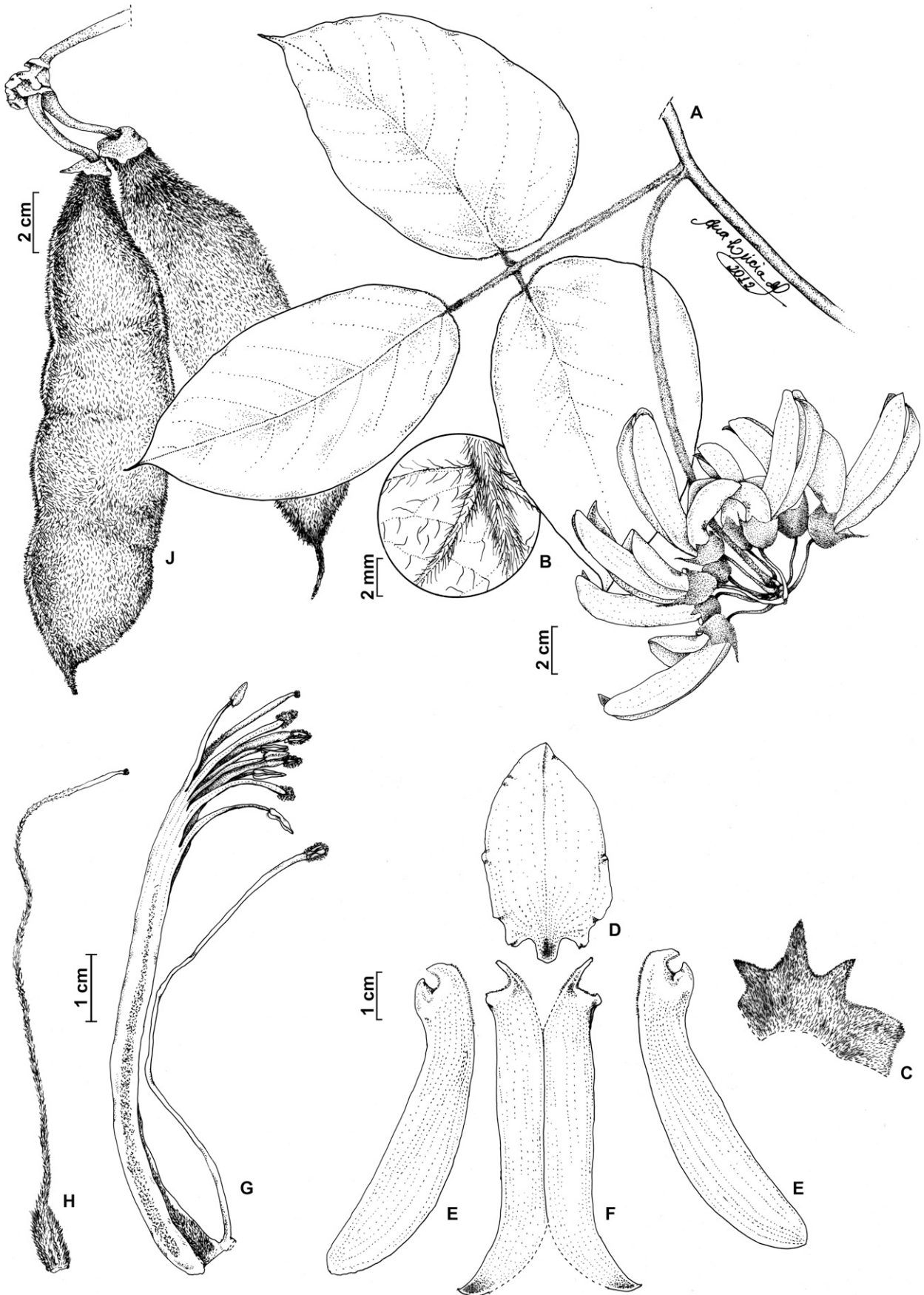


FIG. 5. *Mucuna pseudoelliptica*. A. Stem with leaf and inflorescence. B. Detail of hairs on abaxial surface of leaflet. C. Calyx opened out. D. Standard petal. E. Wing petals. F. Keel petals. G. Androecium. H. Gynoecium. J. Fruits. A–B, J from T. Plowman & H. Kennedy 5693 (F); C–H from R. Foster et al. 7667 (F). Drawn by Ana Lúcia Souza.

San Luis de Shuaro, 21 May 1982, *Smith, D.* 1628 (MO); Chanchamayo, San Luis de Shuaro, 14 Jun 1929, *Killip, E. P.* 25075 (NY, US); Jauja, Tal des Rio Perené, ca 5 km NW von Pichanaki, 26 May 1979, *Teppener, H.* 79/173 (US); La Merced, May 1929, *Killip, E. P. & Smith, A. C.* 23456 (NY, US); Tarma, Entre Merced y Quimiri, 27 Jun 1948, *Ferreira, R.* 3674 (US). La Merced: Aug 1923, *Macbride, J. F.* 5572 (US). Loreto: mouth of Rio Napo, Hacienda Indiana, 24 Nov 1940, *Asplund, E.* 14703 (R, US); Rio Parapapura above Yurimaguas, 10 Jul 1972, *Croat, T. B.* 17933 (MO); Rio Napo at entrada de Isla Inayuga, 20 Sep 1972, *Croat, T. B.* 20506 (K, MO, RB); Yanamono, Campamento "explorama Lodge", 29 May 1979, *Diaz, C. et al.* 1148 (MO, NY); Iquitos and vicinity, Jul 1967, *Martin, R. et al.* 1602 (GH, K, US); Alto Amazonas, entre Uchpayaco y Rimachi, orilla del Rio Pastaza, 30 Jul 1979, *Diaz, C. et al.* 1285 (K, MO); Balsapuerto, May 1933, *Klug, G.* 3083 (K, MO, NY, US); Iquitos, 31 Jun 1972, *Croat, T. B.* 17466 (GH, MO, NY, US); Iquitos, Mangaposo Lago, Rio Nanay, 22 Jun 1966, *Martin, R. T. & Lau-Cam, C. A.* 1034 (A); Iquitos, Rio Itaya, Ushpa Caña across from Iquitos, 20 Aug 1981, *McDaniel, S. & Rimachi, M.* 25387 (MO); Maionas, Yanamono, Explorama Tourist Camp, 27 Jul 1980, *Gentry, A. et al.* 29103 (MO, NY); Nanay, Monte Alto, 9 Dec 1958, *Woytkowski, F.* 5148 (MO); Requena, Jenuaro Herrera, near Supay Cocha, 26 Jun 2007, *Prickett, R.* 56 (K); Requena, Rio Tapiche, 5 Jun 1976, *Revilla, J.* 704 (MO, NY); vicinity of Iquitos, 22 Jul 1972, *Croat, T. B.* 18289 (MO); ca 5 km N de Iquitos, 28 May 1967, *Elias, T. S.* 49 (MO); Maionas, Pebas, quebrada Shishita, 10 km de Pebas, 14 May 1976, *Revilla, J.* 612 (MO); Maionas, Iquitos, carretera Nauta, 22 May 1976, *Revilla, J.* 652 (MO); Maionas, Pebas, caseiro el margem derecha del rio, 20 Jun 1976, *Revilla, J.* 771 (MO). Madre de Dios: Manu, Los Amigos biological station, Madre de Dios river, 24 May 2003, *Maceda, A.P. s. n.* (K); Manu, Mazuco, Puerto Maldonado por la carretera, 14 Oct 2004, *Valenzuela, L. et al.* 4109 (K); Tambopata, Lago Tres Chimbadas, ca 10–15 air km NW effluence, 7 Jun 1980, *Barbour, P. J.* 5554 (MO, NY); Tambopata, Puerto Maldonado, Rio Los Amigos watershed, 19 May 2001, *Janovec, J. P. et al.* 2108 (K); Tambopata, Las Piedras, Lago Valencia, Bosque Ribereño, 22 Oct 2005, *Farfán, J. et al.* 819 (K, MO); Tambopata, Las Piedras, Quebrada Loboyoc, 17 Jul 2007, *Valenzuela, L. & Farfán, J.* 9921 (MO); Tambopata, Cuzco Amazonico, Tourist lodge, trail 1, 27 May 1989, *Núñez, P. et al.* 10584 (MO); Tambopata, Lago très chimbada, tropical moist forest, 12 Jun 1980, *Barbour, P. J.* 5707 (MO); trail from CICRA to Cocha Lobos, 9 Aug 2004, *Acevedo-Rdgz, P. et al.* 14261 (US). Nauta: Yarina, Reserva Nacional Pacaya Samira, Rio Yanacaco, 24 Jun 2006, *Huamantupa, I. et al.* 7779 (K). Padre Isla: Maionas, 22 Sep 1982, *Encarnación, F.* 26335 (MO, NY, US). Pasco: Oxapampa, Pozuzo, fundo de Agustin Egg Schuller, 28 May 2006, *Becerra, E. et al.* 1416 (K); Oxapampa, carretera Oxapampa y Paucartambo, 30 May 2003, *Rojas, R. & Vásquez, R.* 1129 (K, MO, NY); Oxapampa, Villa Rica, Villa Rica-Eneñas, 7 Jun 2004, *Rojas, R. et al.* 2739 (K); Oxapampa, Iscozacín, 24 Jun 1982, *Smith, D.* 2082 (MO); Oxapampa, Palcazu, Bosque de protección, San Matías, 7 Jul 2002, *Vásquez, R. & Monteagudo, A.* 27736 (K, MO); Puno, San Gabon to Ollachea, 17 Jul 1978, *Dillon, M. et al.* 1254 (MO); Sandia, 23 May 1943, *Hooze, W. H.* 6030 (US). Rio Putumayo: entre los Ríos Igaraparaná y Yaguas, Puerto Remanso, em frente de la Isla Tapisca ó Salamanca, 20 Jun 1942, *Schultes, R. E.* 4000 (COL, GH, K, SI). San Martín: 20–27 km NE of Tarapoto, road to Yurimaguas, 21 Jul 1982, *Gentry, A. et al.* 37886 (MO); Mariscal Cáceres, cerca a Verdun, entre Tingo María y Uchiza, 3 Aug 1948, *Ferreira, R.* 3496 (US); Mariscal Cáceres, Tocache nuevo, quebrada de Huaquisha (margen derecha del Rio Huallaga), 12 May 1970, *Schunke, J.* 3969 (NY); Mariscal Cáceres, Tocache nuevo, desembocadura del Rio Tocache, 9 Apr 1975, *Vigo, J. S.* 8258 (NY); Saposoa, 2 Jul 1958, *Woytkowski, F.* 5088 (GH); Lamas, along Rio Yurimaguas, km 62 of Tarapoto-Yurimaguas, 11 Aug 1986, *Knapp, S.* 7982 (K, MO); Zepelacio, near Moyohamba, May 1934, *Klug, G.* 3649 (GH, K, MO, NY, US). Ucayali: Coronel Portillo, Yarinacocha, near Pucalipa, 5 Aug 1980, *Gentry, A. & Horna, M.* 29378 (MO); Coronel Portillo, Cordillera Azul km 51 on rio Tingo Maria-Pucallpa, 4 Jun 1981, *Young, K. & Sullivan, G.* 639 (K, MO); Purus, Rio Curanja, cerca la comunidad nativa de Columbia, 18 Jul 1998, *Graham, J.* 629 (NY).

Notes—*Mucuna rostrata* is characterized principally by its orange flowers, 3.5–15 cm long peduncle, and its 7–15 cm long inflorescence rachis. *Mucuna japira* A. M. G. Azevedo, Agostini & Sazima is morphologically most similar to *M. rostrata*, but *M. japira* has yellow flowers and is endemic to the Atlantic rainforest of Brazil from where *M. rostrata* is not recorded.

10. *MUCUNA SLOANEI* Fawc. & Rendle, J. Bot. 55(650): 36. 1917. —TYPE: Jacq. Amer. 202. t. 182. f. 84. (1763). lectotype designated by Moura et al. (2013c).

Liana. Leaves 3-foliolate; petiole 7.5–11 cm long; stipels 1–4 mm long, persistent; rachis 1–2.5 cm long; petiolules 3–5 mm long; lateral leaflets asymmetric, 7–14(–17) × 4–11 cm, truncate to rounded at base (sometimes subcordate), acute at apex; apical leaflet ovate to elliptic, 7.5–14(–17) × 3.5–10 cm, acute to rounded at base, acute to acuminate at apex; venation eucamptodromous, secondary veins 4–7 pairs per leaflet; abaxial surface of leaflets with adpressed, dense hairs. Inflorescence axillary, pseudoracemose; peduncle 5–18 cm long; rachis 1–1.5 cm long; bracts 1–2.5 × 0.7–2 cm, sericeous on both surfaces, usually caducous; pedicels 1–1.5 cm long, 4–7 nodes per inflorescence, 3 flowers per fleshy node, these 5 mm apart, alternately arranged. Flowers 5–6.5 cm long; calyx 2–3.3 cm long; 4-lobed, the adaxial lobe formed by two connate sepals, ca. 1 × 1.2 cm, obtuse at apex, the abaxial lobe ca. 10 × 5 mm, acute at apex, lateral lobes 5–7 × 3–4 mm; corolla yellow; standard broadly elliptic, 3–4 × 3.2 cm, attenuate at base, rounded to retuse at apex, the claw ca. 3 mm long; wings oblong-elliptic, 5–6.5 × 1.8 cm, attenuate at base, obtuse at apex, the claw 8 mm long; keel petals oblong, 5–6.5 × 1–1.7 cm, attenuate at base, acute at apex, the claw 10 mm long; wings and keel petals pubescent at base. Stamen filaments 5–7 cm long, glabrous. Gynoecium 5.5–7 cm long; style 5–6.3 cm long, sericeous, except at apex; ovary 5–7 × 2–3 mm, sericeous. Fruits 13–16 × 3.5–5 cm, ornamented by transverse lamellae, surface covered with dense urticating hairs, acute at base, acuminate at apex, up to 5-seeded. Seeds globose, 2.1–2.5 × 2.1–2.8 × 2 cm, hilum black, circling 70–80% of the seed circumference.

Phenology—This species flowers in March, June and December; collected in fruit from March to July.

Distribution and Habitat—*Mucuna sloanei* occurs throughout the Neotropics. In Peru it is known from the Provinces of Amazonas, Cajamarca, Loreto, Madre de Dios, and San Martín (Fig. 3). The species is reported to occur in gallery forest, and humid primary and secondary forest; alt. 250–1,600 m.

Conservation Status—*Mucuna sloanei* is assessed to be globally, and in Peru, of least concern (LC) according to IUCN (2001) criteria.

Vernacular Names—This species is popularly known as "vaca ñahui," and "ojo de vaca."

Representative Specimens Examined—Amazonas: Bongará, Palo Seco (Pedro Ruiz Gallo - Chachapoyas), 27 Jul 1991, *Mostacero, J. et al.* 2443 (MO). Cajamarca: San Ignacio, Huarango, Caserio el arenal, 24 May 2006, *Perea, J. & Flores, V.* 2312 (MO). Loreto: Maionas, Iquitos, Allpahuayo, 31 May 1990, *Vásquez, R. et al.* 13817 (K, MO); Paca-Cocha (Pucallpa), 8 May 1961, *Woytkowski, F.* 6321 (MO); Maionas, 27 May 1978, *Gentry, A. & Jaramillo, N.* 22323 (MO); Florida, Rio Putumayo, at mouth of Río Zubineta, 1931, *Klug, G.* 2265 (BM, MO); Loreto, Pampa hermosa and vicinity, Rio Corrientes, 1 km S, Jun 1986, *Lewis, W. H. et al.* 10626 (MO); Loreto, Nueva Jerusalem and vicinity, Río Macusari, 220, Jun 1986, *Lewis, W. H. et al.* 10942 (MO). Madre de Dios: Road to Tambopata, N. of Puerto Maldonado, 21 Apr 1977, *Gentry, A. et al.* 19583 (MO); Tambopata, Cuzco Amazonico Lodge, 15 km NE of Puerto Maldonado, 18 Jun 1990, *Núñez, P.* 12195 (K, MO); Zepelacio, near Moyobamba, Mar 1934, *Klug, G.* 3561 (K, MO); Huahuiva ad Saposoa, 5 May 1962, *Woytkowski, F.* 7318 (MO); Mariscal Cáceres, Tocache Nuevo, 14 Apr 1970, *Schunke, J.* 3910 (COL, MO); Mariscal Cáceres, Tocache Nuevo, al borde del río, 22 Mar 1975, *Vigo, J. S.* 8159 (MO). San Martín: 7–15 km E of Shapojo on road to Chazuta, 15 May 1986, *Knapp, S. et al.* 7273 (K, MO).

Notes—*Mucuna sloanei* is the only species of *Mucuna* subg. *Mucuna* with a pantropical distribution. The species is easily recognized by its reduced inflorescence rachis (1–1.5 cm long), with the internodes no more than 5 mm apart. The species morphologically most similar to *M. sloanei* is *M. ecuatoriana* ined. (endemic to Ecuador), but the two differ by the sparse trichomes on the abaxial surface of leaflets, flowers 6–8 cm long, and bracts 3.5–6 × 2 cm in *M. ecuatoriana* ined., versus the hairs on the abaxial surface of leaflets sericeous, flowers 5–6.5 cm long and bracts 1–2.5 × 0.7–2 cm in *M. sloanei*.

11. *MUCUNA URENS* (L.) Medik, Vorles. Churpfälz. Phys.-Öcon. Ges. 2: 399. 1787. *Dolichos urens* L. Syst. Nat., Editio Decima 2: 1162. 1759. —TYPE: Plukenet, Phytographia: t. 213, f.2. (1692)., lectotype designated by Verdcourt ex Turland and Jarvis (1997).

Liana. Leaves 3-foliolate; pulvinus 7–10 × 2–3 mm; petioles 5.5–11 cm long; stipels absent; rachis 1–2 cm long; petiolules 5 mm long; lateral leaflets asymmetric, 8–15 × 3.6–7 cm, acute to rounded or truncate at base, cuspidate at apex; apical leaflet elliptic, 9–16 × 4.3–7 cm, rounded to acute at base, cuspidate at apex; venation eucamptodromous, secondary veins 4–5 pairs per leaflet; indumentum sparse to glabrescent on both surfaces, when present the hairs adpressed. Inflorescence pseudoracemose; peduncle up to 1.7 m long; bracts 2–3 × 3 cm, sericeous on both surfaces, frequently caducous; rachis 6–20 cm long; pedicels 7–20 mm long, 8–20 nodes per inflorescence, 3 flowers per fleshy node, these 1–2 cm apart, distichously arranged, frequently in a “zig-zag” pattern. Flowers 3.5–4 cm long; calyx 1–1.7 cm long; 4-lobed, the adaxial lobe formed by two connate sepals, 4 × 3 mm, obtuse at apex, the abaxial lobe 5–6 × 3 mm, acute at apex, lateral lobes ca. 2 × 1 mm, acute at apex; corolla cream, yellowish or greenish; standard broadly elliptic, 3.2–3.5 × 3–3.5 cm, attenuate at base, emarginate at apex, the claw ca. 5 mm long; wings oblong-elliptic, 3.5–4 × 1.4 cm, attenuate at base, rounded to slightly obtuse at apex, the claw ca. 1 cm long; keel petals oblong, 3.5–4 × 1.6 cm long, attenuate at base, acute at apex, the claw 5–10 mm long; wings and keel petals pubescent at base. Stamen filaments 3–4 cm long, glabrous. Gynoecium 4–5 cm long; style 3–4.3 cm long, sericeous, except at apex; ovary 7 × 1–2 mm, sericeous; stigma peltate, villous. Fruits 8–20 × 3–4 cm, acute at base and apex (apex sometimes aristate on young fruits), ornamented by transverse lamellae, some of the lamellate ridges crossing the whole of the valve surface, while others are broken half way, surface covered with dense urticating hairs, the hairs become less dense at fruit maturity, 1–6-seeded. Seeds globose, 3.5 × 3.5 × 1–1.5 cm long; hilum almost black, circling ca. 75% of the seed circumference.

Phenology—This species flowers from April to October; fruits from May to October.

Distribution and Habitat—*Mucuna urens* occurs in Central America (Honduras, Nicaragua, Costa Rica and Panamá); the Caribbean Islands; and is widely distributed in South America. In Peru it is reported from the Provinces of Cusco, Loreto, and San Martín (Fig. 3). It is frequently collected close to rivers, in humid primary and secondary forest and on clay soils; alt. 100–650 m.

Conservation Status—*Mucuna urens* is assessed both globally and in Peru to be of least concern (LC) according to IUCN (2001) criteria.

Vernacular Names—This species is popularly known as “cacanahui,” “cow eyes,” and “mucunã.”

Representative Specimens Examined—Rio Nanay between mouth of Rio Momon and Bellavista, 17 Jun 1970, *McDaniels, F. L.* 2460 (US). Cusco: Quispicanchi, 15 May 1964, *Vargas, C.* 15467 (MO). Loreto: Rio Yuvineto, affluent du Rio Putumaio, Territorio des Indiens, Bellavista, 21 Dec 1977, *Barrier, S.* 164 (P); Mishana, Rio Nanay, 14 Jul 1977, *Solomon, J. C.* 3560 (MO); Iquitos, Aug 1929, *Killip, E. P. & Smith, A. C.* 27224 (NY, US); Iquitos region, Road to Santa Clara, 14 Jun 1966, *Martin, R. T. & Lau-Cam, C. A.* 1018 (GH); Maionas, Camino a Puerto Almendar, desvio hacia la Izquierda, 13 Apr 1978, *Diaz, C. & Jaramillo, N.* 276 (MO); Maionas, Iquitos, Rio Nanay, margen de Morona Cocha, 6 May 1993, *Rimachi, M.* 10560 (MO, US); Maionas, Iquitos, carretera Iquitos - Nauta, 4 Jul 1996, *Rimachi, M.* 11744 (MO, NY); Maionas, Puerto Almendras, Rio Nanay above Iquitos, 22 Aug 1980, *Vásquez, R. et al.* 457 (K); Maionas, Cauide (Rio Itaya), 10 Oct 1984, *Vásquez, R. & Jaramillo, N.* 5676 (K, MO); Maionas, Saboya, Rio Pintuyacu, 17 Apr 1986, *Vásquez, R. et al.* 7340 (MO); Maionas, Mishana, Rio Nanay, 10 Jul 1988, *Vásquez, R. et al.* 10917 (MO); Maionas, Iquitos, Alpahuayo, 22 Aug 1990, *Vásquez, R. et al.* 14241 (MO); Mishuyacu, near Iquitos, 1930, *Klug, G.* 1499 (US); Los Amazonas, rivera de la Quebrada Sucusair, 18 Apr 1991, *Vásquez, R. & Jaramillo, N.* 16165 (MO). San Martín: Mariscal Caceres, Tocache Nuevo, quebrada de Huaquisha (margen derecha del rio Huaquisha), 12 May 1970, *Schunke, J.* 3969 (GH, NY, US).

Notes—*Mucuna urens* has a wide geographical distribution, occurring in West Indies, Central, and South America. It also has broad morphological variation, but is easily recognized by pale (cream, greenish, or yellowish) colored flowers, the long peduncle (over 1 m long), and by the secondary axis of its inflorescence usually forming a “zig-zag” pattern. The most similar species morphologically is *M. mitis*.

Peru has one of the highest species diversities of *Mucuna* in South America. Three recently described species (*M. argentea*, *M. cajamarca*, and *M. klitgaardiae*) and *M. pseudoelliptica* presented in this account, were all found in herbarium collections and not during fieldwork undertaken by the authors. It is thus highly likely that there are more species waiting to be discovered during future field exploration, especially to the more remote, under-explored parts of the country.

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