Taxonomic revision of the genus Smilax (Smilacaceae) in Central America and the Caribbean Islands

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Source: Willdenowia, 40(2) : 227-280

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: https://doi.org/10.3372/wi.40.40208
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Abstract

Ferrufino-Acosta L.: Taxonomic revision of the genus *Smilax* (*Smilacaceae*) in Central America and the Caribbean Islands. – Willdenowia 40: 227 – 280. – Online ISSN 1868-6397; © 2010 BGBM Berlin-Dahlem. doi:10.3372/wi.40.40208 (available via http://dx.doi.org/)

*Smilax* is a poorly understood genus, as the lack of agreement among the taxonomic treatments shows. Twenty-nine species of *Smilax* are recognised for Central America and the Caribbean region as the result of this study, much less than the total of c. 120 species described. Among the reasons leading to the recognition of an excessive number of species are a marked phenotypic variation, sexual dimorphism and the common occurrence of morphological intermediates. The treatment includes separate keys for the identification of flowering and fruiting material, synonymies with altogether 36 lectotypes and 5 neotypes designated here, one new combination published (*Smilax compta*), descriptions, drawings of 11 species, taxonomic notes, distribution maps and distributional data (including also the distribution area of the treated species beyond the actual study area) as well as common names and uses where known.

Additional key words: *Liliales*, taxonomy, nomenclature, Antilles, Mexico

Introduction

The family *Smilacaceae* Vent. essentially consists of the single genus *Smilax* L., comprising c. 350 species of mostly tropical and subtropical distribution. The *Smilacaceae* are included in the order *Liliales* (Takhtajan 1997; APG II 2003; Heywood & al. 2007). *Heterosmilax* Kunth, an Asiatic genus differing from *Smilax* by its connate tepals and variable number of stamens (3, 6, 9–12) with connate filaments, is sometimes recognised as distinct. However, based on molecular analyses (Cameron & Fu 2006) *Heterosmilax* is nested within *Smilax*, indicating that perianth fusion has evolved at least twice in *Smilacaceae*, perhaps in connection with a shift in pollinators. Based on morphological analyses, Chen & al. (2006b) proposed that the genus *Ripogonum* J. R. Forst. & G. Forst. (*Ripogonaceae*) is sister to *Smilacaceae*.

The genus *Smilax* produces rhizomes that are used in folk medicine and beer brewing, while the stems are used in crafts. Also, roots were exported widely from the Neotropics for use in the treatment of syphilis. Until now it was not clear which species of *Smilax* contain the active components because of phenotypic plasticity of the species in the Neotropics.

Several taxonomic studies, including various country-specific studies, have been conducted for the species of *Smilax* in Central America and the Caribbean Islands (Killip & Morton 1936; Morton 1962; Huft 1994; Grisebach 1864 for the British West Indian Islands; Standley 1937 for Costa Rica; Morton 1945 for Panama; León 1946 for Cuba; Standley & Steyermark 1952 for Guatemala; Gooding & al. 1965 for Barbados; Howard 1979 for the Lesser Antilles; Philcox 1983 for Trinidad and Tobago; Proctor 1984 for the Cayman Islands; Huft 2002 for Nicaragua) and in neighbouring regions (Sipman 1979 for Surinam; Gaskin & Berry 2005 for Venezuelan Guayana). Although diverse diagnostic characters have been used in these treatments, due to the limited geographical area covered by the authors (single islands or island groups, countries etc.) the taxonomy of the genus for the whole of Central America and the Caribbean could not be resolved.

*Smilax* is a taxonomically difficult genus because the plants are dioecious and show wide phenotypic variation. Furthermore, many of the specimens available for study in the herbaria lack flowers or fruits. Chen & al. (2006b)
conducted a study of the pollen morphology of *Smilax* but did not find sufficient variation to discriminate between species. Ferrufino & Gómez-Laurito (2004) and Andreata (1997) also did not find any differences in the pollen morphology of Neotropical species of *Smilax*. As a result, this study focusses on macromorphological characters.

The goals of the present revision are to clarify species circumscription, resolve synonymies and provide a means of identification.

**Material and methods**

The present study is based on c. 6000 specimens of herbarium material of *Smilax* from Central America, the Caribbean Islands and neighbouring areas deposited in A, B, BHUPM, BBS, BM, CAY, CR, EAP, F, FPDB, G, GH, HAC, HAJB, HBG, HULE, JE, M, MARP, MO, NY, P, SPMS, STRI, TEFH, U, UC, US and USJ (herbarium abbreviations following Thiers 2008+). Only selected collections are cited for each species. The entire list of the revised specimens is available from the author upon request.

Revision of historical specimens of B, BM and P was done with the material directly, while the revision of types and other historical collections at G and S is based on digital images. Identification of original material and the designation of type specimens were based on the respective protologues, specimen labels and annotations, identification of handwriting and the study of field books. Whenever possible, lectotypes and neotypes have been designated to clarify and stabilise nomenclature.

Field observations by the author on all Central American *Smilax* species during 2000–02 and 2007 have greatly contributed to the understanding of the morphology and plasticity of the species.

The taxonomy of *Smilax* in Central America and the Caribbean Islands provided here is based on the critical morphological analysis of the available material. It focusses on the shape of rhizomes, shape of stems (including presence and shape of prickles), leaves (including shapes of apex, base and margin, venation, petiole length and cross section shape), inflorescence type, peduncle length and colour, size of tepals, anthers and filaments, and shape, size and colour of fruits.

The species were classified in morphologically defined assemblages with the attempt to reflect natural relationships. The invalidly published sections of Killip & Morton (1936) were found to provide a suitable basis. These morphological hypotheses were tested in a molecular phylogenetic study of *Smilax* using plastid markers (psbA-trnH spacer, trnL-trnF region, trnK-matK region) and nr ITS (Ferrufino & al., in prep.).

**Taxonomy**


*Dioecious* vines or shrubs. *Rhizomes* tuberous or elongated. *Stems* terete, quadrangular or angular, with or without prickles, terminal branches straight or zigzag (e.g. *Smilax spinosa, S. bona-nox*); axillary scales simple or double and overlapping on the stem. *Leaves* alternate, simple, ovate to lanceolate, cordate or pandurate (e.g. *S. bona-nox*), 5–7- or 7–9–veined, base acute or cordate (e.g. *S. subpubescens, S. mollis*), apex acute or acuminate, petiole terete, flattened or canaliculate with one pair of tendrils attached at the upper end of the sheathing base. *Inflorescence* a pseudumbellate cyme, solitary or aggregated in a raceme (e.g. *S. schomburgkiana*), often with bracthils as a replacement for scales, peduncles shorter or longer than petioles. *Flowers* actinomorphic, unisexual, trimerous, small whitish, brownish or pink. *Tepals* 6, free or connate, 1.5–2.5 mm (e.g. in *S. maypurensis and S. spinosa*) or 3.5–6 mm long (e.g. in *S. domingensis and S. febrifuga*), glabrous or pubescent or with apical hairs only (e.g. *S. mollis*), in two whorls, those of the first series ovate, of the second elliptic. *Stamina* with *anthers* diadelph, linear or elliptic in top- view, shorter or longer than filaments; *pollen* granulose, spinulose, subglobose; female flowers with staminodes. *Ovary* superior, (1–)3-merous, (1–)3-locular, styles often 3, usually free, sometimes partially united. *Berries* red to purple, reddish, orange or black, 6–12 mm in diameter. *Seeds* ovoid, reddish, orange or black.

**Distribution.** — A cosmopolitan genus of 200–300 species in temperate and tropical forests from sea level up to 3000 m. Twenty-nine species are recognised in Central America and the Caribbean Islands.

**Phenology.** — Several studies have focused on Neotropical climbers that include species of *Smilax* (Putz & Windhorst 1987; Hegarty 1990; Ibarra-Manriquez & al. 1991; Morelato & Leitão-Filho 1996; Ippolito & Suárez 1998; Pérez-Salicrup & al. 2001). Ferrufino (2003) studied the phenology of five species of *Smilax*, viz. *S. domingensis, S. spinosa, S. vanilliodora, S. mollis* and *S. panamensis*, in three areas of Costa Rica from February 2001 to April 2002. She observed that the anthesis in male and female plants occurs between February and June but continues throughout the year. At the beginning of winter, female plants may carry fruits for 6–8 months, while male plants may have 2 or 3 flowering periods, which are very ephemeral compared to female plants. The advantage of variable flowering is the production of fruit with different maturation dates, which may increase dispersion. Ferrufino (2003) also found that the flowering times of some species overlap, which could contribute to hybridisation.

**Uses.** — *Smilax* is well-known for its use in folk medicine. Especially the roots, which were of great economic significance because of their use in the treatment of syphilis, were exported extensively from the Neotropics. Currently, the secondary compounds of various Neotropical *Smilax* are being studied for ethnobotanical...
uses. *S. subpubescens* is used in construction and basket making.

**Infrageneric relationships.** – In the present work, the 29 species of the study area are classified and arranged in nine morphologically defined assemblages, which are, because of the geographically limited study area, treated for the time being as informal “species groups”. The species outside the study area belonging to these groups are included as “related species”. These species groups partly correspond to the invalidly published sections of Killip & Morton (1936) and have essentially been corroborated by the author’s molecular phylogenetic analysis of *Smilax* (Ferrufino & al., in prep.), where the infrageneric classification of *Smilax* will be dealt with in more detail.

**Dichotomous keys to the species of *Smilax* in Central America and the Caribbean Islands**

**A. Key for flowering specimens of both sexes**

1. Tepals 1.5 – 2 mm long .......................... 2
   – Tepals 3.5 – 6 mm long .......................... 15
2. Leaf margin usually spinulose, apex mucronate .......................... 3
   – Leaf margin entire, apex acute .......................... 11
3. Leaves lanceolate .................. 4
   – Leaves cordate .......................... 15. *S. coriacea*
4. Stems terete .......................... 5
   – Stems angular .................................. 6
5. Leaves copper coloured .................. 17. *S. cuprea*
   – Leaves brownish or green .......................... 22. *S. populnea*
6. Stems glabrous .......................... 7
   – Stems puberulent .......................... 28.
7. Secondary venation laxly reticulate .......................... 8
   – Secondary venation tightly reticulate .......................... 14. *S. aquifolium*
8. Leaf blade often coriaceous, with (5–)7–11 robust prominent primary veins .......................... 19. *S. havanensis*
   – Leaf blade chartaceous, with 3–5(–7) thin primary veins .......................... 18. *S. graciilior*
   – Prickles brownish .......................... 10
10. Leaves obovate .................. 23. *S. visefolia*
    – Leaves lanceolate .......................... 20. *S. ilicifolia*
11. Peduncles shorter than the petiole .......................... 13. *S. spinosa*
   – Peduncles equal to sometimes longer than the petiole .......................... 12
12. Upper branches smooth .......................... 13
   – Upper branches puberulent .......................... 14
13. Terminal branches flexuous .......................... 21. *S. oblongata*
    – Terminal branches straight .......................... 12. *S. guianensis*
14. Umbels in racemes .......................... 10. *S. schomburgkiana*
    – Umbels solitary .......................... 9. *S. compta*
15. Plants pubescent or tomentose, sometimes only when young and near petiole base; stems without prickles .......................... 16
   – Plants completely glabrous; stems armed with prickles .......................... 18
16. Branches obtusely quadrangular, sometimes pubescent at the base of the petioles .......................... 2. *S. subpubescens*
   – Branches terete, persistently pubescent .......................... 17
17. Adaxial leaf surface brownish or yellowish, abaxial surface tomentose-yellowish .......................... 3. *S. velutina*
   – Adaxial leaf surface green, abaxial surface pubescent .......................... 1. *S. mollis*
18. Stems quadrangular or angled .......................... 19
   – Stems terete .......................... 21
19. Anthers shorter than the filaments .......................... 6. *S. officinalis*
   – Anthers longer than the filaments .......................... 20
20. Stems quadrangular; berries black .......................... 7. *S. regelii*
   – Stems angled; berries reddish .......................... 11. *S. aristolochiifolia*
21. Leaves with main veins connected by parallel veins .......................... 25. *S. spissa*
   – Leaves with main veins connected by reticulate veins .......................... 22
22. Peduncles shorter than or equal to petioles .......................... 23
   – Peduncles longer than petioles .......................... 24
23. Leaves lanceolate or ovate, 5–7-veined from base .......................... 24. *S. domingensis*
   – Leaves linear or narrowly elliptic, 3-veined from base .......................... 5. *S. laurifolia*
24. Prickles acicular, blackish .......................... 8. *S. moranensis*
   – Prickles conical, greenish .......................... 25
25. Inflorescences in racemes; bracts persistent .......................... 26
   – Inflorescences solitary; bracts deciduous .......................... 27
26. Pettiolus c. 2 cm long .......................... 29.
   – Pettiolus c. 0.5 cm long .......................... 26. *S. febrifuga*
27. Leaf base auriculate or pandurate; berries glaucous .......................... 4. *S. auriculata*
   – Leaf base cordate or rounded; berries orange .......................... 28
   – Upper leaf surface opaque .......................... 27. *S. fluminensis*

**B. Key for fruiting specimens**

1. Plants pubescent, sometimes only when young and near petiole base; stems without prickles .......................... 2
   – Plants completely glabrous; stems with prickles .......................... 4
2. Branches obtusely quadrangular, sometimes tomentose at the petiole base .......................... 3
   – Branches terete, persistently pubescent .......................... 1. *S. mollis*
3. Leaf blades abaxially almost glabrous; berries orange .......................... 2. *S. subpubescens*
   – Leaf blades abaxially tomentose; berries reddish .......................... 3
4. Stems quadrangular, sometimes winged .......................... 5
   – Stems terete or obtusely angular, never winged .......................... 6
5. Berries red-orange .......................... 6. *S. officinalis*
   – Berries black .......................... 7. *S. regelii*
6. Stems obtusely angular .......................... 7
   – Stems terete .......................... 15
7. Leaves blade entire; peduncles longer than petioles; berries red .......................... 11. *S. aristolochiifolia*
   – Leaves blade dentate; peduncles shorter than petioles; berries red to black or dark purple .......................... 8
8. Stems glabrous .......................... 9
– Stems verruculose ........................................ 14
9. Leaves blade chartaceous .......................... 10
– Leaves blade coriaceous ............................. 12
10. Leaf margin shallowly spinulose ............... 11
– Leaf margin deeply spinulose ........................ 19. S. havanensis
11. Leaves obovate ........................................ 23. S. viscifolia
– Leaves ovate ........................................... 22. S. populeana
12. Secondary venation laxly reticulate ............. 13
– Secondary venation tightly reticulate ............. 14. S. aquifolium
13. Leaves cordate .......................................... 15. S. coriacea
– Leaves obovate ........................................... 18. S. gracilior
– Prickles brownish ....................................... 20. S. liliifolia
15. Leaves copper coloured, margin entire ......... 17. S. cuprea
– Leaves brownish or green, margin spinose ....... 16
16. Peduncles shorter than petioles ................. 13. S. spinosa
– Peduncles equal or sometimes longer than petioles 17
17. Stems muricate .......................................... 19
– Stems smooth ............................................ 18
18. Inflorescences in racemes ......................... 10. S. schomburgkiana
– Inflorescences solitary ............................... 9. S. compta
19. Leaves with main veins connected by parallel veins ........................................ 25. S. spissa
– Leaves with main veins connected by reticulate veins ........................................ 20
20. Peduncles shorter than or equal to petioles ...... 21
– Peduncles longer than petioles ...................... 22
21. Stems flexuous; berries black ....................... 21. S. oblongata
– Stems straight; berries red to black ............... 24. S. domingensis
22. Berries glaucous ........................................ 23
– Berries red to black ................................... 24
23. Leaves with 3(–5) principal veins; base acute ........................................ 5. S. laurifolia
– Leaves with 5 principal veins; base auriculate ........................................ 4. S. auriculata
24. Prickles acicular ........................................ 8. S. moranensis
– Prickles conical .......................................... 25
25. Inflorescences in racemes .......................... 27
– Inflorescences solitary ................................ 26
– Bracts deciduous; upper leaf surface opaque .... 28
27. Peltioles with wings c. 2 cm long ........................................ 29. S. syphilitica
– Peltioles with wings c. 0.5 cm long .................. 26. S. febrifuga
28. Terminal branches flexuous ...................... 12. S. guianensis
– Terminal branches straight ......................... 27. S. fluminensis

I. Mollis group

Plants pubescent, unarmed; leaves glabrous or tomentose; inflorescences solitary; tepals c. 3.5–5 mm long with api
cal hairs; berries orange to red.

Includes: Smilax mollis, S. subpubescens, S. velutina.


= Smilax mollis var. pavoniana A. DC. in Candolle & Candolle, Monogr. Phan. 1: 68. 1878 = Smilax pavo-
niana A. (DC.) F. W. Apt in Repert. Spec. Nov. Regni Veg. 18: 400. 1922. – Holotype: Mexico, Pavón (G-
BOIS).


tonia 14: 307. 1962. – Holotype: Costa Rica, “Río Tur-

= Smilax mollis var. congestiflora C. V. Morton in Brit-
tonia 14: 301. 1962. – Holotype: Mexico, “Pluma Hi-
Dalgo, Oaxaca, 1200 m”, 17.4.1917, Reko & Conzzati 3084 (US 00892593 [?]!).


Rhizomes elongated. Stems terete, minutely pubescent or glabrous, unarmed, terminal branches straight. Leaves ovate to lanceolate, sometimes pubescent, membraneous, chartaceous or rarely rugose, 9–16 × 4–10 cm, pubescent, glabrous, unarmed, terminal branches straight.

Inflorescences umbelolate, solitary, scale single; bracts sometimes deciduous; flowers 3.5–4.5 mm long; tepals of male flowers 4–6 mm long, of female shorter than the filaments.

S. mollis is characterised by a pubescent indumentum, absence of prickles, rounded stems, peduncles larger than the petioles and orange berries.

Distribution and habitat. — Mexico to Ecuador, Venezuela, Cuba (Fig. 2); montane and premontane wet areas, evergreen seasonal forest, 200–1200 m.

Variability. — This species varies widely in its vegetative and reproductive features. Several morphological characteristics were used to separate closely related species: large, tomentose flowers (e.g. S. gymnopoda); peduncles shorter or longer than the petioles (e.g. S. angustiflora). Although these characteristics are fairly conspicuous in some specimens, they vary widely and continuously, and thus do not merit taxonomic recognition. The same is true for species that were considered distinct simply because of their geographic distribution (e.g. S. tripilinervia only known from the type material collected in Venezuela).

Note. — S. pringlei was described by Greenman (1899) and is characterised by glabrous leaves, staminate flowers, glabrous tepals and reddish petioles, which corresponds to S. subpubescens. The syntype specimens Pringle 6843 and 7259 are indeed identified here as such. However, the lectotype Pringle 7060 corresponds to S. mollis (berries), therefore, S. pringlei has to be treated as a synonym of S. mollis.

Common names. — “Zarzaparrilla cimarrona” in Cuba; “pate” in Honduras (León 1946; Nelson-Sutherland 2008).


Fig. 1. *Smilax subpubescens* – A: staminate flowering branch; B: staminate inflorescence; C: staminate flower; D: stamen; E: pistillate inflorescence; F: infructescence; G: pistillate flower; H: seeds; I: stem segment; J: rhizome. – Drawn by P. Adam from Breedlove 11114, 10938 (F), Castillo & al. 2152 (F), Román & Solórzano 12568 (F), Ramírez 761 (F) and Ferrufino & Masis 267 (B).


**Rhizomes** elongated. Stems terete, glabrous, unarmed, young stems sometimes reddish, terminal branches straight. **Leaves** ovate, lanceolate, glabrous or rarely pubescent, chartaceous, 7–23 × 3.5–18 cm, 7–9-veined, major veins connected by reticulated veinlets, apex acute, base cordate, margin entire, young leaves sometimes red-jor veins connected by reticulated veinlets, apex acute, not glaucous, ovoid, 7–12 mm in diameter. – Fig. 1.

**Smilax subpubescens** characterised by terete, unarmed stems, glabrous or sometimes pubescent leaves, red-tomentose petioles longer than the peduncles, c. 4–6 mm long flowers and orange to red berries.

**Distribution and habitat.** – Mexico to Panama (Fig. 4); cloud and montane forest, pine-oak forest, 900–2500 m.

**Notes.** – The species was described by Candolle (1878) in his protologue as having “spines” on the stems. However, the types cited here are unarmed and all material I saw of *Smilax subpubescens* also does not have spines.

Brandegee (1915) found that *Smilax purpusii* seems to be close to *S. subpubescens*, but he did not address the differences between both species. I examined the type of *S. purpusii* and included the name in the synonymy of *S. subpubescens*, because morphological differences were not evident. My examination of the type of *S. occidentalis* yielded the same result.

A specimen (13.7.1938, *Davidson 953*, MO 1194519) is labelled to be an isotype of *Smilax calocarpa*. However, this fruiting specimen does not match the collection described in the protologue by Standley (1937), because his description was based on a male plant, the specimen therefore does not represent an isotype of this name.

**Common names.** — “Canuygo”, “bejuco de rueda”, “bejucan canasta”, “bejucano para adorn” in Central America (Ferrufino & Gómez-Laurito 2004; MacVean 2006; Nelson-Sutherland 2008).

**Selected specimens examined.** — **COSTA RICA:** Cartago, Oreamuno, descendiendo por la falda norte del Volcán Irazú, 10°04’00’’N, 83°51’00’’W, 2100 m, 6.1.1995, *Cascante & al. 455* (CR); Heredia, P. N. Brualio Carrillo, Estación Barba, 10°08’00’’N, 84°06’00’’W, 1100 m, 20.6.1990, *Apí 68* (CR, INB); Limón, Cordillera de Talamanca, 9°00’–9°12’N, 82°58’–82°59’W, 2400–2750 m, 13.9.1984, *Davidse & al. 29069* (CR, MO); San José, Dota, Cordillera de Talamanca, La Cima de Copey de Santa María de Dota, 9°40’35’’N, 83°55’00’’W, 1000 m, 7.6.1989, *Chavarria 402* (CR, INB). — El. Salvador: Ahuacapán, Lagunas de las Ninfas, 13°54’N, 89°48’W, 1830 m, 16.1.1999, *Herrera 3756* (B); Santa Ana, P. N. Montecristo, 1500 m, 29.8.2000, *Carballo 117* (B). — **GUATEMALA:** Alta Verapaz, Carchá, aldea Chamtacá, 15°33’N, 90°12’W, 1300 m, 27.8.2002, *Rueda 17343* (HULE); Baja Verapaz, Raxinal at summit of Sierra de Chuaucus, 15°01’N, 90°29’W, 1800 m, 25.1.1987, *Croat & Hannon 63650* (MO); El Progreso, cañadas Albores, San Agustin, 14°57’N, 90°12’W, 1300 m, 29.8.2000, *Carballo 117* (B). — **HONDURAS:** Comayagua, Cordillera de Montecillos, trail between La Danta and Cerro San Juanillo, 14°32’N, 87°52’W, 1570 m, 5.5.1991, *Davidse & Hawkins 34217* (EAP); Intibucá, La Esperanza, Cordillera de Opalaca, 25 km NE de La Esperanza, 14°36’N, 90°29’W, 2600 m, 19.6.1985, *Luteyn 11612* (MO, NY); Mexico; along Mexican highway 153 between Temascaltepec and Toluca, 53 km SW of Toluca, at the turnoff to El Polvorín, 19°03’N, 100°02’W, c. 2000 m, 26.4.1987, *Miller & Myers 2613* (MO); Oaxaca, Miahualtán, San Jerónimo Coatlán, 15 km al N de Piedra Larga, sobre el camino a Progreso, 16°09’00’’N, 97°01’00’’W, 1300 m, 16.12.1987, *Torres & Campos 10863* (MO); Veracruz, vic. “La Calavera” 10 km N of Altotonga (13 km by road), on road to Tlapacoyan, 19°51’N, 97°13’W, 1350 m, 28.1.1980, *Nee & Hansen 18647* (NY). — **NICARAGUA:** Jinotega, Wiwilí, Reserva Cerro Kilambé, 13°34’N, 85°41’W, 1300–1500 m, 2.9.2000, *Rueda...
14847 (HULE). — PANAMA: Bocas del Toro, Chiriquí border along ridge of Continental Divide NE of Cerro Pate Macho, above Palo Alto, 8°47’N, 82°21’W, 2200 m, 24.4.1982, Knapp & Schmalzel 4840 (MO, PMA); Chiriquí, hill E of Audubon Cabin, S of Cerro Punta, 8°52’N, 82°35’W, 1400–1800 m, 12.7.1983, Hamilton & Krager 3832 (F, G, PMA).


Rhizomes elongated. Stems terete, pubescent, unarmed, terminal branches straight. Leaves ovate to lanceolate, lanate-tomentose, coriaceous, 6–16×3.5–9 cm, 7–9-veined, principal venation parallel, sometimes pubescent on the adaxial surface, connected by reticulate veinlets, apex acute, base cordate, margin entire, adaxial surface brownish, abaxial surface densely pubescent or tomentose; petiole 1.5–6 cm long, terete, yellowish tomentose, densely so at the base. Inflorescences umbellate, solitary, scale single; peduncle 1.5 cm long, terete, pubescent; pedicels of uniform length, pubescent; tepals of male flowers 5–7 mm long, of female flowers 3.5–4 mm long, pubescent; anthers elliptic in top-view, shorter than the filaments. Berries orange or red-orange when ripe, not glaucous, ovoid, 10–15 mm in diameter.

Smilax velutina can be distinguished by the terete and pubescent stems, yellowish tomentose leaves, tepals of c. 5 mm length and reddish or orange berries. The adaxial leaf surface is glabrous and sometimes brownish in herbarium material, the abaxial surface very pubescent. This species has often been misidentified as S. mollis or S. subpubescens. It is related to S. tomentosa.

Distribution and habitat. — Mexico to Panama (Fig. 2); pine forest, cloud and montane forest, 2000–3300 m.

Selected specimens examined. — BELIZE: Augustine, Mountain Pine Ridge, 16°34’N, 88°54’W, 1500 ft, 6.4. 1960, Hunt 436 (BM); Cayo, Chiquibul, San Pastor Pine Ridge, 16°43’N, 88°59’W, 600 m, 15.3.1997, Monro 1737 (BM, MO); Stann Creek, Sapon road, 10.10.1953, Gentle 8041 (F, MICH); Toledo, Maya mountains, directly N. of the junction of Richardson Creek and Bladen Branch, 16°33–35’N, 88°46’W, 300–620 m, 4., 6. & 8.3.1987, Dav-
idse & Brant 32113 (F, MO). — GUATEMALA: Alta Verapaz, Sierra de Chamá, Montaña Yalijux, Finca Chelemhá, Berggrat zum Mirador, 15°23′05″N, 90°04′33″W, c. 15 km Luftlinie NE von Tucurú, 2460 m, 28.3.2001, Förther 10980 (BM, F); Chimaltenango, faldas del Volcán Acatenango, 2400 m, 27.11.1993, Castillo & al. 2072 (F); El Progreso, Cabañas Alberoz, San Agustín, 14°57′N, 89°58′W, 1830 m, 17.5.2000, CECON-CDIC 10444 (F); Huehuetenango, between Ixcán and Finca San Rafael, Sierras de los Chuchumatanes, 24.7.1942, Steyermark 49478 (F); Santa Rosa, Finca Buenos Aires, salida, Taxisco, 14°8′N, 90°18′W, 6.5.2001, de MacVean 397 (F, HULE); Sololá, Santo Tomás Pachuj, San Lucas Toliman, 14°46′N, 91°12′W, 17.5.2001, Steyermark 49478 (F, HULE); Guatemala: San Rafael, Sierra de los Chuchumatanes, 24.1.1970, Lot 726 (GH). — NICARAGUA: Jinotega, Bocas, San Miguel de Kilandé, Reserva Natural Kilandé, 13°31′N, 85°37′W, 700–900 m, 6.1.2001, Rueda & al. 15414 (MO); Nueva Segovia, Jalapa, subiendo por Buena Vista Chiquita, 13°58′N, 86°11′W, 23.7.2006, Paguada 251 (HULE); Zelaya, vicinities of junction of road to Alaminos and road between El Empalme and Limbaika, 13°32′N, 84°30′W, 25 m, 24.2.1979, Stevens & Kruckoff 12771 (MO). — PANAMA: Bocas del Toro, ridge south of Campano Luchio, 9°05′05″N, 82°44′33″W, 1900 m, 20.3.2004, Monron & Alfaro 4518 (MO); Chiriquí, near Cerro Colorado, c. 8°35′N, 81°45′W, 1500 m, 16.4.1986, McPherson 8977 (MO, PMA); Darien, PN Darien, ridge between Rio Topalisa y Rio Pucuro c. 17 km E of Puerto Limon, 13°32′N, 81°45′W, 1500 m, 16.4.1986, McPherson 8977 (MO, PMA). — Holotype: USA, “Miami, Dade Co.”, 4.–7.4.1898, Pollard & Collins 241 (NY 319988 [st.]).

Rhizomes tuberous-elongated. Stems terete, glabrous, with short prickles and sometimes with blackish dots, straight, flattened, sometimes reddish, terminal branches zigzag. Leaves hastate, ovate, pandurate, sometimes glaucous abaxially, membranaceous, coriaceous, 2.5–8 × 0.7–5.5 cm, 5(–7)-veined, major veins connected by reticulate veinlets, apex acute, base hastate, acute or pandurate, margin entire, young leaves reddish; pediole 0.5–2 cm long, flattened; pedicels of uniform length; tepals of male flowers 4–4.5 mm long, of female flowers 3.5 mm long; anthers linear in top-view, shorter than the filaments. Berries reddish (when) ripening, otherwise dark blue, purple blush black or black, sometimes glaucous, ovoid, 9–12 mm in diameter. — Fig. 3.

Notes. — The type material of Smilax beyrichii at B was destroyed and isotypes could not be found. Material of Beyrich could also have been deposited at Schrader’s herbarium (BHUPM); however, Beyrich’s specimen of Smilax could not be located there. The specimen collected by Nelson 28065 (B) is selected as neotype, because duplicates exist in other herbaria (e.g. USC) and it displays stomate flowers that match the original description.

Long & Lakela (1971) reported that the flowers of Smilax auriculata are fragrant. They considered the species to be closely related to S. bona-nox.

Distribution and habitat. — Louisiana, North Carolina, South Carolina, Florida, Alabama, Georgia, Missouri, West Indies (Bahamas) (Fig. 4); dunes and sandy flatwoods, open areas, 0–150 m.


Selected specimens examined. — BAHAMAS: Andros, Nicholl’s Town and Vicinity, 13.–15.3.1907, Brace 6870 (F, NY); Grand Bahama, Freeport, 16.8.1974, Correll & Kral 42922 (NY); Great Abaco, 3 miles south of Marsh Harbou airport, 1.1.1969, Gillis 7436 (A); Nassau, 2.3.1905, Wight 148 (F, NY); New Providence, New Providence, 18.2.1905, Britton 3381 (F, NY). — USA: Florida, Lib-
Fig. 3. *Smilax auriculata* – A: pistillate flowering branches; B: pistillate inflorescence; C: pistillate flower; D: infructescence; E: seeds; F: staminate flowering branches; G: staminate inflorescence; H: staminate flower; I: stamen; J: stem. – Drawn by P. Adam from Curtiss 4779 (UC), Radford & Stewart 963 (UC), Demaree 10254 (UC), Small & Mosier 5812 (UC) and Nash 569 (UC).


Rhizomes tuberous. Stems terete, glaucous, armed with blackish flattened prickles, terminal branches straight; axillary scale single on the stem. Leaves ovate, lanceolate or elliptic, glaucous or minutely pubescent abaxially, coriaceous, 12 × 5 cm, 3(–5)-veined, major veins connected by reticulate veinlets, apex mucronate, base truncate or rounded, margin entire, leaves turning brownish upon drying; petiole 0.7–1.5 cm long, terete. Inflorescences umbellate, scale single; peduncle 8–10 mm long, terete; pedicels of uniform length; tepals of male flowers 4–5 mm long, of female flowers 2.5–3 mm long; anthers elliptic, longer than the filaments. Berries black when ripe, glaucous, globose, 5–7 mm in diameter.

Note. — Fernald (1944) commented that “Smilax laevis Lauri folio” of Catesby was the best representation of the name S. laurifolia. He cited a specimen of Clayton 617 deposited at BM and Reveal (in Jarvis 2007) designated this specimen as lectotype of S. laurifolia.

The drawing of Smilax laurifolia by Catesby does not provide extensive details; in fact, it does not even contain major features. Despite this, it gives us a good illustration of the species described by Linnaeus.

For Smilax lanceolata, Reveal & Jarvis (2009) designated the illustrations of Plukenet, Phytographia: t: 110,
f.4. 1691, as lectotype and a specimen of L. B. Smith & A. R. Hodgson from Virginia as epitope. The protologue of *S. lanceolata* by Linnaeus, however, does not correspond with Plukenet’s illustration and Linnaeus used a question mark, revealing that he was not sure about the number of the figure. Ferrufino-Acosta & Greuter (2010a) found a mislabelled specimen in the Clifford herbarium (BM). They identified this specimen as the single extant original element on which Linnaeus based *S. lanceolata*. Therefore, they designated it as lectotype and confirmed its use as a synonym of *S. laurifolia*.

**Distribution and habitat.** — Bahamas, Cuba, USA (Fig. 21); swamps, bays, riparian forest, 0–80 m.

**Common names.** — “Raíz de China”, “laurel”, “bamboo vine”, “laurel greenbrier” in Cuba; “laurel greenbrier”, “blaspheme vine” in the USA (León 1946; Holmes 2002); “Laurel-leaved greenbrier” in the Bahamas (Britton & Millspaugh 1920).


**III. Medica group**

Plants glabrous, stems square with or without wings, with flattened prickles; inflorescence racemose; tepals c. 4–7 mm long; berries red or purple.

Includes: *Smilax officinalis* and *S. regelii*. Related species: *S. longifolia*, *S. spicata*.


**Rhizomes** elongated. **Stems** quadrangular, glabrous, armed with flattened prickles, terminal branches straight and often unarmed. **Leaves** ovate, lanceolate, glabrous, coriaceous or membranous, 10–23 cm x 2–14 cm, 7–9–veined, major veins connected by reticulate veins, apex acuminate, base acute or rounded, margin entire; petiole 0.5–4.5 cm long, flattened. **Inflorescences** umbellate, scales paired; **peduncle** 2–8 cm long, flattened; **pedicels** of uniform length; **tepals** of male flowers 5–7 mm long, of female flowers 3.5 mm long; **anthers** linear in top-view, shorter than the filaments. **Berries** red or orange-red when ripe, not glaucous, ovoid, 10–12 mm in diameter. – Fig. 5.

**Notes.** — I revised the original specimens of *Smilax officinalis* and *S. longifolia* (reported from Brazil and Venezuela); both species display identical stamens and berry
Fig. 5. *Smilax officinalis* – A: fruit bearing branch; B: pistillate inflorescence; C: pistillate flower; D: infructescence; E: seeds; F: staminate inflorescence; G: staminate flower; H: stamen; I: stem; J: stem with wings. – Drawn by C. Hillmann-Huber from Croat & Hannon 63446 (MO), van der Werff & Herrera 7114 (MO), de Nevers & Cavagnaro 4800 (MO), Ferrufino & Hernández 453 (B), Ferrufino & al. 380 (B) and Ferrufino 421 (B).
colour. However, the stems are different. *S. longifolia* has small, recurved, evenly dispersed prickles on the stems, whereas *S. officinalis* has large, straight and scattered prickles. Both are deemed to be closely related.

The holotype of *Smilax barbillana* at W is missing; the isotype at US was selected as lectotype, because the specimen has male flowers.

**Distribution and habitat.** — Nicaragua, Costa Rica, Panama, Colombia (Fig. 6); humid and montane forest, open areas, roadsides, 50–900 m.

**Common names.** — “Zarzaparrilla”, “sarsaparrilla”, “Saskecha” (for the bribri, in Costa Rica) (Ferrufino & Gómez-Laurito 2004).

**Selected specimens examined.** — **COLOMBIA:** Antioquia, Vereda Venados, P. N. Las Orquídeas, Quebrada Las Manzaneras, 3°31’N, 76°18’W, 800–1000 m, 1.1.1995, Pipoly & al. 18238 (MO); Chocó, area of Baudó, 8.2.1967, Fuchs & Zanella 21831 (U); Quindío, Salento, 2450 m, 1.7.1984, Rentería 3351 (MO). — **COLOMBIA** R. de Nevers & Cavagnaro 4133 (MO, INB); San José, Mora, Finca El Rodeo, Fila Diamante, 9°41’N, 79°57’W, 600–700 m, 20.2.1998, de Nevers & Cavagnaro 4800 (MO, F); Darién, Chiriquí, 9°45’N, 82°15’W, 1000–1200 m, 26.9.1976, Correa & al. 2919 (PMA), Panama, P. N. Altos de Campana, 8°41’N, 79°57’W, 600–700 m, 20.2.1998, Gallo & al. 4133 (F); Veraguas, 6.4 km outside of Santa Fe, 5.5.1977, Folson 2977 (MO).


≡ *Smilax utilis* Hems. in Hooker’s Icon. Pl. 26: ad t. 2589. 1899 [non C. H. Wright 1895]. – Lectotype (designated here): “Sarsaparilla from Jamaica Botanical Dept.,” 5.1898, Morris (K 524863 [O]); isolectotype: K 524864 [st.]).


Rhizomes elongated. Stems quadrangular, glabrous, armed with flattened prickles, terminal branches straight, often unarmed distally. Leaves ovate to lanceolate, glabrous, coriaceous or membranous, 6–32 × 3–24 cm, 7–9–veined, major veins connected by reticulate veinlets, apex acuminate, base cordate or rounded, margin entire; petiole 0.5–4 cm, flattened, sheaths spinulose. Inflorescences umbellate, scale single; peduncle 1.5–10 cm, flattened; pedicels of uniform length; tepals of male flowers 2.5–3.5 mm long, of female flowers c. 2 mm long; anthers ellipsoid, longer than the filaments. Berries black or dark maroon when ripe, not glaucous, ovoid, 1–1.5 cm in diameter.

**Affinities.** — Killip & Morton (1936) stated that *Smilax regelii*, *S. aristolochiifolia* and *S. vanilliodora (= S. officinalis)* are, without doubt, closely related. *S. regelii* has sharply quadrangular stems and branchlets and can thus be clearly separated from *S. aristolochiifolia*, which has subterete or rounded-quadrangular stems. In the latter species, the berries are black, whereas in *S. aristolochiifolia* and *S. officinalis* they are red. In *S. aristolochiifolia*, the anthers, which are smaller then the filaments, are another useful feature to distinguish these species from each other. However, the species with (more or less) quadrangular stems offers only few diagnostic features, which is complicated by the fact that it is virtually impossible to identify sterile material accurately. Unfortunately, the majority of herbarium specimens is sterile.

**Distribution and habitat.** — Mexico to Honduras (Fig. 6); wet forest, premontane wet forest, pine-oak forest, 50–800 m.

**Note.** — Applequist (2005) concluded that no original Regol material of *Smilax grandifolia* can be located and
thus designated a neotype, acknowledging that the specimen had probably been seen by Regel and presumably originates from Central America.


Selected specimens examined. — BELIZE: Jacinto, creek, 50 ft, 28.4.1934, Schipp S-707 (F, G, K); Cayo, Ix Chel Farm, 17°61’N, 89°04’W, 1.12.1993, Warrior & Romero 1864 (MO); Toledo, San Antonio-Punta Gords road, 14 miles, 7.4.1949, Gentle 6702 (F, MICH, NY). — COSTA RICA: Cartago, Turrialba, Finca Aravat, tramo los Morados, Tayutic, 9°51’N, 83°54’W, 27.10.2000, Masis 54 (HULE); Limón, Talamanja, Reserva Indígena kekoldi, 9°39’N, 83°6’W, 29.11.2001, Masis 39 (HULE). — GUATEMALA: Alta Verapaz, along Río Sebol between Sebol and Carrizal, north of Sebol, 200–300 m, 18.4.1942, Steyermak 45745 (F); Chimaltenango, Quisache, 1800 m, 5.–6.1.1939, Standley 62025 (F); Huehuetenango, Nentón, orilla del Río Nentón, 800 m, 1.12.1996, Castillo & al. 2804 (F); Izabal, Bay of Santo Tomás, between Escobas and Santo Tomás, 2 m, 13.4.1940, Steyermark 39223 (F); Petén, Santa Elena, en orillado el camino para la Candelaria, a km 9, 19.10.1970, Tún Ortíz 1382 (F, MICH, US); Sololá, Santo Tomás, 26.3.2000, de McVeegan 253 (HULE). — HONDURAS: Altántida, Tela, Lancellata, 20–600 m, 6.12.1927–20.3.1928, Standley 52745 (US); Colón, Trujillo, rio Silin, 15°55’47’’N, 85°53’29’’W, 19.5.1980, Saunders 285 (MO). — MEXICO: Chiapas, Tuxtla, Monte Grande, 7.11.1984, Ventura & López 636 (F); Hidalgo, Jacala, near km 327 on highway between Santa Ana and Chapulhuacán, 12.7.1948, Moore Jr 3960 (A); Oaxaca, Uxpanapa Region, 1.1 mi S of Esmeralda, 17°10’N, 94°45’W, 100 m, 19.1.1987, Croat & Hannon 63289 (F); Tabasco, Lomas de San Sebastián, 18.3.1889, Rovirosa 402 (NY, US); Veracruz, Jesús Car-

Fig. 6. Distribution of Smilax regellii (circles) and S. officinalis (triangles).
ranza, 17°16’N, 94°40’W, 120 m, 10.4.1982, Vásquez & al. V-2404 (NY); some km before Montepio, 18°38’N, 95°05’W, 2.5.1980, Rooden 801 (U). — NICARAGUA: Río San Juan, Reserva Indio-Maíz, Municipio de el Castillo, 11°5’N, 84°15’W, 24.2.1997, Rueda 6292 (HULE).

IV. Hispida group

Plants glabrous and armed with needle-like prickles; leaves glabrous, drying dark green or dark grey, margin sometimes minutely serrulate; inflorescence racemose; tepals c. 4–5.5 mm long; berries black.


= Smilax cordifolia var. papantlae A. DC. in Candolle & Candolle, Monog. Phan. 1: 84. 1878. – Lectotype (Killip & Morton 1936: 279): same as for Smilax sylvatica, above (B†).


= Smilax densiflora var. christmaricensis A. DC. in Candolle & Candolle, Monogr. Phan. 1: 89. 1878. – Holotype: Mexico, San Miguel, 1849, Christmas (B†); lectotype (designated here): US 1635976 [9 fragm.]).


Rhizomes elongated. Stems terete, obliquely angular or quadrangular, glabrous, armed with blackish, slender, acicular prickles, terminal branches straight. Leaves ovate, lanceolate, glabrous, membranous, 5–13×2–6 cm, 7–9–veined, major veins connected by reticulate veinlets, apex acuminate, base acute or rounded, margin entire or minutely erose–denticulate; pediole 0.4–1.5 cm long, flattened, purple to reddish. Inflorescences umbellate, solitary, scales paired; peduncle 0.8–3.5 cm long, flattened; pedicels of uniform length; tepals of male flowers 4–6 mm long, of female flowers 2.5–3.5 mm long; anthers linear in top–view, shorter than filaments. Berries black when ripe, not glaucous, ovoid, 6–8 mm in diameter.

Smilax moranensis can be identified by its terete stems, blackish needle-like prickles, petioles shorter than its peduncles and black berries.

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Distribution and habitat. — Mexico to northern Nicaragua (Fig. 7); pine-oak forest, semi-evergreen seasonal forest, 800–1500 m.

Notes. — Candolle (1878), Killip & Morton (1936) and Huft (1994) noted that the examined specimens of Smilax moranensis are minutely erose-denticulate on the leaf margin. Killip & Morton (1936) contended that the key characteristics distinguishing S. moranensis from S. jalapensis are only minor, but even so, they believed that they could in fact be two different species. My critical analysis of the material, however, revealed, that both species cannot be distinguished. I therefore sunk S. jalapensis in the synonymy of S. moranensis.

In the protologue of Smilax jalapensis, Schlechtendal (1845) cites three syntypes collected in Mexico by Schiede. One of the three specimens in HAL carries fruits, the second one is sterile and the third is a seedling. The specimen with the female flowers and immature fruits was selected as lectotype.

Schlechtendal (1845) described Smilax glaucocarpos and S. jalapensis and determined that they differ in that the first is armed, has terete stems, straight prickles, leaves with 5 veins and subglobose berries. The second species has few straight prickles, 7-veined leaves and obovate berries. In the protologue of S. glaucocarpos, two syntypes collected by Ehrenberg in Mexico are mentioned. The first is from “Tierra Fria ad hacienda del Carmen” (with fruits) and the second from “Mineral del Monte” (with flowers) (Schlechtendal 1845). In my opinion, S. glaucocarpos and S. jalapensis are not different and equally conspecific with C. moranensis. The fruiting specimen was selected as lectotype of the name S. glaucocarpos because it is more representative of the species.

The holotypes of Smilax schiedeana and S. sylvatica at B were destroyed. I have chosen a specimen referred to by Candolle (1878: 84) as lectotype of S. schiedeana, which is deposited at HAL (Code Art. 9.10, McNeill & al. 2006). For S. sylvatica, I selected a syntype as lectotype that belongs to the specimen HAL 101519 (Art. 9.12, McNeill & al. 2006). Both names are considered as synonyms of S. moranensis.

In the protologue of Smilax moranensis var. mexiae, Killip & Morton (1936) noted that this conspicuous variety is recognisable by its relatively broad, cordate-based leaves and slender fruiting pedicels. Here, this taxon is treated as a synonym of S. moranensis, because its features fall within the continuous variation of S. moranensis.

The type specimens of Smilax erythrocarpa and S. densiflora var. christmarensis, both located at B, were
I considered the variety as a synonym of Smilax var. christmarensis. Both are also considered as synonyms of Smilax moranensis.

Candolle (1878) published Smilax invensuta var. armata and cited two syntypes, Galeotti s.n. and Linden 48. Kil- lip & Morton (1936) designated Galeotti s.n. as lectotype. I considered the variety as a synonym of Smilax moranensis.

Both syntypes of Smilax moranensis var. schaffneriana, Schaffner 159 (B) and 183 (B), were destroyed. Killip & Morton (1936) chose Schaffner 159 as lectotype. A duplicate of Schaffner 183, located at MEXU, was established to be Ranunculus hooheri Schlecht. (Ranunculaceae).

The holotype of Smilax invensuta at B was destroyed. I selected an isotype deposited at HAL (Art. 9.10, McNeill & al. 2007) as lectotype.

Schlechtdell (1845) described Smilax acutifolia on two syntypes, Schiede and Ehrenberg, both at HAL. Here, the Schiede species is designated as lectotype.

**Common names.** — “Palo de vida”, “bejuco de la vida” in Mexico; “Kixcul”, “zarzaparrilla”, “corona de Cristo” in Guatemala and Honduras (Killip & Morton 1936; MacVeán 2006; Nelson-Sutherland 2008).

**Selected specimens examined.** — EL SALVADOR: Santa Ana, Cordillera Miramundo, Mountain of Montecristo, 2000–2200 m, 27–31.1.1966, Molina & al. 16959 (EAP); P. N. Montecristo, 14°25’N, 89°21’W, 1900 m, 24.1.2002, Monterrosa 159 (B). — GUATEMALA: Alta Verapaz, Coban, 4300 ft, 3.1886, von Türkheim 890 (US); Zacapa, upper slopes along Río Repollal to summit of mountain, 2100–2400 m, 12.–13.1.1942, Steyermark 42544 (F). — HONDURAS: Francisco Morazán, P. N. La Tigra, 22–25 km NE of Tegucigalpa, 14°12’N, 87°07’W, 1850–2125 m, 1.2.1987, Croat & D’Arcy 64057 (EAP); Lempira, P.N. Celaque, El Súcte, 7 km al NE de San Manuel Cohohete, 14°33’N, 88°42’W, 2400 m, 16.2.1993, Mejía 270 (EAP, TEHF). — MEXICO: Villa Flores, 4.43 km al SE of Tres Picos, Reserva de la Biósfera La Sepultura, 16°12’0”N, 93°36’15”W, 1950 m, 19.4.2002, Calónico 22821 (MO); Coahuila, about 35 miles east of Saltillo, 5–6 miles east of El Limos, 2300–2400 m, 27.5.1951, McVeagh & Hoover 12332 (G); Hidalgo, Zacualtipán, Río Teponax, 2000 m, 2.7.1947, Moore Jr. 3372 (GH); near Trinidad Iron Works, 5800 ft, 1.5.1904, Pringle 8898 (F, NY, U, US); Jalisco, Reserva Biosfera Sierra de Manantlan, 10.6 km N of El Terreno on the road to La Laguna, c. 35.5 km (by air) due NW of Colima, c. 38 km (air) WSW of Nevado Colima, 19°29’15”N, 103°57’53”W, 2463 m, 23.3.1989, Weter & al. 2053 (F, GH, UC); Nayarit, Tepic, Cerro San Juan, 21°29’N, 104°54’W, 1400 m, 17.10.1989, Tellez & al. 12372 (MO); Nuevo León, Villa Santiago, Cañón Marisio Abajo Rancho Las Adjuntas, 27.6.1935, Mueller 2067 (A); Morelos, near Cuernavaca, 6000 ft, 18.5.1898, Pringle 2661 (US); Oaxaca, Puebla, Teotitlán del camino, Puerto de la Soledad por la carretera de Huautla de Jiménez, 14.7.1991, Gonzalez-Villarreal & al. 4170 (GH); Puebla, along Tehuacán-Orizaba highway on the western slopes below Puerto del Aire, 1800–2200 m, 18.7.1961, Smith & al. 3899 (G, GH); Guanajuato, Xichú, El Puerto Chiquito, 2300 m, 23.4.1990, Ventura & López 7905 (F); Sinaloa, Sierra Madre, 7.1897, Rose 1636 (NY, US); Sonora, Cañón International, 23.8.1940, White 3508 (GH); Tamaulipas, near large, loose rock formation near Rancho Gómez Farias, 4.1960, Duke 3555 (MO); Veracruz, Huatu- sco, 1 km NW of Elotepec along (impassable) road to Chichiquila, 19°12’N, 97°02’W, 1700 m, 17.1.1984, Nee & Taylor 28895 (F). — NICARAGUA: Matagalpa, cloud forest at “Disparate de Potter” near Sta María de Ostuma, Cordillera Central de Nicaragua among Matagalpa and Jinotega, 1500 m, 20. & 24.2.1963, Williams & al. 25066 (EAP, G); Jinotega, Wiwilí, Reserva Natural Cerro Kilambé, Comunidad Aguas Rojas, 13°33’N, 85°42’W, Rueda 16736 (HULE).

**V. Schomburgkiana group**

Plants glabrous, stems terete or angular, muricate or verrucose; leaves glabrous; inflorescences mostly solitary, sometimes in racemes; tepals c. 2 mm long; berries red or purple.


Rhizomes unknown. Stems angular, verrucose, pubescent of hispid hairs, prickles fine, needle-like, terminal branches straight. Leaves lanceolate, glabrous, membranous, 5–20 × 1.5–5 cm, 5-veined, tertiary venation reticulate, apex acuminate, base acute or rounded, margin ciliate or entire; petiole 0.5–2 cm long, terete, muricate. Inflorescences umbellate, solitary, scale simple; peduncle c. 4 cm long, muricate; pedicels of different lengths; tepals of male flowers 2.5–3 mm long, of female flowers 2.5 mm long; anthers linear in top-view, as long as the filaments. Berries red to purple when ripe, not glaucous, ovoid, 0.8–10 mm in diameter.

Affinities. — Smilax compta is similar but not closely related to S. spinosa. From the latter species is can be clearly distinguished by its verruculose stems.

**Distribution and habitat.** — Panama (Fig. 7); wet forest, 30–1600 m.
Additional specimen examined. — PANAMA (Fig. 7); Darien, Borbua, Chucunaque, Yaviza, 8°11’N, 77°42’W, 5.6.1959, Stern & al. 97 (MO).


= Smilax schomburgkiana var. gracilis A. DC. in Candolle & Candolle, Monogr. Phan. 1: 156. 1878. – Holotype: Suriname, “ad ripas fluviorum”, Kapppler 1202 (G-DC 25139 [!] ; isotypes: M 124483 [!] ; P ex CN).


Rhizomes tuberous. Stems terete, verruculose, prickles straight, terminal branches straight, axillary scales double, overlapping on the stem. Leaves ovate, lanceolate, glabrous, membranous, 8–20 x 3–7.5 cm, 5–7–veined, connected by reticulate veinlets, apex acute, base acute or rounded, margin entire; petiole 1.8 cm long, rounded, reddish. Inflorescences umbellate, arranged in racemes, rarely solitary; bracts prominent, perennifolious, scales paired; peduncle 1–4.5 cm long, flattened, thick; pedicels of uniform length; tepals of male flowers 2.5 mm long, of female flowers 1.5–2 mm long; anthers linear in top-view, shorter than the filaments. Berries orange when ripe, not glaucous, ovoid, 8–10 mm in diameter. – Fig. 8.

Smilax schomburgiana is characterised by verruculose stems, its racemously composed inflorescences, c. 2 mm long tepals and orange berries.

Distribution and habitat. — Ecuador, Peru, Venezuela, Guyana, French Guiana, Suriname, Brazil (Fig. 7); roadsides, open areas, evergreen seasonal forest, lower montane forest, 50–500 m.

Notes. — Kunth (1850) described Smilax schomburgkiana as a glabrous, unarmed plant with straight, terete stems and ovate-oblong, 5-veined leaves. The type specimen at B has no fruits, only peduncles and sparsely prickled branches.

Andreata (1997) proposed Smilax schomburgkiana, S. syphilitica var. aequatorialis, S. pseudosyphilitica var. pseudosyphilitica, S. aequatoriales, S. schomburgiana, S. schomburgiana var. gracilis and S. schomburgiana var. foliosa as synonyms of S. syphilitica. She asserts that several authors have tried to distinguish S. schomburgkiana from S. syphilitica based on the tuberculate stems of S. schomburgkiana. Nevertheless, in this study S. schomburgkiana and S. syphilitica are recognised as two distinct taxa, whereas S. pseudosyphilitica, S. schomburgkiana var. foliosa and S. schomburgiana var. gracilis are treated as synonyms of S. schomburgkiana.

Gleason (1929) suggested that the habitat of Smilax latipes is very similar to that of S. schomburgiana. With regard to morphological features, I have found S. latipes to have longer flowers and broader filaments than S. schomburgiana. In the type specimen, the tepals are c. 2.5 mm long, whereas in Flora of Surinam, Sipman (1979) described S. latipes as having tepals c. 5 mm long and orange fruits. It is therefore quite likely that the specimens examined by Sipman were confused with S. febrifuga. In the present study, S. latipes is considered a synonym of S. floribunda.

Smith (1940) introduced Smilax immersa, distinguishing it from S. schomburgkiana and S. pseudosyphilitica by the presence of immersed veinlets. I examined the type of S. immersa and consider the name as a synonym of S. schomburgkiana.


Selected specimens examined. — BRAZIL: Amazonas, along Rio Castanho tributary of Rio Padaui, upper Rio Negro Basin, 100–140 m, 16.–24.2.1946, Cardona 1380 (US); Bahia, Ilhéus, Rd from Ilhéus to Serra Grande, 14°41’S, 39°09’W, 5.5.1992, Thomas & al. 9119 (MO); Espirito Santo, Domingos Matins, BR 262 km 35, localidade Santa Isabel, 11.5.1993, Pirani & al. 2801 (K); Pará, Alemquer, 15.8.1943, Baldwin Jr. 2968 (US); Rondônia, Santa Barbara, 9°10’N, 63°07’W, 26.5.1982, Teixeira & al. 768 (MO, U). — COLOMBIA: Cascasia, Hacienda “Quinteiro” 8°04’N, 75°05’W, 100 m, 6.9.2000, Fonsegra & Benavides 7234 (MO). — FRENCH GUIANA: Mont, Saint-Marcel, zone centre-est du massif, 2°23’20''N, 53°01’20’’W, 500 m, 20.7.2002, Gavrilov & al. 15373 (B, CAY, K); Cayenne, Sainte Rupununi, Kuyuwini Landing, Kuyuwini Creek, 9°04’N, 53°05’W, 100 m, 6.9.2000, Fonsegra & Benavides 7234 (MO). — FRENCH GUIANA: Mont, Saint-Marcel, zone centre-est du massif, 2°23’20''N, 53°01’20’’W, 500 m, 20.7.2002, Gavrilov & al. 15373 (B, CAY, K); Cayenne, Sainte Rupununi, Kuyuwini Landing, Kuyuwini River, 2°05’N, 59°15’W, 150–250 m, 13.10.1992, Jansen-Jacobs & al. 2901 (B, CAY). — GUAYANA: Cuuyuni-Mazaruni, N side of Karawtipu, c. 470m, 9.9.1960, Cowan & Soderstrom 2116 (K, US); Potaro-Siparuni, c. 4.5 miles above Kaieteur Falls c. 1400 ft, 9.3.1962, Cowan & Soderstrom 2116 (K, US); Potaro-Siparuni,
Fig. 8. *Smilax schomburgkiana* – A: flowering branches; B: inflorescence with a pair of scales; C: pistillate inflorescence; D: pistillate flower; E: infructescence; F: seeds; G: staminate inflorescence; H: staminate flower; I: stamen; J: stem. – Drawn by C. Hillmann-Huber from Skog & al. 7510 (CAY), Granville 7194 (CAY), Stege & al. 371 (CAY) and Oldeman 1999 (CAY).

### VI. Spinosa group

Plants armed with straight prickles, terminal branches zigzag; leaves glabrous, often with prickles on the midrib, margin entire or dentate; tepals c. 2 mm long; berries purple or black.


Rhizomes elongated. Stems obously angular, terete near the apex, glabrous, armed with flattened prickles, terminal branchlets straight, scarcely prickly. Leaves ovate to lanceolate, glabrous, coriaceous or membraneous, 10 – 22×4 – 12 cm, 7 – 9-veined, major veins connected by reticulated veinlets, with prickles on the main veins; apex acuminate, base cordate or hastate, margin of entire, petiole 1 – 4 cm long, flattened. *Inflorescences* umbrellate, solitary; rarely to few or several in racemes, scale single; *peduncle* 2 – 4.5 cm, flattened; *pedicels* of uniform length; *tepals* of male flowers 3.5 – 4 mm long, of female flowers 3.5 – 4 mm long; *anthers* linear in top-view, longer than the filaments. *Berries* red when ripe, not glaucous, globose, 12 – 15 mm in diameter. – Fig. 9.

**Notes.** — Miller (1768) described *Smilax aristolochifoilia* based on sterile material. He noted that this species has terete, armed stems and ovate-lanceolate leaves. The specimen *Houstoun, BM 678842*, is selected as lectotype.

**Distribution and habitat.** — Mexico to Costa Rica (Fig. 10); evergreen seasonal and humid tropical forest, 100 – 800 m.

**Variability.** — The species shows features intermediate between *Smilax spinosa* and *S. officinalis*, which suggests that it is perhaps a hybrid between these two species.

**Common names.** — “Es ‘co’ ka” in Belize, “Cocolme-ca”, “cocomeca” in Guatemala (Killip & Morton 1936; MacVean 2006).

Fig. 9. *Smilax aristolochiifolia* – A: fruit bearing branches; B: pistillate inflorescence; C: pistillate flower; D: infructescence; E: seeds; F: staminate flowering branches; G: staminate inflorescence; H: staminate flower; I: stamen; J: stem; K: rhizome. – Drawn by P. Adam from Chiang 253 (F), Cook & Martin 214 (US), Contreras 426 (F), Rovirosa 402 (US), Hinton 14038 (US) and Molina 15409 (F).
12. **Smilax guianensis** Vitman, Summa Pl. 5: 422. 1791
≡ **Smilax macrophylla** Willd., Sp. Pl. 4: 786. 1806. – Holotype [icon]: “Smilax caule inermi, foliis cordatis” in Plumier, Pl. Amer.: t. 84. 1756. [σ!].
≡ **Smilax megalophylla** Duhamel, Traité Arbr. Arbust., ed. 2, 1: 244. 1803. – Holotype: [no label data] (P-J 3022 [st.!]).

**Rhizomes** elongated. **Stems** terete, glabrous with robust, short prickles, terminal branches zigzag, angular; axillary scale single. **Leaves** ovate, cordate, 9—29 × 4—16 cm, 5—7-veined, major veins connected by reticulate veinlets, apex acute, rarely obtuse, base cordate, acute, margin entire, glabrous, coriaceous or membranaceous; **petiole** 1.2—1.5 cm long, terete. **Inflorescences** umbellate, solitary, scale single; **peduncle** 2.5 cm long, flattened; **pedicels** of different lengths; **tepals** of male flowers 2.5—3 mm long, of female flowers 2 mm long; **anthers** ellipsoidal, as long as the filaments. **Berries** black when ripe, globose, 8 mm in diameter. – Fig. 11.

**Affinities.** — **Smilax guianensis** has often been mistaken for *S. solanifolia* but I consider them as separate species.

**Distribution and habitat.** — Puerto Rico, Lesser Antilles, Guyana (Fig. 22); humid forest, 0—300 m.

**Note.** — Acevedo-Rodríguez (2005) stated that the syntypes of **Smilax guianensis** var. *subarmata* were destroyed at B. However, the specimens *Sintenis* 4943 and 5932 are extant at B. *Sintenis* 5932 is designated as lectotype and the name considered a synonym of *S. guianensis*.


**Selected specimens examined.** — **ANTIGUA:** Shambro Hills, 1849, Wallschlägel 6 (M); Macarthy Hills, 1000', 100 m, 22.5.1986, *Schatz & al* 1132 (MO); Veracruz, Ozuluama, Isla Juana Ramírez, 21°48’N, 97°40’W, 9 m, 5.3.1980, *Avendaño & al.* 680 (F).
Fig. 11. *Smilax guianensis* – A: fruit bearing branches; B: pistillate inflorescence; C: pistillate flower; D: infructescence; E: seeds; F: staminate flowering branches; G: staminate inflorescence; H: staminate flower; I: stamen; J: stem and rhizome. – Drawn by P. Adam from *Duss 1047, 3864 (NY), Hodge 331 (NY) and Cooper III 35 (NY).*


Rhizomes elongated. Stems terete or angular, glabrous, prickles flattened and robust, terminal branches zigzag, often unarmed in the apical part of the branches; axillary scale single on the stem. Leaves ovate, lanceolate, glabrous, coriaceous or membraneous, 7–20×3–8 cm long, 5-veined, major veins connected by reticulate veinlets, apex acute, base rounded or subcordate, margin entire, of- ten with prickles on the midrib; petiole 0.6–1.5 cm long, canaliculate. Inflorescences umbellate, solitary, scale single; peduncle 3–5 mm long, flattened; pedicels of different lengths, long; tepals of male flowers 2.5 mm long, of female flowers 1.5–2 mm long; anthers linear, as long as the filaments. Berries purple to black when ripe, not glaucous, ovoid, 5–7 mm in diameter. – Fig. 12.
Distribution and habitat. — Mexico to Peru, Venezuela, Guyana, French Guiana, Suriname, Trinidad and Tobago, Jamaica (Fig. 12); wet and montane forest (in Central America: mostly dry forest). 100–800 m.

Notes. — *Smilax spinosa* is a species easily recognisable by its small flowers, petioles longer than the peduncles and the zigzag terminal branches. In Central America, it is mostly found in the dry tropical and subtropical forests. It is a species with a wide morphological variation and for this reason, some morphs have been described as separate species, most of them based on the size and texture of the leaves.

Macbride (1936) published *Smilax vaga* as a new species and characterised it by terete or subangular stems with short, small prickles. My examination of the type material confirmed that the terminal branches of *S. spinosa* might display prickles of the above-mentioned form;
however, I have also seen specimens in which prickles are completely absent. Therefore, *S. vaga* is treated as a synonym of *S. spinosa*.

Macbride (1936) described *Smilax williamsii* based on sterile material, considering its foliage to be entirely distinct from other species. However, I cannot see any discontinuity towards *S. spinosa* and consider both as conspecific.

The type of *Smilax mexicana* at B was destroyed in 1943, but there are isotypes at K, MO and HAL. I chose the specimen at HAL (101520, 2 sheets) as lectotype (see Art. 9.10 of the Code) because the sheets bear labels in the specimen at HAL (101520, 2 sheets) as lectotype (see 1943, but there are isotypes at K, MO and HAL. I chose discontinuity towards distinct from other species. However, I cannot see any mala*).


**Selected specimens examined.** — **BELIZE:** Corozal, 1 mi. north of Buena Vista, 100 ft, 23.6.1975, Croat 24962 (MO); Satun Creek, Silk Grass Creek Reserve, 20.9.1939, Feddema 1946 (MO); Zelaya, Experiment Station El Recreo on the Pacific escarpment, 3 km S of Alotenango on highway 14, 14°25′N, 90°45′W, 1500 m, 1. – 2.8.1965, Roe & al. 803 (G); Colón, camino Platanares, Fca Sto Tomás, 14°63′N, 90°51′W, 1300 m, 13.3.2001, Fahrens & Martínez 11321 (CR). — **GUAYANA:** West Demerara, c. 7.6 km S of Time-hri Airport turnoff, 6°29′55″N, 58°13′09″W, 21.5.1997, Taylor & al. 12088 (MO). — **HONDURAS:** Gracias a Dios, Barra Platano, 15°53′N, 84°42′W, 25.11.1976, Fryxell 2839 (EAP); Intibucá, Valle de Otoro, c. 10 km W of Jesús de Otoro, Río Sirima, 13°43′N, 88°06′W, 800 m, 3.6.1991, Davide 34957 (TEFH, EAP); Yoro, Quebrada El Otolito, 15 km by Yoro, 1100 m, 8.5.1956, Molina 6683 (EAP). — **MEXICO:** Oaxaca, Chiltepec, 13, 24.4.1967, Martínez 1376 (CR, U); Quintana Roo, Coba, in forest on bank of Lake Macanxoc, 6. – 7.1938, Lundell & Lundell 7620 (A, MICH); Yucatán, Chichen Itza, 6. – 7.1938, Lundell & Lundell 7521 (A, F, MICH). — **NICARAGUA:** Chinúe, Reserva Bosawas, Municipio de Bocay, Río Bocay, Salto Cayascón, 13°14′N, 86°13′W, 2.12.2001, Rueda 16811 (HULE); Rivas, Isla de Ometepe, Municipio de Moyogalpa, Volcán Concepción, subiendo por La Concepción, 12°32′N, 85°38′W, 200 – 900 m, 27.10.2001, Rueda 16712 (HULE); Zelaya, Experiment Station El Recreo on the Río Mico, 12°10′N, 84°18′W, 30 m, 1.6.1985, Davide & al. 30748 (CR, MO). — **PAÍS:** Chiriquí, mas o menos 5.4 km del Hato de Volcan en el camino a Las Lagunas , 26.4.1969, Correa & Lazor 1466 (PMA); Panama, Barro Colorado Island, 10.4.1969, Foster 685 (PMA); Veraguas, S of Santa Fe, c. 450 m, 17.11.1973, Neve 8013 (PMA). — **PERU:** Amazonas, Chachapoyas Kuelap, Fortress, 6°25′13.5″S, 77°47′56.8″W, 3000 m, 16.5.2001, Henning & Schneider 252 (B); Loreto, Requena, Yarina (Rio Tapiche), 5°05′S, 73°50′W, 180 m, 11.1.1984, Vásquez & al. 4872 (USJ); Madre de Dios, Tambopata, Santuario Nacional Pampas del Heath, Rio Heath, 12°39′23″S, 68°44′13″E, 210 m, 22.5.1996, Aguilar & Castro 766 (USJ). — **SURINAME:** Sipalivini, N of S-camp, southern Sipalivini, 19.1.1970, Oldenburger & al. 1031 (BBS). — **TRINIDAD AND TOBAGO:** Trinidad, Rockley Vale, 21.4.1910, Broadway 3539 (BM).

**VII. Havanensis group**

Plants armed with straight prickles, terminal branches zigzag and angular or quadrangular; leaves glabrous, margin dentate, sometimes entire; tepals c. 2 mm long; berries purple or black.


= Smilax ilicifolia Kunth var. sublappacea A. DC. in Candolle & Candolle, Monogr. Phan. 1: 125. 1878. – Holotype: Cuba, “Havane”, 1833, Sagra 567 (G-DC 14736 [st.]).

Rhizomes unknown. Stems terete, glabrous, armed with small prickles. Leaves ovate, cordate, glabrous, coriaceous, 5–8×2–5 mm, 5–7-veined, major veins thin and connected by reticulated veinslets, prominent venation on the upper surface, apex mucronate, base rounded or cordate, margin deeply spinulose; petiole 0.4–1 cm long, flattened. Inflorescences umbellate and solitary, rarely terminal, scale single; peduncle 2–10 mm long, flattened; pedicels of uniform length; tepals of male flowers 2–2.5 mm long, of female flowers 1.5–2 mm long; anthers linear in top-view, as long as the filaments. Berries black or purple when ripe, not glaucous, ovoid, 5–7 mm in diameter.

Affinities. — This species is related to Smilax havanensis. S. aquifolium can be distinguished from other Smilax species by the secondary leaf venation being distinctly grouped and reticulate, and the leaf margins being deeply spiny.

Distribution and habitat. — Cuba, Dominican Republic (Fig. 13); semideciduous and evergreen forest, serpentine lands (Fig. 13); humid forest, limestone, 0–600 m.

Selected specimens examined. — CUBA: Habana, Taburete, 28.6.1839. E. Otto 339 (B); Pinar del Rio, Las Terrazas, Loma Pelada de Cayajabos, 300–400 m, 18.3.1984, Bisse & al. HFC 51949 (B, HAJB).

15. Smilax coriacea Spreng., Syst. Veg. 2: 103. 1825. Described from Hispaniola. – Neotype (Acevedo-Rodríguez 2005) stated that Smilax havanensis and S. coriacea are easily recognised by the venation pattern. He commented that S. coriacea has interprimary veins, emerging at an angle of 45° to 90° instead of 25° to 35° in S. havanensis. This is an interesting observation with regard to the vegetative characteristics; therefore, I have also treated it as a different species in this study.

Note. — In the protologue of Smilax havanensis var. portoricicensis (Candolle 1878), the syntypes Wydler 341 (FI), collected in Puerto Rico, and Schomburgk 71 (B), collected in the Dominican Republic, are given. Wydler 341, which has male flowers, is selected as lectotype because Schomburgk 71 could not be located.


Selected specimens examined. — PUERTO RICO: Ciales, along trail Camino de la Ceiba towards Quebrada del Pozo Azul, 15.8.2001, Acevedo-Rodríguez & Vicens 11848 (MAPR); Isla Vieques, Lighthouse Peninsula, 11.2.1914, Shafer 2809 (F, NY); San Juan, Rio Piedras, 15.9.1912, Jobuston 678 (NY); Vega Baja, Bo. Algarrobo, Tortugero Lagoon Natural Reserve, 18°27′35″N, 66°25′34″W, 0 m, 20.11.2000, Breckon 6307 (MAPR); Yauco, Susúa Alta, Susúa Forest Reserve, Quebrada Peces, north side of Quebrada Peces, 18°04′10″N, 66°54′28″W, 200 m, 27.5.2001, Breckon & al. 6451 (MAPR). — VIRGIN ISLANDS: Virgin Gorda, Fishlock 138, 5.1.1919 (GH); St John, Coray Bay Quarter, 7.1.1991, Acevedo-Rodríguez & Siaca 3818 (MO).


Rhizomes unknown. Stems angular, glabrous, blackish upon drying, armed with thin and short prickles; terminal branches zigzag. Leaves lanceolate, cordate, glabrous,
membraneous, c. 5–14 × 2–9 cm, 5-veined, major veins connected by reticulate veinlets, without prominent venation on the upper surface, apex mucronate, base rounded or cordate, margin spinulose, rarely entire; petiole flattened, 0.3–0.6 cm long. Inflorescences umbellate, solitary, rarely in racemes, scale single; peduncle 2–10 mm long, flattened; pedicels of uniform length; tepals of male flowers 1.5–2 mm long, of female flowers 1.2–1.5 mm long; anthers linear in top-view, shorter than the filaments. Berries black or purple when ripe, not glaucous, ovoid, 4–7 mm in diameter. – Fig. 14.

Distribution and habitat. — Cuba (Fig. 15); secondary forest, pineland forest and serpentine, 0–1000 m.

Notes. — Smilax cristalensis is close to S. havanensis. It is characterised by the stems being verruculose, angular and blackish (in herbarium specimens) and zigzag terminal branches.

The holotype of Smilax populnea var. angustata at B has been destroyed. A specimen (with fruits) deposited at NY was selected as neotype.

Selected specimens examined. — Cuba: Guantánamo, Sierra de Imías, cabezadas del arroyo Los Cacaos, 600–700 m, 7.4.1984, Bisse & al. HFC 52432 (B, HAJB, JE); Holguín, alrededores del camino entre La Zanja y el entronque de Batista y El Oro, 2.5.1985, Álvarez & al. HFC 57385 (B, HAJB, JE); Santiago de Cuba, Sierra Cristal, subida entre la mina de Ocujal y el Altiplano de la Pradera 300–700 m, 6.1967, Bisse & Rojas HFC 04116 (B, HAJB, JE).


Rhizomes unknown. Stems terete, glabrous, armed with small, short and flattened prickles. Leaves ovate, cordate, glabrous, coriaceous, brownish or copper-coloured upon drying, 5–12×1–4 cm, 5–7-veined, major veins connected by very thin reticulate veinlets, venation on the upper surface not prominent, apex mucronate, base rounded or cordate, margin spinulose, rarely entire; petiole rounded, 0.7–0.9 cm long. Inflorescences umbellate and solitary, scale single; peduncle 2–10 mm long, flattened; pedicels
of uniform length; tepals of male and female flowers unknown; anthers linear in top-view, shorter than the filaments. Berries black or purple when ripe, not glaucous, ovoid, 6–9 mm in diameter. – Fig. 16.

Affinities. — Smilax cuprea is related to Smilax havanensis. This species can be distinguished from other Smilax species by leaves being copper-coloured upon drying.

Distribution and habitat. — Eastern Cuba (Fig. 15); secondary forest, pineland forest and serpentine, 0–800 m.

Selected specimens examined. — CUBA: Guantánamo, Baez, charrascos serpentinosos cerca del arroyo Maguana, 23.1.1977, Bisse & al. HFC 33891 (B); Holguin, Calentura del Medio, zona de Cayo Coco, 200 m, 23.4.1981, Bisse & Mory HFC 44895 (B, HAJB); Santiago de Cuba, charrascos al norte de Los Jagüeyes, 3.5.1985, Alvarez de Zayas & al. HFC 57549 (B, HAJB, JE).


Rhizomes unknown. Stems angular, verruculose, rarely glabrous, armed with small prickles, terminal branches zigzag. Leaves ovate, lanceolate, glabrous, membranaceous, 2.5–7×0.7–3.5 cm, 3–5(–7)-veined, major veins thin and connected by reticulate veinlets, venation on the upper surface prominent, rarely inconspicuous, apex mucronate, base acute, margin spinulose or entire; pedicels 0.3–0.5 cm long, rounded. Inflorescences solitary, terminal, scale single; peduncle 0.5–1.7 mm long, flattened; pedicels of uniform length; tepals of male flowers 2 mm long, of female flowers unknown; anthers linear in top-view, as long as the filaments. Berries black or purple when ripe, not glaucous, ovoid, 4–6 mm in diameter.

Affinities. — Smilax gracilior is a species close to Smilax ehrenbergiana and can be distinguished from other Smilax species by pruinose leaves and prominent secondary on the upper surface venation. Material from the Bahamas was previously identified as Smilax havanensis.

Distribution and habitat. — Endemic to central (Camaguey, Las Tunas) and eastern Cuba (Holguin, Guantánamo), Bahamas (Fig. 17); xeromorphic matorral in coastal and subcoastal areas as well as on serpentine, and in secondary forests, 0–400 m.

Common names. — “Saw-brier” in the Bahamas (information from herbarium specimen).

Selected specimens examined. — Bahamas: Abaco, 8.12.1904, Brace 1581 (F); Andros, Andros, deep creek,
Fig. 15. *Smilax cristalensis* – A: pistillate flowering branches; B: pistillate inflorescence; C: pistillate flower; D: infructescence; E: seeds. – Reprinted with permission from Ferrufino-Acosta & Greuter (2010a).
Fig. 16. *Smilax cuprea* – A: flowering branches; B: leaf; C: pistillate inflorescence; D: pistillate flower; E: infrutecence; F: seeds. – Drawn by C. Hillmann-Huber from HFC 12002, 18052, 35985, 50271, JE.
26.6.1890, Northrop & Northrop 663 (F, GH); 18.8.–10.9.1906, Brace 5089 (F); Ben Rolle, 1.1976, Nickerson s.n. (GH); 18.8.–10.9.1906, Brace 5089 (F); Eleuthera, Glass Window to Gregora Town, 18.2.1907, Britton & Millspaugh 5424 (F); Great Guana Cay, Exuma Chain, 21.–22.2.1905, Britton & Millspaugh 2889 (F); Hummingbird, behind sunover beach, 16.1.1969, Nickerson & Semple 2974 (A); Inagua, 0.6 miles SSW of Devils Point, in rocky thickets near the sea, 3.6.1974, Proctor & Gillis 33907 (A); Long Island, North End, 21.3.1907, Britton & Millspaugh 6366 (F); Nassau, 9.1.1890, Northrop & Northrop 59 (F, GH); North Caico, Kew, 1.7.1954, Proctor 9082 (A); Parrot Cay, 3.3.1911, Millspaugh & Millspaugh 9201 (F, GH, NY); South Bimini, coastal coppice along west end, 18.1.1975, Correll 44187 (NY). — Cuba: Camaguey, Cayo Paloma, Camaguey, 12.10.1909, Shafer J. A. 2570 (F, NY); Guantánamo, entre la Tinta y Jauco, 2.6.1982, Bisse & al. HFC 47406 (B, HAJB, JE); Holguin, costa entre Punta Gorda y Punta Manglito, Cabo Lucrecia, 21.10.1978, Bisse & al. HFC 38434 (B, HAJB, JE); Las Tunas, maniguas cerca de Playa Herradura, 22.4.1987, Arias & al. HFC 61688 (B, HAJB, JE).


= Smilax havanensis f. inermis O. E. Schulz in Urban, Symb. Antill. 5: 41. 1903. — Holotype: Cuba, Sagra (B†).

Rhizomes elongated. Stems terete or angulose at the apical branches, glabrous, sometimes verrucose, armed with small, short, flattened prickles; terminal branches zigzag. Leaves variable, oblong, elliptic, ovate to lanceolate, glabrous, coriaceous, c. 10 × 2 cm, (5–)7–11-veined, major veins strong, connected by reticulate veinlets, apex mucronate, base rounded or cordate, margin deeply sinuospulate or entire; petiole flattened, 0.4–1 cm long. Inflorescences umbellate, solitary, rarely in racemes, scale single; pedicels 2–10 mm long, flattened; pedicels of uniform length; tepals of male flowers 1.5–2 mm long, of female
flowers 1.5 mm long; *anthers* linear in top-view, as long as the filaments. *Berries* black or purple when ripe, very often angulose due to the presence of three seeds, reddish, not glaucous, ovoid, 4–6 mm in diameter. – Fig. 18.

**Affinities.** — *Smilax havanensis* can be distinguished from other *Smilax* species by its prickly stems, zigzag angular branches, the often spinulose leaf margin, tepals of c. 1.5–2 mm and black berries.

**Distribution and habitat.** — USA (southern Florida), Bahamas, Cayman Islands (Fig. 13); humid forests, limestone, 0–800 m.

**Variability.** — *Smilax havanensis* has a wide phenotypic plasticity, particularly regarding the leaves. Various leaf characteristics (e.g. shape, size) may respond to environmental conditions.

**Note.** — In his “Selectarum Stirpium Americanum”, Jacquin pointed out that *Smilax havanensis* was originally found in Havana. Jacquin’s drawing of this species is based on a simple, 7-veined, ovate leaf with spinulose margins. As D’Arcy (1970) stated, there is no “Jacquin Herbarium” and his specimens can be found at W, LINN or in other European herbaria. The type of *Smilax havanensis*, however, could not be located. Because no original material of *Smilax havanensis* could be found, this name is lectotypified with Jacquin’s illustration.

**Common names.** — “Alambrillo”, “bejuco de ñame”, “bejuco de china” in Cuba; “china-brier” in the Bahamas; “tsiguina”, “tsiguna” in Haiti; “wire wiss” in the Cayman Islands; “bejuco de ñame” in Cuba; “china-brier” in the Bahamas; “bejuco de china” in Cuba; “salsepareille bâtard” in Martinique (León 1946; Proctor 1984).

 Selected specimens examined. — BAHAMAS: Abaco, 17.12.1904, Brace 1741 (NY); Andros, Island, Big Wood Cay, N.E. tip, 3.1966, Dawson 267036 (US); Cat Island, the Bight and vicinity, 1–6.3.1907, Britton & Millsbaugh 5866 (F); Mariguana Islands, Abraham Bay and vicinity, 6–7.12.1907, Wilson 7504 (F, NY); New Providence, coastal thicket, Ft. Montague, 23.8.1904, Britton & Brace 177 (F, NY); Noth Bimini, in coppice on white-stone, 0–800 m.


Rhizomes unknown. Stems angular, verruculose, armed with thin and short prickles; terminal branches zigzag. Leaves lanceolate, cordate, glabrous, coriaceous, brownish, c. 5–14 × 2–9 cm, 5-veined, major veins connected by reticulate veins, venation on the upper surfaces not prominent, apex mucronate, base rounded, margin with straight, blackish spines, deeply spinose; petiole flattened, 0.3–0.6 cm long. Inflorescences umbellate, solitary, scale single; peduncle 2–8 mm long; flattened; pedicels of uniform length; tepals of male flowers 1.5–2 mm long, of female flowers 1.2–1.5 mm long; *anthers* linear in top-view, shorter than the filaments. *Berries* black or purple when ripe, not glaucous, ovoid, 4–6 mm in diameter.

**Affinities.** — *Smilax ilicifolia* is close to *S. havanensis* and *S. cristalensis*.

**Distribution and habitat.** — Haiti, Dominican Republic (Fig. 17); secondary forest, pineland forest, 0–500 m.

**Nomenclature** — The Desvaux specimen P 686923 is a mixture of two elements, male and female flowers. The male specimen is selected as lectotype.

**Selected specimens examined.** — DOMINICAN REPUBLIC: Azua, el poblado rural Pocílaga, c. 1.5 km N de Sabana de San José, 18°39’N, 70°44’W, 4000–4400 pies, 27.7.1982, Zanoni & Pimentel 22060 (JBSD, U); Barahona, trail between Pdernales and Aceitle, 3800’, 8–12.8.1946, Howard & Howard 8230 (F, NY); North Caicos, Bellemont and vicinity, 2.3.1911, Millsbaugh & Millsbaugh 9191 (F). — CAYMAN ISLANDS: Grand Cayman, 11.1890, Hitchcock s.n. (MO). — CUBA: Camaguey, Vilató, entre el pueblo y Ocujal, 100 m, 25.4.1984, Bisse & al. HFC 53853 (B, JE); Cienfuegos, orillas del río Jabaaco al oeste del pueblo [se extrajo muestra para ADN], 21.2.2009, Greuter & al. (B, herb. Greuter); Santa Clara, Soledad, Potrero, Howard R. A. 6576, 8.1941 (GH, NY); Holguín, charrascos entre El Oro y los Gúeros, 26.4.1985, Álvarez de Zayas & al. HFC 56731 (JE); Pinar del Río, Sumidero, mogotes de Sierra de Sumidero, 13.12.1978, Bisse & al. HFC 38599 (B, JE); Sanctis Spiritus, Santa Clara, Banao, 5.1920, Luna A. 637 (NY); Santiago de Cuba, charrascos de Sacal la Lengua, 25.4.1985, Álvarez de Zayas & al. HFC 56650 (JE); Villa Clara, lomas de Agabana, cerca de la Presa Agabana, 30.10.1986, Arias & al. HFC 60005 (JE). — USA: Florida, Grassy Key, 24.4.1896, Curtiss 5636 (F, G, MO, NY, US).
18°02'N, 71°39'W, 400–600 m, 24.6.2005, Clase & al. 4004 (JBSD); Peravia, 14.2 km N del Parque Central de San José de Ocoa, y 4.1 km desde el Cruce Los Arroyos, 18°37'N, 70°31'W, 4200 pies, 7.4.1982, Zanoni & al. 19839 (JBSD); Samaná, Península de Samaná, near Los Banaderas Prietas, 450 m, 4.6.1930, Ekman 15215 (GH); Salcedo, carretera Tenares-Gaspar Hernández, 19°31'N, 70°21'W, 700–760 m, 25.11.1992, García & Jiménez 4231 (JBSD); San Cristóbal, Loma Humeadora, Ladera Este, 18°38.5'N, 70°15'W, 1100 m, 21.4.1994, Jiménez & al. 1390 (JBSD); San Juan, Sierra de Neiba, al sur de Vallejuelo, 18°37.5'N, 71°23'W, 1800 m, 5.3.1994, García 5434 (JBSD); Santiago, Franco Bidó, Parajo Sierra Prieto, P. N. Armando Hernández, 1450 m, 20.2.1999, Clase & Peguero 642 (JBSD). — HAITI: Massif de la Hotte, Grand Ansesud limite, 13.6 km Norte de Camp Perrin, 18°23'N, 73°53'W, 720 m, 15.11.1982, Zanoni & al. 24301 (JBSD); Massif de la Selle, Quest, Morne Cadet, una loma, 4 a 5 km al E de Fermathe, 18°28'W, 72°14'W, 1100–1200, 3.6.1985, Zanoni & al. 34747 (JBSD); Nord, Marmelade, 800 m, 19.12.1925, Leonard 8213 (UC).


Fig. 18. Smilax havanensis – A: staminate flowering branches; B: staminate inflorescence; C: staminate flower; D: stamen. Reprinted with permission from Ferrufino-Acosta & Greuter (2010a).
Rhizomes unknown. Stems terete, angular, armed with short prickles; terminal branches zigzag. Leaves lanceolate, ovate, glabrous, membraneous, c. 10×2 cm, 5-veined, major veins connected by reticulate veinlets, apex acute, base acute or rounded, margin entire; petiole 0.5–1 cm long, rounded. Inflorescences umbellate, solitary, scale single; peduncle 5–7 mm long, flattened; pedicels of different lengths; tepals of male flowers 1.5–2 mm long, of female flowers 1.5 mm long; anthers linear in top-view, as long as the filaments. Berries black or purple when ripe, not glaucous, ovoid, 6–8 mm in diameter.

Affinities. — In certain cases, it is difficult to differentiate this species from *Smilax spinosa* due to similarities in leaf morphology.

Distribution and habitat. — Lesser Antilles, Venezuela, Brazil (Fig. 19).

Notes. — In the protologue of *Smilax oblongata*, Swartz did not mention any type. In the herbariums of BM and S, there are two specimens that could be possible matches. Howard (1979) contended that the Anderson specimen from St Vincent deposited at BM is the lectotype, but that the specimen deposited at S is probably not a corresponding type. He also claimed that the *S. oblongata* specimen at S does not bear Swartz’s writing. Despite this, I chose the specimen deposited at S as a lectotype, because Swartz brought his collection to London in 1786 and returned to Sweden in autumn 1787. One year later, he published his Nova Genera & Species Plantarum seu Prodromus (Stearn 1965).

The type specimen of *Smilax cumanensis* is sterile; there are only remains of the inflorescence. In his protologue, Wildenow (1806) noted obtusely angular, unarmed stems and ovate-oblongate, triplinerviate leaves. Howard (1979) mentioned that all the *S. cumanensis* material from the Lesser Antilles is moderately spinulose on the stem and on the midrib (lower leaf surface). He referred to this material as *S. oblongata*. He also examined material from Trinidad and Tobago as well as northern South America and noted that all specimens had unarmed stems. Sipman (1979) described this species as having angular branches, 2–2.5 mm long tepals, blue or black berries and occasional prickles. I examined the type *S. cumanensis* and also consider this name as a synonym of *S. oblongata*.


Rhizomes elongated. Stems terete, glabrous, armed; terminal branches zigzag. Leaves lanceolate, cordate, glabrous, membranous or coriaceous, c. 10×2 cm, 5–7-veined, major veins connected by reticulate veinlets, apex acute or acuminate, base cordate or rounded, margin spinulose, rarely entire; petiole flattened, 0.4–1 cm long. Inflorescences umbellate, solitary, or rarely in racemes, scale single; peduncle 2–10 mm long, flattened; pedicels of uniform different length; tepals of male flowers 1.5–2 mm long, of female flowers 1.5 mm long; anthers linear in top-view, as long as the filaments. Berries black or purple when ripe, not glaucous, ovoid, 5–7 mm in diameter.

Affinities. — Smilax populnea is close to S. guianensis, but differs by its short pedicels, its tepal size and the colour of its berries.

Distribution and habitat. — Dominican Republic (Fig. 19).

Selected specimens examined. — DOMINICAN REPUBLIC: Altagracia, La Altagracia, Llano costero, Bavaro, 27 km al sur del poblado de El Macao, 18°40'N 68°23'W, 0–5 m, 30.1.1986, Zanoni & al. 36042 (JBSD); Azua, Azua, Sierra Martín García, 18°19'N 70°56'W, 300 m, 13.11.1985, Pimentel & al. 339 (JBSD); Baharona, Sierra de Baoruco, 17°58'N 71°13'W, 650 m, 16.1.1985, Zanoni & al. 33075 (JBSD); Dajabón, 14.7 km desde el Parque Central al pueblo de Loma de Cabrera, 19°23'N 70°41'W, 1600 pies, 11.11.1981, Zanoni & Mejía 12986-A (JBSD); La Romana, SW of the Preea Chavón, 18°25'N, 68°54'W, 50–60m, 17.11.1980, Mejía & Zanoni 9175 (JBSD); La Vega, La vega, East of Bonao, on Loma El Caribe, 18°58’N, 70°24'W, 400 m, 30.7.1981, Zanoni & al. 15778 (JBSD); Maimón, Mananaguas, Sierra Rieta, Villa Malla, 200 m, 26.5.1973, Alain & Liogier 19281 (JBSD); Pedernales, Sierra de Baoruco, 26 km norte desde el Puerto de Cabo Rojo, 18°06'N, 71°36'W, 2000 pies, 16.2.1982, Zanoni & al. 19061 (JBSD); Puerto Plata, Sosúa, P.N., El Choco, 19°34’N, 70°28'W, 200–300 m, 19.1.1999, Clase & al. 362 (JBSD); San Cristobal, 2 km al N de Cambita Garabito, 19°27’N, 70°10'W, 225 m, 6.11.1994, García & al. 5655 (JBSD); Santiago Rodríguez, La Leonor, 15 km al N de Monción, 18°19’N, 71°14'W, 650 m, 30.5.1992, González & al. 228 (JBSD). Santo Domingo, Sierra Prieta, al Noreste de Villa Mella, camino a Yamasá, 18°19’N, 69°58'W, 190 m, 9.9.1995, Veloz & al. 302 (JBSD); Samaná, Playa El Rincón 0–50 m, 28.5.1980, Mejía & Zanoni 6555 (JBSD). — HAITI: Massif du nord, Nord-Quest, 3.1 km al este de Anse-a-foleur en la carretera a Le Borgne, 19°53’N 72°35'W, 20–30 m, 7.6.1985, Zanoni & al. 34889 (JBSD).


Notes. — Smilax ehrenbergiana was described by Kuntsch (1850) based on a specimen at B collected by Ehrenberg, which was destroyed. A duplicate, however, is extant at HAL, which also matches Kuntsch’s original description. I have selected this as lectotype.

Duhamel (1801–03) described Smilax viscifolia based on the material present in Lamark’s herbarium at P. A fragment removed from this specimen was deposited at the general herbarium at P (Poirier herbarium). Previous publications (Kuntsch 1850; Candolle 1878; Schulz 1904) mentioned that a possible type of S. viscifolia was deposited at the Balbis Herbarium in Jamaica (TO). Here, for S. subaculeata a Bertero specimen representing S. viscifolia from the Balbis herbarium is designated as neotype, because the original material has seemingly been lost. Consequently, S. subaculeata is treated as a synonym of S. viscifolia.

In the Balbis Herbarium at TO, there are two syntypes of Smilax celastroides. I have chosen as lectotype TO 7357 because it is more representative, better preserved and also a better match of the description by Kuntsch.

Selected specimens examined. — DOMINIC REPUBLIC: Dajabón, paraje Santiago de la Cruz, 19°27′N, 71°35′W, 520 m, 16.7.2003, Clase & al. 3573 (JBSD); Independencia, Sierra de Neiba, 18°36′N, 71°47′W, 600 m, 1.8.1990, Santanta & Schaub 589-A (JBSD); Monte Cristí, en la Costa del Océano Atlántico, aprox. 9 km al N de los Uberos, 19°52′N, 71°24′W, 18.4.1984, Zanonzi & Pimentel 29595 (JBSD); Santiago Rodríguez, Los Queamas, cruce de carretera Santiago Rodríguez, 19°22′N, 71°71′W, 100 m, 3.12.1997, González & León 1080 (JBSD). — HAITI: Centre, Montagnes Noires, 20 km desde Mirebalais, en la carretera a Croix-des-(K).

Plants glabrous, stems terete with prickles, sometimes reddish; leaves membranous or coriaceous, sometimes reddish when young; inflorescences solitary; tepals reddish; leaves membranous or coriaceous, sometimes

VIII. Dominensis group

Plants glabrous, stems terete with prickles, sometimes reddish; leaves membranous or coriaceous, sometimes reddish when young; inflorescences solitary; tepals c. 3.5–5.5 mm long; berries red to purple or black. Related species: S. quinquenervia, S. walteri.


= Smilax berterii Sprmg., Syst. Veg. 2: 102. 1825. — Lectotype (designated here): La Hispañola, Bertero (TO-Balbis?).


= Smilax balbisiana Kunth, Enum. Pl. 5: 183. 1850. — Holotype: Jamaica, Bertero (B!); neotype (designated here): “as Pseudochina”, TO 7357 [st.].


= Smilax eucalyptifolia Kunth. Enum. Pl. 5: 230. 1850. — Holotype: Peru, 1778–1788 (B†); neotype (designated here): “Perú”, Ruiz (B 100277645 [!]!).


= Smilax chiapensis Lundell in Contr. Univ. Michigan Herb. 7: 3. 1942. – Holotype: Mexico, Chiapas, “Mt Ovando CHI8”, 1000 m, 14 – 18.11.1939, Matuda 3988 (MICH 1192727 [♂]); isotypes: MO 1195502 [♂], GH 30061 [♂], TEX-LL 370268, 370269 [♂]).

= Smilax staminea f. obtusata Steyerm. in Fieldiana, Bot. 28 (1): 156. 1951. – Holotype: Venezuela, “State of Bolivar: Ptari-tepuí, forested sandstone south-facing slopes between plateau portion and “Cave Camp”, 1700 – 1800 m, 1.11.1944, Steyermark 59695 (F 330732 [♀]); isotype: NY 180349 [♀]).


Rhizomes tuberous, red with perennial and coriaceous scales. Stems terete, glabrous, with recurved prickles, often unarmed apically, terminal branches straight and reddish; axillary scale single on the stem. Leaves ovate to lanceolate, glabrous, coriaceous or membranous, 7–15 × 2.5–5 cm, 5–7-veined, major veins connected by reticulate veinlets, apex acuminate, base acute, margin entire, young leaves sometimes reddish; petiole 1–1.5 cm long, terete. Inflorescences umbellate, solitary, scale single; peduncle 0.2–0.7 mm long, terete; pedicels of uniform length; tepals of male flowers 4–7 mm long, of female flowers 3.5–4.5 mm long; anthers linear in top-view, shorter than the filaments. Berries red to purple when ripe, not glaucous, globose, 7–10 mm in diameter. – Fig. 20.

Distribution and habitat. — Honduras to Peru, Venezuela, Brazil, Greater Antilles (Fig. 21); open areas, lower montane wet forest, humid forest, 100–1000 m.

Notes. — Smilax domingensis is a species with a wide distribution and morphological variation. Lundell (1942) described S. chiapensis based on a specimen previously determined to be S. lanceolata, although he stated that S. chiapensis was closer to S. kunthii. He distinguished S. chiapensis from other species through the size of tepals, peduncles, anthers and filaments (Gaskin & Berry 2005; Andreata 1997), despite species like S. domingensis ranging widely in phenotypic variation and the size of tepals, measuring between 4 and 7 mm. Therefore, in this study, S. chiapensis is treated as a synonym of S. domingensis.

Smilax staminea is distinguished from S. domingensis and S. kunthii based on its unarmed stems and peduncle length. All of them, however, display tepals either 3.5 mm
reported that it distinguished it from other species. León (2006) and Macbride (1931) found that they measure c. 4 mm in length. Therefore, *S. colubrina* is considered a synonym of *S. domingensis.*

The holotype of *Smilax eucalytifolia* at B was destroyed. Two specimens were identified as *S. eucalytifolia* by G. M. Schulze. The specimen B 1001277645 is selected as neotype.

Macbride (1931) stated that *Smilax gilva* is a species very similar to *S. floribunda* and *S. staminea.* He distinguished it from other *Smilax* species by its small flowers, subopaque leaves, longer petioles, shorter-vaginate and broader perianth segments. The tepals of all three species measure c. 4 mm; therefore, *S. floribunda, S. gilva* and *S. staminea* are considered synonyms of *S. domingensis.*

Since the type specimen of *Smilax canaliculata* at B was destroyed during the Second World War, the isotype (with fruits) deposited at K is selected as lectotype. This species is considered a synonym of *S. domingensis* (Art. 9.10, McNeill & al. 2006).

The type material of *Smilax reticulata* consists of only one specimen at Paris (P 647212), which corroborates Desvaux’s annotation. This taxon is considered a synonym of *S. domingensis.*

The syntype of *Smilax kunthii* collected by Ruiz & Pavón in Peru was destroyed at B. The specimen Hartweg 896 with male flowers at P is selected as lectotype and the name regarded a synonym of *S. domingensis.*

I have not seen the type specimen of *Smilax balbisiana* personally. However, Kunth (1850) cited a specimen collected in Cuba; “cuculmeca”, “cuculmeca roja”, “cuculmeca morada”, “diente de perro”, “curlo” in Central America; “cocolmeco”, “bejuco de uva”, “poppo medicinal” in Mexico; “bejuco chino” in Venezuela; “bejuco de riñón” in the Dominican Republic (León 1946; Hernández Cano & Volpato 2004; Ferrufino & Gómez-Laurito 2004; MacVeen 2006).

**Selected specimens examined.** — **BELIZE:** Cayo, Ceibo Grande to main divide track by old repeater, 16°32'26"N, 89°05'43''W, 740 m, 8.3.2000, Monro & al. 3226 (MO); Belize, Cohune ridge, Sibur River, 4.2.1931, Bartlett 11359 (UC). — **BOLIVIA:** La Paz, Larecaja, Copacabana, 8.10. – 15.11.1939, Krukoff 11129 (U). — **BRAZIL:** Acre, Cruzeiro do Sul, km 6 of Cruzeiro do Sul-Boa Fé road, 7°28'22"S, 72°49'17''W, 16.10.2001, Maas & al. 8972 (MO); São Paulo, São Vicente, 20.3.1955, Hoehne 3933 (F); Rio de Janeiro, 1876, Glaziou 8502 (G). — **COLOMBIA:** Antioquia, Cáceres, Troncal de la Paz, Cáceres-Bage, 3–4 km, 7°35’N, 75°16’W, 16.5.1987, Collectejas & al. 3576 (K, MO, U); Quindio, Salento, Reserva del Alto Quindio Acaima, 4°37’N, 75°32’W, 3070 m, 12.6.1990, Ranjifo 129 (MO). — **COSTA RICA:** Alajuela, San Ramón, Los Ángeles, Reserva Biológica Alberto Manuel Brenes, 10°13’N, 84°37’W, 850 m, 16.2.2001, Ferrufino 35 (USJ); San José, Dota, Cordillera de Talamanca, Madreselva, 9°40’05’’S, 83°57’22’’W, 2500–2600 m, 24.8.1996, Gómez-Laurito & al. 12877 (USJ). — **CUBA:** Matanzas, lomas al oeste de Las Tres Ceibas, 80–100 m, 23°06’–07”N, 81°39’W, Greuter & al. 25034 (B); Sanctus Spiritus, Finca Cuba, alrededores de Mogote Caburni, 650 m, 13.4.1994, Acevedo-Rodríguez & al. 6465 (US). — **DOMINICAN REPUBLIC:** Monseñor Novel, 3 km al sur de Maimón, Loma mala, Río Maimón, 18°53’N, 70°18’W, 110 m, 26.6.1994, Jiménez & Vélez 1611 (F, MO); Santiago, San José de las Matas, 700–800 m, 2.6.1930, Vázquez 899 (F, GH, K, MO). — **GUATEMALA:** Alta Verapaz, San Juan Chichu’shab 8 km al SW de Cobán, 15°26’N, 90°27’W, 400 m, 22.7.1988, Tenorio & al. 14717 (MO); Suchitpéquez, San Andrés, Cantón Chiquimulilla, Finca El Catacal, 14°7’N, 91°28’W, 450 m, Rueda 17340 (HULE). — **GUAYANA:** Potaro-Siparuni, Iwokrama Rainforest reserve, 4°20’N, 58°50’W, 600–800 m, 22.11.1995, Clarke & Hoffman 380 (K, U). — **HAITI:** Massif de la Hotte, Grand’Ansesud limite: 13.6 km N de Camp Perrin en la carretera a Roseaux y Jérémie, 18°23’N, 73°53’W, 720 m, 15.11.1982, Zanoni & al. 24323 (MO); Massif du Nord, Chaine Bonnet Leveque, 19°35’N, 72°14’W, 700–750 m, 25.10.1985, Mejía 35770 (U). — **HONDURAS:** Cortés, P. N. Cusco, Filo entre Cerrro Cantiles y Cerrro Jilínco, 20 km al O. de San Pedro Sula, 15°30’N, 88°14’W, 2120 m,
Fig. 20. *Smilax domingensis* – A: pistillate flowering branches; B: infructescence; C: seeds; D: staminate flower; E: staminate inflorescence; F: stamen. – Reprinted with permission from Ferrufino-Acosta & Greuter (2010a).

20.3.1993, Mejia 348 (TEFH, EAP); Yoro, along Quebrada El Aguacatal and in ravines that enter into el Rio Guan Guan, 15°31’N, 87°28’W, 100–300 m, 19.4.1994, Hazlett & Brant 8084 (EAP). — JAMAICA: Saint Andrew, Grand Ridge of the Blue Mountains between Morce’s Gap and John Peak, 18°05’N, 76°40’W, c. 1620 m, 18.4.1990, Bellingham 1170 (BM). — MEXICO: Oaxaca, San Miguel Chimalapa, Cima del Cerro Salomón al No de Benito Juárez, c. 44 km en línea recta al N de San Pedro Tapanatepec, 16°46'15”N, 94°11'45”W, 1770 m, 7.4.1986, Ishiki 1443 (MO); Veracruz, Jesús Carranza, Loma al S de Poblado 2, 17°12’N, 94°38’W, 200 m, Wendt & al. 5774 (MO). —
Fig. 21. Distribution of *Smilax domingensis* (circles) and *S. laurifolia* (triangles).

Panama: Chiriquí, Fortuna Dam, along trail across valley south of lake 9°45'04"N, 82°15'04"W, 1300–1400 m, 7.1.1987, McPherson 10392 (PMA); Panama, Cerro Jefe region, 9°15'N, 79°30'W, 600 m, 2.5.1987, McPherson & Stockwell 10893 (PMA). — Peru: Amazonas, Bagua, Imaza, Tayu Mujaji, 5°15'56"S, 78°22'07"W, 900–1030 m, 17.2.2002, Vásquez 27594 (USJ); Cajamarca, San Ignacio, San José de Lourdes, Estrella del Oriente, 4°46'00"S, 78°59'00"W, 1600–1700 m, 6.9.1997, Campos & Díaz 4420 (USJ). — Puerto Rico: Ciales, along trail Camino de la Ceiba towards Quebrada del Pozo Azul, 15.8.2001, Acevedo-Rodríguez & Vicens 11835 (US); Luquillo,
1417

Sierra de Luquillo, Monte Jimenez, 5.1885, 13.12.1954, US).—W of Rio Coro-Coro, W of Serrania de Yutaje, 5°41′N, 64°34′10″W, 1850–1920 m, 4.3.1974, Sucre, Pensinsula (MO); Bolivar, Meseta del Jaua, Cerro Jaua, 4°48′50″N, Steyermark & Liesner 120931

lanceolate, glabrous, membraneous, 9–22 × 3–10 cm, Rhizomes


Rhizomes tuberous. Stems terete, glabrous, armed with flattened prickles, terminal branches straight, scarcely prickly at apex; axillary scale single on the stem. Leaves ovate, lanceolate, glabrous, membraneous, 9–22 × 3–10 cm, 5-veined, major veins connected by parallel venation, apex acuminate, base acute, margin entire; bracts perennifolious, peduncle 1.5–5 cm long, flattened; pedicels of uniform length; tepals of male flowers 4–5 mm long, of female flowers 3.5 mm long; anthers oblong in top-view, longer than the filaments. Berries red when ripe, not glaucous, ovoid, 8–10 mm in diameter.

Affinities. — Smilax spissa can be distinguished from other Smilax species by its muricate stems, the parallel secondary venation, c. 4–5 mm long tepals and red berries.

In many herbaria, this species has been mistaken for Smilax panamensis and S. subpubescens. While S. spissa is close to S. syringoides, it differs by its long pedicels, spread umbells and the colour of its berries (see also di-

Distribution and habitat. — Panama and southern Costa Rica (Fig. 22); lowland forest, wet forest, 300–800 m.

Selected specimens examined. — COSTA RICA: Puntarenas, Puntarenas, R. B. Carara Lomas Pizote, Sendero a Bijagual, 9°47′10″N, 84°35′10″W, 300 m, 8.12.1989, Jiménez & Záñiga 761 (USJ); San José, Montana Jamaíca, c. 3 km NE of Bijagual de Turrubares, R. B. Carara, 9°45′5″N, 84°33′33″W, 500–600 m, 7.8.1985, Grayum & al. 5843 (CR, MO). — PANAMA: Comarca de San Blas, El Llano-Carti road, 9°20′N, 79°00′W, 300–400 m, 28.8.1982, Hamilton & Stockwell 1049 (F, PMA); Coče, PN G.D. Omar Torrijos Herrera, camino a Coclesito, 8°40′10″N, 80°35′34″W, 900 m, 18.11.2003, Aizpría & Flores B3887 (PMA); Darien, to the Serranía del Darien, Colombia Frontier, top of Cerro Mali, c. 1400 m, 17.1.1975, Gentry & Mori 13675 (PMA); Panama, Canal Zone, Barro Colorado Island, S of Armour 14, 24.5.1969, Foster 872 (MO, PMA).

IX. Panamensis group

Plants glabrous, stems terete, armed with straight prickles; leaves membraneous; inflorescences composed in a raceme with a terminal or determinate inflorescence or often with bracts, very prominent and perennifolious; tepals c. 3.5–5 mm long; berries orange.


= Smilax febrifuga var. aequatoris A. DC. in Candolle & Candolle, Monogr. Phan. 1: 159. 1878. — Holotype: Ecuador, “ad radices m. Chimborazo, secus rivulum Chasuan frequentis”, 8.1860 (K 201314 [σ]!).

totypes: NY 320000 [σ], USJ!)


= Smilax graciliflora A. C. Sm. in J. Arnold Arbor. 20: 291. 1939. — Holotype: Brazil, “Basin of Rio Soli-


Rhizomes tuberous, white. Stems terete, glabrous, armed with straight prickles. Leaves ovate to lanceolate, gla-

brous, membraneous, 8–25 × 5–18 cm, 5–7-veined, sub-

marginal veins connected by reticulate veinlets, apex acuminate, base acute, margin entire; pediole 1–1.7 cm long, terete, sheath winged. Inflorescences umbellate, in racemes; scales paired, bracts conspicuous, brownish
ripe, not glaucous, ovoid, 6–12 mm in diameter. Berries orange when ripe, not glaucous, ovoid, 6–12 mm in diameter.

Affinities. — The most representative features of Smilax febrifuga are its tuberos, white rhizomes, the terete and armed stems, the inflorescences composed in racemes with prominent bracts, tepals of c. 4–5 mm length and its orange berries.

Distribution and habitat. — Honduras to Peru, Bolivia, Venezuela, Brazil, French Guiana (Fig. 23); evergreen seasonal forest, riparian forests, humid forests, montane rain forests, 0–800 m.

Note. — Two syntypes of Smilax febrifuga, collected by Ruiz, exist at B. One of these was chosen as lectotype (B 10127767) because it is the more representative and better preserved specimen, and also because it better matches Kunth’s description of the species.

In his protologue, Morong (1894) noted that Smilax panamensis has unarmed, slightly pubescent stems, almost glabrous peduncles and tendrils as well as black berries with a reddish tinge in dried specimens. Killip & Morton (1936) suggested that there is confusion regarding this species, dating back to the original publication by Morong, because the specimens collected by Hayes belong to different taxa. The lectotype Hayes 63 represents S. panamensis, whereas Hayes 209 matches representative specimens of S. mollis. Also, Killip & Morton (1936) mentioned that several specimens of S. spissa were mistaken for S. panamensis. However, both species are growing in association, but differ in some important characteristics, such as venation, type of inflorescence and berry colour. The taxon so far known from Honduras to Panama by the name of “S. panamensis” is the same taxon known as S. febrifuga, which is currently reported for Ecuador, Peru and Bolivia, with the particularity that plants occurring in South America have bigger leaves than those growing in Central America. The lectotype of S. panamensis was studied by the author and found to represent S. febrifuga.

The lectotype of Smilax ramonensis designated by Killip & Morton (1936) was destroyed at B. An isolecotype deposited at BM is selected as lectotype. McBride (1936) suggested that S. ruiziana is a species close to S. febrifuga and described it as having peduncles of 8–20 mm and bracts of 5–7 mm length. The type collection deposited at B and cited by Kunth (1850) has flower buds of c. 5 mm, but in his protologue, Kunth mentioned tepals of c. 2.5 mm; here, S. ruiziana is proposed as a new synonym of S. febrifuga.

The name Smilax poepplii was originally published by Kunth in 1850 and, according to the protologue, based on Poeppl 1960, collected in Huallaga, Peru, and deposited at B. However, the corresponding specimen with Kunth’s handwriting at B has the collection number “1916”. Apparently the collection number “1960” in the protologue is a typographical error.

Smilax insignis described by Kunth (1850) was based on sterile material. In his protologue, Kunth described it as a glabrous and unarmed plant. Although the specimen collected by Ruiz & Pavón in Peru holds only remains of a raceme and displays verrucose peduncles of c. 0.75 cm length, these features are evident in the type specimen. I consider S. insignis as conspecific with S. febrifuga.

Common names. — “Zursa Masha” in Peru; “cuculumca blanca” in Central America (Ferrufino & Gómez-Laurito 2004).

Selected specimens examined. — BOLIVIA: Beni, Ballivian, Espíritu in the zona de influencia del rio Yacuma, al borde de la “Isla” (I2), 28.9.1979, Beck 2536 (NY); Santa Cruz, Ichilo, Parque Nacional Amboró, Río Saguaya near mouth of Quebrada Yapójé, 17°34’S, 63°44’W, 350 m, 11.6.1991, Nee 40900 (NY). — BRAZIL: Acre, Sena Madureira, trail from W bank of Rio Iaco to Rio Pu-rus, 5.10.1968, Prance & al. 7877 (F, MO). — COLOMBIA: Amazonas, Misión, Río Mavaca, 2°26’N, 65°07’W, 185 m, 31.1.1991 (MO); Antioquia, Jardín, 2 km N de Jardín, vía a Morro Amarillo, Alto de las Flores, 5°40’N, 75°48’W, 2220 m, 10.6.1987, Callejas & al. 3990 (MO, NY, US); Boyaca, El Humbo, 3000 ft, 4.4.1933, Lawrence 738 (A, G, F, K, MO, UC); Caquetá, Sierra de Chiribiquete, 1°05’S, 72°40’W, 26.8.1992, Palacios & al. 2695 (MO); Chocó, 3 km W of Istmo de San Pablo (Rioquito), c. 15 km W of Las Minas on new Pan American Highway, 80 m, 10.1.1979, Gentry & Renteria 23948 (NY); Cundinamarca, Laguna de Pedro Palo, 4 km form road Bogotá to La Mesa, 2056–2100 m, 29.11.1990, Wi-jninga 596 (MO, U); Huila, Río Caqueta, Arauracuara, 13.12.1990, van Dulmen 62A (U); Putumayo, Mocoa, corregimiento San Antonio, vereda Alto Campucana, finca La Mariposa, 1°12’S, 76°38’W, 1400 m, 20.4.–1.5.1994, Betancour & Marin 5168 (MO); Santander, N slope of Mesa de los Santos, 100–1500 m, 11.–15.12.1926, Killip & Smith 15380 (A); Valle del Cauca, Río Frío, vereda La Trinchada, Finca El Provenir, 4°10’N, 76°13’W, 1200 m, 5.4.1986, Al Gentry 54040 (MO) — COSTA RICA: Alajuela, San Ramón, Los Angeles, Reserva Biológica Alberto Manuel Brenes, 10°13’N, 84°37’W, 850 m, 9.3.2002, Ferrufino 229 (USJ); Limón, Matina, Baltimore, 9°34’20’N, 82°39’50’W, 100–150 m, 7.4.2001, Ferrufino 62 (USJ); Puntarenas, Buenos Aires, P.N. La Amistad, Cuenca Tér-raba-Sierre, 9°02’11’N, 83°01’21’W, 1350 m, 22.4.1999, Castro & al. 311 (CR, INB). — ECUADOR: Napo, Es-tación Biológica Jatun Sacha, 8 km al este de Misahualli, 1°04’S, 77°36’W, 450 m, 1804.2005, Palacios & al. 10488 (MO); Pastaza, 1 km al E de Topo por carretera entre Banos y Mera, 1°21’N, 78°10’W, 1300 m, 18.3.1985, Palacios & al. 185 (MO). — GUAYANA: Rupununi, along trail from Moriss Mines (on Ireng River) to Karasabai Village,
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4°00'N, 59°21'W, 300-400 m, 7.1.1982, Knapp & Mallet 2880 (MO). — Honduras: Atlántida, J. B. Lancetilla, entrada principal, 15°08'N, 88°05'W, 0 – 500 m, 7.4.1994, Nelson & Andino 18018 (TEFH). — Nicaragua: Río San Juan, Reserva Indio-Maíz, Municipio de El Castillo, A lo largo del Caño Chontaleño, 11°31'N, 84°14'W, 26.2.1994, Rueda 3600 (HULE); Zelaya, Camino a lo largo del Río Punta Gorda, entre la Corriente la Guitarrona y San José, 11°31'N, 84°14'W, 26.2.1994, Rueda 3600 (HULE). — Panama: Chiriquí, Bugaba, Santa Clara, Hartmann Finca, 8°50'N, 82°44'W, 1300 m, 26.2.1985, van der Werff & Herrera 7073 (PMA); Veraguas, Montijo, Cerro Hoya, subiendo por Cobachón, 7°18'45''N, 80°40'23''W, 5.2.1997, Deago & al. 263 (PMA). — Peru: Cajamarca, San Ignacio, Huarango, Nuevo Mundo, Quebrada Santa Rosa, 5°10'05''S, 68°32'00''W, 1700 m, 10.11.1997, Campos & Nunez 4585 (B, MO, USJ); Cusco, Quispicanchis, Hills around Río Araza between Pande Azucar and Quince Mil Airport, 13°13'S, 70°45'W, 543 m, 10.8.1991, Nunez 13991 (USJ); Loreto, Rio Samiria, c. 5°2'S, 74°30'W, 140–160 m, 4.8.1982, Gentry & al. 38056 (USJ); Madre de Dios, Tambopata, Las Piedras, Cusco Amazónico, 12°29'S, 69°03'W, 200 m, 13.11.1991, Timaná & Jaramillo 3184 (B, MICH, MO, USJ); San Martín, Rioja, Pedro Ruiz-Moyobamba road, km 390, 5°50'S, 77°45'W, 1750 m, 29.7.1983, Smith 4442 (USJ). — Venezuela: Amazonas, Cano de Cholo, 16 km NE of San Carlos de Rio Negro, 4 km SW of Solano, 1°56'N, 66°58'W, 120 m, 2.2.1980, Liesner 8985 (MO, NY); Miranda, Cerros del Bachiller, above Quebrada Corozal, south of Santa Cruz, 10 km (by air) west of Cúpira, 10°09'N, 65°48'W, 20–700 m, 22.–25.–26.3.1978, Steyermark & Dadvise 116945 (MO).


Rhizomes tuberous. Stems terete, glabrous with robust prickles. Leaves ovate, lanceolate, cordate, glabrous, coriaceous or membraneous, 9–21 × 6–17 cm, 5–7-veined, major veins connected by reticulate veinlets, apex acute, acuminate, rarely obtuse, bases cordate, acute or rounded, margin entire; petiole 3–4 cm long, flattened. Inflorescences umbellate, arranged in racemes, scale single, bracts perennifolious; pedicels of uniform length; tepals of male flowers 3–5 mm long, of female flowers 3–3.5 mm long; anthers ellipsoidal, longer than the filaments. Berries yellow to orange when ripe, not glaucous, globose, 8–10 mm in diameter.

Notes. — This taxon is here newly reported for Costa Rica and Panama. Some specimens had been misdetermined as Smilax panamensis. In Costa Rica, this species spreads to the southern part of the country.
In 1841 Steudel published *Smilax fluminensis* as a new name. The images of individual flowers (t. 105 and 106) with its corresponding analysis for Vellozo’s illegitimate name constitute valid publication of the name (see Art. 42.3, McNeill & al. 2006).

**Distribution and habitat.** — Costa Rica, Panama, Colombia, Peru, Ecuador, Venezuela, Brazil, Peru, Bolivia, Argentina (Fig. 23); riparian forests, 150–1800 m.


**Selected specimens examined.** — ARGENTINA: Misiones, Ledesma, P. N. Calilegua, 23°44’S, 64°50’W, 720 m, 27.2.1997, Zuloaga & al. 6323 (MO). — BOLIVIA: Pando, Rio Abuna, 3 km above confluence of Rio Negro south...
bank, 16.11.1968, Prance & al. 8529 (F); Santa Cruz, 18°06'30"S, 63°57'00"W, 315 m, Nee 39349 (NY); Sara, Buenavista, 450 m, 10.925, Steinkach 7287 (U). — BRAZIL: Amazonas, Rio Culicuriari, 1.1948, Schultes & López 9705 (US); Matto Grosso, Cuyaba, 23.9.1943, Baldwin 3001 (US). — COLOMBIA: Antioquia, San Luis, Cañón del Río Clarito, 5°53'N, 74°39'W, 330 – 350 m, 5.30.1984, Cogolito 1713 (MO); Caldas, Rio Navarro, Salento, 1400 – 1700 m, 31.7.1922, Pennell 9083 (K, NY); Cauca, Valle del Cauca, Querental, vereda La Victoria, 3°31'N, 76°42'W, 1480 m, 27.7.1997, Croat & Gaskin 80430 (MO). — COSTA RICA: Puntarenas, Cordillera de talamanca, Coto Brus, 8°59’N 82°15’W, 600 m, 24.9.1980, Fellerivo & al. 441 (K); Puraná, Quatro Barras, Morro Mía Catira, 24.7.1987, Cordeiro & Silva 440 (MO). — PANAMA: 3 Hermanas, Potrero Aquidqdan, 22.10.1991, Aguilar & Castro 1037 (MO); Bocas del Toro, 450 m, 10.1925, Vásquez & al. 7447 (B, MO); Barro Colorado, 3°35'S, 73°54'W, 160 m, 20.4.1986, Do Imray 285 (MO); Chiriquí, Bugaba, Santa Clara, 8°50'N 82°44'W, 150 m, 10.7.1982, Croat 35858 (MO). — PARAGUAY: Amambay, Estancia 5 Hermanos, camino a Pirity, 9.6.1996, Soria 7645 (MO); Concepción, Estancia 3 Hermanas, Potrero Aquidqdan, 22.10.1991, Basualdo 3600 (MO). — PERU: Cajamarca, San Ignacio Province, Ricardo Palma, 5°07’29”S, 79°03’16”W, 1720 m, 19.5.1998, Campos & López 4903 (B, MO); Loreto, Maynas, Pucacuro, Rio Chambira, 3°33'58", 73°54'W, 160 m, 20.4.1986, Vásquez & al. 7447 (B, MO); Madre de Dios, Tambopata, pto. San Antonio, 12°57’12”S, 68°52’60”W, 30.5.1984, Howard & Howard 18756 (NY); Sara, 3°31’N, 76°42’W, 1480 m, 27.7.1997, Croat & Gaskin 80430 (MO). — VENEZUELA: Bolivar, “Chimantá Massif, rainforest along Río Apacará, Apacará-tepui altitude 400 meter”, 25.3.1953, Steyermark 74652 (NY 180348 [st.]).

Rhizomes unknown. Stems terete, glabrous, prickly. Leaves ovate, lanceolate, membranous, 8 – 20 x 3 – 7.5 cm, 3 – 5 – veined, upper surface shiny, venation on both surfaces prominent, connected by reticulate veinlets, apex acute or mucronate, base acute or rounded, margin entire, glabrous; petiole 1 – 1.8 cm long, rounded, with a simple adaxial scale at the lateral shoot base. Inflorescences, umbellate, usually arranged in racemes, rarely solitary, scale single; peduncle 1.2 – 2 cm long, flattened, thick; tepals of male flowers 4 – 4.5 mm long, of female flowers 3.5 mm long; anthers shorter than the filaments. Berries orange when ripe, ovoid, 8 – 10 mm in diameter.

Distribution and habitat. — Venezuela, French Guiana, Suriname, Guyanas, Lesser Antilles (Fig. 24); 50 – 700 m.

Notes. — Smilax solanifolia was described by Candolle (1878) as a plant with angular branches, prickles, ovate-acute leaves, 5 – 7 veins, axillary racemes, lanceolate bracts and flower buds c. 5 – 6 mm long. Howard (1979) claimed that S. solanifolia was a synonym of S. guianensis. Nevertheless, the drawing of S. guianensis (Plumier Pl. Amer. t. 84. 1756) differs from the type specimen of S. solanifolia deposited at K in the inflorescence and tepal size. In the protologue of S. solanifolia (Candolle 1878), two syntypes collected by Anderson (K, photo) are mentioned, one of them from the island of St Lucia (flowering) and the other one from the island of Trinidad (sterile). The flowering specimen is selected as lectotype.

Steyermark’s protologue (1951) of Smilax pittieriana cited two specimen as types (Steyermark 60251 and 60251a). Nevertheless, as has been stated by Gaskin & Berry (2005) and is confirmed here, these specimens represent different species: Steyermark 60251 is the type of S. pittieriana, but Steyermark 60251a represents S. domingensis. Steyermark & Maguire (1967), about 15 years after the publication of S. pittieriana, described S. chimantensis, stating several characteristics that separate this new species from S. pittieriana. However, these differences were based on the alleged “cotype” Steyermark 60251a representing S. staminea (= S. domingensis).
Fig. 24. Distribution of Smilax solanifolia (triangles) and S. syphilitica (circles).


Rhizomes tuberous. Stems terete, glabrous, prickles straight, terminal branches straigh. Leaves lanceolate, glabrous, membranous or coriaceous, 12–30 × 3.5–14 cm, 7–9-veined, connected by reticulate veinlets, apex acuminate, base acute or rounded, margin entire; petiole 2–3 cm long, rounded with very prominent wings, c. 0.5–2 cm long. Inflorescences umbellate, in racemes, rarely solitary, scales paired; receptacle reniform; bracts brownish, very conspicuous; peduncle 3–5 cm long, flattened and thick; pedicels of uniform length; tepals of male flowers 2.5 mm long, of female flowers 1.5–2 mm long;
Fig. 25. *Smilax syphilitica* – A: flowering branches; B: inflorescence with a pair of scales; C: pistillate inflorescence; D: pistillate flower; E: infrutecence; F: seeds; G: staminate inflorescence; H: staminate flower; I: stamen; J: stem. – Drawn by C. Hillmann-Huber from Grenand 646 (CAY), Larpin 320 (CAY), Cremers 13076 (CAY), Granville 8101, 5122 (CAY) and Prévost 286 (CAY).
antlers ellipsoidal, longer than the filaments. Berries orange when ripe, not glaucous, ovoid, 8–15 mm in diameter. – Fig. 25.

Notes. — Smilax syphilitica was described by Willdenow (1806) based on two different specimens with the same collector number, which belong to different species. The sterile specimen is designated as lectotype of Smilax syphilitica, because this conserves the current use of the name and is more in accordance with the original description.


Distribution and habitat. — Colombia, Ecuador, Venezuela, Brazil, French Guiana, Guyana, Suriname, Lesser Antilles (Fig. 24); riparian and secondary forests, 100–1000 m.

Common names. — “Corona guayaca” in Venezuelan Guayana (Gaskin & Berry 2005); “Durrakwarra pimpla” in Guyana.


Taxa excluded


Smilax elliptica Desv. ex Ham., Prodr. Pl. Ind. Occid.: 58. 1825. – According to Candolle (1878: 190) the type, originally in the Desvaux herbarium (now P), does not come from the West Indies but from India as stated by Hamilton (1825). It is conspecific with Smilax zeylanica L.

Smilax hastata Jacq., Enum. Syst. Pl.: 33. 1760. – Neo-type (designated here): [illustration] “Smilax hastata” in Jacquin, Select. Stirp. Amer. Hist.: t. 179, f. 103. 1763, based on material from Hispaniola. – This is not a Smilax but belongs to Dioscoreaceae and is probably conspecific with the polymorphic Rajania hastata L.

Smilax sagittata Desv. in Hamilton, Prodr. Pl. Ind. Occid.: 581825. – Holotype: “India Occidentali”. – According to Candolle (1878: 165) the type, originally in the Desvaux herbarium (now P), does not come from the West Indies as stated by Hamilton but possibly from the Mediterranean. It is conspecific with Smilax aspera L.

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Acknowledgements

I am grateful to the German Academic Exchange Service (DAAD) for financial support, which allowed me to pursue my Ph.D. The project was also financially supported by the Botanic Garden and Botanical Museum Berlin-Dahlem and by OTS (Organization for Tropical Studies). I am grateful to the curators of the following herbaria: B, BHUPM, BBS, BM, CAY, CR, EAP, FPDB, G, GH, HAC, HAJB, HBG, HULE, JE, m, MARP, MO, NY, P, SPMS, STRI, TEFH, U, UC, US and USJ for processing my loan requests or assisting me during my visit. I would like to give particular thanks to Peter Adam, Christine Hillmann-Huber and Gisela Jahrmärker for providing the line drawings, to Prof. emer. Dr Werner Greuter (Berlin) and Dr Hermann Manitz (Jena) for their advice and helpful discussions, to two reviewers and the editor for their valuable comments on and improvements of a previous version of this paper.

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