THE PANAMANIAN SPECIES OF *BAUHINIA* (LEGUMINOSAE)[1]

RICHARD P. WUNDERLIN[2]

ABSTRACT

Eleven species of *Bauhinia* native to Panama are enumerated with the three species new to the flora described. Synonyms, typification, and key to species are provided.

Twenty-five years have passed since the treatment of *Bauhinia* in the Flora of Panama appeared (Schery, 1951). It seems appropriate at this time to reassess the genus in light of studies that have taken place in the intervening years.

Schery recognized thirteen native plus two introduced Asiatic species (*B. purpurea* and *B. monandra*) for the flora of Panama. Eleven native species are recognized and discussed here.

Although at first it appears as if only a minor change has taken place, a decrease in two species, there is a significant modification in taxonomy and nomenclature. Actually, of the thirteen names employed by Schery, only four are retained here. Three species are added to the flora while five are reduced to synonymy. All other changes are nomenclatural.

Approximately 300 herbarium specimens of Panamanian materials from the following herbaria were examined for this study: DUKE, F, MO, NY, P, UC, USF, and US. The reader is referred to annotated specimens deposited in these herbaria. Annotated specimens of species discussed here but collected outside Panama are deposited in the following additional herbaria: A, COL, GH, IJ, ILL, K, MICH, SIU, TEX, UCWI, VT, W, and WIS. The author also had the opportunity to study six of the species in the field in Panama or elsewhere in the Neotropics: *B. aculeata*, *B. glabra*, *B. guianensis*, *B. pauletia*, *B. reflexa*, and *B. ungulata*.

BAUHINIA

Bauhinia L., Sp. Pl. 374. 1753, non Kunth, 1824, nec Raf., 1838. TYPE: *B. divaricata* L.

Pauletia Cav., Icon. Descr. Pl. 5: 5. 1799. LECTOTYPE: *P. inermis* Cav.
Amaria Mutis, Sem. Nuev. Rey. Gran. 2: 25. 1810. LECTOTYPE: *A. petiolata* Mutis ex DC.
Schnella Raddi, Mem. Soc. Ital. Modena 18: 411. 1820. LECTOTYPE: *S. macrostachya* Raddi.
Lacara Spreng., Neue Entdeck. 3: 56. 1822, non Raf., 1836. TYPE: *L. triplinervia* Spreng.
Bauhinia Kunth, Ann. Sci. Nat. (Paris) 1: 85. 1824, non L., 1753, nec Raf., 1838. LECTOTYPE: *B. aculeata* L.
Casparia Kunth, Ann. Sci. Nat. (Paris) 1: 85. 1824. TYPE: *C. pes-caprae* (Cav.) H.B.K.
Caulotretus Rich. ex Schott in Spreng., Syst. Veg., ed. 16. 4(2): 406. 1827. TYPE: *C. smilacinus* Schott.

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[2] Department of Biology, University of South Florida, Tampa, Florida 33620.

Perlebia Mart. in Spix & Mart., Reise Bras. 2: 555. 1828, non DC., 1829. TYPE: *P. bauhinioides* Mart.
Bauhinia Raf., Sylva Tell. 121. 1838, non L., 1753, nec Kunth, 1824. LECTOTYPE: *B. aculeata* L.
Binaria Raf., Sylva Tell. 121. 1838. TYPE: *B. cumanensis* (H.B.K.) Raf.
Cansenia Raf., Sylva Tell. 122. 1838. LECTOTYPE: *C. ungulata* (L.) Raf.
Mandarus Raf., Sylva Tell. 122. 1838. LECTOTYPE: *M. divaricatus* (L.) Raf.
Ariaria C. Marq., Estud. Arq. Etno. Amer. 1: 141. 1920. TYPE: *A. superba* C. Marq.

Other synonyms occur for *Bauhinia*. Only those which apply to Neotropical material are listed here. See Wunderlin (1975) for a complete synonymy and discussion of typification.

Key to the Native Panamanian Species of *Bauhinia*

a. Trees or shrubs with or without spines.
  b. Plants armed with intrastipular spines.
    c. Petals white, elliptic to obovate; fertile stamens 10; buds linear-lanceolate, 3–4(–5.5) cm long ..... 1. *B. aculeata*
    cc. Petals green, filiform; fertile stamens 5; buds filiform, 8–10(–12) cm long ..... 2. *B. pauletia*
  bb. Plants unarmed.
    d. Calyx limb splitting to hypanthium into several lobes.
      e. Petal blades ovate-elliptic, white to pinkish with roseate center; fertile stamens 8, other 2 reduced to a ligule ..... 3. *B. picta*
      ee. Petal blades filiform or linear, white; fertile stamens 10 ..... 4. *B. ungulata*
    dd. Calyx limb spathaceous.
      f. Shorter alternate stamens connate for about ½ their length; inner pair of leaf nerves closer to midrib than to adjacent nerves ..... 5. *B. bequinotii*
      ff. All stamens free nearly to base; inner pair of leaf nerves equi-distant or closer to adjacent nerves than to the midvein ..... 6. *B. petiolata*
aa. Tendriled vines or lianas.
  g. Calyx 5-nerved or inconspicuously nerved; fruit indehiscent, thin walled ..... 7. *B. microstacha*
  gg. Calyx conspicuously 10–15-nerved; fruit dehiscent, woody.
    h. Leaves shallowly to deeply cleft on mature plants, frequently bifoliolate on young plants; calyx about 1 cm long.
      i. Calyx lobes setaceous; pubescence various, but never with coppery sheen.
        j. Calyx lobes erect; petals pink or white, one with conspicuous purple spots ..... 8. *B. glabra*
        jj. Calyx lobes reflexed; petals pink, without markings ..... 9. *B. reflexa*
      ii. Calyx lobes ovate to lanceolate or sometimes nearly absent; young parts of plants often with a coppery pubesence ..... 10. *B. guianensis*
    hh. Leaves bifoliolate on mature and young plants; calyx 1.5–2.0 cm long ..... 11. *B. hymenaeifolia*

1. **Bauhinia aculeata** L., Sp. Pl. 374. 1753, non Vell., 1825. TYPE: Colombia or Venezuela, *Herb. Clifford* (BM, holotype, not seen, IJ, photo).

B. emarginata Miller, Gard. Dict., ed. 8. 1768, non Jack, 1822, nec Wall., 1831, nec. Roxb. ex G. Don, 1832. TYPES: Colombia, Bolívar, Houston s.n. (BM, holotype, not seen, IJ, US, photos).
B. rotundata Miller, Gard. Dict., ed. 8. 1768. TYPE: Colombia, Bolívar, *Houston s.n.* (BM, holotype, not seen, US, photo).
B. ungula Jacq., Frag. Bot. 22. 1801, non Willd. ex Steud., 1840. TYPE: Venezuela, *Jacquin s.n.* (W, holotype, not seen).
Pauletia glandulosa H.B.K., Nov. Gen. Sp. Pl. 6: 314. 1824. TYPE: Venezuela, Sucre, *Humboldt 47* (P, holotype, not seen, MO microfiche; B(W), isotype, not seen, F, MO, NY, US, photos).
Bauhinia glandulosa (H.B.K.) DC., Prodr. 2: 513. 1825.

B. affinis Vogel, Linnaea 10: 594. 1836. TYPE: Brazil, Santa Catharina, *Vogel s.n.* (B, holotype, not seen, probably no longer extant, MO, NY, photos).
B. bredmeyeri Vogel, Linnaea 13: 302. 1839. TYPE: Venezuela, Distrito Federal, *Bredmeyer s.n.* (B, holotype, not seen, F, fragment, F, MO, NY, US, photos).
B. albicans Vogel, Linnaea 13: 304. 1839. TYPE: Brazil, Rio de Janeiro, *Sello 201* (B, holotype, not seen, F, fragment, MO, NY, US, photos).
B. ungula Willd. ex Steud., Nom. Bot., ed. 2. 1: 191. 1840, pro syn., non Jacq., 1801.
B. notophila Griseb., Abh. Königl. Ges. Wiss. Göttingen 24: 166. 1879. TYPE: not known.
B. catingae Harms, Bot. Jahrb. Syst. 42: 209. 1908. TYPE: Brazil, Bahia, *Ule 7277* (B, holotype, not seen, F, fragment, F, MO, NY, US, photos; K, isotype, not seen, F, NY, US, photos).
B. mollicella Blake, Contr. Gray Herb. 53: 32. 1918. TYPE: Venezuela, *Curran & Hamon 1024* (GH, holotype, not seen; NY, US, isotypes).
B. miranda Pittier, Trab. Mus. Comercial Venez. 1: 13. 1927. TYPE: Venezuela, Miranda, *Pittier 11783* (VEN, holotype, not seen; NY, US, isotypes).
B. mollifolia Pittier, Trab. Mus. Comercial Venez. 1: 14. 1927. TYPE: Venezuela, Cojedes, *Pittier 11726* (VEN, holotype, not seen; NY, US, isotypes).
B. schultzei Harms, Repert. Spec. Nov. Regni Veg. 24: 210. 1928. TYPE: Colombia, Magdalena, *Schultze 428* (B, holotype, not seen, F, fragment, F, MO, NY, US, photos).
B. albiflora Britton & Rose, N. Amer. Fl. 23: 203. 1930. TYPE: El Salvador, Sonsonate, *Standley 22373* (US, holotype; NY, isotype).
Pauletia affinis (Vogel) Schmitz, Bull. Jard. Bot. Natl. Belgique 43: 388. 1973.

This species was referred to *B. emarginata* Miller by Schery (1951). In Panama it is known only from the Province of Panamá. The Panamanian material belongs to var. *aculeata* which is also found in El Salvador, Antigua, Barbados, Peru, Brazil, Bolivia, and Argentina. A second variety, var. *grandiflora* (Juss.) Wunderlin, distinguished by its larger leaves, flowers, and fruits, occurs in Ecuador, Peru, Bolivia, and Argentina.

Bauhinia albiflora Britton & Rose, from El Salvador, is described as having five fertile stamens. However, examination of type material of this species revealed it to actually have ten stamens. Material from El Salvador referred to *B. albiflora* is indistinguishable in all respects from *B. aculeata.*

This taxon is highly variable as is evidenced by its extensive synonymy, and it is not surprising that Schery expressed uncertainty in selecting a name for the Panamanian material.

2. **Bauhinia pauletia** Pers., Syn. Pl. 1: 455. 1805. TYPE: Panama, Panamá, *Herb. Cavanilles* (MA, holotype, not seen).

Pauletia aculeata Cav., Icon. Descr. Pl. 5: 6. 1799. TYPE: Panama, Panamá, *Herb. Cavanilles* (MA, holotype, not seen).
Bauhinia spinosa Poir., Encycl. Méth. Bot. Suppl. 1: 599. 1811, new name for *Pauletia aculeata* Cav.
B. leptopetala DC., Prodr. 2: 513. 1825. TYPE: Based on a Sessé and Mocino plate known only from a copy at Geneva (G, not seen), photos (F, MO, US), tracing (US), and photos of tracing (MO, US).
B. panamensis Spreng., Syst. Veg. 2: 334. 1825, new name for *Pauletia aculeata* Cav.
B. parvifolia Seem., Bot. Voy. Herald 113. 1854, non Hochst. ex Field & Gard., 1844, nec Teijsm. & Binn., 1867. TYPE: Panama, Panamá, *Seemann 223* (K, holotype, not seen, F, NY, US, photos).
B. chlorantha Brandegee, Zoe 5: 200. 1905. TYPE: Mexico, Sinaloa, *Brandegee s.n.* (UC, holotype, not seen; US, isotype).
B. longiflora Rose, Contr. U.S. Natl. Herb. 10: 97. 1906, non (Bong.) Steud., 1840. TYPE: Mexico, Sinaloa, *Palmer 1426* (US, holotype; NY, US, isotypes).

This species is known in Panama from the Provinces of Herrera, Panamá, Los Santos, and the Canal Zone. It ranges from western Mexico south to Colombia and Venezuela. In the Caribbean it is found in Trinidad and has been introduced into Puerto Rico where it apparently has become naturalized.

Bauhinia pauletia is one of two Panamanian species known to be bat pollinated (Heithaus et al., 1974) with the other species being *B. ungulata*.

3. **Bauhinia picta** (H.B.K.) DC., Prodr. 2: 515. 1825.

Pauletia picta H.B.K., Nov. Gen. Sp. Pl. 6: 316. 1824. TYPE: Colombia, Santander, *Humboldt 1604* (P, holotype; B, isotype, probably no longer extant, F, MO, NY, US, photos).
Bauhinia ligulata Pittier, Contr. U.S. Natl. Herb. 20: 112. 1918. TYPE: Panama, San Blas, *Pittier 4334* (US, holotype; US, isotype).
B. kalbreyeri Harms, Repert. Spec. Nov. Regni Veg. 19: 65. 1923. TYPE: Colombia, Antiquia, *Kalbreyer 1802* (US, holotype; US, isotype).
B. conceptionis Britton & Killip, Ann. New York Acad. Sci. 35: 160. 1936. TYPE: Colombia, Chocó, *Archer 2086* (NY, holotype, not seen; US, isotype).

This species was first reported from Panama by Pittier who described material from Puerto Obaldía, San Blas, as a new species, *B. ligulata*. It is today still only known in Panama from the type material of *B. ligulata*. *Bauhinia picta* also occurs in Venezuela and Colombia where it is also occasionally cultivated as an ornamental.

Bauhinia picta is distinguished from all other Panamanian species of *Bauhinia* by its eight fertile stamens and the presence of two ligulate staminodes. Schery (1951) erroneously described this species as having ten fertile stamens.

4. **Bauhinia ungulata** L., Sp. Pl. 374. 1753. TYPE: *Herb. Miller* (BM, holotype, not seen).

Pauletia inermis Cav., Icon. Descr. Pl. 5: 6. 1799. TYPE: Mexico, Guerrero, *Herb. Cavanilles* (MA, holotype, not seen).
Bauhinia inermis (Cav.) Pers., Syn. Pl. 1: 455. 1805, non Forsk., 1775, nec. Billb. ex Walp., 1843.
Cansenia ungulata (L.) Raf., Sylva Tell. 122. 1838.
Bauhinia cavanillei Millsp., Publ. Field Columbian Mus. Bot. Ser. 1: 364. 1898, new name for *Pauletia inermis* Cav.
Pauletia ungulata (L.) Schmitz, Bull. Jard. Bot. Natl. Belgique 43: 393. 1973.

Numerous additional synonyms occur for this highly variable species based on South American material, but are excluded here for brevity.

Bauhinia ungulata is known in Panama from the Provinces of Chiriquí, Darién, Herrera, Veraguas, and the Canal Zone. It ranges from Mexico south to Paraguay. *Bauhinia ungulata* is known to be bat pollinated, as also is *B. pauletia* (Heithaus et al., 1974).

5. **Bauhinia beguinotii** Cufod., Arch. Bot. Sist. 9: 192. 1933. TYPE: Costa Rican, Limón, *Cufodontis 664* (W, holotype, not seen, F, MO, US, photos).

Shrubs or small *trees* to 6 m tall; branches brown-tomentose to -tomentellous when young, soon glabrescent. *Leaves* petiolate; blade oblong-ovate, entire or with bifurcate apices 10–24 cm long, 5–16 cm wide, the apices acuminate to

caudate, simple or bifurcate, the base rounded to truncate, chartaceous, glabrate above, brown-tomentellous below, 7–9-nerved; petiole 1.5–3.5 cm long, slightly canaliculate; stipules broadly ovate, apiculate, 1.0–1.5 mm long, persistent; intrastipular excrescences subulate, the adpetiolar pair occasionally enlarged up to 1 mm in length. *Inflorescences* racemose, terminal or subterminal and axillary, the racemes 5–10-flowered, the rachis brown-tomentose to -tomentellous, the buds elliptic-lanceolate, 1.5–2.5 cm long, brown-tomentose to -tomentellous, the free tips minute; bract ovate, ca. 1 mm long; bracteoles similar to the bract, subbasal; pedicels 2–5 mm long. *Flowers* with the hypanthium cyathiform, 5–6 mm long; calyx spathaceous at anthesis; petals 5, subequal, 2.5–4.5 cm, the blade white, oblanceolate to elliptic, 0.8–2.0 cm wide, glabrous, the claw 3–5 mm long, pale pink, glabrate; fertile stamens 10, the 5 alternate ones longer, ca. ¾ the length of petals, connate up to ca. ½ the length of shorter stamens, the filaments sparsely pilose toward base or glabrate, the anthers oblong in bud, triangular to lanceolate at anthesis, rounded to emarginate at the apex, sagittate at the base, 2–3 mm long, sparsely pilose or glabrate; gynoecium ± equalling the stamens, brown-tomentose or -tomentellous, the gynophore ± equalling the style, the stigma bilobate. *Fruits* dehiscent legumes, linear, apiculate with a persistent style, 12–15 cm long, ca. 2 cm wide, minutely strigose to glabrate, the gynophore 1.0–1.5 cm long, glabrate; seeds not seen.

A rare species previously known only from Limón Province, Costa Rica, and Gorgona Island, Narino Province, Colombia. It is reported here for the first time from Panama. The Colombian material, recognized as var. *gorgonae* (Killip ex Cowan) Wunderlin, is distinguished from the Costa Rican and Panamanian material in having its leaves deeply bilobate or bifoliolate rather than entirely or only slightly bilobed. Since the degree of lobing in leaves is a function of age of the plant in some species of *Bauhinia*, it is possible that when additional material is found, the two varieties may prove to be synonymous. In Panama the species is represented by a single collection.

PANAMA: El Lllano-Cartí-Tupile road, 16 km N of Pan-American Hwy. at El Llano, 400–500 m, *Nee 9362* (MO).

6. **Bauhinia petiolata** (Mutis ex DC.) Triana ex Hook. f., Bot. Mag. *tab. 6277.* 1877.

Amaria petiolata Mutis ex DC., Prodr. 2: 519. 1825. TYPE: Colombia, *Mutis 2398* (MA, holotype, not seen; US, isotype).
A. sessilifolia Mutis ex DC., Prodr. 2: 519. 1825. TYPE: Colombia, *Mutis 2724* (MA, holotype, not seen, US, fragment).
Casparia speciosa Linden ex Hook. f., Bot. Mag. *tab. 6277.* 1877, pro syn.
Bauhinia caudigera Blake, Contr. U.S. Natl. Herb. 20: 533. 1924. TYPE: Venezuela, Yaracuy or Carabobo, *Pittier 8851* (US, holotype, US, NY, photos; P, isotype).
Schnella caudigera (Blake) Pittier, Suppl. Pl. Usual. Venez. 37: 1939.

Shrubs or small *trees* to 8 m tall; branches slender, glabrous. *Leaves* petiolate; blade ovate to ovate-lanceolate, entire, 7–14 cm long, 3–7 cm wide, the apices caudate, the base rounded to truncate, chartaceous, glabrous above, obscurely strigillose along the veins or glabrate below, 5-nerved; petiole 1–3 cm long, slightly canaliculate; stipules ovate to reniform, ca. 1 mm long, persistent and

becoming calloused, intrastipular excrescenses obscure. *Inflorescences* shortly racemose, terminal or subterminal and axillary, the racemes 3–8-flowered, the rachis tomentellous or glabrate, the buds narrowly ellipsoid, ca. 4 cm long, tomentellous to glabrate; bract broadly ovate, ca. 1 mm long, ciliolate; bracteoles similar to the bract, subbasal; pedicels ca. 4–7 mm long. *Flowers* with the hypanthium campanulate, 5–10 mm long; calyx spathaceous at anthesis; petals 5, subequal, 3–5 mm long, white, the blade oblanceolate, 1.0–1.5 cm wide, glabrous, the claw 2–5 mm long, glabrous; fertile stamens 10, slightly shorter than petals, the alternate ones slightly shorter, slightly connate at the base, glabrate, the anthers linear, 7–10 mm long, sparsely pilose or glabrate, sagittate at the base; gynoecium slightly exceeding the petals, glabrate, the gynophore ± equalling the style or slightly shorter, the stigma bilobate. *Fruits* dehiscent legumes, linear, apiculate with a persistent style, 20–30 cm long, 2–3 cm wide, glabrous, the gynaphore ca. 2 cm long; mature seeds not seen.

A rare species previously known only from Colombia and Venezuela. It is here reported from Panama for the first time.

COLÓN: Ca. 2–3 mi up the Río Guanche, ca. 10–20 m, *Kennedy & Foster 2127* (MO, USF).

7. **Bauhinia microstachya** (Raddi) Macbride, Contr. Gray Herb. 59: 22. 1919.

Schnella microstachya Raddi, Mem. Soc. Ital. Modena 18: 412. 1820. TYPE: not known.
Bauhinia gentlei Lundell, Wrightia 3: 120. 1965. TYPE: Belize, Toledo, *Gentle 6047* [TEX(LL), holotype, not seen].

Numerous additional synonyms occur for this species based on South American material, but are excluded here for brevity.

Tendrilled *vines*; branches slender, brown-sericeous or -tomentose when young, soon glabrescent, the older stems sinuate-flattened; intrastipular tendrils 1 or paired, woody, circinate. *Leaves* broadly ovate, bilobate to ½ their length, 3–9 cm long, 3–9 cm wide, the lobes rounded to acute, the base cordate to truncate, chartaceous, glabrate above, pilose-tomentose or sparsely appressed pilose below, especially along the nerves, 7–9-nerved; petiole 2–4 cm long; stipules lanceolate, ca. 1 mm long, caducous. *Inflorescences* racemose or subpaniculate, terminal or subterminal and axillary, 5–25 cm long, brown-sericeous or -tomentose, many-flowered, the buds ovoid, ca. 5 mm long; bract linear to lanceolate, ca. 0.5 mm long, caducous; bracteoles similar to the bract, above the middle of the pedicel; pedicels subsessile to 5 mm long. *Flowers* with the hypanthium discoid, ca. 0.5 mm high; calyx campanulate, 5-lobed, the lobes ca. ½ the length of the calyx; petals 5, 5–7 mm long, the blade elliptic to spatulate, sparsely pilose externally or glabrous, the claw to ½ the length of the blade; fertile stamens 10, free, nearly equalling the petals, the alternate ones slightly shorter, the filaments slender, glabrous, the anthers oblong, 1.5–2.0 mm long, glabrous; gynoecium ± equalling the petals, subsessile, the ovary sericeous, the style glabrate, acentric, shorter than the ovary, the stigma terminal, capitate. *Fruits* indehiscent legumes, oblong, chartaceous-walled, mucronate with a persistent style, ca. 5 cm long, ca. 1.5 cm wide; seeds 1–3, suborbicular, ca. 1 cm in diameter.

A widespread, but uncommon, South American species with a disjunction in Guatemala and Belize, it is reported here for the first time from Panama.

DARIÉN: Cerro Yaviza, *Duke & Bristan 422* (MO, NY, US). Río Tuira, between Río Punusa and Río Mangle, *Duke 14582* (MO). La Boca de Pirre, *Bristan 1296* (MO, NY). Sambú, 0–5 mi above Río Venado, *Duke 9285* (MO, NY, US).

8. **Bauhinia glabra** Jacq., Enum. Pl. Carib. 20. 1760. TYPE: not seen.

B. heterophylla Kunth, Voy. Reg. Equin., Bot., Mim. 157. 1824. TYPE: Venezuela, Carabora, *Humboldt 1187* (P, lectotype; B(W), isolectotype, not seen, F, MO, NY, US, photos).
B. suaveolens H.B.K., Nov. Gen. Sp. Pl. 6: 320. 1824. TYPE: Peru, San Martín, *Humboldt 3588* (P, lectotype; B(W), isolectotype, not seen, F, MO, NY, US, photos).
B. cumanensis H.B.K., Nov. Gen. Sp. Pl. 321. 1824. TYPE: not seen.
B. columbiensis Vogel, Linnaea 13: 313. 1839. TYPE: not seen.
Binaria cumanensis (H.B.K.) Raf., Sylva Tell. 122. 1838.
Schnella brachystachya Benth., J. Bot. (Hooker) 2: 98. 1840. TYPE: Guyana, Essequibo, *Schomburgk 565* (K, holotype, not seen, NY, US, photos; F, P, US, isotypes).
Bauhinia brachystachya (Benth.) Walp., Repert. Bot. Syst. 1: 852. 1843.
Schnella columbiensis (Vogel) Benth., Bot. voy. Sulph. 89. 1844.
S. heterophylla (Kunth) Benth. in Griseb., Cat. Pl. Cub. 81. 1866.
Caulotretus heterophyllus (H.B.K.) Warb., Bot. Zeitung (Berlin) 41: 617. 1883.
Bauhinia standleyi Rose, J. Wash. Acad. Sci. 17: 166. 1927. TYPE: Panama, Panamá, *Standley 2647* (US, holotype, NY, fragment; NY, isotype).
Schnella cummanensis (H.B.K.) Britton & Rose, N. Amer. Fl. 23: 206. 1930.
S. standleyi (Rose) Britton & Rose, N. Amer. Fl. 23: 206. 1930.
S. storkii Rose in Britton & Rose, N. Amer. Fl. 23: 206. 1930. TYPE: Panama, Bocas del Toro, *Stork 140* (US, holotype, NY, fragment; UC, isotype).
Bauhinia hondurensis Standley, Publ. Field Columbian Mus., Bot. Ser. 8: 313. 1931. TYPE: Honduras, Atlantida, *Chickering 152* (F, holotype).
B. storkii (Rose) Standley, Trop. Woods 34: 40. 1933.
Schnella glabra (Jacq.) Dugand, Revista Acad. Colomb. Ci. Exact. 4: 137. 194.
Binaria hondurensis (Standley) Schmitz, Bull. Jard. Bot. Natl. Belgique 43: 403. 1973.

Numerous additional synonyms occur for this highly variable species based on South American material. Only the names used for Panamanian or Central American material are included here for brevity.

Schery (1951) referred this species in part to *B. standleyi*, *B. storkii*, and *B. cumanensis*. However, he did indicate that *B. standleyi* and *B. cumanensis* might both be synonymous with *B. glabra*. *Bauhinia storkii* is actually little more than a pinkish-flowered, hirsute form.

In addition, *B. suaveolens*, excluded by Schery as a species of doubtful occurrence in Panama, is also placed in synonymy with *B. glabra*.

Bauhinia glabra is a widespread species ranging from the state of Chiapas in Mexico south and throughout most of the northern half of South America. It also occurs in Cuba and Trinidad in the Caribbean. In Panama it is known from the Provinces of Bocas del Toro, Coclé, Darién, Los Santos, Panamá, and the Canal Zone.

Bauhinia glabra is highly variable in leaf size, shape, and vesture. Certain combinations of leaf morphology and vesture are more frequent in some geographic areas, but intergradations are common. These various forms therefore do not warrant taxonomic recognition and are best considered, at best, only as biotypes. Numerous taxa have been described on the basis of these variable characters resulting in a lengthy synonymy for the species.

9. **Bauhinia reflexa** Schery, Ann. Missouri Bot. Gard. 38: 17. 1951. TYPE: Panama, Canal Zone, *Woodson et al. 1623* (MO, holotype; NY, US, isotypes).

A distinctive species described by and known only to Schery from collections made in the Canal Zone. It is now known from the Provinces of Darién, Panamá, and San Blas, as well as the Provinces of Valle and Chocó of Colombia.

10. **Bauhinia guianensis** Aubl., Hist. Pl. Guiane 1: 377. 1775. TYPE: French Guiana; *Aublet s.n.* (? BM, holotype, not seen).

B. splendens H.B.K., Nov. Gen. Sp. Pl. 6: 321. 1824. TYPE: ? Venezuela, *Humboldt 1186* [B(W), holotype, not seen, F, MO, US, photos].
Schnella excisa Griseb., Fl. Brit. W. Ind. 214. 1860. TYPE: Trinidad, *Crueger 57* (K, holotype, not seen, IJ, photo).
Bauhinia excisa (Griseb.) Hemsley, Biol. Centr. Amer., Bot. 1: 377. 1880.
B. obovata Blake, J. Wash. Acad. Sci. 14: 286. 1924. TYPE: Panama, Darién, *Pittier 5568* (US, holotype; F, NY, US, isotypes).
Schnella obovata (Blake) Britton & Rose, N. Amer. Fl. 23: 207. 1930.
Bauhinia sericella Standley, Publ. Carnegie Inst. Wash. 461: 60. 1935. TYPE: Belize, Toledo, *Schipp 1197* (F, holotype; F, MO, NY, UC, isotypes).
B. manca Standley Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 511. 1937. TYPE: Costa Rica, Alajuela, *Brenes 20552* (F, holotype; NY, isotype).
B. thompsonii I. M. Johnston, Sargentia 8: 140. 1949. TYPE: Panama, Panamá, *Johnston 539* (A, holotype; NY, US, isotypes).

A highly variable and widespread species with an almost unbelievably large and complex synonymy based essentially on South American material. Only the names which have been used for Panamanian and Central American material are included here for brevity. In addition, *B. platycalyx* Benth., *B. breviloba* Ducke, and *B. umbriana* Britton & Killip, incidently mentioned by Schery (1951), should also be sought here.

Schery referred this species in part to *B. obovata*, *B. excisa*, and *B. manca*, which illustrate its variable nature.

Bauhinia guianensis is a widespread species ranging from southern Mexico south and throughout most of the northern half of South America. It is also found on Trinidad in the Caribbean. In Panama it is found in the Provinces of Coclé, Colón, Darién, Panamá, San Blas, Veraguas, and the Canal Zone. It was reported by Schery from Bocas del Toro based on *Dunlap 337* from Changuinola Valley, but this collection is correctly assigned to *B. glabra*.

Bauhinia guianensis is highly variable in leaf size, shape, and vesture. Immature specimens usually have leaves bifoliolate or at least deeply bilobate while older, more mature specimens usually have shallowly bilobate (less commonly entire) leaves. However, it is not unusual to find a wide range of leaf shapes and sizes on the same individual. Certain combination of leaf morphology and vesture types are often more common in some geographical areas, but intergradations are also common. Thus these forms do not warrant taxonomic recognition and are considered, at best, biotypes. Numerous species and infraspecific taxa have been described on the basis of these variable vegetative characters, resulting in a lengthy synonymy for the species.

11. **Bauhinia hymenaeifolia** Triana ex Hemsley, Diag. Pl. Nov. 48. 1880. TYPE: Panama, Canal Zone, *Hayes 635* (K, holotype, not seen, US, photo; P, isotype, US, photo).

B. eucosma Blake, J. Wash. Acad. Sci. 14: 286. 1924. TYPE: Panama, Canal Zone, *Pittier 6782* (US, holotype, NY, fragment; P, US, isotypes).
Schnella eucosma (Blake) Britton & Rose, N. Amer. Fl. 23: 207. 1930.
S. hymenaeifolia (Triana ex Hemsley) Britton & Rose, N. Amer. Fl. 23: 208. 1930.
Binaria hymenaeifolia (Triana ex Hemsley) Schmitz, Bull. Jard. Bot. Natl. Belgique 43: 404. 1973.

Hemsley erroneously stated that *B. hymenaoifolia* has five fertile stamens, but examination of the type material revealed it has ten. Schery (1951) accordingly distinguished it from *B. eucosma* on the basis of Hemsley's statement of stamen number and referred nearly all of the Panamanian material to *B. eucosma.*

The Panamanian material is referred to var. *hymenaeifolia* and is distinguished from the Colombian material which is referred to var. *stuebeliana*, (Harms) Wunderlin. Variety *hymenaeifolia* has chartaceous leaves and white flowers while var. *stuebeliana* has subcoriaceous leaves and pink flowers.

Bauhinia hymenaeifolia is known in Panama only from the Provinces of Panamá, Darién, and the Canal Zone.

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