

*CENTROSEMA* AND *CLITORIA* (LEGUMINOSAE:  
PAPILIONIDAE: PHASEOLEAE: CLITORIINAE)  
IN THE MEXICAN YUCATÁN PENINSULA,  
INCLUDING THREE LECTOTYPIFICATIONS

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**Abstract.** An overview of the genera *Centrosema* (DC.) Benth. and *Clitoria* L. (Leguminosae: Papilionoideae: Phaseoleae: Clitoriinae) in the Mexican Yucatán Peninsula is presented. In this region, *Centrosema* comprises nine species, whereas *Clitoria* includes two species. A key to the species known for the area is given as well as information on ecology, phenology, common names, and known uses for each species. Lectotypes for *Bradburya schottii* Millsp., *B. unifoliata* Rose, and *Centrosema molle* Mart. ex Benth. are designated.

**Resumen.** Se presenta un panorama de los géneros *Centrosema* (DC.) Benth. y *Clitoria* L. (Leguminosae: Papilionoideae: Phaseoleae: Clitoriinae) en la porción mexicana de la Península de Yucatán. En esta región, *Centrosema* incluye nueve especies y *Clitoria* dos especies. Se presenta una clave, información ecológica, fenológica, nombres comunes y usos conocidos de cada especie. Se designa el lectotipo de *Bradburya schottii* Millsp., *B. unifoliata* Rose y *Centrosema molle* Mart. ex Benth.

**Keywords:** *Bradburya*, *Centrosema*, *Clitoria*, Yucatán, nomenclature, typification, lectotype.

The genera *Centrosema* (DC.) Benth. and *Clitoria* L. are the only members of subtribe Clitoriinae Benth. (Leguminosae: Papilionoideae: Phaseoleae) in the Mexican Yucatán Peninsula (Schrire 2005). *Centrosema* includes ca. thirty neotropical species and two in temperate America. *Clitoria* includes sixty species occurring worldwide with two species in temperate America. These two genera are unique legumes with resupinate flowers, but frequently are confused with each other, mostly due to the presence of an enlarged bracteole covering the floral bud.

*Centrosema* is characterized by bearing a campanulate calyx, a standard with a short or gibbous spur, wings subequal in length to the keel petals, a broadly U-shaped style, and fruits that are sessile, flat, and costate with two ribs, one near each margin (Fantz 1980, 1993, 1996, 1999a, 1999b, 2001a, 2001b). General data on the characteristics, diver-

sity, taxonomic history, and distribution of *Centrosema* were defined by Schultze-Kraft et al. (1997) and Williams and Clements (1997).

*Clitoria* is distinguished by an infundibular calyx, a standard lacking a spur, wings longer than the keel petals, a geniculate style, and fruits that are stipitate, flat ecostate or costate with one rib medially, turgid to convex (Fantz 1980, 1993, 1996, 1999a, 1999b, 2001a, 2001b).

Currently, taxonomic information published on taxa of these two genera in the Mexican Yucatán Peninsula is limited to checklists; one species for *Clitoria* and three to nine in the case of *Centrosema* (Standley 1930; Sousa & Cabrera 1983; Sosa et al. 1985; Durán et al. 2000; Arellano-Rodríguez et al. 2003; Gutiérrez-Báez 2003). Working within the framework of the Flora Ilustrada de la Península de Yucatán project, our objectives herein are: (1) to present a synopsis of both genera for the flora

We would like to give our thanks and appreciation to Günter Gerlach (M), Michael Dillon (F), and Pedro Acevedo (US) who assisted us in locating the type specimens of *Centrosema molle* and *C. unifoliatum*, and who provided digital images of both species and syntypes. The manuscript benefited from review by Rosaura Grether González (UAM-Iztapalapa) and an anonymous reviewer. The first author thanks Kew Latin American Research Fellowships program and the Cuatrecasas Award (Smithsonian Institution) for providing funding to visit herbaria in London, England (BM, K) and Washington, D.C., United States (US).

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in this area, (2) to provide a key to the species, and (3) to provide relative data on phenology, ecology, recorded common names and local uses of each taxon. Although different limits have been proposed (Morrone 2005), we accept the Yucatán Peninsula Biotic Province (YPBP) to be comprised of the Mexican states of Yucatán, Campeche, and

Quintana Roo, the Belize departments of Corozal and Orange Walk, and the department of Petén in Guatemala (Carnevali et al. 2003). In the context of the Flora Ilustrada de la Península de Yucatán, we are reporting only the Mexican portion of this biogeographical area.

#### METHODS

Specimens were studied from the herbaria of the region (CICY, CIQRO, UADY, UCAM), the National Herbarium of México (MEXU), and some international herbaria pertinent to the floristic record of the area (GH, K, NY, S, US). Specimens were studied with a dissecting stereomicroscope. Some flowers were rehydrated to study their mor-

phology. Additional specimens examined by P.R. Fantz (NCSC) are included.

Distributional maps were generated with Biotica 4.3 GIS (CONABIO). The maps generated were of low-resolution, thus each one was edited with Adobe Photoshop and saved as a TIF file for posterior editing and assembling.

#### TAXONOMIC TREATMENT

Our understanding of the genus *Centrosema* in the Mexican Yucatán Peninsula was facilitated enormously by two recent publications: the taxonomic treatment of the genus for the *Flora de Nicaragua* (Fantz 2001a) and the distribution of the genus in Mesoamerica (Fantz 2004). Some species are poorly known with only a few and/or older collections in the region; namely *Centrosema angustifolium* (Kunth) Benth. and *C. unifolium* (Rose) Lundell.

The published distribution of *Clitoria* in Mesoamerica (Fantz 2005) included two species for the Mexican Yucatán Peninsula: *Clitoria ternatea* L.—a

cultivated species that sometimes escapes—and *Clitoria falcata* Lam. *Clitoria guianensis* (Aubl.) Benth. ranges from southern México to northern South America and Brazil, commonly in savannas (Fantz 1999b). Variety *guianensis* is documented in México from Chiapas, Oaxaca, Tabasco, and Veracruz, but not in the YBPB areas of Campeche, Quintana Roo, or Yucatán. However, this species does occur in Belize (e.g., Belize District, dry pine ride near Manatee Lagoon, 24 Sep 1905, *M.H. Peck 141*, GH). The species is a subshrub with subsessile, trifoliolate leaves, large (5.5–7 cm) bluish to lavender flowers, and turgid, costate legumes.

#### KEY TO THE GENERA AND SPECIES OF *CENTROSEMA* AND *CLITORIA* IN THE MEXICAN YUCATÁN PENINSULA

1. Calyx infundibular; wing petals longer than keel petals; style geniculate; fruits stipitate; standard petal lacking spur [*Clitoria*] ..... 2.
1. Calyx campanulate; wing petals subequal in length to keel petals; style broadly U-shaped; fruits sessile; standard spurred or gibbous [*Centrosema*] ..... 3.
2. Leaflets 3; bracteoles 4–11 mm long, 3–4 mm wide; fruit turgid, costate ..... *Clitoria falcata*, p. 12
2. Leaflets 5–7; bracteoles 6–8 mm long and wide; fruit flat, ecostate ..... *Clitoria ternatea*, p. 13
3. Leaves 1-foliolate (rarely 3-foliolate basally in *C. unifolium*) ..... 4.
3. Leaves 3-foliolate ..... 5.
4. Petioles winged; leaflets sagittate; calyx tube 5–7 mm long, ventral lobe 5–7 (–9) mm long; fruits 9–15 (–18) cm long, 7–8 mm wide ..... *Centrosema sagittatum*, p. 8
4. Petioles lacking wing; leaflets linear; calyx tube 3–4 mm long, ventral lobe 4–6 mm long; fruits 5–8.5 cm long, 2.5 mm wide ..... *Centrosema unifolium*, p. 10

5. Ventral calyx tooth subequal to the other four teeth..... 6.  
 5. Ventral calyx tooth longer than the other four teeth..... 7.
6. Flowers 1–1.5 cm long; fruits 5.5–7 cm long, 3–4 mm wide..... *Centrosema pascuorum*, p. 6  
 6. Flowers 2.5–3.5(4) cm long; fruits 8–13 cm long, 3–5 mm wide..... *Centrosema virginianum*, p. 11
7. Leaf rachis nearly absent to 3 mm long; leaflets to 0.5 cm wide, typically narrowly ovate.....  
 ..... *Centrosema angustifolium*, p. 3  
 7. Leaf rachis conspicuously longer than 3 mm long; leaflets more than 1.5 cm wide, ovate or elliptic to rhombic..... 8.
8. Leaflets rhombic-ovate, basally asymmetric; ventral calyx tooth 1–2 mm long..... 9.  
 8. Leaflets elliptic to ovate or elliptic-lanceolate, basally symmetric; ventral calyx tooth more than 2.5 mm long..... 10.
9. Petiolules 5–6 mm; dried leaves often blackish; flowers white with purple center, wings white with purplish apex, 3.5–5 cm long; fruits 8–12 mm wide..... *Centrosema plumieri*, p. 7  
 9. Petiolules 3–4 mm; dried leaves not blackish; flowers violet to purplish-red with central white medial stripe, 2.5–3 cm long; fruits 9–16.5 mm wide..... *Centrosema schottii*, p. 8
10. Bracteoles 10–15 mm long; flowers white fading dull yellowish, maroon medially and along veins, 3–3.5 cm long; upper and lateral calyx teeth 4–6 mm long, ventral tooth 9–17 mm long; fruits 10–19 cm long, rostrum 12–18 mm long..... *Centrosema macrocarpum*, p. 4  
 10. Bracteoles 6–11 mm long; flowers pale purple with pale yellow to white medially on banner, and keel and wings dull white with wings purple toward apex, 2–3 cm long; upper and lateral calyx teeth 2–4 mm long, ventral tooth 5–7(–9) mm long; fruits (6.5–)10–14 cm long, rostrum 5–12 mm long..... *Centrosema molle*, p. 4

#### 1. CENTROSEMA (DC.) BENTH.

***Centrosema angustifolium*** (Kunth) Benth., *Comm. Legum. Gen.* 54. 1837. *Clitoria angustifolia* Kunth, *Nov. Gen. Sp. (folio ed.)* 6: 327. 1824.—TYPE: VENEZUELA. *Crecit prope Angosturam Orinocensium, Humboldt & Bonpland s.n.* (HOLOTYPE: P, not seen). Fig. 1.

Perennial herbaceous vine; stem wiry, striate-terete, sparsely pilose with uncinata hairs, glabrescent with age; leaves 3-foliolate, subcoriaceous, 27 cm long; stipules 1.5–3.0 mm long; petioles 0.6–1.4(–1.7) cm long; rachis absent; stipels 1.5–2.0 mm long; petiolules 1–2 mm long; leaflets 2.6–4.0 cm long, 0.3–0.5 cm wide, very narrowly ovate, scarcely cordate, apex obtuse, glabrous above, scattered uncinata trichomes below, mainly along veins, 20–40 pairs of secondary veins arising at right angle to midrib, anastomosing irregularly near the margin; inflorescence axillary, 1–3-flowered, up to 3 cm long, pilose, bracteoles 1.0–1.4 cm long; flowers light violet to dark reddish-

violet, 2.5–3.5 cm long; calyx 5.5–10(–13) mm long, tube 2.5–3.0 mm long, teeth very unequal, upper and lateral teeth obscure, 0.7–1 mm long, the ventral one up to 6 mm long; legume 3.5–6(–10) cm long, 0.3–0.4 cm wide, slightly pilose, glabrescent with age, lateral costa very developed, rostrum 0.7–1.0 (–1.5) cm long; seeds 4–6 per pod, subreniform, dark brown, 2 mm diam.

**Phenology.** Flowers collected in June in Campeche.

**Habitat and distribution.** Coastal dunes and mangroves. México (Campeche and Chiapas) and Belize (Balick et al. 2000) to Brazil (Fantz 2001a, 2004).

**Observations.** Historically, botanists have confused this species with *Centrosema pascuorum* Mart. ex Benth. and narrow-leaflet forms of *Centrosema virginianum* (L.) Benth. (Fig. 3C–D). It is distinguished from both species by the unequal calyx teeth and the leaf rachis nearly absent. In addition,



FIG. 1. Distribution of *Centrosema angustifolium* in the Mexican portion of the Yucatán Peninsula.

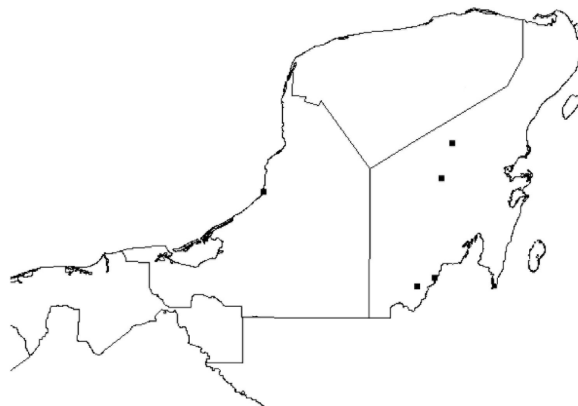


FIG. 2. Distribution of *Centrosema macrocarpum* in the Mexican portion of the Yucatán Peninsula.

the leaflets have 20–40 lateral vein pairs. Both *C. pascuorum* and *C. virginianum* have elongate, subequal calyx teeth and a conspicuous leaf rachis. *Centrosema pascuorum* has 15–19 lateral vein pairs. Specimens of narrow-leaflets of *C. virginianum* are lacking in the Yucatán, the leaflets are wider (> 1 cm) with 6–8 lateral vein pairs.

**Additional specimens seen.** MÉXICO. CAMPECHE. Poxilá, Champotón, 18°55'00"N, 90°42'00"O, 80 msnm, 20 Jun 1985 (fl), *E. Ucan 3945* (CICY, CIQRO, UADY).

***Centrosema macrocarpum*** Benth., An. Nat. Hist. 3: 436. 1839.—TYPE: BRITISH GUIANA. *Schomburgk s.n.* (HOLOTYPE: K!). Fig. 2.

Robust vines, rarely shrubs to 3 m; stem angular-terete, slightly pilose, glabrescent with age; leaves 3-foliolate, chartaceous to subcoriaceous, 7–17 cm long; stipules 2 mm long, ovate; petioles 2.5–10 cm long, tomentose; stipels 2–3 mm long; petiolules 3–5 mm long; leaflets 4–10(–15) cm long, 2–5.5(–7) cm wide, ovate, narrowly elliptic-oblong, apex acute to acuminate, mucronate, rotund, hispidulous above, soft pilose-tomentose below, glabrate with age, 7–9 pairs of secondary veins curved and anastomosing irregularly near the margin to the apex; inflorescence axillary, cauliflorous, 2–9 cm long, pilose; bracteoles 10–15 mm long; flowers white fading dull yellowish, maroon medial and along veins, 3–3.5 cm long; calyx 0.9–2.1 cm long, pilose, tube 0.4 cm long, teeth very unequal, the ventral one up to 3 times longer than the tube, 9–17 mm long; legume 10–19 cm long, 0.6–0.8 cm wide, glabrous, lateral costa very well developed; seeds not seen.

**Phenology.** Flowering January to March, with fruits in April.

**Habitat and distribution.** Secondary vegetation. México (Campeche, Chiapas, Guerrero, Jalisco, Nayarit, Quintana Roo, Tabasco, and Veracruz) to Ecuador and Brazil (Fantz 1999a, 2001a, 2004).

**Observations.** Frequently confused with *C. molle* Mart. ex Benth., but distinguished by the more robust habit, larger flowers, and longer ventral calyx tooth (9–15 mm long), bracteoles, and fruits. The collection *C.D. Johnson 424* (MEXU) mentioned by Sosa et al. (1985) and by Durán et al. (2000) as belonging to this species is best assigned to *C. schottii* (Millsp.) K. Schum. (Fantz 2004).

**Additional specimens seen.** MÉXICO. CAMPECHE. Champotón, road to Pixoyal, [19°21'17"N, 90°43'14"O], 12 Jan 1986, *M. Luckow 3020* (TEX). QUINTANA ROO. Zona urbana del ejido Álvaro Obregón Viejo, a 2 km de la carretera Pucté-Chetumal, [18°18'16"N, 88°36'30"O], 2 Feb 1990, *A. Sánchez V. 31* (CIQRO), a 12 km. al sur del Ingenio A. Obregón, [18°18'16"N, 88°36'30"O], 11 Apr 1980, *O. Téllez & E. Cabrera 1978* (BM, CIQRO, NY).

***Centrosema molle*** Mart. ex Benth., Comm. Legum. Gen. 55. 1837.—TYPE: BRAZIL. [AMAZONAS] Provinciae Rio Negro, in silvis ad Barra do Rio Negro, *Martius s.n.* (LECTOTYPE: M-0099207!, **designated here**); Provinciae Paráensis, pascuis, in pratis ad Pará, *Martius s.n.* (SYNTYPE: M-0099206!). Figs. 3E, 4.

Perennial herb; stem twining, angular-terete,

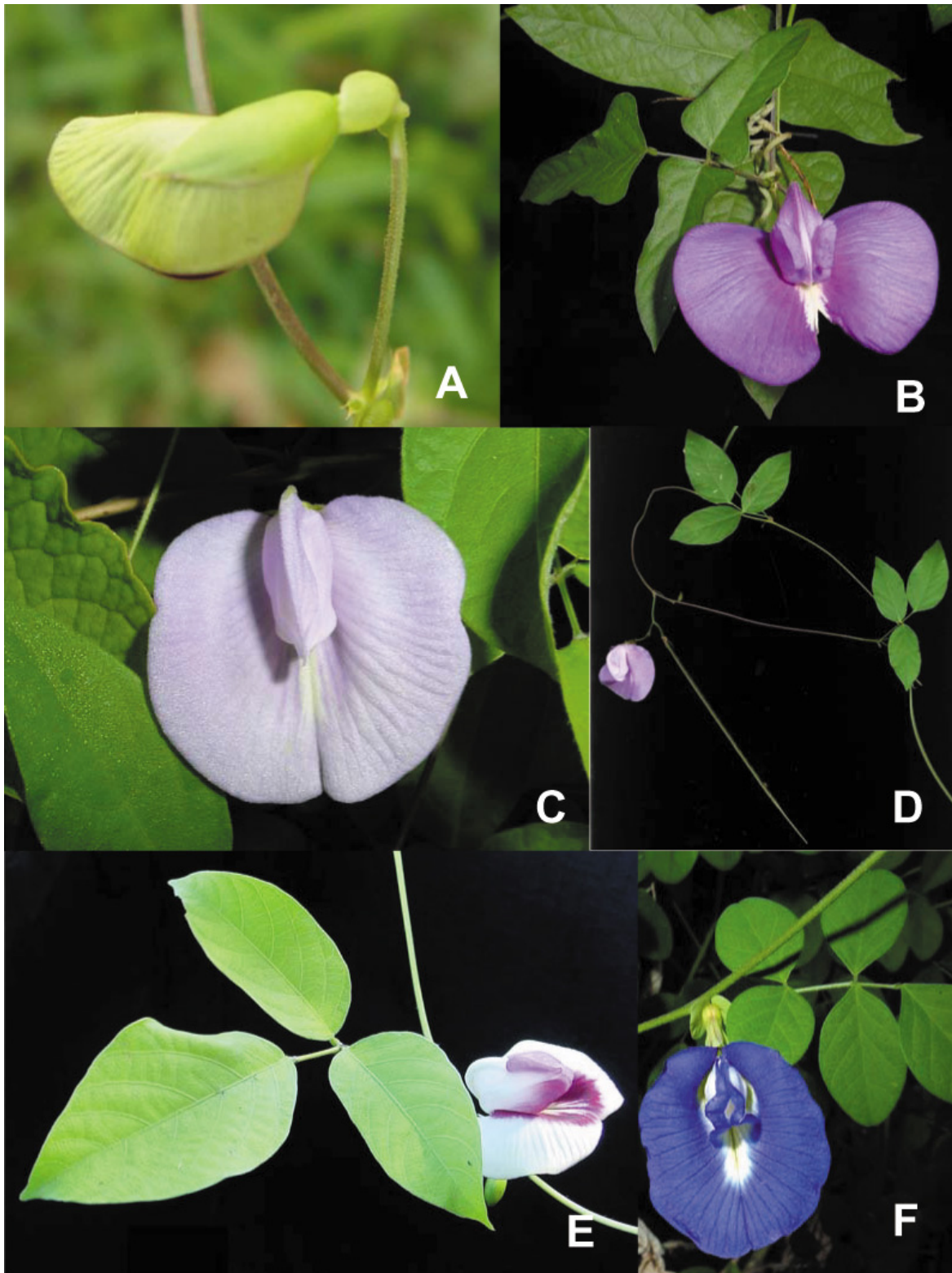


FIG. 3. Sample species of the genus *Centrosema* and *Clitoria* in the Mexican portion of the Yucatán peninsula. **A–B.** *Centrosema schottii* (Millsp.) K. Schum. **C–D.** *Centrosema virginianum* (L.) Benth. **E.** *Centrosema molle* Mart. ex Benth. **F.** *Clitoria ternatea* L. Photos: A, C–F: R. Duno de Stefano; B: G. Carnevali.

pilose with uncinata hairs, glabrescent with age; leaves 3-foliolate, chartaceous to subcoriaceous, 4–11 cm long; stipules 2–3 mm long; petioles 2–3(–5) cm long; rachis 8–15 mm long; stipels 2–3 mm long; petiolules 2–3 mm long; leaflets 3–7(–10) cm long, 1.4–3(–5.5) cm wide, generally ovate, uncinata puberulous above becoming glabrate, tomentose-pilose below becoming pilose on major veins, apex acute, rotund, 5–7 pairs of secondary veins, anastomosing irregularly near the margin; inflorescence axillary, multiflowered, up to 7 cm long; bracteoles 6–11 mm long; flowers pale purple with pale yellow to white medially on banner, and keel wings dull white with wings purple toward apex, 2–3 cm long; calyx 4–5 mm long, pilose, tube 3–4 mm long, slightly pubescent, teeth unequal, the ventral one 5–7(–9) mm long; legume (6.5–)10–14 cm long, 6–7 mm wide, glabrescent, very well developed, rostrum 5–12 mm long; seeds 11–12 per pod, reniform, dark brown with black mottling, 3–3.5 mm long, 4 mm wide.

**Phenology.** Flowers and fruits from October to December.

**Habitat and distribution.** Low deciduous forests, medium subdeciduous forests, and secondary vegetation. The Antilles and México (Campeche, Chiapas, Guerrero, Hidalgo, Jalisco, Michoacan, Nayarit, Oaxaca, Puebla, Quintana Roo, San Luis Potosi, Sinaloa, Veracruz, and Yucatán) to Brazil and Argentina; introduced and naturalized in Africa and Asia.

**Observations.** The most widespread tropical species of *Centrosema*. Morphologically, a very plastic species frequently confused with *C. pubescens* Benth. and *C. virginianum*, especially in fruiting specimens which lack flowers with the bracteole and calyx. It is distinguished from *C. virginianum* by the unequal calyx teeth, broader fruit, and bracteoles that are typically 1/3–2/3 densely uncinata-pubescent on the ventral portion of the surface. *Centrosema pubescens* is found commonly at higher elevations outside the YBPB with longer (10–16 mm), densely sericeous bracteoles, longer beaks (7–18 mm) on the fruits whose valves also bear purplish spots above the seeds (fading with age), and pedicels thinly sericeous in fruiting stage. *Centrosema molle* has glabrate pedicels in the fruiting stage.

*Centrosema molle* was described originally by George Bentham (loc. cit.). He used two speci-

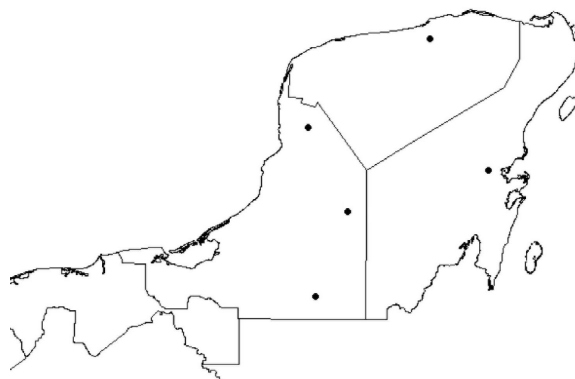


FIG. 4. Distribution of *Centrosema molle* in the Mexican portion of the Yucatán Peninsula.

mens of Carl Friederich Philipp von Martius from Brazil as type material (*Martius s.n.*, M-0099206, and *Martius s.n.*, M-0099207). The two sheets were deposited at Munich. We chose the voucher with leaves, flowers, and one fruit (i.e., M-0099207) as the lectotype of *Centrosema molle*. The other voucher had plenty of flowers and fruits, but lacked any leaves described by Bentham.

**Additional specimens seen.** MÉXICO. CAMPECHE. A 2 km al S de Xca-ha, camino a Xpujil, 19°05'06"N, 89°19'36"W, 80 msnm, 17 Nov 1997, *E. Martínez et al.* 29801 (CICY, NY). QUINTANA ROO. 16 km de la Brecha, rumbo a Vigía Chico, *E. Cabrera & R. Durán* 798 (MEXU-2). YUCATÁN. San Anselmo, [20°26'N, 89°04'O], *G.F. Gaumer* 1987 (GH, MO; non: BM, C, F).

**Notes.** *Gaumer* 1987 (BM, C, F) is best assigned to *C. schottii*. Both the Copenhagen and the Field Museum specimens include mixed material, integrated with a species of the *Macroptilium* (Benth.) Urb. complex.

***Centrosema pascuorum*** Mart. ex Benth., *Comm. Legum. Gen.* 56. 1837.—TYPE: BRAZIL. In pasuis ad Campo Grande provinciae Piauiensis, *Martius s.n.* (HOLOTYPE: M!). Fig. 5.

Suffrutescent herb, trailing to weakly climbing; stem angular-terete, scattered pilose; leaves 3-foliolate, coriaceous, 5–12 cm long; stipules 5–6 mm long; petioles 1–2.5 cm long, pilose; stipels 5–7 mm long; petiolules 2–3 mm long; leaflets linear, rarely oblong, (2.5–) 4–9 cm long, 0.4–1 cm wide, apex acute, mucronate, attenuate, gla-

brous above, slightly adpressed-pubescent along main vein below, 15–19 pairs of secondary veins, ascending at an angle of 60° with the main vein and anastomosing irregularly near the margin; inflorescences axillary, few flowered, to 1.5 cm long; bracteoles 4–8 mm long; flowers blue, 1.0–1.5 cm long; calyx 5–8 cm long, calyx tube 2–3 mm long, the lateral teeth 4–5 mm long, the ventral 5–6 mm long; legume 5.5–7 cm long, 3–4 mm wide, glabrate, lateral costa well developed, rostrum 3–5 mm long, glabrous; seeds 10–11 per pod, reniform, dark brown, 2–2.5 mm long, 4 mm wide.

**Phenology.** Flowers and fruits from August to December.

**Habitat and distribution.** Medium subperennifolious forests. México (Campeche) to northern South America and Brazil (Fantz 2001a, 2004).

**Observations.** Rare in the Yucatán Peninsula, collected only from SW Campeche. Historically confused with *C. angustifolium*, but distinguished easily by smaller flowers with a calyx bearing subequal teeth, and a conspicuous leaf rachis.

**Additional specimens seen.** MÉXICO. CAMPECHE. 27 Km al SO de Champotón, sobre la carretera Champotón-Ciudad del Carmen, 29 Jul 1987, *E. Cabrera & H. de Cabrera 14089* (CIQRO); km 110 carretera de Champotón a Isla Aguada, 29 Aug 1976, *R. Grether 484* (MEXU).

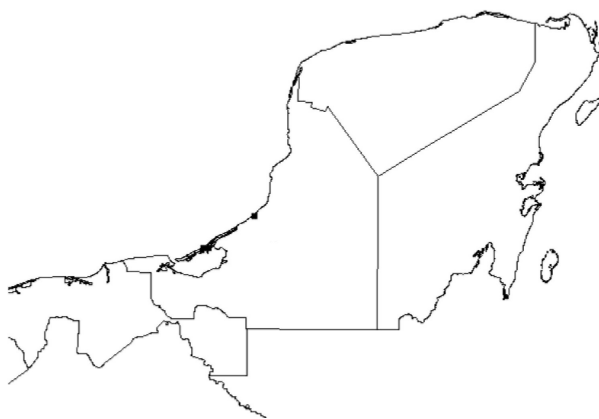


FIG. 5. Distribution of *Centrosema pascurorum* in the Mexican portion of the Yucatán Peninsula.

**Centrosema plumieri** (Turpin ex Pers.) Benth., *Comm. Legum. Gen.* 54. 1837, as "*Plumieri*". *Clitoria plumieri* Turpin ex Pers., *Syn. Pl.* 2(2): 303. 1807.—TYPE: [HISPANIOLA.] Ad St. Domingo, *Turpin s.n.* (HOLOTYPE: P, not seen). Fig. 6.

Vine; stem striate, canaliculate, glabrous or slightly pilose; leaves 3-foliolate, coriaceous, 7.5–20(–28) cm long; stipules 0.4–1 cm long; petioles 1.9–9.5 cm; rachis 10–15 mm long; stipels 2–9 mm long; petiolules 5–6 mm long; leaflets 4–14 cm long, 2–8 cm wide, ovate to slightly rhombic, glabrous above, slightly indumented below, 6–8 pairs of secondary veins, ascending at an angle of 60° with the main vein and anastomosing irregularly near the margin; inflorescences axillary, solitary, several flowers, up to 7 cm long; bracteoles 10–14(–17) mm long, 5–6(–9) mm wide; flowers white with purple center, wings white with purplish apex, 3.5–5 cm long, glabrous; calyx tubular, 0.7–1 cm long, wider than long, teeth obscure, to 3 mm long; legume up to 20 cm long, 0.7–0.8 cm wide, sparsely adpressed pubescent, lateral costa very well developed, rostrum 0.5–3.0 cm long; seeds 15–19 per pod, suborbicular to reniform, 6–7 mm long, 5 mm wide.

**Phenology.** Flowers from September to March, fruits from January to April.

**Habitat and distribution.** Medium subperennifolious forests and secondary vegetation. Neotropics, introduced in tropical Africa (Fantz 1993, 2001a). McVaugh (1987) and Fantz (2004) cited Mexican collections from Campeche.

**Observations.** A very distinct species sometimes confused with *C. schottii*. *Centrosema plumieri* has larger, white flowers, longer petiolules, and broader fruits. Leaves often become dark to blackened in dried specimens. Known locally by the vernacular name "bull bech" (Mayan). Standley (1930) cited the Spanish name "mariposa" as the vernacular name.

**Additional specimens seen.** MÉXICO. CAMPECHE. Dos Lagunas, a 43 km al N de Xpujil, 18° 53'30"N, 89°21'40"W, 200 msnm, 17 Jan 1997, *P. Álvaro & F. Trejo 702* (CICY); por la entrada N a Campeche, cerca de la Estación Pemex, [19°50'32"N, 90°31'54"O], 30 Nov 1987, *E. Cabrera & H. de Cabrera 15229* (CIQRO). QUINTANA ROO. Tres Reyes, 12 Nov 1980, *E. Cabrera & L. Cortes 276* (CIQRO, MEXU); 10 km al NO de Estero

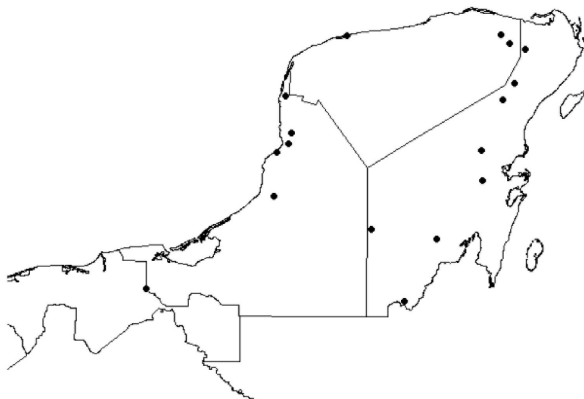


FIG. 6. Distribution of *Centrosema plumieri* in the Mexican portion of the Yucatán Peninsula.



FIG. 7. Distribution of *Centrosema sagittatum* in the Mexican portion of the Yucatán Peninsula.

Franco, entrando por el rancho El Danto, sobre carretera Ucum-La Unión, [17°56'20"N, 88°52'37"O], 29 Mar 1988, *E. Cabrera & H. de Cabrera 16015* (CICY). YUCATÁN. Sobre el camino a Colonia Yucatán, 21 Mar 1988, *E. Cabrera & H. de Cabrera 15609* (CIQRO); Progreso, [21°17'04"N, 89°39'48"O], *G.F. Gaumer 1406* (F-2); Izamal, *G.F. Gaumer 1442* (GH); Progreso, [21°17'04"N, 89°39'48"O], *G.F. Gaumer 2380* (F, GH).

***Centrosema sagittatum*** (Humb. & Bonpl. ex Willd.) Brandege ex L. Riley, Bull. Misc. Inform. Kew 1923(9): 344. 1923. *Glycine sagittata* Humb. & Bonpl. ex Willd., Enum. Pl. 2: 757. 1809.—TYPE: CUBA. Ad Havanam, *Humboldt & Bonpland s.n.* (HOLOTYPE: P, not seen, possibly B, and destroyed). Fig. 7.

Vine; stem angular-terete, striate, sparse pilose or glabrous; leaves unifoliolate, membranaceous, 7.5–20 cm long; petioles 2.5–7(–8) cm long, winged up to 2.5 mm wide; leaflets 3.5–15(–17) x 1.8–8(–9) cm, ovate-sagittate, apex acuminate, glabrous or slightly pubescent in both surfaces; stipules 2.5–7 mm long, narrowly ovate; stipels 3–5 mm long, very narrowed ovate; petiolules 2–4 mm long; rachis absent; inflorescences axillary, solitary, several flowered, 3–9 cm long, slightly pilose; bracteoles 6–9 mm long, 2.5–3.5 mm wide; flowers white fading dull yellowish with age, bearing medial purplish marking, 3.5–5 cm long; calyx 1.2–1.3 cm long, tube 5–7 mm long, upper and lateral teeth, 2.5–4 mm long, ventral tooth 5–7(–9) mm long, slightly pubescent to pubescent; legume 9–15(–18) cm long, 7–8 mm wide, slightly and di-

minute pilose, glabrescent with age, margin with costa weakly developed, rostrum 0.6–1.5 cm long; seeds (14–)17–21 per pod, reniform, black, 4 mm long, 7 mm wide.

**Phenology.** Flowers from October to February, fruits from November to April.

**Habitat and distribution.** This species grows mainly in secondary vegetation. México (Campeche, Chiapas, Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca, San Luis Potosi, Sinaloa, and Yucatán ) to Colombia (Fantz 2001a, 2004) and northern Argentina.

**Observations.** *Centrosema sagittatum* is easy to identify due to its unifoliolate leaves with winged petioles and sagittate leaflets. In *Flora Novogaliciana*, McVaugh (1987) included an illustration showing a slightly different calyx. Our material exhibited different teeth with the ventral tooth longer. This species is known locally as “buy-ak”.

**Additional specimens seen.** MÉXICO. CAMPECHE. 3.5 km al sureste de Miguel Hidalgo, 17°51'38"N, 90°49'31"O, 50 msnm, 30 Oct 2002, *C. Gutiérrez Báez 7572* (CICY); 15 km E Campeche, 4 Mar 1980, *C.D. Johnson 1660-80* (CICY, MEXU). YUCATÁN. Ekpedz, 20 Jan 1995, *A. Ankil 128* (CICY); Yaxcabá, solar de Juan Cox, [20°32'50"N, 88°49'38"O], 30 Apr 1984, *D. Zizumbo & P. Sima 278* (CICY).

***Centrosema schottii*** (Millsp.) K. Schum., Just's Bot. Jahresber. 26(1): 353. 1900, as “*Schottii*”. *Bradburya schottii* Millsp., Publ. Field Columbian Mus., Bot. Ser. 1(4): 364. 1898, as “*Schottii*”.—TYPE: MÉXICO. YUCATÁN: Ad Nohpat, 24 Nov



1865, *Schott 718* (LECTOTYPE: F-274898!, **designated here**; ISOLECTOTYPE: BM!); Izamal, *F.G. Gaumer 930* (SYNTYPE: C!, F-2!, MO!). Figs. 3A–B and 8.

Vine; stem subangular, striate, canaliculate, uncinately-pubescent, glabrescent with age; leaves 3-foliolate, membranaceous, 5.5–17.0 cm long; stipules 5–8 mm long; petioles 3–7 cm long; rachis 12–30 cm long; stipels 3–7 mm long; petiolules 2–3 mm long; leaflets 3.0–8.5 cm long, 2.0–6.5 cm wide, ovate-rhombic or deltoid, rarely ovate, apex acute, broadly cuneate to truncate, glabrous on both surface, 6–9 pairs of secondary veins; inflorescences axillary, solitary or occasionally paired, 2–8.5 cm long, glabrous or slightly and diminute pilose; bracteoles 1.5–1.8 cm long; flowers violet to purplish-red with central white medial stripe, 2.5–3 cm long; calyx slightly pilose, 4–5 mm long, calyx tube 2–3 mm long, teeth subtriangular, the ventral tooth 2 mm long; legume 9.0–16.5 cm long, 0.6–0.7 cm wide, glabrous, lateral costa well developed, rostrum 1.5–2.5 cm long; seeds 9–14 per pod, reniform, brown to black, 4–5 mm long, 5–6 mm wide.

**Phenology.** Flowers and fruits from October to March, with one collection in our area flowering in June.

**Habitat and distribution.** Grows in mangrove, low deciduous forest, medium subdeciduous forest and medium subperennifolious forest. México (Campeche, Chiapas, Quintana Roo, and Yucatán), Guatemala (Peten), Venezuela, Ecuador and Brazil.

**Observations.** A very distinctive species with ovate-rhombic to deltoid leaflets which are almost always somewhat pandurate, often strongly so. It is one of the most common species in the area, along with *C. plumieri* and *C. virginianum*.

*Centrosema schottii* was described originally by C. F. Millspaugh as *Bradburya schottii* (loc. cit.). He used two vouchers from the Yucatán state as type material; the first one collected by Arthur Schott (718) and the second one by F.G. Gaumer (930). The two sheets were deposited at the Field Museum. Evidently, Millspaugh used the epithet “schottii” to recognize the intensive collection work of A. Schott in Yucatán, as he had done with Gaumer with some of the other new species described by him (e.g., *Croton gaumeri* Millsp. and *Euphorbia gaumeri* Millsp.). Thus, we have chosen to

select Schott’s specimen at the Field Museum as the lectotype for two reasons. First, the material is in excellent condition, bearing flowers and fruits, and featuring the typical pandurate leaflets. Second, it is clear that Millspaugh intended to honor Schott with this species. It seems thus fitting to select his collection to typify Schott’s *Centrosema*.

This species is known locally as “bul-cho”, “bug”, “putz ak”, “xeet” or “xeret” (Mayan). Standley (1930) cited the name “buulbech” (Maya). It is used as a medicinal plant, as well as to feed animals (horses). *Gaumer 1987* (GH, MO) is best assigned to *C. molle*. The Copenhagen and the Field Museum specimens included mixed material, mounted along with a species of the *Macropodium* genus.

**Additional specimens seen.** MÉXICO. CAMPECHE. 15 km al N de Escárcega, camino a Champotón, 7 Mar 1982, *E. Cabrera et al.* 2005 (BM, MEXU); 65 km al sur de Conhuas, en el Centro Regional de Calakmul, límite norte del Petén guatemalteco, 16 Mar 1983, *E. Cabrera et al.* 4445 (BM); 2 km al S de Dzitbalche, sobre la carretera 269 tramo Campeche-Merida, 23 Nov 1986, *E. Cabrera & H. de Cabrera* 12797 (MEXU); cerca del km 180 de la carretera Ciudad del Carmen-Campeche o a 5 km de Microondas Boxol, 30 Nov 1987, *E. Cabrera & H. de Cabrera* 15209 (CICY, CIQRO); Campo Experimental Forestal “El Tormento,” Escárcega, 6 Dec 1981, *M. Sousa et al.* 12231 (BM, ENCB, ILL, LL, MEXU). QUINTANA ROO. Brecha a Chumpon, 40 km N de F.

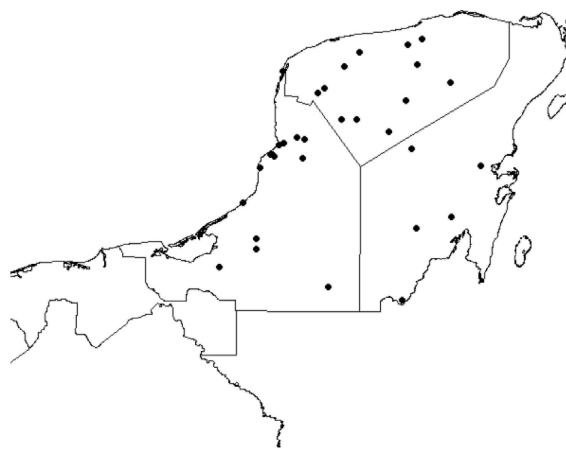


FIG. 8. Distribution of *Centrosema schottii* in the Mexican portion of the Yucatán Peninsula.

Carrillo Puerto, 8 Dec 1980, *E. Cabrera & R. Durán* 598 (BM, MEXU); 4 km N de Bacalar, 12 Dec 1980, *E. Cabrera & R. Durán* 708 (BM, ENCB, MEXU); zona arqueológica de Muyil, 20 km S de Tulum, 27 Dec 1982, *E. Cabrera & H. Cabrera* 4299 (BM); 6 km N of Tulum, 28 Dec 1978, *C.D. Johnson & Conway* 424-78 (MO); 1 km al S de F. Carrillo Puerto, 10 Feb 1980, *O. Téllez & E. Cabrera* 1188 (MEXU). YUCATÁN. 5 km al O de Temax sobre carr. Cancún-Valladolid, 19 Dec 1985, *E. Cabrera & H. Cabrera* 9990 (GH); 20 km N de La Ciudad de Merida, 21°03'N, 89°36'W, 50 m, 4-11-1980, *J.I. Calzada et al.* 6496 (F,UC); 1917-21, *G.F. Gaumer s.n.* (F); *G.F. Gaumer* 930 (BM, C, F-2); *G.F. Gaumer* 1662 (F); San Anselmo, *G.F. Gaumer* 1987 (BM, C-mixed, F-mixed; non: GH, MO); San Anselmo, *G.F. Gaumer* 2061 (F, GH, NY); San Anselmo, *G.F. Gaumer* 2062 (BM); Chichankanab, *G.F. Gaumer* 2062 (C, F, NY-2); Suitun Woods, Nov 1916, *G.F. Gaumer et al.* 23457 (F, GH, NY); 1917-21, *G.F. Gaumer* 24121 (F); 1917-21, *G.F. Gaumer* 24162 (F, GH, NY); 1 km de Camino Uman-hacienda Tebec, 20°39'N, 89°52'W, 27 Nov 1980, *M. Narváez et al.* 160 (UC); Periferico, carretera Merida-Xmatkuil a un lado de la carretera, 20°59' N, 89°37'W, 8 m, 24 Oct 1980, *A. Puch* 130 (ENCB, UC); Uxmal, 1 Dec 1966, *V. Rudd* 2029 (I).

***Centrosema unifoliatum*** (Rose) Lundell, Bull. Torrey Bot. Club 69(5): 391. 1942. *Bradburya unifoliata* Rose, Contr. U. S. Natl. Herb. 8(1): 45. 1903.—TYPE: MÉXICO. CHIAPAS: Between San Ricardo and Ocozucantha, 780–990 m, 18 Aug 1895, *E.W. Nelson* 2977 (LECTOTYPE: US!, designated here; ISOLECTOTYPE: NY!). Fig. 9.

Perennial herbaceous herb; stem filiform, striate-terete, glabrous to slightly pubescent; leaves unifoliate, occasionally 3-foliate at lower nodes of juvenile plants, subcoriaceous, 4–8 cm long; stipules 3–4 mm long; petioles 0.7–1.5 cm long; stipels 2–4 mm long; petiolules 1 mm long; leaflets 2–9 cm long, 0.3–1.2 cm wide, linear to oblong, obtuse, glabrous above, glabrous to slightly indumented below, 15–20 pairs of secondary veins arising at right angle to midrib to shorter leaflets with 8–10 pairs arising with an angle of 60° to midrib; inflorescences axillary, 1–3-flowered, up to 1 cm long; bracteoles 0.5 cm long; flowers purple, 3.0 cm long; calyx 7–8 mm long, tube 3–4 mm



FIG. 9. Distribution of *Centrosema unifoliatum* in the Mexican portion of the Yucatán Peninsula.

long, tenth longer than the tube, the ventral tooth 4–6 mm long; legume 5–8.5 cm long, 2.5 cm wide, glabrous, lateral costa weakly developed, rostrum 1.0–1.5 cm long; seeds bullet-reniform, brown mottled black, 2 mm long, 3–4 mm wide.

**Phenology.** Flowers from June to October.

**Habitat and distribution.** Savannas and grazed pine forests. México (Chiapas, Quintana Roo and Tabasco) and Guatemala (Alta Verapaz, Peten). Rare in the Mexican Yucatán Peninsula area.

**Observations.** *Centrosema unifoliatum* has narrow, unifoliate leaflets. The original description by Joseph Nelson Rose (1903) mentioned “leaflets single, linear to oblong or even orbicular”. The cited syntypes (*Nelson* 2977, NY, US; *Nelson* 2966, US) lacked orbicular leaflets, as do specimens examined from Quintana Roo. Williams and Clements (1997) regarded *Centrosema unifoliatum* conspecific with the trifoliate species *C. virginianum*. However, the leaves of *C. unifoliatum* are mainly unifoliate or sometimes bifoliate (*Ghiesbreght* 603, 604, GH) with narrower leaflets. In addition, the floral parts and fruits are smaller and bracts are larger. The multitude of different reproductive and vegetative characters indicates that is unlikely that these two species are conspecific.

Of the syntypes, we chose the NY specimen (*Nelson* 2977)—with leaves, flowers and one fruit—as the lectotype of *Bradburya unifoliata* (= *Centrosema unifoliatum*). The other syntype (*Nelson* 2966) has flowers, but lacks fruits. Fruit morphology was included in the original description.

**Additional specimens seen.** MÉXICO. QUINTANA ROO. Cobá, [20°29'30"N, 87°43'55" W], Jun–Jul 1938, *C.L. Lundell & A.A. Lundell* 7746 (A, LL, MEXU, MICH).

***Centrosema virginianum*** (L.) Benth., Comm. Legum. Gen. 56. 1837. *Clitoria virginiana* L., Sp. Pl. 2: 753. 1753.—TYPE: [U.S.A.] Habitat in Virginia, Clayton 112 (LECTOTYPE: BM-000038162!, designated by Fawcett & Rendle 1920). Figs. 3C–D and 10.

Vine; stem slender, glabrous or slightly pilose; leaves 3-foliolate, subcoriaceous to coriaceous, 3–10(–15) cm long; stipules 2–5 mm long; petioles 1.3–3.5(–4.5) cm long, slightly pilose; rachis 5–10 mm long; stipels 2–5 mm long; petiolules 1–2 mm long; leaflets 1.5–6.5(–9.0) cm long, 0.7–3 cm wide, ovate, rarely narrowed ovate, slightly pilose below, becoming glabrate with age, slightly pilose below, apex acute, 6–8 pairs of secondary veins anastomosing irregularly near the margin; inflorescences axillary, to 1 cm long, 1–4-flowered, with long and erect hairs along peduncle; bracteoles 5–8 mm long; flowers purple or violet, 2.5–3.5(–4) cm long; calyx pilose, 8–12 mm long, calyx tube 3–4 mm long, lobes subequal, the shorter 6–8 mm long, the ventral 8–10 mm long; legume 8–13 cm long, 3–5 mm wide, glabrous, lateral well developed, rostrum 1.3–2 cm long; seeds 15–18 per pod, reniform, dark brown, 3–4 mm long, 4–6 mm wide.

**Phenology.** Flowers June to January, fruits September to February.

**Habitat and distribution.** Secondary vegetation. United States and México (Campeche, Chiapas, Colima, Jalisco, Michoacan, Nayarit, Nuevo Leon, Oaxaca, Queretaro, Quintana Roo, San Luis Potosi, Sinaloa, Sonora, Tabasco, Tamaulipas, Veracruz, and Yucatán) south to Argentina, Antilles; introduced into Africa, Southeast Asia, and Australia.

**Observations.** A distinctive species with subequal calyx lobes and narrow fruits. The species includes some members with narrow leaves historically confused with *C. pascuorum* (which has smaller flowers and shorter fruits) or confused with *C. angustifolium* (which has leaves nearly lacking a rachis and unequal calyx lobes). These narrow, linear to oblong leaflets are not documented from the Yucatán area. It is known locally as “bull che”, “chi can-tul”, “ib che”, and “xeret” (Mayan). Standley (1930) cited the name “kantsin” (Mayan). It is used a forage crop for horses and cattle.

**Additional specimens seen.** MÉXICO. CAMPECHE. Crucero de San Luis entre Hopelchén y



FIG. 10. Distribution of *Centrosema virginianum* in the Mexican portion of the Yucatán Peninsula.

San Antonio Cayal, 19°43'10"N, 89°59'20"W, 70 msnm, 29 Sep 1995, *C. Gutiérrez* 4971 (UCAM); 15 km NW de Campeche, camino a Merida, 25 m, 6 Feb 1983, *E. Martínez et al.* 2986 (MEXU); Narciso Mendoza, 18°13'38"N, 89°27'14"W, 223 msnm, 11 Aug, *E. Martínez et al.* 28335 (NY). QUINTANA ROO. 2 km between la brecha a Vallarta, 7 de Nov 1980, *E. Cabrera & L. Cortéz* 141 (CIQRO, NY); a 7 km al S de Akumal, por la carr. Cancún-Tulum, 17 Dec 1982, *E. Cabrera & H. Cabrera* 4015 (TAES); 1 km N del Faro de la Punta Celarain, Isla de Cozumel, 22 Nov 1985, *E. Cabrera et al.* 9809 (MEXU); Puerto Morelos, a las afueras del Puerto, 6 Feb 1980, *M. Sousa et al.* 10866 (ENCB). YUCATÁN. 4 km al W de Chemax, carr. Cancún-Valladolid, 24 Sep 1985, *E. Cabrera & H. Cabrera* 9274 (MEXU-mixed); zona arqueológica de Saxil, 35 km SO de Oxkutzcab, 29 Sep 1985, *E. Cabrera & H. Cabrera* 9546 (MEXU); 11 km E de Maxcanú, 3 km S de Cacehtok, por el camino a Muna, 30 Sep 1985, *E. Cabrera & H. Cabrera* 9624 (MEXU-mixed); las Grutas de Balancanche, 36 km W de Valladolid, 2 Oct 1985, *E. Cabrera & H. Cabrera* 9736 (MEXU); 5 km al O de Temax, carr. Cancún-Valladolid, 19 Dec 1985, *E. Cabrera & H. Cabrera* 9995 (GH); km 2 camino de Cantamayec a Peto, 20°29'N, 89°04'W, 25 m, 4 Sep 1982, *C. Chan* 1800 (UC); Izamal, 1888, *G.F. Gaumer* s.n. (F, K); Cozumel Island, 25 Apr 85, *G.F. Gaumer* 55 (K); Izamal, Kanoin, *G.F. Gaumer* 450 (F); Izabal, *G.F. Gaumer* 833 (F-2 sheets, mixed, NY); Izamal, *G.F. Gaumer* 1264 (F); San Anselmo, *G.F. Gaumer* 1986 (C-mixed, F, GH, UC); Izamal, *G.F. Gaumer* 2290 (F, GH-mixed); Suitun, Oct 1916, *G.F. Gau-*

mer et al. 23449 (F, GH); km 26, Merida-Progreso road, May–Aug 1938, C.L. Lundell & A. Lundell 7990 (LL, MICH); 1–2 km S del Pueblo de Calcehtok, 20°33'00"N, 89°54'27"W, 30–100m, 15 Oct 1997, I. Ramírez et al. 589 (GH); 1865, Schott

867 (BM, F); Chichen Itzá, 10 Jun 1932, W.C. Steere 1119 (F, MICH-3 sheets) and 11 Jun, 1131 (MICH); Uxmal, 20–21 Jul 1932, W.C. Steere 2053 (MICH); Progreso, 11–15 Aug 1932, W.C. Steere 3061 (MICH).

## 2. CLITORIA L.

***Clitoria falcata*** Lam., Encycl. 2(1): 51. 1786. *Clitoria rubiginosa* Juss. ex Pers., Syn. Pl. 2: 303.1807. *Clitoria glycinoides* DC., Prod. 2: 234. 1825.—  
TYPE: [HISPANIOLA] Saint-Domingue, dans les bois, Plumier s.n. (HOLOTYPE: P-JU, not seen).  
Fig. 11.

Herbaceous vine, twining and scandent, occasionally repent; stem conspicuously rufo-pilose; leaves 3-foliolate, 3–12 cm long, subcoriaceous; petioles 2–4(5–8) cm long; stipules 3–6 mm long, ciliate in the margins; stipels acicular, 3–7 mm long; leaflets oblong, elliptic-oblong, ovate-oblong, ovate to elliptic, 1.8–10 cm long, 1–7 cm wide, broadly acute to retuse-emarginate, pale and glabrous above, densely sericeous below, 6–9 pairs of secondary veins; inflorescences axillary, 2–4 (6) flowered; bracts 4, broadly ovate to ovate to oblong-narrowly ovate, 3–5 mm long, 1.5 mm wide; bracteoles 7–12 mm long, 3–3.5 mm wide, pilose with uncinata hairs; flowers chasmogamous or cleistogamous; chasmogamous flowers showy, 3.5–5.5(–6) cm long; bracteoles lanceolate, 4, 3–5 mm long, 1.5 mm wide, pilose ciliate with uncinata hairs; calyx tube 7–15 mm long, lobes 9–15 mm long; standard white fading dull yellow, 4–5 cm long, 3–4 cm wide; cleistogamous flowers inconspicuous, calyx tube 5–7 mm long, 1.5 mm wide, lobes 4–7 mm long, petals lacking; legume turgid, costate with raised medial costa, to ecostate, valves almost linear, slightly curved, subfalcate at the apex, 2.5–6 cm long, 7–11 mm wide, twisting upon dehiscence, rostrum to 15 mm long; seeds 5–8 per pod, cunoidal, 4.5 mm long, 4 mm wide, brown to black.

**Phenology.** Only known in the area from two collections with flowers in July.

**Habitat and distribution.** Savanna. México to Paraguay, Antilles; naturalized in Africa and Asia. Rare in the Peninsula area, originally reported by Fantz (2005). Known in México only from Campeche, Chiapas, Nayarit, Oaxaca, Tabasco, Veracruz, and Yucatán.

**Observations.** This species is a member of *Clitoria* subgenus *Neurocarpum* (Desv.) Baker section *Neurocarpum* (Desv.) Benth. Our members belong to var. *falcata* f. *falcata*. The white flowers typically dry to a dull yellow in herbarium vouchers. Cleistogamous flowers will occur before chasmogamous flowers, typically at lower nodes, and are inconspicuous to botanists until fruits from these flowers are produced. Variety *aurantiaca* (Benth.) Fantz, with larger flowers (6–7.5 cm) drying yellowish-orange, is endemic to southern Brazil. Variety *glabrescens* (Verdc.) Fantz, with glabrate stem and calyx and ecostate fruits, is endemic to western Africa with introduced populations in Zanzibar and the West Indies. Variety *latifolia* (Rizzini) Fantz, with broader leaflets (5–8 cm wide) and larger bracteoles (10–15 mm long x 4–6 mm wide), is endemic to Pará, Brazil. This is the only resupinate legume species in the Yucatán Peninsula that bears turgid fruits with a medial costa.

**Additional specimens seen.** MÉXICO. CAMPECHE. A 5 km S de Salsipuedes, 7 Jul 1981, T.P. Ramamoorthy et al. 2508 (MEXU). YUCATÁN. Savanna de Lian, Jul, J. Linden s.n. (P).

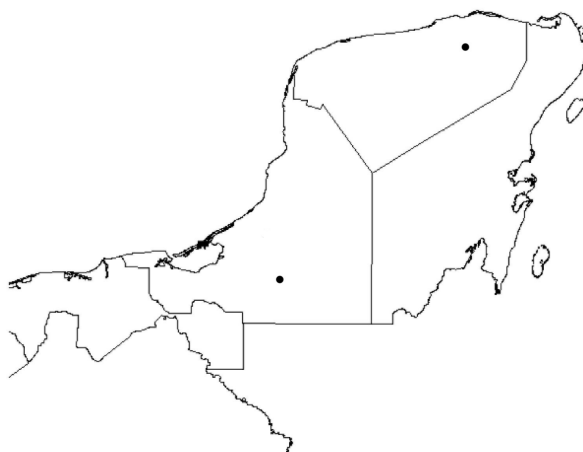


FIG. 11. Distribution of *Clitoria falcata* in the Mexican portion of the Yucatán Peninsula.

***Clitoria ternatea*** L., Sp. Pl. 2: 753. 1753.—TYPE: Habitat in India, *Herb. Clifford: 360, Clitoria 1* (LECTOTYPE: BM-000646600!, designated by Wijnands 1983). Fig. 3F.

Herbaceous vine, up to 5 m long; stem slightly pubescent, stems with uncinata adpressed hairs; leaves 5–7-foliolate, (3.0–)4.0–12 cm long, membranaceous, concolorous; petioles 1.5–3.5 cm long; rachis 2.5–5.5 cm long; stipules narrowly ovate, 3–6 mm long; stipels acicular, 2–3 mm long; leaflets ovate to elliptic, 1.5–4.5 cm long, 1.0–3.5 cm wide, retuse, rotund, glabrate above with uncinata hairs, glabrous below, 5–8 pairs of secondary veins; inflorescences reduced to one flower; bracteoles broadly ovate, 6–8 mm long, 6–8 mm wide; calyx 8–22 mm long, lobes 6–12 mm long, persistent; standard blue, 3.0–3.5 cm long; legume flat, ecostate, 4–12 cm long, 8–11 mm wide, valves dehiscent, twisted, rostrum 2–6 mm long; seeds 7–10 per pod, subreniform, 4–5 mm long, 5–6 mm wide, brown to black.

**Phenology.** Flowers and fruits from July to September.

**Habitat and distribution.** Secondary vegetation. Native to Africa, introduced and naturalized in neo- and paleotropics (Fantz 2001b). In México, known from Campeche, Chiapas, Colima, Guerrero, Jalisco, Nayarit, Oaxaca, Quintana Roo, San Luis Potosi, Sinaloa, Sonora, Tabasco, Veracruz, and Yucatán.

**Observations.** This species is a member of subgenus *Clitoria*, easily distinguished from the other resupinate legumes by the 5–7 leaflets and the flat, ecostate fruits. Our members belong to var. *ter-*

*natea* f. *ternatea*, a blue-flowered form that ranges from dark to lighter azure blue with a medial yellow strip on the banner outlined in white. *E. Cabrera et al. 9824* (MEXU) is the only known white-flowered form, f. *albiflora* (Voigt) Fantz. Variety *pleniflora* Fantz, with five standards, is prominent in the Antilles (Fantz 1990), but not yet reported in México. When Wijnands (1983) proposed the lectotype for this species, Indiomalaya was mentioned as a possible origin, but the plant is originally from Africa and introduced and naturalized in Indiomalaya.

The species is used as an ornamental vine, as a medicinal plant, as a forage crop, and as a dye. Fruits are eaten by man in Asia, but the seeds can be a strong laxative (Fantz 1991). It is locally known as “frijolillo” (Spanish) and “xet” (Mayan).

**Additional specimens seen.** MÉXICO. CAMPECHE. Cult. Estación “Cayal”, Pronase, 13 Dec 1972, *García et al. 263* (ENCB); Chan Laguna, 4 Dec 1931, *C.L. Lundell 1022* (F, GH, MICH, MO, NY). QUINTANA ROO. Parque Chankanab, Isla de Cozumel, 23 Nov 1985, *E. Cabrera et al. 9824* (MEXU); ruinas de Kohunlich, 13 Nov 1980, *J.I. Calzada et al. 6202* (UC); Isla de Cozumel, 20°22'N, 87°00'W, 4 m, 7 Aug 1981, *J.S. Flores & Ucan 8939* (UC); Apr 1977, *IDRC Forage Program CF-545* (NCSC, cult CIAT 9432); Zona arqueológica Kohunlich, sobre carretera Chetumal-Escárcega, 25 Jul 1976, *P. Moreno 873* (MEXU); ruinas de Kohunlich, a 44 km a W de Ucum, 29 Sep 1979, *O. Téllez & E. Martínez 1024* (BM, CM-mixed, MEXU); Hotel Paradise, a las afueras de Chetumal, 9 Aug 1980, *O. Téllez & E. Cabrera 3130*. YUCATÁN. Izamal, 1888, *G.F. Gaumer s.n.* (F).

#### EXCLUDED TAXA

***Centrosema pubescens*** Benth., Comm. Legum. Gen. 55. 1837, non Martius, Fl. Bras. 15(1): 131. 1859. *Centrosema schiedeana* Schltld., Linnaea 12(3): 284. 1838. *Clitoria grandiflora* M. Martens & Galeotti, Bull. Acad. Brux. 10: 189. 1843. *Centrosema grandiflorum* Walp., Repert. Bot. Syst. 5: 529. 1846. *Centrosema galeottii* Fantz, Sida 8: 155. 1979.

Historically, this name has been applied to two distinct species lumped as one by botanists, including numerous specimen annotations by Fantz in the 1970s to early 1990s. Fantz (1996)

segregated the two species *C. pubescens* and *C. molle* during preparation of a taxonomic treatment of *Centrosema* for Mesoamerica. The holotype (*Keerle s.n.*, BR) was mounted with collections of *C. molle*, compounding confusion by botanists. *Centrosema pubescens* is distinguished by sericeous bracts and bracteoles, longer dorsal and lateral teeth (3–5 mm), sericeous pedicels in flower thinning as fruits are produced, violaceous flowers, and occurrence at higher elevations (500–2000 m). The name *Centrosema pubescens* has been included by Durán et al. (2000) and Gutiérrez-Báez (2003) for the

Mexican portion of the YBPB. However, Fantz (1996, 2004) excluded this species from the YBPB area.

***Centrosema villosa*** Miller, *nom. in sched.*

This name is included in the checklist of Campeche (Gutiérrez-Báez 2003) and the collection *J.I.*

*Calzada 6751* (UCAM) has not been localized. This name is not included in the International Legume Database Information Service (ILDIS) website ([www.ildis.org](http://www.ildis.org)), nor in the International Plant Name Index (IPNI) website ([www.ipni.org](http://www.ipni.org)). It appears to be an unpublished, illegitimate name found only on a herbarium specimen.

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