

## 11. SMILAX Linnaeus, Sp. Pl. 2: 1028. 1753.

菝葜属 ba qia shu

Chen Xinqi (陈心启 Chen Sing-chi); Tetsuo Koyama<sup>1</sup>

Vines climbing or shrubs, woody, less often suberect or herbs, dioecious, usually with short, thick rhizomes. Stems and branches usually prickly. Petiole usually narrowly winged proximally, with an abscission zone between winged portion and apex; tendrils often present. Leaf blade usually ovate to lanceolate, main veins 3–7, connected by a network of cross veins and veinlets. Inflorescence borne in axil of leaf or scalelike bract, of 1(–3) umbels or a panicle, raceme, or spike of umbels; peduncle sometimes with a scalelike prophyll at base. Flowers small; tepals 6, usually free (connate in *Smilax synandra*). Male flowers: stamens 6, rarely 8 or more, inserted at base of tepals; anthers mostly 1-loculed. Female flowers: ovary 3-loculed; ovules 1 or 2 per locule; style very short; stigmas 3; staminodes absent to 6. Fruit a berry, red to black, usually 1- or 2-seeded. Seeds dark brown.

About 300 species: tropical, subtropical, and temperate regions of both hemispheres; 79 species (39 endemic) in China.

- 1a. Rhizomes stoloniferous, creeping, elongate.
  - 2a. Peduncle with a prophyll at base; leaves not glaucous abaxially ..... 65. *S. pinfaensis*
  - 2b. Peduncle without a prophyll at base; leaves glaucous abaxially.
    - 3a. Petiole 1–2 mm, narrowly winged for ca. 2/3 its length; stem much branched ..... 26. *S. nana*
    - 3b. Petiole 4–13 mm, scarcely winged; stem slightly branched or not ..... 25. *S. pachysandroides*
- 1b. Rhizomes not stoloniferous, usually tuberous, short.
  - 4a. Inflorescence a spike of umbels with 5–25 sessile umbels on a common axis.
    - 5a. Branches terete, ridged-angled, sparsely prickly; leaf blade 6–11 cm ..... 78. *S. aspera*
    - 5b. Branches 4-angled, not prickly; leaf blade 20–30 cm ..... 79. *S. elegantissima*
  - 4b. Inflorescence a solitary umbel or a raceme of umbels with 2 to many stalked umbels on a common axis.
    - 6a. Branches verruculose or bristly.
      - 7a. Branches densely bristly.
        - 8a. Petiole not bristly; peduncle without a prophyll at base ..... 19. *S. horridiramula*
        - 8b. Petiole densely bristly; peduncle with a prophyll at base ..... 74. *S. setiramula*
      - 7b. Branches verruculose, sometimes young branches minutely bristly.
        - 9a. Peduncle without a prophyll at base.
          - 10a. Branches minutely verruculose, not prickly; inflorescence borne in axil of well-developed leaf ..... 49. *S. nervomarginata*
          - 10b. Branches verruculose or spinulose-verruculose, ± sparsely prickly; inflorescence borne in axil of young leaf on new branches ..... 13. *S. lebrunii*
        - 9b. Peduncle with a prophyll at base.
          - 11a. Young branches, petiole, and leaf base minutely bristly ..... 57. *S. kwangsiensis*
          - 11b. Young branches, petiole, and leaf base not bristly.
            - 12a. Leaf blade orbicular or nearly so, thickly leathery ..... 70. *S. bauhinioides*
            - 12b. Leaf blade not orbicular, leathery or papery.
              - 13a. Petiole wingless, tendrils absent; receptacle suboblong ..... 67. *S. fooningensis*
              - 13b. Petiole winged, tendrils usually present; receptacle subglobose.
                - 14a. Inflorescence 1-umbellate; branches usually 2- or 3-angled ..... 54. *S. chapaensis*
                - 14b. Inflorescence 2–5-umbellate, forming a raceme of umbels; branches not angled.
                  - 15a. Inflorescence with 3–7 umbels; petiole 10–15 mm, tendrils usually present ..... 61. *S. aspericaulis*
                  - 15b. Inflorescence with 2 umbels; petiole 7–12 mm, tendrils usually absent ..... 63. *S. malipoensis*
    - 6b. Branches neither verruculose nor bristly.
      - 16a. Inflorescence of 2 to many umbels (if a solitary umbel, then peduncle articulate in proximal part with a prophyll at base).
        - 17a. Branches ± 4-angled.
          - 18a. Branches not zigzagged, angles narrowly winged ..... 72. *S. gagnepainii*
          - 18b. Branches strongly zigzagged, angles wingless ..... 68. *S. quadrata*
        - 17b. Branches terete, not angled.
          - 19a. Tepals of male flowers longitudinally wrinkled; stamens 8–10 ..... 50. *S. luei*
          - 19b. Tepals of male flowers not wrinkled; stamens 6.
            - 20a. Petiole wings well developed, each 4–13 mm wide.
              - 21a. Petiole wings not clasping node at base ..... 75. *S. griffithii*

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- 21b. Petiole wings deeply clasping node at base.
- 22a. Inflorescence of 2–7 solitary umbels; filaments proximally connate, forming a short column ..... 76. *S. ocreata*
- 22b. Inflorescence of 10–30 umbels, umbels 2- or 4-subwhorled or nearly clustered; filaments free ..... 77. *S. perfoliata*
- 20b. Petiole wings weakly developed, each less than 4 mm wide.
- 23a. Filaments proximally connate, forming a short column.
- 24a. Receptacle suboblong, 3–6 × 2–4.5 mm; outer tepals of male flowers ca. 5 mm ..... 56. *S. hemsleyana*
- 24b. Receptacle subglobose, 2–3 mm in diam.; outer tepals of male flowers 7–8 mm ..... 55. *S. vanchingshanensis*
- 23b. Filaments free.
- 25a. Branches densely prickly; petiole verruculose-prickly ..... 73. *S. densibarbata*
- 25b. Branches smooth or sparsely prickly; petiole not verruculose-prickly.
- 26a. Leaf blade 8–14(–20) cm wide ..... 62. *S. ovalifolia*
- 26b. Leaf blade 1–5(–7) cm wide.
- 27a. Petiole laterally compressed, winged portion 1–3 cm ..... 71. *S. planipes*
- 27b. Petiole subterete, winged portion less than 0.9 cm.
- 28a. Umbels 2- or 3-flowered; peduncle 1–3 mm; petiole 2.5–5 mm; stem and branches 2- or 4-angled ..... 66. *S. basilata*
- 28b. Umbels 3–15-flowered; peduncle and petiole both more than 5 mm; stem and branches not or indistinctly obtusely angled.
- 29a. Stamens very short, less than 1 mm, 1/5–1/3 as long as tepals ..... 64. *S. cocculoides*
- 29b. Stamens 3–6 mm, more than 1/2 as long as tepals.
- 30a. Leaf blade thickly leathery, orbicular to elliptic, with 3 main veins concave adaxially and veinlets indistinct; petiole scarcely winged ..... 69. *S. lunglingensis*
- 30b. Leaf blade leathery or papery, variable in shape, with 3–5 main veins raised or sometimes midvein slightly concave adaxially; petiole winged.
- 31a. Inflorescence with 3–7 umbels.
- 32a. Leaf blade leathery, apex acuminate; raceme with terminal umbel abortive; receptacle ellipsoid ..... 59. *S. yunnanensis*
- 32b. Leaf blade papery, apex mucronate; raceme with terminal umbel well developed; receptacle subglobose.
- 33a. Berries 1.5–2 cm in diam.; petiole 1.5–5 cm; inflorescence of 2 or 3 umbels; male flowers with tepals greenish yellow ..... 58. *S. megacarpa*
- 33b. Berries 5–7 mm in diam.; petiole 1–2 cm; inflorescence of 3–6(–10) umbels; male flowers with tepals dull red ..... 60. *S. bracteata*
- 31b. Inflorescence with 1 umbel.
- 34a. Berries 1.5–2 cm in diam. .... 58. *S. megacarpa*
- 34b. Berries 0.6–1 cm in diam.
- 35a. Seeds smooth; leaf blade becoming dark green or sometimes tinged black when dried, not wrinkled adaxially ..... 52. *S. lanceifolia*
- 35b. Seeds deeply 5- or 6-furrowed; leaf blade becoming grayish when dried, wrinkled along main veins adaxially ..... 53. *S. astrosperma*
- 16b. Inflorescence a solitary umbel; peduncle not articulate, usually without a prophyll at base.
- 36a. Stems usually annual, herbaceous.
- 37a. Leaf blade abaxially pale green, usually glabrous or papillose-puberulent, not white powdery ..... 2. *S. riparia*
- 37b. Leaf blade abaxially glaucous, white powdery.
- 38a. Petiole scarcely winged, tendrils (when developed) borne in proximal part ..... 1. *S. nipponica*
- 38b. Petiole narrowly winged, tendrils borne at middle or in distal part ..... 3. *S. pottingeri*
- 36b. Stems perennial, becoming woody.
- 39a. Petiole wings lacerate-fimbriate at margin.
- 40a. Branchlets usually 4-angled; leaf blade usually rhombic-ovate, with 3(–5) main veins raised adaxially, base cuneate; prickles sparse or absent ..... 44. *S. myrtillus*
- 40b. Branchlets 2- or 3-angled; leaf blade cordate to ovate, with (3–)5 main veins slightly concave adaxially, base truncate to cordate; prickles rather dense ..... 45. *S. munita*
- 39b. Petiole wings subentire at margin.
- 41a. Petiole with abscission zone below apex, hence leaf blade abscising together with distal part of petiole.
- 42a. Leaf blade abaxially pubescent, papillose-pubescent, or powdery-scabrous.
- 43a. Peduncle 0.5–3 cm; receptacle thickened and elongate ..... 12. *S. chingii*
- 43b. Peduncle 3–5 cm; receptacle scarcely thickened, not elongate ..... 37. *S. aberrans*
- 42b. Leaf blade abaxially glabrous.

- 44a. Peduncle 0.1–0.3 cm ..... 46. *S. bapouensis*  
44b. Peduncle 0.4–5 cm.  
45a. Petiole wings semicircular, each 3–5 mm wide, occupying entire length of petiole ..... 16. *S. discotis*  
45b. Petiole wings not as above.  
46a. Filaments ± connate, forming a column.  
47a. Outer tepals free; filaments connate in proximal part ..... 24. *S. emeiensis*  
47b. Outer tepals connate for ca. 1/2 their length, forming a tube; filaments connate throughout ..... 33. *S. synandra*  
46b. Filaments free.  
48a. Inflorescence arising from branches or branchlets with leaves fully developed.  
49a. Leaf blade abaxially glaucous.  
50a. Inflorescence usually racemose; pedicel erect in fruit ..... 36. *S. austrozhejiangensis*  
50b. Inflorescence umbellate; pedicel bent downward in fruit ..... 38. *S. retroflexa*  
49b. Leaf blade abaxially green or pale green.  
51a. Peduncle slightly shorter or longer than petiole; female flowers with 6 staminodes ..... 4. *S. sieboldii*  
51b. Peduncle much shorter than petiole (usually less than 1/2 as long); female flowers with 3 staminodes ..... 5. *S. scobinicaulis*  
48b. Inflorescence arising from young branches or branchlets with leaves not fully developed.  
52a. Petiole with abscission zone 2–3 mm above winged portion.  
53a. Leaf blade elliptic; petiole winged for ca. 1/2 its length ..... 17. *S. glaucochina*  
53b. Leaf blade ovate-elliptic to oblong-lanceolate; petiole winged for ca. 2/3 its length ..... 18. *S. elongatoumbellata*  
52b. Petiole with abscission zone immediately above winged portion.  
54a. Umbels 1- or 2-flowered or racemes 3–5-flowered ..... 9. *S. trinervula*  
54b. Umbels 3- to many flowered.  
55a. Receptacle oblong or ellipsoid, ± elongate.  
56a. Petiole winged for 2/3–4/5 its length ..... 10. *S. ferox*  
56b. Petiole winged for 1/3–1/2 its length ..... 11. *S. megalantha*  
55b. Receptacle subglobose.  
57a. Leaf blade herbaceous, becoming membranous or thinly papery when dried; tendrils partly developed.  
58a. Leaf blade abaxially glaucous; berries red at maturity ..... 14. *S. polycolea*  
58b. Leaf blade abaxially green or pale green; berries purplish black at maturity ..... 15. *S. outanscianensis*  
57b. Leaf blade papery or leathery; tendrils well developed.  
59a. Petiole wings each 2–4 mm wide, wider than petiole; tendrils short, slender .... 8. *S. davidiana*  
59b. Petiole wings each 0.5–1 mm wide, about as wide as petiole; tendrils long, rather thick.  
60a. Tepals of male flowers greenish to yellowish green, recurved at anthesis, outer ones 1.8–2.5 mm wide ..... 6. *S. china*  
60b. Tepals of male flowers yellow, tinged pinkish red, spreading at anthesis, outer ones 1.3–1.5 mm wide ..... 7. *S. nantoensis*  
41b. Petiole with abscission zone at apex, hence leaf blade abscising with almost no part of petiole.  
61a. Leaves and inflorescences becoming blackish or blackish brown when dried.  
62a. Branches slightly ridged, smooth or prickly ..... 20. *S. nigrescens*  
62b. Branches neither ridged nor prickly.  
63a. Petiole 3–7 mm; umbels 1–3-flowered ..... 39. *S. darrisii*  
63b. Petiole 5–5.5 cm; umbels densely 50–100-flowered ..... 48. *S. jiankunii*  
61b. Leaves and inflorescences not becoming blackish or blackish brown when dried.  
64a. Petiole wings each with a lanceolate auricle at apex.  
65a. Outer tepals connate for ca. 1/2 their length, inner ones adnate to filament column ..... 33. *S. synandra*  
65b. All tepals free.  
66a. Plants suberect or subscaudent; tendrils absent.  
67a. Leaf blade rhombic-elliptic or ovate-rhombic; peduncle 7–22 mm; auricles of petiole wings 1–1.5 mm ..... 35. *S. hayatae*  
67b. Leaf blade ovate; peduncle 3–4 mm; auricles of petiole wings 0.3–0.5 mm ..... 40. *S. mairei*  
66b. Vines climbing; tendrils wholly or partly developed.  
68a. Leaf blade thinly papery, ovate-lanceolate to broadly lanceolate; branchlets zigzagged; female flowers with 6 staminodes ..... 31. *S. elegans*  
68b. Leaf blade leathery, ovate to elliptic; branchlets not zigzagged; female flowers with 3

- staminodes.
- 69a. Peduncle 4–15 mm, 2/3–4/5 as long as petiole ..... 32. *S. corbularia*  
 69b. Peduncle 1–5 mm, less than 1/2 as long as petiole ..... 34. *S. hypoglauca*
- 64b. Petiole wings without auricle at apex.
- 70a. Shrubs erect or suberect; tendrils absent.
- 71a. Leaf blade lanceolate to oblong-lanceolate, more than 5 × as long as wide; stamens very short, ca. 1/8 as long as tepals ..... 30. *S. tsinchengshanensis*
- 71b. Leaf blade ovate to elliptic, 2–3 × as long as wide; stamens much longer, 1/3–1/2 as long as tepals.
- 72a. Filaments connate in proximal part, forming a column ..... 23. *S. cyclophylla*  
 72b. Filaments free.
- 73a. Petiole and leaf blade glabrous ..... 21. *S. stans*  
 73b. Distal 1/2 of petiole and abaxial base of leaf blade (particularly on veins) papillose-puberulent ..... 22. *S. trachypoda*
- 70b. Vines climbing, shrubby; tendrils wholly or partly developed.
- 74a. Peduncle shorter than or subequalling petiole; receptacle much thickened, with many persistent bracteoles.
- 75a. Male flowers slightly 6-angled, scarcely open, ca. 3 mm in diam.; outer tepals cucullate, abaxially deeply channeled ..... 43. *S. glabra*
- 75b. Male flowers not angled, fully open, 1–1.5 mm in diam.; outer tepals neither cucullate nor abaxially channeled.
- 76a. Branches minutely prickly; peduncle slightly shorter than petiole; female flowers with 3 staminodes ..... 42. *S. microphylla*  
 76b. Branches not prickly; peduncle much shorter than petiole; female flowers with 6 staminodes ..... 41. *S. longibracteolata*
- 74b. Peduncle longer than petiole; receptacle not or only slightly thickened, without persistent bracteoles
- 77a. Leaf blade abaxially green or pale green.
- 78a. Leaf blade with 3–5 main veins, outermost veins separate from leaf margins; petiole winged for 1/2–3/4 its length, tendrils borne near middle ..... 51. *S. arisanensis*
- 78b. Leaf blade with 5–7 main veins, outermost veins nearly combined with leaf margins; petiole winged for ca. 1/4 its length, tendrils borne near base.
- 79a. Leaf blade papery or thinly leathery, adaxially ± concave along midvein; anthers shorter than filaments ..... 47. *S. biumbellata*  
 79b. Leaf blade leathery, adaxially not concave along midvein; anthers slightly longer than filaments ..... 49. *S. nervomarginata*
- 77b. Leaf blade abaxially ± glaucous.
- 80a. Flowers large, tepals 6–7 mm ..... 29. *S. lushuiensis*  
 80b. Flowers much smaller, tepals 2–3.5 mm.
- 81a. Leaf blade with 3 main veins; petiole 3–7 mm, winged for 1/3–1/2 its length; stamens ca. 1/2 as long as tepals ..... 39. *S. darrisii*
- 81b. Leaf blade with 5–7 main veins; petiole (5–)8–12 mm, winged for 2/3–3/4 its length; stamens ca. 1/3 as long as tepals.
- 82a. Leaf blade with 5 main veins; filaments basally connate, forming a short column ..... 27. *S. menispermoidea*  
 82b. Leaf blade with 7 main veins; filaments free ..... 28. *S. pygmaea*

**1. *Smilax nipponica*** Miquel, Verslagen Meded. Afd. Natuurk. Kon. Akad. Wetensch., ser. 2, 2: 87. 1868.

白背牛尾菜 bai bei niu wei cai

*Coprosmanthus simadae* (Masamune) Masamune; *Smilax herbacea* Linnaeus var. *intermedia* C. H. Wright; *S. herbacea* var. *nipponica* (Miquel) Maximowicz; *S. herbacea* var. *oblonga* C. H. Wright; *S. longipedunculata* Merrill; *S. nipponica* subsp. *manshurica* Kitagawa; *S. nipponica* var. *manshurica* (Kitagawa) Kitagawa; *S. oblonga* (C. H. Wright) J. B. Norton; *S. simadae* Masamune.

Herbs annual, erect or sometimes slightly climbing. Stem

simple, terete, 8–100 cm, smooth, hollow and slightly pithy. Petiole 1.5–4.5 cm, scarcely winged; abscission zone distal; tendrils sometimes present. Leaf blade ovate to oblong, 4–20 × 2–14 cm, abaxially glaucous and usually powdery-pubescent. Inflorescence of 1 umbel, basally not prophyllate; peduncle 3–9 cm, slightly compressed; umbels of both sexes 20–30-flowered, base thickened. Male flowers: tepals usually reflexed at anthesis, greenish yellow or white, ca. 4 × 1 mm; stamens 2.5–3.5 mm. Female flowers: tepals subequalling male ones; staminodes 6. Berries blue-black, globose, 6–7 mm in diam., white powdery. Fl. Apr–May, fr. Aug–Sep.

Forests, grassy slopes, moist places along streams; 200–1400 m.

Anhui, Fujian, Guangdong, Guizhou, Henan, Hunan, Jiangxi, Liaoning, Shandong, Sichuan, Taiwan, ?Yunnan, Zhejiang [Japan, Korea].

**2. *Smilax riparia*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 55. 1878.

牛尾菜 niu wei cai

Vines annual or sometimes perennial (in S China), climbing. Stem branched, terete, 1–2 m, herbaceous or slightly woody near base, smooth or pubescent, hollow and slightly pithy. Petiole 0.7–2 cm, scarcely winged; abscission zone distal; tendrils usually present. Leaf blade usually ovate to elliptic, 7–15 × 5–11 cm, herbaceous, abaxially glabrous, papillose-puberulent, or pubescent. Inflorescence of 1 umbel, basally not prophyllate; peduncle rather slender, 3–5(–10) cm, slightly compressed; umbels of both sexes 5–20(–30)-flowered, base thickened; bracteoles 1–2 mm, not caducous. Male flowers: tepals yellowish green, 4–5 × 0.6–1 mm; stamens 4–5 mm. Female flowers: tepals slightly smaller than male ones. Berries blue-black, globose, 7–9 mm in diam. Fl. Jun–Jul, fr. Oct.

Forests, thickets, grassy slopes, hillsides along valleys; near sea level to 2100 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, ?Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Philippines].

- 1a. Leaf blade abaxially glabrous ..... 2a. var. *riparia*  
 1b. Leaf blade abaxially papillose-puberulent  
 or pubescent.  
 2a. Stem, branches, and inflorescence  
 glabrous ..... 2b. var. *acuminata*  
 2b. Stem, branches, and inflorescence  
 pubescent ..... 2c. var. *pubescens*

**2a. *Smilax riparia* var. *riparia***

牛尾菜(原变种) niu wei cai (yuan bian zhong)

*Coprosmanthus oldhamii* (Miquel) Masamune var. *daibuensis* (Hayata) Masamune; *C. pseudochina* Masamune var. *daibuensis* (Hayata) Masamune; *Smilax flaccida* C. H. Wright; *S. herbacea* Linnaeus var. *angusta* C. H. Wright; *S. herbacea* var. *daibuensis* Hayata; *S. herbacea* var. *foetida* H. Léveillé; *S. herbacea* var. *heterophylla* H. Léveillé; *S. herbacea* var. *lancilimba* Merrill; *S. higoensis* Miquel var. *maximowiczii* (Koidzumi) Kitagawa; *S. maximowiczii* Koidzumi; *S. oldhamii* Miquel var. *daibuensis* (Hayata) T. Koyama; *S. ovatorotunda* Hayata; *S. riparia* f. *ovatorotunda* (Hayata) T. Koyama; *S. takaensis* Hayata.

Stem, branches, leaves, and inflorescence glabrous. Female flowers: staminodes absent.

Forests, thickets, grassy slopes, hillsides along valleys; near sea level to 1600 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, ?Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Philippines].

**2b. *Smilax riparia* var. *acuminata*** (C. H. Wright) F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 192. 1978.

尖叶牛尾菜 jian ye niu wei cai

*Smilax herbacea* Linnaeus var. *acuminata* C. H. Wright, J. Linn. Soc., Bot. 36: 98. 1903.

Stem, branches and inflorescence glabrous. Leaf blade abaxially papillose-puberulent especially on main veins, apex subcuspidate-acuminate. Female flowers: staminodes 6.

• Forests, grassy slopes, hillsides along valleys; 900–2100 m. Henan, Hubei, Shaanxi, Sichuan.

**2c. *Smilax riparia* var. *pubescens*** (C. H. Wright) F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 192. 1978.

毛牛尾菜 mao niu wei cai

*Smilax herbacea* Linnaeus var. *pubescens* C. H. Wright, J. Linn. Soc., Bot. 36: 98. 1903.

Stem, branches, leaves, and inflorescence pubescent.

• W Hubei.

**3. *Smilax pottingeri*** Prain, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 69: 174. 1900.

纤柄菝葜 xian bing ba qia

*Heterosmilax pottingeri* (Prain) F. T. Wang & Tang.

Vines herbaceous, becoming blackish when dried. Stem terete, rigid, slightly woody proximally, smooth. Petiole 2–5 cm, slightly compressed, narrowly winged; wings 1–2.5 cm × ca. 1 mm, apically minutely auriculate; abscission zone inconspicuous; tendrils commonly present. Leaf blade abaxially glaucous, ovate to broadly so, 10–18 × 6–17 cm, herbaceous to thinly papery, abaxially white powdery, main veins 5–7. Male inflorescence of 1 umbel, basally not prophyllate; peduncle 3–6 cm; umbel densely 40–70-flowered, base 3–4 mm in diam. Male flowers: tepals 4–5 × 1–1.5 mm; stamens slightly shorter than tepals. Female flowers unknown.

Dense forests, thickets, river banks, hillsides along valleys; 1100–1500 m. S Yunnan [Laos, Myanmar, Thailand].

Only a few sterile and fruiting specimens have been collected from China. The description of the male flowers follows Koyama (in Smitinand et al., Fl. Thailand 2: 245. 1975).

**4. *Smilax sieboldii*** Miquel, Verslagen Meded. Afd. Natuurk. Kon. Akad. Wetensch., ser. 2, 2: 87. 1868.

华东菝葜 hua dong ba qia

*Coprosmanthus oldhamii* (Miquel) Masamune; *Smilax formosana* (Hayata) Hayata; *S. herbacea* Linnaeus var. *oldhamii* (Miquel) Maximowicz; *S. nebelii* Gilg; *S. oldhamii* Miquel; *S. sieboldii* var. *formosana* Hayata; *S. sieboldii* f. *inermis* (Nakai) H. Hara; *S. sieboldii* var. *inermis* Nakai.

Vines climbing. Stem branched, subterete, 1–2 m, ± woody; stem and branches with scattered, blackish, needlelike prickles. Petiole 1–2 cm, narrowly winged for ca. 1/2 its length; abscission zone distal; tendrils well developed. Leaf blade ovate to broadly so, 3–9 × 2–5(–8) cm, herbaceous. Inflorescence of 1 umbel, basally not prophyllate; peduncle slender, 1–2.5 cm, subequaling or longer than petiole; umbels of both sexes usually 3–8-flowered, base scarcely thickened. Male flowers: tepals yellowish green, 4–5 × 1.2–1.4 mm, inner ones slightly

narrower than outer; stamens 2–3 mm. Female flowers: tepals smaller than male ones; staminodes 6. Berries blue-black, globose, 6–7 mm in diam. Fl. May–Jun, fr. Oct.

Forests, thickets, grassy slopes; near sea level to 1800(–2500) m. Anhui, Fujian, Jiangsu, Liaoning, Shandong, Taiwan, Zhejiang [Japan, Korea].

**5. *Smilax scobinicaulis*** C. H. Wright, Bull. Misc. Inform. Kew 1895: 117. 1895.

短梗菝葜 duan geng ba qia

*Smilax brevipes* Warburg; *S. cavaleriei* H. Léveillé & Vaniot; *S. martini* H. Léveillé & Vaniot; *S. microphylla* C. H. Wright var. *nigrescens* Warburg; *S. ocreata* H. Léveillé & Vaniot (1905), not A. de Candolle (1878); *S. scobinicaulis* var. *brevipes* (Warburg) Handel-Mazzetti; *S. sieboldii* Miquel var. *scobinicaulis* (C. H. Wright) T. Koyama.

Vines climbing. Stem branched, terete, 1–2 m, ± woody; stem and branches sparsely prickly, rarely scarcely so; prickles blackish, needlelike, 4–5 mm. Petiole 0.5–1.5 cm, narrowly winged for ca. 1/2 its length; abscission zone distal; tendrils well developed. Leaf blade sometimes becoming blackish when dried, ovate to elliptic-ovate, 4–12.5 × 2.5–8 cm, herbaceous. Inflorescence of 1 umbel, basally not prophyllate; peduncle rather short, usually less than 1/2 as long as petiole; umbels of both sexes 3–8-flowered, base not thickened. Male flowers: tepals yellowish green, 4–5 × 1–1.8 mm; stamens 2–3 mm. Female flowers: tepals slightly smaller than male ones; staminodes 3. Berries blue-black, globose, 6–9 mm in diam. Fl. May, fr. Oct.

• Forests, thickets, shaded places on slopes; 600–1200 m. Gansu, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Shanxi, Yunnan.

**6. *Smilax china*** Linnaeus, Sp. Pl. 2: 1029. 1753.

菝葜 ba qia

*Coprosmanthus japonicus* Kunth; *Smilax china* f. *obtusa* H. Léveillé; *S. china* var. *taiheiensis* (Hayata) T. Koyama; *S. pteropus* Miquel; *S. taiheiensis* Hayata.

Vines climbing. Stem branched, terete, 1–5 m, woody, sparsely prickly. Petiole 0.5–1.5 cm, narrowly winged for 1/2–2/3 its length; abscission zone just above winged portion; tendrils usually present. Leaf blade elliptic to orbicular, 3–10 × 1.5–6(–10) cm. Inflorescence borne in axil of young leaf, of 1 umbel, basally not prophyllate; peduncle 1–2 cm; umbels of both sexes 10–25-flowered, subglobose, base subglobose, 2–3 mm in diam.; bracteoles many, small. Male flowers: tepals yellowish green, 3.5–4.5 × 1.5–2.5 mm; stamens 3–4 mm; filaments filiform. Female flowers: staminodes 6. Berries red, globose, 0.6–1.5 cm in diam., minutely white powdery. Fl. Feb–May, fr. Sep–Nov.  $2n = 30^*$ ,  $90^*$ .

Forests, thickets, hillsides, grassy slopes, shaded places along valleys or streams; near sea level to 2000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, ?Liaoning, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [Myanmar, Philippines, Thailand, Vietnam].

*Smilax taquetii* H. Léveillé (Repert. Spec. Nov. Regni Veg. 10:

372. 1912), described from Korea, was identified as *S. china* by Mc-Kean (Notes Roy. Bot. Gard. Edinburgh 44: 196. 1986).

**7. *Smilax nantoensis*** T. Koyama, Taiwania 20: 120. 1975.

南投菝葜 nan tou ba qia

Vines climbing. Stem much branched distally, terete, 0.8–2 m, woody, unarmed. Petiole 0.7–1.5(–2) cm, narrowly winged for 2/3–3/4 its length; abscission zone just above winged portion; tendrils usually 5–10 cm. Leaf blade usually ovate or elliptic, 3–10 × 1.5–4 cm. Inflorescence borne in axil of young leaf or bract on new branches, of 1 umbel, basally not prophyllate; peduncle 5–10 mm; umbels of both sexes 3–10-flowered, base neither thickened nor elongate. Male flowers: tepals yellow, tinged pinkish red, 4.5–5 × 1.3–1.5 mm; stamens 4–4.5 mm. Female flowers: tepals 2.5–3 × 1–1.7 mm; staminodes 3. Berries red, globose, 6–8 mm in diam.

• Forest margins, grassy forest openings; 800–900 m. C Taiwan.

**8. *Smilax davidiana*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 104. 1878.

小果菝葜 xiao guo ba qia

*Smilax china* Linnaeus var. *brachypoda* Rehder.

Vines climbing. Stem branched, 1–2(–4) m, terete, slightly woody, sparsely prickly. Petiole usually 5–7 mm, winged for 1/2–2/3 its length; wings 2–4 mm wide; abscission zone just above winged portion; tendrils rather short. Leaf blade usually elliptic, 3–7(–14) × 2–4.5(–12) cm. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 5–14 mm; umbels of both sexes 3–13-flowered, base thickened, sometimes slightly elongate; bracteoles persistent. Male flowers: tepals yellowish green, 3.5–4 × 1–2 mm. Female flowers: tepals subequaling male ones, staminodes 6. Berries globose, 5–6 mm in diam. Fl. Mar–Apr, fr. Oct–Nov.

Forests, thickets; 400–1700 m. Fujian, Guizhou, Hunan, Jiangxi, Zhejiang [Japan].

**9. *Smilax trinervula*** Miquel, Verslagen Meded. Afd. Natuurk. Kon. Akad. Wetensch., ser. 2, 2: 87. 1868.

三脉菝葜 san mai ba qia

*Smilax biflora* Siebold ex Miquel var. *trinervula* (Miquel) Hatusima ex T. Koyama; *S. china* Linnaeus var. *trinervula* (Miquel) Makino; *S. esquirolii* H. Léveillé; *S. leucocarpa* H. Léveillé & Vaniot.

Subshrubs suberect or slightly climbing, deciduous. Stem branched, 0.5–2 m, unarmed or sparsely prickly. Petiole 3–5 mm, narrowly winged for ca. 2/3 its length; abscission zone just above winged portion; tendrils usually present. Leaf blade abaxially glaucous, usually elliptic, 2–5 × 1–2.5 cm, papery. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel or raceme, basally not prophyllate; peduncle 3–7 mm; umbel 1–5-flowered, base not thickened. Male flowers: tepals yellowish green, ca. 4 × 0.8–1.5 mm. Female flowers: tepals ca. 4 mm; staminodes 6. Berries red, globose, 5–6 mm in diam. Fl. Mar–Apr, fr. Oct–Nov.

Forests, thickets; 400–1700 m. Fujian, Guizhou, Hunan, Jiangxi,

Zhejiang [Japan].

**10. *Smilax ferox*** Wallich ex Kunth, Enum. Pl. 5: 251. 1850.

长托菝葜 chang tuo ba qia

Vines climbing. Stem branched, terete, woody, usually sparsely prickly. Petiole 4–7(–13) mm, winged for 2/3 to nearly all its length; wings 1.5–2.5 mm wide; abscission zone distal; tendrils only occasionally developed on old stem or branches. Leaf blade abaxially often glaucous, oblong to oblong-lanceolate, 3.5–9(–12) × 1.5–3.5(–6) cm, papery to leathery. Inflorescence borne in axil of young leaf, of 1 umbel, basally not prophyllate; peduncle 1–1.6(–2.5) cm; umbels of both sexes 4–11-flowered, usually ± racemose due to elongate base, base thickened, 2–5 × 1–2 mm. Male flowers: tepals pale yellow, 3–4.5 × 1.5–2 mm; filaments 1.5–2 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Berries red, globose, 8–10 mm in diam. Fl. Apr–May, fr. Oct–Dec.  $2n = 104$ .

Dense forests, thickets, shaded slopes; 1000–2900 m. Guangdong, Guangxi, Guizhou, Yunnan [Bhutan, India, Myanmar, Nepal, Vietnam].

**11. *Smilax megalantha*** C. H. Wright, Bull. Misc. Inform. Kew 1895: 118. 1895.

大花菝葜 da hua ba qia

*Smilax cinerea* Warburg; *S. loupouensis* H. Léveillé; *S. megalantha* var. *alata* F. T. Wang & Tang; *S. tortuosa* Diels.

Vines climbing. Stem branched, terete, to 5 m, woody, sparsely prickly. Petiole 1–2.5 cm, winged; wings 1–2 mm wide; abscission zone just above winged portion; tendrils sometimes present. Leaf blade abaxially usually glaucous, elliptic to oblong-ovate, thickly leathery, 6–16 × 2.5–9 cm. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 1–2.5 cm, occasionally articulate; umbels of both sexes 4–13-flowered, usually ± racemose due to elongate base, base thickened, 2–4 × 1–2 mm; bracteoles persistent. Male flowers: tepals yellowish green or white, 6–8 × 2–3 mm. Female flowers: tepals slightly smaller than male ones, staminodes 6. Berries red, globose, 1–1.5 cm in diam. Fl. Mar–Apr, fr. Oct–Nov.

• Forests, thickets, shaded places; 900–3400 m. Guizhou, Hubei, Sichuan, Yunnan.

**12. *Smilax chingii*** F. T. Wang & Tang, Sinensia 5: 426. 1934.

柔毛菝葜 rou mao ba qia

*Smilax chingii* var. *papillosifolia* J. M. Xu; *S. megalantha* C. H. Wright var. *ferruginea* F. T. Wang; *S. megalantha* var. *maclurei* Merrill.

Vines climbing. Stem branched, terete, 1–7 m, woody, sparsely prickly. Petiole 0.5–2 cm, winged; wings 3–10 × 2–3 mm; abscission zone just above winged portion; tendrils usually absent. Leaf blade ovate-elliptic to oblong-lanceolate, 5–18 × 1.5–7(–11) cm, abaxially brownish or white pubescent. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 0.5–3 cm, occasionally articulate; umbels of both sexes several flowered, usually

slightly racemose due to elongate base, base thickened, 2–4 × 1–2 mm; bracteoles present. Male flowers: tepals 7–8 × 3.5–4 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Berries red, globose, 1–1.4 cm in diam. Fl. Mar–Apr, fr. Nov–Dec.

• Forests, thickets, grassy slopes, shaded places along valleys or streams; 700–1600(–2800) m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

**13. *Smilax lebrunii*** H. Léveillé, Fl. Kouy-Tcheou, 257. 1914.

粗糙菝葜 cu cao ba qia

*Smilax megalantha* C. H. Wright var. *asperata* F. T. Wang.

Vines climbing. Stem branched, 1–2 m, terete, woody; branches ± verruculose or spinulose-verruculose. Petiole 0.5–1.5 cm, winged; wings 4–10 × 2–3 mm; abscission zone distal; tendrils sometimes present. Leaf blade elliptic, ovate, or lanceolate, 4–10 × 1.5–5.5 cm. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 1–2.5 cm; umbels of both sexes several flowered, base slightly thickened, sometimes elongate. Male flowers: outer tepals yellowish green, 4.5–5 × 1.8–2 mm. Female flowers: tepals 4.5–5 mm; staminodes 6. Berries red, globose, 1–1.5 cm in diam. Fl. Mar–Apr, fr. Oct–Nov.

Forests, thickets, grassy slopes, shaded roadsides; 800–2900 m. Gansu, Guangxi, Guizhou, Hunan, Sichuan, Yunnan [Myanmar].

**14. *Smilax polycolea*** Warburg in Diels, Bot. Jahrb. Syst. 29: 257. 1900.

红果菝葜 hong guo ba qia

Vines climbing. Stem branched, to 7 m, woody, scarcely prickly. Petiole 5–10(–20) mm, winged; wings 3–5 × 1–2 mm; abscission zone just above winged portion; tendrils partly present. Leaf blade abaxially glaucous, elliptic to ovate, 4–7(–12) × 2.5–4(–6) cm. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 0.5–3 cm; umbels of both sexes 3–13-flowered, base usually slightly thickened, sometimes elongate; bracteoles several, persistent. Male flowers: tepals yellowish green, 3.5–4.5 × 1.2–2 mm. Female flowers: tepals subequaling male ones; staminodes 6. Berries red, globose, 7–8 mm in diam., white powdery. Fl. Apr–May, fr. Sep–Oct.

• Forests, thickets, shaded places on slopes; 900–2200 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan.

**15. *Smilax outanscianensis*** Pampanini, Nuovo Giorn. Bot. Ital., n.s., 18: 109. 1911.

武当菝葜 wu dang ba qia

*Smilax discotis* Warburg subsp. *concolor* (J. B. Norton) T. Koyama; *S. discotis* var. *concolor* J. B. Norton.

Vines climbing. Stem branched, 2–3 m, woody, scarcely prickly. Petiole 5–10 mm, winged; wings 3–5 × 1–2 mm; abscission zone just above winged portion; tendrils sometimes present. Leaf blade elliptic to ovate, 4–10 × 2–4.5 cm. Inflorescence borne in axil of young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 5–12 mm; umbels of

both sexes several flowered, base slightly thickened, sometimes elongate; bracteoles persistent. Male flowers: tepals yellowish green, 6–7 × 1.4–2.8 mm. Female flowers: tepals smaller than male ones; staminodes 3–6. Berries purplish black, globose, 7–10 mm in diam. Fl. May, fr. Sep–Oct.

• Forests, thickets, shaded hillsides along valleys or streams; 1100–2100 m. Hubei, Jiangxi, Sichuan.

**16. *Smilax discotis*** Warburg in Diels, Bot. Jahrb. Syst. 29: 256. 1900.

托柄菝葜 tuo bing ba qia

Plants shrubby, suberect to subscandent. Stem branched, terete, 0.5–3 m, scarcely or sparsely prickly. Petiole 4–5(–15) mm, broadly winged for all its length; wings ± shell-shaped, 3–5 mm wide; abscission zone apical; tendrils sometimes present. Leaf blade abaxially glaucous, usually subelliptic, 4–10(–20) × 2–5(–10) cm, base cordate. Inflorescence borne in axil of rather young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 1–4 cm; umbels of both sexes several flowered, base slightly thickened, sometimes elongate; bracteoles small. Male flowers: tepals yellowish green, ca. 4 × 1–1.8 mm. Female flowers: tepals slightly smaller than male ones; staminodes 3. Berries black, globose, 6–8 mm in diam., white powdery. Fl. Apr–May, fr. Oct.

• Forests, thickets, shaded places on slopes; 600–2100 m. Anhui, Fujian, Gansu, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, ?Zhejiang.

**17. *Smilax glaucochina*** Warburg in Diels, Bot. Jahrb. Syst. 29: 255. 1900.

黑果菝葜 hei guo ba qia

*Smilax bodinieri* H. Léveillé & Vaniot; *S. sebeana* Miquel var. *glaucochina* (Warburg) T. Koyama.

Vines climbing. Stem branched, terete, 0.5–4 m, woody, sparsely prickly. Petiole 0.7–1.5(–2.5) cm, winged, wings 4–8 × 1.5–2 mm; abscission zone distal; tendrils usually present. Leaf blade abaxially glaucous, elliptic, 5–8(–20) × 2.5–5(–14) cm, thickly papery, occasionally abaxially white powdery. Inflorescence borne in axil of rather young leaf on new branchlets, of 1 umbel, basally not prophyllate; peduncle 1–3 cm; umbels of both sexes 5–18-flowered, base slightly thickened. Male flowers: tepals yellowish green, 5–6 × 1.5–3 mm. Female flowers: tepals subequaling male ones; staminodes 3. Berries black, globose, 7–8 mm in diam., white powdery. Fl. Mar–May, fr. Oct–Nov.

• Forests, thickets, grassy slopes; near sea level to 1600 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shanxi, Sichuan, Taiwan, Zhejiang.

**18. *Smilax elongatumbellata*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 358. 1911.

台湾菝葜 tai wan ba qia

*Smilax elongatoreticulata* Hayata; *S. elongatumbellata* f. *elongatoreticulata* (Hayata) T. Koyama.

Plants shrubby, suberect to scandent. Stem and branches scarcely or sparsely prickly. Petiole 5–8 mm, narrowly winged for ca. 2/3 its length; abscission zone distal; tendrils usually

present. Leaf blade abaxially glaucous, ovate-elliptic to oblong-lanceolate, 2.5–9 × 1–4 cm, main veins (3–)5, prominent on both sides. Inflorescence borne in axil of proximal leaf, of 1 umbel, basally not prophyllate; peduncle 1–4 cm; umbels of both sexes 9–28-flowered. Male flowers: outer tepals ca. 6.5 × 3 mm, inner ones ca. 1/2 as wide as outer ones. Female flowers: tepals smaller than male ones. Berries blackish, globose, 6–8 mm in diam., white powdery. Fl. Mar.

1300–1500 m. Taiwan [Japan (Ryukyu Islands)].

**19. *Smilax horridiramula*** Hayata, Icon. Pl. Formos. 9: 131. 1920.

刺枝菝葜 ci zhi ba qia

Vines climbing. Stem and branches densely bristly throughout; bristles horizontally spreading, slender, needlelike, ca. 5 mm, apex sometimes forked. Petiole ca. 1 cm, winged; wings ca. 5 × 1–1.5 mm; abscission zone distal; tendrils usually present. Leaf blade abaxially slightly glaucous, elliptic to oblong-ovate, 5–6 × 3–3.5 cm, papery, base rounded, apex somewhat mucronate, main veins 5. Inflorescence of 1 umbel, basally not prophyllate; peduncle 3–4 cm. Flowers unknown. Berries blue-black at maturity, globose, ca. 6 mm in diam.

• C and E Taiwan.

**20. *Smilax nigrescens*** F. T. Wang & Tang ex P. Y. Li, Acta Phytotax. Sin. 11: 253. 1966.

黑叶菝葜 hei ye ba qia

Vines climbing. Stem branched, to 2 m, woody, scarcely or sparsely prickly. Petiole 6–12 mm, narrowly winged for 1/2–2/3 its length; abscission zone distal or subapical; tendrils usually present. Leaf blade becoming blackish when dried, abaxially usually glaucous, ovate-lanceolate or ovate, 3.5–9.5 × 1.5–5 cm, papery. Inflorescence of 1 umbel, basally not prophyllate; peduncle 0.8–1.5(–2.5) cm; umbels of both sexes 4–14-flowered, base slightly thickened; bracteoles ovate. Male flowers: tepals yellowish green, ca. 2.5 × 1 mm. Female flowers: tepals slightly smaller than male ones, staminodes 6. Berries blue-black, globose, 6–8 mm in diam. Fl. Apr–Jun, fr. Sep–Oct.

• Forests, thickets, shaded slopes; 900–2500 m. Gansu, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Yunnan.

**21. *Smilax stans*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Pétersbourg 17: 170. 1872.

鞘柄菝葜 qiao bing ba qia

*Smilax pekingensis* A. de Candolle; *S. tenuissima* Hayata; *S. vaginata* Decaisne; *S. vaginata* var. *pekingensis* (A. de Candolle) T. Koyama; *S. vaginata* var. *stans* (Maximowicz) T. Koyama.

Shrubs deciduous, erect, unarmed. Stem densely branched, 0.3–3 m. Petiole 5–12 mm, abaxially striate-ridged, narrowly winged for ca. 2/3 its length; wings apically confluent to petiole; abscission zone subapical; tendrils absent. Leaf blade abaxially glaucous, ovate to suborbicular, 1.5–4(–6) × 1.2–3.5(–5) cm, sometimes abaxially slightly powdery. Inflorescence of 1 umbel, basally not prophyllate; peduncle slender, 0.7–2 cm; umbels of both sexes 1–3(–6)-flowered, base not thickened. Male

flowers: tepals yellowish green or sometimes pink, 2.5–3 × 0.7–1 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Berries black, globose, 6–10 mm in diam., white powdery. Fl. Mar–May, fr. Oct–Nov.

Forests, thickets, shaded places on grassy slopes; 400–3200 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, ?Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shanxi, Taiwan, ?Yunnan, Zhejiang [Japan].

**22. *Smilax trachypoda*** J. B. Norton in Sargent, Pl. Wilson. 3: 3. 1916.

糙柄菝葜 *cao bing ba qia*

*Smilax stans* Maximowicz var. *verruculosifolia* J. M. Xu.

Shrubs deciduous, erect, unarmed. Stem and branches terete, indistinctly striate-ridged. Petiole 5–10 mm, widened toward base, abaxially striate-ridged, adaxially channeled, papillose-puberulent in distal 1/2, narrowly winged for ca. 2/3 its length; wings apically confluent to petiole; abscission zone apical; tendrils absent. Leaf blade ovate or broadly so, 2–4 × 1–3 cm, papery, abaxially papillose-puberulent on basal veins. Inflorescence of 1 umbel, basally not prophyllate. Flowers very similar to those of *Smilax stans*. Berries black, globose, 5–7 mm in diam. Fl. May–Jun, fr. Oct.

• Forests, thickets, shaded places on slopes; 1300–3100 m. Gansu, Henan, Hubei, Shaanxi, Sichuan.

**23. *Smilax cyclophylla*** Warburg in Diels, Bot. Jahrb. Syst. 29: 257. 1900.

合蕊菝葜 *he rui ba qia*

Shrubs erect, unarmed. Stem and branches terete. Petiole 6–13 mm, widened toward base, abaxially striate-ridged, narrowly winged for ca. 2/3 its length; wings apically confluent to petiole; abscission zone apical; tendrils absent. Leaf blade abaxially glaucous, 2–7 × 1–4 cm, elliptic-oblong to ovate. Inflorescence of 1 umbel, basally not prophyllate; peduncle 1–3 cm; umbels of both sexes 3–5-flowered, base slightly thickened. Male flowers: tepals yellowish green, outer ones 2.5–3 × ca. 0.8 mm, inner ones ca. 2.5 × 0.5 mm; filaments connate, forming a column ca. 0.8 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Berries black, globose, 5–7 mm in diam. Fl. Apr–May, fr. Oct.

• Forests, thickets, shaded places on slopes; 1600–2700 m. Sichuan, Yunnan.

**24. *Smilax emeiensis*** J. M. Xu, Acta Phytotax. Sin. 23: 234. 1985.

峨眉菝葜 *e mei ba qia*

Shrubs erect, unarmed. Stem laxly branched, terete, 0.4–2 m, smooth. Petiole slender, 2.5–5.5 cm, abaxially striate-ridged, narrowly winged for ca. 1/5 its length; wings apically confluent to petiole; abscission zone just above winged portion; tendrils absent. Leaf blade cordate to ovate-cordate, 4–13 × 3–11 cm, papery. Inflorescence of 1 umbel, basally not prophyllate; peduncle 2–3.5 cm; umbels of both sexes 5–15-flowered, base slightly thickened. Male flowers: tepals pale green, 2.6–3.5 × 1–1.5 mm; filaments connate, forming a column ca. 1 mm. Female flowers: tepals subequaling male ones; staminodes 6.

Berries black, globose, ca. 6 mm in diam. Fl. May–Jun, fr. Oct.

• Forest margins, hillsides, grassy slopes; 2200–2700 m. C Sichuan (Emei Shan).

**25. *Smilax pachysandroides*** T. Koyama, Brittonia 26: 136. 1974.

川鄂菝葜 *chuan e ba qia*

*Smilax umbrosa* J. M. Xu.

Subshrubs or small shrubs, suberect. Rhizome creeping, stolonlike, 1–2 mm in diam. Stem sometimes with 1 or 2 branches, terete, 10–30 cm, 2–4-leaved. Petiole 4–13 mm, abaxially striate-ridged, scarcely winged; abscission zone at middle; tendrils absent. Leaf blade abaxially very glaucous, broadly ovate, elliptic, or suborbicular, 3–7.5 × 3–6 cm, base cordate, main veins 3–5. Female inflorescence borne in axil of scalelike, membranous bract, of 1 umbel, basally not prophyllate; peduncle 1–2 cm; umbel 2–5-flowered, base not thickened. Male flowers unknown. Female flowers very small; staminodes 2 or 3. Berries ca. 7 mm in diam. (immature). Fr. Nov–Dec.

• Bamboo forests, forest margins; 1700–1900 m. W Hubei, SW Sichuan.

**26. *Smilax nana*** F. T. Wang, Bull. Fan Mem. Inst. Biol. 5: 116. 1934.

矮菝葜 *ai ba qia*

Subshrubs or small shrubs, deciduous, erect. Rhizome creeping, stolonlike, 1–2 mm in diam. Stem branched, 20–50 cm, smooth. Petiole 1–2 mm, widened toward base, abaxially striate-ridged, adaxially channeled, narrowly winged for ca. 2/3 its length; abscission zone distal; tendrils absent. Leaf blade abaxially glaucous, oblong-elliptic, 0.5–1.8 cm × 3–8 mm, papery, base obtuse, apex mucronate. Male flowers unknown. Female inflorescence of 1 umbel, basally not prophyllate; peduncle 5–7 mm; umbel 1- or 2-flowered, base not thickened; bracteoles ovate, very small; pedicels 3–5 mm. Fruit unknown.

• Mixed forests; 2400–2700 m. W Yunnan (Yangbi Xian).

**27. *Smilax menispermoidea*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 108. 1878.

防己叶菝葜 *fang ji ye ba qia*

*Smilax luteocaulis* H. Léveillé; *S. rubriflora* Rehder.

Vines deciduous, climbing, unarmed. Stem branched, terete, 0.5–3 m, woody. Petiole 5–12 mm, abaxially striate-ridged, narrowly winged for 2/3–3/4 its length; wings apically confluent to petiole; abscission zone apical; tendrils usually present. Leaf blade abaxially glaucous, ovate or elliptic-ovate, 2–6(–10) × 2–5(–7) cm. Inflorescence of 1 umbel, basally not prophyllate; peduncle 2–4 cm; umbels of both sexes 5–15-flowered, base scarcely thickened. Male flowers: tepals purplish red, ca. 2.5 × 1 mm; stamens 0.6–1 mm; filaments basally connate, forming a short column. Female flowers: tepals subequaling male ones; staminodes 6, sometimes antheriferous. Berries purplish black, globose, 7–10 mm in diam. Fl. May–Jun, fr. Oct–Nov.

Forests, thickets, shaded places on slopes; 2600–3700 m. Gansu, Guizhou, Hubei, Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, N India,

Myanmar, Sikkim].

**28. *Smilax pygmaea*** Merrill, Philipp. J. Sci. 5: 339. 1910.

蛮大菝葜 luan da ba qia

*Smilax glaucophylla* Klotzsch var. *randaiensis* (Hayata) T. Koyama; *S. menispermoidea* A. de Candolle subsp. *randaiensis* (Hayata) T. Koyama; *S. menispermoidea* var. *randaiensis* (Hayata) T. Koyama; *S. randaiensis* Hayata.

Vines suberect to scandent, unarmed. Stem branched, 45–80 cm, woody, smooth. Petiole 0.8–1.2 cm, narrowly winged for ca. 2/3 its length; abscission zone apical; tendrils absent or rather short. Leaf blade abaxially glaucous, ovate or lanceolate-ovate, 3–6 × 2–2.5 cm, thickly herbaceous to subleathery, main veins 7, base rounded to shallowly cordate, apex acute or acuminate. Inflorescence of 1 umbel, basally not prophyllate; peduncle slender, 1.5–3 cm; umbels of both sexes 3–10-flowered. Male flowers: tepals red-brown, lanceolate-oblong, 2.5–3.5 mm; stamens 0.8–1.1 mm. Female flowers: tepals lanceolate-ovate, 2–3 mm. Berries dark blue, globose, ca. 6 mm in diam. Fl. Aug.

Mountain forests. Taiwan [Philippines].

**29. *Smilax lushuiensis*** S. C. Chen, Acta Phytotax. Sin. 26: 142. 1988.

泸水菝葜 lu shui ba qia

Vines climbing, unarmed. Stem branched, subterete, to more than 1 m, woody, slightly striate. Petiole 7–10 mm, widened toward base, narrowly winged for ca. 3/4 its length; abscission zone apical; tendrils just above winged portion. Leaf blade abaxially glaucous, ovate-cordate or orbicular-cordate, thinly papery, main veins 5, apex apiculate. Male inflorescence of 1 umbel, basally not prophyllate; peduncle slender, 3–4.5 cm; umbel 6–15-flowered, base thickened, ca. 2 mm in diam.; pedicels 1–2 cm. Male flowers: tepals spreading, narrowly oblong or ovate-oblong, 6–7 × 1.5–2 mm; filaments very short; anthers 0.3–0.5 mm. Female flowers and fruit unknown. Fl. May.

• Broad-leaved forests; 2500–2700 m. W Yunnan.

**30. *Smilax tsinchengshanensis*** F. T. Wang, Bull. Fan Mem. Inst. Biol. 5: 119. 1934.

青城菝葜 qing cheng ba qia

Shrubs erect, unarmed. Stem and branches inconspicuously obtusely ridged. Petiole 0.5–1.5(–1.8) cm, widened toward base, narrowly winged for 1/4–1/3 its length; abscission zone apical; tendrils absent. Leaf blade abaxially glaucous, lanceolate or oblong-lanceolate, 7–12 × 1–2.5(–3) cm. Inflorescence borne in axil of leaf or scalelike bract at base of young branches, of 1 umbel, basally sometimes prophyllate; peduncle slender, 1.5–5 cm; umbels of both sexes several flowered, base scarcely thickened. Male flowers: tepals dark red, 2.3–2.5 × 1–1.2 mm; stamens very short. Female flowers: tepals slightly smaller than male ones; staminodes 3. Berries black, globose, 7–10 mm in diam. Fl. Oct, fr. Oct–Nov of following year.

• Forests; 800–1900 m. Guizhou, W Sichuan.

**31. *Smilax elegans*** Wallich ex Kunth, Enum. Pl. 5: 163. 1850.

西藏菝葜 xi zang ba qia

*Smilax parvifolia* Wallich ex J. D. Hooker.

Vines climbing, unarmed. Stem branched, to more than 1 m, woody, smooth; young branches zigzagged. Petiole 0.5–1.5 cm, narrowly winged for 1/3–1/2 its length; wings apically lanceolate-auriculate; abscission zone apical; tendrils commonly present. Leaf blade abaxially glaucous, ovate-lanceolate or broadly lanceolate, 3–9 × 1–3.5 cm, main veins 5–7. Inflorescence of 1 umbel, basally not prophyllate; peduncle slender, 1–5 cm; umbels of both sexes 1–4-flowered, base not thickened; bracteoles 2 or 3, lanceolate. Male flowers: tepals greenish, ca. 1.5 × 0.7 mm; stamens rather short. Female flowers: tepals ca. 1.2 × 0.5 mm; staminodes 6, subulate. Fl. Jun.  $2n = 32$ .

Broad-leaved forests, *Tsuga* forests; 2200–2800 m. S Xizang [Bhutan, India, Myanmar, Nepal].

This species was misidentified in FRPS as *Smilax glaucophylla* Klotzsch.

**32. *Smilax corbularia*** Kunth, Enum. Pl. 5: 262. 1850.

筐条菝葜 kuang tiao ba qia

Vines climbing, unarmed. Stem branched, 3–9 m, woody. Petiole 0.8–1.4 cm, narrowly winged for ca. 1/2 its length; wings each with a lanceolate auricle (2–6 mm) apically; abscission zone apical; tendrils usually present. Leaf blade abaxially glaucous, ovate to oblong-elliptic, 4–14 × 2–4.5(–7) cm, leathery, margin recurved. Inflorescence of 1 umbel, basally not prophyllate; peduncle 4–15 mm; umbels of both sexes 10–20-flowered, base thickened; bracteoles many, persistent. Male flowers: tepals not spreading, greenish yellow, outer ones cymbiform, 2.5–3 × ca. 2 mm, inner ones 2–2.5 × ca. 1 mm, thickened, abaxially concave; filaments connate, forming a short column. Female flowers: tepals 2–2.5 mm; staminodes 3. Berries dark red, globose, 6–7 mm in diam. Fl. May–Jul, fr. Dec.

Forests, thickets; near sea level to 1600 m. Guangdong, Guangxi, Hainan, Yunnan [Indonesia, Malaysia, Myanmar, Vietnam].

Three closely allied taxa, *Smilax corbularia*, *S. hypoglauca*, and *S. synandra*, form a natural group in SE Asia. Among them, *S. synandra* differs rather distinctly from the others in its partly connate tepals (rather like those of *Heterosmilax*), the tube of which is sometimes 4-angled. Certain intermediates blur the distinction between *S. corbularia* and *S. hypoglauca*. In addition to the key characters, the leaf blades of *S. hypoglauca* tend to be thinner than those of *S. corbularia*, and the umbels of the former species bear far fewer flowers than those of the latter. The differences among the taxa might be ecological, in which case intensive future field investigations would be necessary.

- 1a. Leaf blade adaxially slightly shiny, with conspicuous, reticulate veins, base subrounded, margin slightly recurved ..... 32a. var. *corbularia*
- 1b. Leaf blade adaxially shiny, with inconspicuous, reticulate veins, base shallowly cordate to broadly cuneate, margin strongly recurved ..... 32b. var. *woodii*

**32a. *Smilax corbularia* var. *corbularia***

筐条菝葜(原变种) kuang tiao ba qia (yuan bian zhong)

*Smilax banglaoensis* R. H. Miao.

Leaf blade ovate, ovate-oblong, or narrowly elliptic, adaxially slightly shiny, reticulate veins conspicuous adaxially, base subrounded, margin slightly recurved.

Forests, thickets; near sea level to 1600 m. Guangdong, Guangxi, Hainan, Yunnan [Myanmar, Vietnam].

**32b. *Smilax corbularia* var. *woodii*** (Merrill) T. Koyama, Quart. J. Taiwan Mus. 13: 15. 1960.

光叶菝葜 guang ye ba qia

*Smilax woodii* Merrill, Univ. Calif. Publ. Bot. 15: 27. 1929; *S. amaurophlebia* Merrill; *S. balansana* Baillon ex Gagnepain.

Leaf blade ovate to ovate-elliptic, adaxially shiny, reticulate veins inconspicuous adaxially, base shallowly cordate to broadly cuneate, margin strongly recurved.

Forests; near sea level to 500 m. Hainan [Indonesia, Malaysia].

**33. *Smilax syndra*** Gagnepain, Bull. Soc. Bot. France 81: 73. 1934.

筒被菝葜 tong bei ba qia

*Heterosmilax erecta* F. T. Wang & Tang; *Smilax corbularia* Kunth subsp. *syndra* (Gagnepain) T. Koyama.

Shrubs suberect to subscandent, unarmed. Stem and branches slightly 4-angled. Petiole 5–10 mm, narrowly winged for ca. 1/2 its length; wings each with a lanceolate auricle apically; abscission zone apical; tendrils absent. Leaf blade abaxially glaucous, oblong or ovate-oblong, 6–15 × 1.2–7 cm, papery, abaxially minutely white powdery. Inflorescence of 1 umbel, basally not prophyllate; peduncle compressed, slender, 1.2–1.5 cm; umbels of both sexes 10–20-flowered, base thickened; bracteoles lanceolate. Male flowers: outer tepals 2–2.5 mm, connate for ca. 1/2 their length, forming a tube, inner ones adnate to filaments; filaments connate, forming a column. Female flowers: perianth tubular-campanulate, 2.5–3 mm, apically with 3 obtuse teeth and 3 abortive inner tepals; staminodes 3. Fl. Jan.

Wastelands, grassy slopes; near sea level to 1000 m. Guangdong, Hainan, SE Yunnan [Thailand, Vietnam].

**34. *Smilax hypoglauca*** Benthams, Fl. Hongk. 369. 1861.

粉背菝葜 fen bei ba qia

*Smilax corbularia* Kunth var. *hypoglauca* (Benthams) T. Koyama

Vines climbing, unarmed. Stem branched, 2–3(–4) m, woody, smooth. Petiole 0.7–1.3 cm, narrowly winged for ca. 1/2 its length; wings apically lanceolate-auriculate; abscission zone apical; tendrils usually rather long. Leaf blade abaxially glaucous, narrowly elliptic to ovate-oblong, 5–12 × 2–5 cm, leathery, main veins 3–5, margin slightly recurved. Inflorescence of 1 umbel, basally not prophyllate; peduncle 1–5 mm; umbels of both sexes 10–20-flowered, base thickened; bracte-

oles many, small. Male flowers: tepals not spreading, greenish, outer ones ca. 2.5 × 1.8 mm, inner ones ca. 2.2 × 1 mm, thickened, abaxially concave; filaments connate, forming a short column. Female flowers: tepals 2.2–2.5 mm; staminodes 3. Berries globose, 8–10 mm in diam. Fl. Jul–Aug, fr. Dec.

• Open forests, thicket margins; near sea level to 1300 m. Fujian, Guangdong, Guizhou, Jiangxi, ?Yunnan.

**35. *Smilax hayatae*** T. Koyama, Quart. J. Taiwan Mus. 10: 15. 1957.

菱叶菝葜 ling ye ba qia

*Smilax gracillima* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 359. 1911, not H. Léveillé & Vaniot (1905).

Shrubs suberect to subscandent. Stem branched, terete, slender, smooth. Petiole 2–5(–8) mm, winged for 1/2–3/5 its length; wings ca. 3 mm, apically with a deltoid-lanceolate auricle 1–1.5 mm; abscission zone apical; tendrils absent. Leaf blade ovate-rhombic or rhombic-elliptic, 3–5(–7) × 1–2.5(–4.5) cm. Male inflorescence of 1 umbel, basally not prophyllate; peduncle slender, 0.7–1.7(–2.2) cm; umbel 2–7-flowered, base scarcely thickened. Male flowers: tepals greenish, outer ones linear-oblong, 1–2 × 0.4–0.8 mm, inner ones ca. 1 × 0.2 mm; stamens ca. 1/2 as long as tepals; anthers subglobose. Female flowers unknown. Berries red, globose, ca. 8 mm in diam. Fl. Apr, fr. Oct.

• Forests, hillsides along valleys or streams; 900–1500 m. N Guangdong, Taiwan.

**36. *Smilax austrozhejiangensis*** Q. Lin, Acta Phytotax. Sin. 28: 71. 1990.

浙南菝葜 zhe nan ba qia

Shrubs suberect, unarmed. Stem branched, 50–100 cm, smooth. Petiole 2–5 mm, narrowly winged for 1/2–3/4 its length; wings apically with an ovate-lanceolate auricle ca. 1 mm; abscission zone just above winged portion; tendrils absent. Leaf blade abaxially glaucous, ovate-lanceolate, ovate, or oblong-lanceolate, 3–7.5 × 1–3 cm. Inflorescence racemose or sometimes subumbellate, basally not prophyllate; peduncle slender, 1–2 cm; umbels of both sexes 2–7-flowered; bracteoles small, persistent. Male flowers: tepals elliptic, ca. 1.5 × 0.5–0.8 mm; stamens 0.7–0.8 mm. Female flowers: tepals ca. 1 × 0.5 mm; staminodes 6. Berries orange-red, globose, 5–7 mm in diam. Fl. Apr–May, fr. Jul–Nov.

• Forests, shrubby slopes; 500–600 m. S Zhejiang.

**37. *Smilax aberrans*** Gagnepain, Bull. Soc. Bot. France 81: 71. 1934.

弯梗菝葜 wan geng ba qia

*Smilax tsaii* F. T. Wang.

Subshrubs or shrubs, suberect, unarmed. Stem branched, 0.5–2 m, smooth. Petiole 0.7–1.5 cm, papillose distally, winged for ca. 1/3 its length; abscission zone subapical; tendrils absent. Leaf blade elliptic or ovate-elliptic, 7–12 × 2.5–6.5 cm, abaxially papillose-pubescent or powdery-scabrous particularly on reticulate veins. Inflorescence borne in axil of leaf or scalelike

bract on young branches, of 1 umbel, basally not prophyllate; peduncle 4–6.5 cm; umbels of both sexes 5–20-flowered. Male flowers: tepals greenish yellow or pale purple, 2–2.5 × ca. 1 mm; stamens very short. Female flowers: tepals grayish white, 1.5–2 × ca. 0.8 mm; staminodes 6. Berries globose, 8–11 mm in diam.; carpogonium recurved. Fl. Mar–Apr, fr. Dec.

Forests, thickets, shaded places along streams; near sea level to 1600 m. Guangdong, Guangxi, Guizhou, Sichuan, Yunnan [Vietnam].

**38. *Smilax retroflexa*** (F. T. Wang & Tang) S. C. Chen, Acta Phytotax. Sin. 34: 436. 1996.

苍白菝葜 *chang bai ba qia*

*Smilax aberrans* Gagnepain var. *retroflexa* F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 254. 1978; *S. aberrans* subsp. *retroflexa* (F. T. Wang & Tang) T. Koyama.

Subshrubs or shrubs, suberect, unarmed. Stem branched, to 1 m, smooth. Petiole 1–1.5 cm, widened toward base, abaxially striate-ridged, sometimes papillose distally, narrowly winged for ca. 1/3 its length; abscission zone subapical; tendrils absent. Leaf blade abaxially very glaucous, elliptic to ovate, 5–11 × 2–5.5 cm, abaxially glabrous. Inflorescence borne in axil of leaf or scalelike bract on young branches, of 1 umbel, basally not prophyllate; peduncle 2–4 cm; umbels of both sexes 3–20-flowered. Male flowers: tepals ca. 2 × 1 mm; stamens very short, ca. 1/4 as long as tepals; filaments basally connate, forming a short column ca. 0.2 mm. Berries subglobose, ca. 1 cm in diam.; carpogonium recurved. Fl. Apr, fr. Nov.

Forests, thickets, shady places along streams; 900–1700 m. Guangxi, Guizhou, SW Sichuan, S Yunnan [Vietnam].

**39. *Smilax darrisii*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 12: 553. 1913.

平滑菝葜 *ping hua ba qia*

Shrubs suberect to subscaudent, unarmed. Stem branched, terete, 50–100 cm, smooth. Petiole slender, 3–7 mm, narrowly winged for 1/3–1/2 its length; abscission zone apical; tendrils sometimes present. Leaf blade usually turning blackish when dried, abaxially glaucous, ovate-elliptic to elliptic, 2–5 × 1–2.5 cm. Inflorescence of 1 (or 2) umbels, basally not prophyllate; peduncle slender, 3–7 mm; umbel 1–3-flowered, base not thickened; bracteoles small, usually caducous. Male flowers: tepals 2–2.5 × 0.8–1.3 mm; stamens 1–1.5 mm. Female flowers unknown. Berries purplish black, globose, 5–7 mm in diam. Fl. Jun, fr. Nov.

- Forested slopes; 1100–2200 m. Guizhou, Sichuan, Yunnan.

This species is quite different from *Smilax microphylla* C. H. Wright in having elliptic leaves that are blackish when dried and a scarcely swollen peduncle apex.

**40. *Smilax mairei*** H. Léveillé, Bull. Acad. Int. Géogr. Bot. 25: 39. 1915.

无刺菝葜 *wu ci ba qia*

Shrubs suberect, unarmed. Stem branched, smooth. Petiole 4–6 mm, narrowly winged for ca. 3/4 its length; wings each with a small auricle (0.3–0.5 mm) apically; abscission zone subapical; tendrils absent. Leaf blade ovate, 1–3.3 × 0.6–1.5 cm, rounded at base. Male inflorescence of 1 umbel, basally

not prophyllate; peduncle 3–4 mm; umbel usually 7–10-flowered; pedicels 2–5 mm. Male flowers: tepals yellow, ovate, ca. 1 × 0.6 mm; stamens nearly 1/2 as long as tepals; filaments free. Female flowers and fruit unknown. Fl. Jun.

- Rocks; ca. 2400 m. ?Xizang, Yunnan.

**41. *Smilax longibracteolata*** J. D. Hooker, Fl. Brit. India 6: 305. 1892.

长苞菝葜 *chang bao ba qia*

*Smilax elegans* Wallich ex Kunth subsp. *subrecta* Noltie.

Vines climbing, unarmed. Stem branched, 1–5 m, woody, smooth. Petiole 0.5–1.5(–2) cm, narrowly winged for 1/2–2/3 its length; abscission zone apical; tendrils usually present. Leaf blade abaxially glaucous, ovate, oblong-ovate, or triangular-lanceolate, 3.5–9 × 1–5 cm. Inflorescence of 1 umbel, basally not prophyllate; peduncle 5–12 mm, slightly compressed, usually slightly shorter than petiole; umbels of both sexes 10–30-flowered, base thickened; bracteoles many, persistent. Male flowers: tepals greenish or reddish, 2–2.5 × 0.7–1 mm; stamens very short. Female flowers: tepals 2–2.5 mm; staminodes 6. Berries blue-black, globose, 5–7 mm in diam. Fl. May–Jun, fr. Dec.

Forests, thickets, shaded places along valleys; 1000–3000 m. Guizhou, Sichuan, Xizang, Yunnan [Bhutan, India, Myanmar].

**42. *Smilax microphylla*** C. H. Wright, Bull. Misc. Inform. Kew 1895: 117. 1895.

小叶菝葜 *xiao ye ba qia*

*Smilax castaneiflora* H. Léveillé; *S. elegans* Wallich ex Kunth subsp. *microphylla* (C. H. Wright) Noltie; *S. gracillima* H. Léveillé & Vaniot (1905), not Hayata (1911); *S. labordei* H. Léveillé & Vaniot; *S. microphylla* var. *angustifolia* Warburg.

Vines climbing. Stem branched, 1–5 m, woody; branches minutely prickly. Petiole 0.5–2 cm, narrowly winged for 1/2–2/3 its length; abscission zone apical; tendrils commonly present. Leaf blade abaxially glaucous, ovate-lanceolate to linear-lanceolate, 3–9 × 1–4 cm. Inflorescence of 1 umbel, basally not prophyllate; peduncle strikingly shorter than petiole, usually minutely scabrous; umbels of both sexes 2–15-flowered, base thickened; bracteoles many, small, persistent. Male flowers: tepals greenish, 1.6–2 × 0.7–1 mm; stamens very short. Female flowers: tepals slightly smaller than male ones; staminodes 3. Berries blue-black, globose, 5–7 mm in diam. Fl. Jun–Aug, fr. Oct–Nov.

- Forests, thickets, shaded places on slopes; 500–1600 m. S Gansu, Guizhou, Hubei, Hunan, S Shaanxi, Sichuan, Yunnan.

**43. *Smilax glabra*** Roxburgh, Fl. Ind., ed. 1832, 3: 792. 1832.

土伏苓 *tu fu ling*

*Smilax blinii* H. Léveillé; *S. calophylla* Wallich var. *concolor* C. H. Wright; *S. dunniana* H. Léveillé; *S. glabra* var. *maculata* Bodinier ex H. Léveillé; *S. hookeri* Kunth; *S. mengmaensis* R. H. Miao; *S. trigona* Warburg.

Vines climbing, unarmed. Stem branched, terete, 1–4 m, woody, smooth. Petiole 5–15(–30) cm, narrowly winged for 1/4–3/5 its length; abscission zone apical; tendrils well devel-

oped. Leaf blade elliptic- or ovate-lanceolate, 6–15 × 1–7 cm. Inflorescence of 1 umbel, basally not prophyllate; peduncle 1–5(–8) mm, strikingly shorter than petiole; umbels of both sexes 10–30(–60)-flowered, base thickened; bracteoles many. Male flowers: perianth greenish white, slightly 6-angled, scarcely open; outer tepals broadly obovate-orbicular, cucullate, ca. 2 × 3 mm, abaxially deeply channeled, inner ones ca. 1 mm wide, margin irregularly denticulate. Female flowers: inner tepals entire at margin; staminodes 3. Berries blue-black, 6–10 mm in diam., white powdery. Fl. Jul–Nov, fr. Nov–Apr.

Forests, thickets, thinly forested slopes along valleys, river banks; 300–1800 m. Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, ?S Shaanxi (Qin Ling), Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [India, Myanmar, Thailand, Vietnam].

The tuberlike rhizomes are used medicinally.

**44. *Smilax myrtillos*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 106. 1878.

乌饭叶菝葜 *wu fan ye ba qia*

*Smilax myrtillos* var. *dulongensis* H. Li; *S. rigida* Wallich ex Kunth subsp. *myrtillos* (A. de Candolle) T. Koyama; *S. rigida* var. *myrtillos* (A. de Candolle) T. Koyama.

Shrubs erect. Stem densely branched, 50–100 cm, sparsely prickly; branchlets usually 4-angled, with winglike edges. Petiole 1–4 mm, basally auriculate; auricles paired, lanceolate to ovate, 1–2 × ca. 0.5 mm, membranous, margin lacerate-fimbriate; abscission zone at middle; tendrils absent. Leaf blade usually rhombic-ovate, 1–5 × 0.6–2.5(–3) cm, thinly papery, main veins 3(–5), raised adaxially. Inflorescence of 1 umbel, basally not prophyllate; peduncle 5–10 mm; umbels of both sexes 2–10-flowered. Male flowers: tepals purplish green, ca. 1.5 × 0.4–0.6 mm; stamens ca. 0.5 mm. Female flowers: tepals ca. 1 × 0.3 mm; staminodes 3. Berries blue-black, globose, 6–8 mm in diam. Fl. Jul, fr. Oct–Nov.

Forest, forest margins, thickets; 1600–3100 m. SE Xizang, Yunnan [Bhutan, India, Myanmar].

**45. *Smilax munita*** S. C. Chen, Acta Phytotax. Sin. 34: 436. 1996.

劲直菝葜 *jin zhi ba qia*

*Smilax rigida* Wallich ex Kunth, Enum. Pl. 5: 164. 1850, not Solander (1794); *S. myrtillos* A. de Candolle var. *rigida* Noltie.

Shrubs erect. Stem branched, 50–100 cm; branches 2- or 3-angled, with winglike edges; prickles on branches straight, 5–7 mm, rigid. Petiole ca. 1 mm, basally auriculate; auricles paired, lanceolate to ovate, 1–2 × ca. 0.5 mm, membranous with lacerate-fimbriate margin; abscission zone near middle; tendrils absent. Leaf blade cordate to ovate, 1.5–2.5 × 1.2–2.8 cm, main veins (3–)5, adaxially concave. Inflorescence of 1 umbel, basally not prophyllate; peduncle 4–7 mm; umbels of both sexes 2–8-flowered. Male flowers: tepals greenish, 1.2–1.5 × 0.3–0.5 mm; stamens very short. Female flowers: tepals ca. 1.2 mm; staminodes 3. Berries blue-black, 7–9 mm in diam.

Fl. Jul, fr. Oct–Nov.

Mixed forests, broad-leaved deciduous forests; 2100–2800 m. S Xizang, Yunnan [Bhutan, Myanmar, Nepal, Sikkim].

**46. *Smilax bapouensis*** H. Li, Acta Bot. Yunnan., Suppl. 5: 20. 1992.

巴坡菝葜 *ba po ba qia*

Shrubs evergreen, suberect. Stem branched, 2–3 m, sparsely prickly. Petiole 5–12 mm, narrowly winged for ca. 1/2 its length; abscission zone above middle; tendrils usually present. Leaf blade ovate, 2–6 × 1–1.3 cm, leathery, main veins 5, median 3 veins elevated abaxially, base rounded, apex acute. Male flowers unknown. Female inflorescence of 1 umbel, basally not prophyllate; peduncle very short, 1–3 mm; umbel 5–8-flowered, base thickened, subglobose, ca. 2 mm in diam.; pedicels ca. 3 mm, rigid. Female flowers: tepals yellowish green, linear-oblong, ca. 2.5 × 1 mm. Berries purplish black, globose, 4–8 mm in diam. Fl. May, fr. Nov.

• Open forests, thickets, hillsides along streams and valleys. NW Yunnan (Gongshan Drung-Nu Zu Zizhixian).

**47. *Smilax biumbellata*** T. Koyama, Brittonia 26: 133. 1974.

西南菝葜 *xi nan ba qia*

Vines climbing, unarmed. Stem laxly branched terete, rather slender, 2–5 m, woody. Petiole 5–20 cm, narrowly winged for ca. 1/4 its length; abscission zone subapical; tendrils well developed. Leaf blade oblong-lanceolate to narrowly ovate, 7–15 × 1–5 cm. Inflorescence borne in axil of leaf or scalelike bract, of 1 umbel, basally not prophyllate; peduncle slender, 1.5–5 cm; umbels of both sexes 7–17-flowered, base slightly thickened, 1–2 mm in diam. Male flowers: tepals purplish red or greenish yellow, 2.5–3 × ca. 1 mm. Female flowers: tepals ca. 2.2 × 0.8 mm; staminodes 3. Berries blue-black, globose, 8–10 mm in diam. Fl. May–Jul, fr. Oct–Nov.

Forests, thickets; 800–2900 m. S Gansu, Guangxi, Guizhou, Hunan, Sichuan, Xizang, Yunnan [India, Myanmar].

**48. *Smilax jiankunii*** H. Li, Acta Bot. Yunnan., Suppl. 5: 21. 1992.

建昆菝葜 *jian kun ba qia*

Vines climbing, unarmed, usually becoming blackish when dried. Stem terete, 4–5 mm, woody. Petiole 5–5.5 cm, narrowly winged for ca. 1/2 its length; abscission zone distal; tendrils well developed. Leaf blade ovate or ovate-oblong, ca. 18 × 10 cm, abaxially slightly white powdery. Male inflorescence of 1 umbel, basally not prophyllate; peduncle to 10 cm; umbel densely 50–100-flowered, base thickened. Male flowers: perianth greenish, campanulate; outer tepals linear-oblong, ca. 5 × 1.5 mm, slightly fleshy, inner ones slightly narrower; stamens ca. 3.2 mm; anthers ca. 1 mm. Female flowers and fruit unknown. Fl. Apr–May.

• Forested slopes; 1300–1600 m. NW Yunnan (Gongshan Drung-Nu Zu Zizhixian).

**49. *Smilax nervomarginata*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 361. 1911.

缘脉菝葜 *yuan mai ba qia*

Vines climbing, unarmed. Stem branched, terete, 1–2 m, woody; branches striate-ridged, sometimes minutely verruculose. Petiole 0.6–1.8 cm, narrowly winged for ca. 1/4 its length; abscission zone subapical; tendrils well developed. Leaf blade oblong, elliptic, or ovate-elliptic, 6–12 × 1.5–4.5(–7) cm, leathery, 5–7-veined, midvein obviously raised adaxially, base obtuse, apex acuminate. Male inflorescence borne in axil of leaf or scalelike bract, of 1 umbel, basally not prophyllate; peduncle slightly compressed, slender, 1.5–4 cm; umbel 6–17-flowered, base slightly thickened. Male flowers: tepals purplish brown, ca. 2.5 × 1 mm. Female flowers unknown. Berries globose, 7–10 mm in diam. Fl. Apr–May, fr. Oct.

Forests, forest margins, thickets; near sea level to 1000 m. Anhui, Guizhou, Hunan, Jiangxi, Zhejiang [Japan (Ryukyu Islands)].

- 1a. Branches minutely verruculose ..... 49a. var. *nervomarginata*
- 1b. Branches not verruculose ..... 49b. var. *liukuensis*

**49a. *Smilax nervomarginata* var. *nervomarginata***

缘脉菝葜(原变种) *yuan mai ba qia* (*yuan bian zhong*)

*Smilax sempervirens* F. T. Wang.

Branches minutely verruculose.

Forests, forest margins, thickets; near sea level to 1000 m. Anhui, Guizhou, Hunan, Jiangxi, Zhejiang [Japan (Ryukyu Islands)].

**49b. *Smilax nervomarginata* var. *liukuensis*** (Hayata) F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 217. 1978.

无疣菝葜 *wu you ba qia*

*Smilax liukuensis* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 360. 1911.

Branches not verruculose.

Forests. Anhui, Jiangxi, Zhejiang [Japan (Ryukyu Islands)].

**50. *Smilax luei*** T. Koyama, Taiwania 20: 117. 1975.

吕氏菝葜 *lu shi ba qia*

Vines climbing, unarmed. Stem branched, 1–4 m, woody. Petiole 1–1.7 cm, shortly and narrowly winged; abscission zone subapical; tendrils well developed. Leaf blade lanceolate-ovate to oblong-lanceolate, (3–)5–13 × 1–3.5 cm. Inflorescence in axil of bract, of 1 umbel, basally not prophyllate; peduncle slender, longer than petiole; umbels of both sexes 10–25-flowered. Male flowers: tepals greenish purple, 3.2–3.7 × 1–1.2 mm, adaxially longitudinally wrinkled with several ridges; stamens 9(or 10), 1.7–2 mm; filaments short. Female flowers: tepals dark green; staminodes 5 or 6, filiform. Berries black, globose, 6–8 mm in diam.

• Forest margins; near sea level to 700 m. C Taiwan.

**51. *Smilax arisanensis*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 356. 1911.

尖叶菝葜 *jian ye ba qia*

Vines climbing. Stem branched, to 10 m, woody, sometimes sparsely prickly. Petiole 0.7–2 cm, usually twisted,

narrowly winged for 1/2–3/4 its length; abscission zone subapical; tendrils commonly present. Leaf blade usually becoming bronze-colored when dried, oblong to ovate-lanceolate, 7–12(–15) × 1.5–3.5(–5) cm. Inflorescence of 1 umbel, basally sometimes prophyllate; peduncle slender, 1.5–3.5 cm; umbels of both sexes 5–25-flowered, base scarcely thickened. Male flowers: tepals greenish white or pale green, 2–3 × ca. 1 mm; stamens ca. 1.5 mm. Female flowers: tepals 1.5–2 × ca. 0.8 mm; staminodes 3. Berries purplish black, globose, ca. 8 mm in diam. Fl. Apr–May, fr. Oct–Nov.

Forests, thickets, shaded places along valleys or streams; near sea level to 1500 m. Fujian, Guangdong, Guangxi, Guizhou, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Vietnam].

**52. *Smilax lanceifolia*** Roxburgh, Fl. Ind., ed. 1832, 3: 792. 1832.

马甲菝葜 *ma jia ba qia*

Vines climbing. Stem branched, terete, 1–2 m, woody; branchlets occasionally zigzagged. Petiole 1–2(–2.5) cm, narrowly winged for 1/5–1/4 its length; abscission zone at middle; tendrils usually present. Leaf blade lanceolate to ovate-oblong, 6–17 × 2–8 cm. Inflorescence of 1(or 2) umbels, basally prophyllate; peduncle 1–1.5 cm, proximally articulate; umbels of both sexes densely 20–30-flowered, base slightly thickened. Male flowers: tepals yellowish green, 3–4.5 × ca. 1 mm; stamens 3–4 mm. Female flowers: tepals 1.5–2 × ca. 0.6 mm; staminodes 6. Berries yellowish red to black, globose, 6–7 mm in diam. Fl. Sep–Mar, fr. Oct–Nov.

Forests, forest margins, thickets, shaded places on slopes; 100–2800 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Bhutan, Cambodia, NE India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Sikkim, Thailand, Vietnam].

This species is very difficult to treat taxonomically due to the extreme polymorphism of the included entities.

- 1a. Main veins obviously concave on adaxial leaf surface ..... 52e. var. *impressinervia*
- 1b. Main veins raised on adaxial leaf surface (sometimes midvein slightly concave).
  - 2a. Leaf blade usually ovate or ovate-lanceolate, usually 1–3 × as long as wide.
    - 3a. Leaf blade usually papery, adaxially not or slightly shiny; peduncle usually shorter than petiole ..... 52a. var. *lanceifolia*
    - 3b. Leaf blade usually leathery, adaxially shiny; peduncle usually longer than petiole ..... 52b. var. *opaca*
  - 2b. Leaf blade lanceolate to narrowly oblong-lanceolate, usually 5–7 × as long as wide.
    - 4a. Branchlets ± zigzagged; peduncle longer than petiole; tepals yellowish green ..... 52c. var. *elongata*
    - 4b. Branchlets not zigzagged; peduncle shorter than or subequalling petiole; tepals purple ..... 52d. var. *lanceolata*

**52a. *Smilax lanceifolia* var. *lanceifolia***

马甲菝葜(原变种) ma jia ba qia (yuan bian zhong)

*Smilax micropoda* A. de Candolle.

Leaf blade usually ovate to ovate-lanceolate, usually 1–3 × as long as wide, papery, adaxially not or slightly shiny, main veins raised adaxially (sometimes midvein slightly concave).  $2n = 32$ .

Forests, thickets, shaded places on slopes; 600–2800 m. Guangxi, Guizhou, Hubei, Sichuan, Yunnan [Bhutan, NE India, Laos, Myanmar, Sikkim, Thailand, Vietnam].

**52b. *Smilax lanceifolia* var. *opaca*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 57. 1878.

暗色菝葜 an se ba qia

*Smilax laevis* Wallich ex A. de Candolle; *S. laevis* var. *ophirensis* A. de Candolle; *S. laevis* var. *parkii* A. de Candolle; *S. lanceifolia* subsp. *opaca* (A. de Candolle) T. Koyama; *S. opaca* (A. de Candolle) J. B. Norton.

Leaf blade leathery, usually ovate to ovate-lanceolate, usually 1–3 × as long as wide, adaxially obviously shiny, main veins raised adaxially (sometimes midvein slightly concave).

Forests, thickets, shaded places on slopes; 100–1000(–2000) m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Taiwan, Yunnan, Zhejiang [Cambodia, Indonesia, Laos, Malaysia, Thailand, Vietnam].

**52c. *Smilax lanceifolia* var. *elongata*** (Warburg) F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 220. 1978.

折枝菝葜 zhe zhi ba qia

*Smilax microphylla* C. H. Wright var. *elongata* Warburg in Diels, Bot. Jahrb. Syst. 29: 259. 1900; *S. austrosinensis* F. T. Wang & Tang; *S. tortipetiolata* H. Léveillé & Vaniot.

Branchlets zigzagged. Leaf blade lanceolate or narrowly oblong-lanceolate, usually 5–6 × as long as wide, thickly papery to leathery, main veins raised adaxially (sometimes midvein slightly concave). Peduncle longer than petiole. Tepals yellowish green.

• Forests, shaded places on slopes; 500–2000 m. Guangdong, Guangxi, Guizhou, Jiangxi, Sichuan, ?Yunnan, Zhejiang.

**52d. *Smilax lanceifolia* var. *lanceolata*** (J. B. Norton) T. Koyama, Quart. J. Taiwan Mus. 13: 26. 1960.

长叶菝葜 chang ye ba qia

*Smilax cocculoides* Warburg var. *lanceolata* J. B. Norton in Sargent, Pl. Wilson. 3: 11. 1916.

Leaf blade lanceolate to narrowly oblong-lanceolate, usually 5–7 × as long as wide, main veins raised adaxially (sometimes midvein slightly concave). Peduncle shorter than or subequaling petiole. Tepals purple.

• Forests, forest margins; 1500–2000 m. S Yunnan.

**52e. *Smilax lanceifolia* var. *impressinervia*** (F. T. Wang & Tang) T. Koyama, Quart. J. Taiwan Mus. 13: 26. 1960.

凹脉菝葜 ao mai ba qia

*Smilax impressinervia* F. T. Wang & Tang, Sinensia 5: 425. 1934.

Leaf blade lanceolate to oblong-lanceolate, thinly leathery; main veins 3, obviously concave adaxially. Peduncle subequaling petiole.

• Shaded places in forests; 1000–2000 m. Guangxi, Guizhou, Yunnan.

**53. *Smilax astrosperma*** F. T. Wang & Tang, Fl. Hainan. 4: 534. 1977.

灰叶菝葜 hui ye ba qia

Vines climbing. Stem branched, terete, 1–2 m, woody, sometimes sparsely prickly. Petiole 1–1.5 cm, narrowly winged for 1/5–1/4 its length; abscission zone at or above middle; tendrils usually present. Leaf blade becoming grayish when dried, lanceolate, 8–12 × 2–4 cm, adaxially wrinkled along 3 concave main veins. Inflorescence usually of 1 umbel, basally prophyllate; peduncle 1.5–2.5 cm, proximally articulate; umbels of both sexes 3–5-flowered, base slightly thickened. Male flowers: tepals lanceolate-oblong, 3.5–4 × 0.7–1 mm. Female flowers: tepals 2.5–3 × 0.6–0.8 mm; staminodes 3(or 4). Berries globose, 5–6 mm in diam., 1-seeded. Seeds oblate-globose, deeply 5- or 6-furrowed. Fl. Nov.

• Open forests; near sea level to 1000 m. Guangxi, Hainan.

**54. *Smilax chapaensis*** Gagnepain, Bull. Soc. Bot. France 81: 72. 1934.

密疣菝葜 mi you ba qia

*Smilax lanceifolia* Roxburgh var. *reflexa* (J. B. Norton) T. Koyama; *S. micropoda* A. de Candolle var. *reflexa* J. B. Norton.

Vines climbing. Stem branched, terete, 1–3 m, woody; branches 2- or 3-angled, densely verruculose, sometimes also sparsely prickly. Petiole 1–2(–2.5) cm, narrowly winged for ca. 1/4 its length, basally slightly verruculose; abscission zone at middle or above; tendrils usually present. Leaf blade ovate to lanceolate, 8–15 × 3–6 cm. Inflorescence of 1 umbel, basally prophyllate; peduncle 1–1.5 cm, proximally articulate; umbels of both sexes 20–30-flowered, base slightly thickened. Male flowers: tepals 3–4 × ca. 1 mm; stamens 3.5–4 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Berries globose, 6–7 mm in diam. Fl. Feb–Mar, fr. Oct–Nov.

Forests, thickets, shaded places on slopes; 600–1500 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan [Vietnam].

**55. *Smilax vanchingshanensis*** (F. T. Wang & Tang) F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 224. 1978.

梵净山菝葜 fan jing shan ba qia

*Smilax laevis* Wallich ex A. de Candolle var. *vanchingshanensis* F. T. Wang & Tang, Sinensia 5: 424. 1934.

Vines climbing. Stem branched, to 5 m, woody, sometimes sparsely prickly. Petiole 1–2 cm, narrowly winged for 1/5–1/3 its length; abscission zone at middle; tendrils well developed. Leaf blade ovate-oblong to lanceolate, 8–16 × 4–9 cm, adaxially slightly shiny, main veins 5. Inflorescence of 1(or

2) umbels, basally prophyllate; peduncle 1–2(–3) cm, proximally articulate when inflorescence of 1 umbel; umbels of both sexes 10–40-flowered, base thickened. Male flowers: tepals yellowish green, 7–8 × 0.8–1.6 mm; stamens 7–8 mm; filaments basally connate, forming a short column ca. 1 mm. Female flowers: tepals 3–4 × ca. 0.5 mm; staminodes 6. Berries ca. 9 mm in diam. Fl. Sep–Oct, fr. Dec–Feb.

• Open forests, forest margins, grassy slopes; 400–1400 m. Guizhou, Hubei, Sichuan.

**56. *Smilax hemsleyana*** Craib, Bull. Misc. Inform. Kew 1912: 409. 1912.

束丝菝葜 shu si ba qia

*Smilax zeylanica* Linnaeus subsp. *hemsleyana* (Craib) T. Koyama.

Vines climbing. Stem branched, 3–5(–15) m, woody, sometimes sparsely prickly. Petiole 1.5–2.5 cm, narrowly winged for ca. 1/4 its length; abscission zone at middle; tendrils usually present. Leaf blade broadly ovate to elliptic, 7–13 × 4–11 cm. Inflorescence of 1(or 2) umbels, basally prophyllate; peduncle 1.5–4.5 cm, proximally articulate, with 1 or 2 bracts; umbels of both sexes densely many flowered, base thickened, suboblong, 3–6 × 2–4.5 mm in fruit. Male flowers: tepals ca. 5 × 0.5–1 mm; stamens slightly exerted; filaments basally connate, forming a column ca. 1 mm. Female flowers: tepals ca. 4 × 0.7–1.5 mm; staminodes 3, filiform. Berries 7–8 mm in diam. Fl. Apr–May, fr. Nov.

Thickets, grassy slopes; 600–1700 m. S Guizhou, Yunnan [India, Myanmar, Thailand].

**57. *Smilax kwangsiensis*** F. T. Wang & Tang, Sinensia 5: 425. 1934.

缘毛菝葜 yuan mao ba qia

Vines climbing. Stem branched, to 3 m, woody, smooth or slightly scabrous, sometimes sparsely prickly. Petiole 1.5–2.5 cm, glabrous or minutely setose, narrowly winged for 1/4–1/3 its length; wings ciliate or minutely fimbriate at margin; abscission zone at middle or distal; tendrils well developed. Leaf blade ovate-lanceolate to elliptic-lanceolate, 8–18 × 3.5–5.5 cm, papery, base rounded or cuneate, apex acuminate. Male inflorescence of 1 umbel, basally prophyllate; peduncle much longer than petiole, proximally articulate; umbels of both sexes many flowered. Male flowers (var. *setulosa*): tepals yellowish green, outer ones ca. 8 × 1.2 mm, inner ones ca. 8 × 0.6 mm. Berries globose, ca. 1.2 cm in diam. Fl. Aug, fr. Oct–Nov.

• Forests; 300–400 m. SW Guangdong, S Guangxi.

- 1a. Stem and branches glabrous; petiole glabrous or sparsely and minutely setose ..... 57a. var. *kwangsiensis*
- 1b. Stem and branches ± scabrous, sometimes minutely setose; petiole densely and minutely setose ..... 57b. var. *setulosa*

**57a. *Smilax kwangsiensis*** var. *kwangsiensis*

缘毛菝葜(原变种) yuan mao ba qia (yuan bian zhong)

Stem and branches glabrous. Petiole glabrous or sparsely and minutely setose.

• Forests; 300–400 m. S Guangxi.

**57b. *Smilax kwangsiensis*** var. *setulosa* F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 254. 1978.

小刚毛菝葜 xiao gang mao ba qia

Stem and branches ± scabrous, sometimes minutely setose. Petiole densely and minutely setose.

• Forests. SW Guangdong (Xinyi Xian).

**58. *Smilax megacarpa*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 186. 1878.

大果菝葜 da guo ba qia

Vines climbing, usually unarmed. Stem branched, terete, to 10 m, woody. Petiole 1.5–5 cm, narrowly winged for 1/3–1/2 its length; abscission zone distal; tendrils usually present. Leaf blade sometimes turning blackish when dried, ovate to elliptic, (5–)10–20 × 3–12 cm, papery or subleathery, adaxially slightly shiny, base rounded or truncate, apex submucronate. Inflorescence of (1 or)2 or 3 umbels, 3–6(–10) cm, basally prophyllate; umbels of both sexes 6–20-flowered, base slightly thickened. Male flowers: tepals greenish yellow, 6–7 × 0.6–1.5 mm. Female flowers unknown (in China). Berries dark red, globose, 1.5–2 cm in diam. Fl. Oct–Dec, fr. May–Jun.

Forests, thickets, shaded slopes; near sea level to 1500 m. Guangxi, Hainan, S Yunnan [Cambodia, India, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam].

Chinese records of *Smilax macrocarpa* Blume (e.g., in FRPS) are referable to *S. megacarpa*.

**59. *Smilax yunnanensis*** S. C. Chen, Bull. Bot. Res., Harbin 3(3): 111. 1983.

云南菝葜 yun nan ba qia

Vines climbing. Stem terete, woody, occasionally sparsely prickly. Petiole (2–)3–3.5 cm, narrowly winged for ca. 1/3 its length; abscission zone at middle; tendrils well developed. Leaf blade ovate to ovate-lanceolate, 11–13 × 6–7 cm, thickly leathery, adaxially shiny, main veins 7, raised on both sides, base rounded, apex acuminate. Male inflorescence a raceme of 3 lateral umbels and an abortive terminal umbel, 3.5–4.5 cm, basally prophyllate; umbels densely 30–40-flowered, base thickened, ellipsoid, 4–5 × 3–4 mm; bracteoles many. Male flowers: tepals greenish yellow or pale yellow, linear, outer ones ca. 7 × 1.8 mm, inner ones much narrower; stamens ca. 7 mm; anthers ca. 1.2 mm. Female flowers and fruit unknown. Fl. Sep.

• Forested slopes; ca. 1000 m. S Yunnan.

**60. *Smilax bracteata*** C. Presl, Reliq. Haenk. 1: 131. 1827.

圆锥菝葜 yuan zhui ba qia

*Smilax lyi* H. Léveillé; *S. stenopetala* A. Gray.

Vines climbing. Stem branched, subterete, to 10 m, woody, sometimes sparsely prickly. Petiole 1–2 cm, narrowly winged for 2/5–1/2 its length; abscission zone distal; tendrils commonly

present. Leaf blade broadly elliptic to ovate-elliptic, 5–17 × 3–11 cm. Inflorescence a raceme of 3–6(–10) umbels, 3–7 cm, basally prophyllate; umbels of both sexes 12–25-flowered, base slightly thickened, globose, ca. 2 × 2 mm. Male flowers: tepals olive green to dark red, ca. 5 × 0.7–1.3 mm. Female flowers: tepals smaller than male ones; staminodes 3. Berries globose, 5–7 mm in diam. Fl. Nov–Feb, fr. Jun–Aug.  $2n = 32$ .

Forests, thickets, shaded places on grassy slopes; near sea level to 1800 m. Fujian, Guangdong Guangxi, S Guizhou, Hainan, Taiwan, Yunnan [Cambodia, Indonesia, Japan, Laos, Malaysia, Philippines, Thailand, Vietnam].

**61. *Smilax aspericaulis*** Wallich ex A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 195. 1878.

疣枝菝葜 *you zhi ba qia*

*Smilax bracteata* C. Presl subsp. *verruculosa* (Merrill) T. Koyama; *S. bracteata* var. *verruculosa* (Merrill) T. Koyama; *S. trachyclada* Hayata; *S. verruculosa* Merrill.

Vines climbing. Stem woody; stem and branches densely verruculose, sometimes sparsely prickly. Petiole 1–1.5 cm, narrowly winged for 2/5–1/2 its length; abscission zone distal; tendrils usually present. Leaf blade broadly ovate-elliptic, 6–15 × 4–10 cm, thickly herbaceous or papery, base rounded, apex subacute. Inflorescence a raceme of 3–7 umbels, 3–6 cm, basally prophyllate; umbels of both sexes many flowered, base slightly thickened. Male flowers: outer tepals ca. 5 × 1.2 mm, inner ones much narrower. Female flowers: tepals smaller than male ones; staminodes 3. Berries purplish black, ovoid-globose or somewhat pear-shaped, 5–6 mm in diam. Fl. Dec–Feb, fr. Jul–Sep.

Forests, thickets, shaded slopes; near sea level to 1900 m. Guangxi, Guizhou, Hainan, Taiwan, ?Xizang, Yunnan [India, Myanmar, Philippines, Vietnam].

*Smilax aspericaulis* is often treated as a variety or subspecies of *S. bracteata* because it differs only in its verruculose stems (vs. stems occasionally thorny but not verruculose). It is possible that *S. aspericaulis* represents an ecotype of *S. bracteata* occurring at higher elevations.

**62. *Smilax ovalifolia*** Roxburgh, Fl. Ind., ed. 1832, 3: 794. 1832.

卵叶菝葜 *luan ye ba qia*

*Smilax macrophylla* Roxburgh.

Vines climbing, large. Stem branched, to 10 m, woody; branches smooth or sparsely prickly. Petiole 1.6–3 cm, narrowly winged for 1/2–2/3 its length; abscission zone subapical; tendrils well developed. Leaf blade ovate to suborbicular, 12–23(–26) × 8–14(–20) cm, main veins 7. Inflorescence of (1 or) 2 or 3 umbels, 1.5–4 cm, basally prophyllate; peduncle 1.3–3 cm, proximally articulate when inflorescence of 1 umbel; umbels of both sexes 12–40-flowered, base thickened. Male flowers: outer tepals 5–6 × ca. 1.5 mm, inner ones much narrower. Female flowers: tepals slightly smaller than male ones; staminodes 3. Berries dark red, ellipsoid-globose, 0.9–1.2 cm in diam.  $2n = 64$ , 96, 128.

Forests; near sea level to 1500 m. Hainan [India, Myanmar, Nepal,

Thailand, Vietnam].

**63. *Smilax malipoensis*** S. C. Chen, Bull. Bot. Res., Harbin 3(3): 113. 1983.

马里坡菝葜 *ma li po ba qia*

Vines climbing. Stem subterete, woody, furrowed when dried, sparsely verruculose. Petiole 7–12 mm, abaxially verruculose near base, winged; wings 3–5 × 1–1.6 mm, margin crisped; abscission zone at middle; tendrils absent. Leaf blade oblong to oblong-elliptic, (5.5–)11–13 × (1.5–)3–5 cm, main veins 7, abaxially convex, adaxially slightly raised. Male inflorescence of 2 umbels, 4–4.5 cm, basally prophyllate; umbels 10–20-flowered, ca. 2 cm in diam., base globose, 2–3 mm in diam. Male flowers: outer tepals greenish white, 5–6 × ca. 1.8 mm, inner ones much narrower; stamens 5.5–6 mm; anthers ca. 2 mm. Female flowers and fruit unknown. Fl. Nov.

• Mixed forests; 1600–1800 m. SE Yunnan (Malipo Xian).

**64. *Smilax cocculoides*** Warburg in Diels, Bot. Jahrb. Syst. 29: 257. 1900.

银叶菝葜 *yin ye ba qia*

*Smilax polycolea* Warburg var. *acuminata* Warburg.

Shrubs scandent, unarmed. Stem suberect, branched, 0.5–2 m. Petiole usually curved, 5–10 mm, transversely wrinkled on proximal 1/2, basally narrowly winged; wings sometimes auriculate apically; abscission zone at middle; tendrils absent. Leaf blade abaxially grayish green, ovate, elliptic-ovate, or ovate-lanceolate, abaxially slightly shiny. Male inflorescence of 1(or) 2 umbels, basally prophyllate; peduncle 1–2 cm, articulate 2–5 mm from base; umbels 3–15-flowered, base scarcely thickened. Male flowers: tepals yellowish green, outer ones 2.5–3.5 × 1–1.5 mm; stamens very short, ca. 0.7 mm. Female flowers unknown. Berries blackish blue, globose, ca. 8 mm in diam. Fl. Feb–Apr, fr. Nov.

• Forests, thickets; 500–1900 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan.

**65. *Smilax pinfaensis*** H. Léveillé & Vaniot in H. Léveillé, Mem. Pontif. Accad. Romana Nuovi Lincei 23: 355. 1905.

平伐菝葜 *ping fa ba qia*

Shrubs suberect, unarmed. Rhizome stolonlike, 2–3 mm in diam. Stem branched, smooth. Petiole 4–6 cm, basally narrowly winged; abscission zone apical; tendrils absent. Leaf blade lanceolate to oblong-lanceolate, 8–16 × 1.5–4 cm, leathery, 3-veined, with midvein concave adaxially, base subrounded, apex acuminate. Male inflorescence of 1 umbel, basally prophyllate; peduncle 8–14(–20) cm, proximally articulate; umbel 5- or 6-flowered, base scarcely thickened; bracteoles small; pedicels 5–9 mm. Male flowers: tepals spreading, ovate or ovate-elliptic, 1.5–1.8 × ca. 1 mm; stamens very short, 0.3–0.4 mm; anthers shorter than filaments. Female flowers unknown. Fl. Mar.

• Forests. SC Guizhou (Guiding Xian).

**66. *Smilax basilata*** F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 254. 1978.

少花菝葜 shao hua ba qia

Vines climbing. Stem branched, to 2 m, woody; branches 2–4-angled, sometimes sparsely prickly. Petiole 2.5–5 mm, narrowly winged for 1/2–2/3 its length; abscission zone distal; tendrils sometimes present. Leaf blade lanceolate, ovate-lanceolate, or oblong-lanceolate, 3–7 × 1–2(–2.5) cm, leathery or thickly papery. Male inflorescence of 1 umbel, basally prophyllate; peduncle 1–3 mm, much shorter than petiole, proximally articulate; umbels 2- or 3-flowered, base scarcely thickened. Male flowers: tepals greenish, outer ones ca. 2 × 1 mm, inner ones ca. 1 × 0.6 mm; stamens ca. 1/2 as long as tepals; anthers suborbicular. Female flowers unknown. Berries dark purple, globose, ca. 1 cm in diam. Fl. Mar–Apr, fr. Nov.

- Forests, grassy slopes; 1200–2000 m. Guangxi, SE Yunnan.

The recently described *Smilax guiyangensis* C. X. Fu & C. D. Shen (Acta Phytotax. Sin. 35: 70. 1997), from C Guizhou (Guiyang), appears to be a distinct species closely related to *S. basilata*, from which it differs in having white-marked leaf blades and rather long peduncles conspicuously longer than the petioles.

**67. *Smilax fooningensis*** F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 255. 1978.

富宁菝葜 fu ning ba qia

Vines climbing. Stem branched, woody; branches densely verruculose. Petiole 1–2 cm, wingless; abscission zone between middle and distal part; tendrils absent. Leaf blade ovate, 7.5–15.5 × 4–8 cm, leathery, base subtruncate or broadly cuneate, apex acuminate. Male inflorescence of 1 umbel, basally prophyllate; peduncle 3–5 cm, proximally articulate; umbel densely many flowered, base thickened, oblong-ellipsoid, 4–5 × 1.5–2 mm. Male flowers: tepals yellowish green, outer ones oblong, 2–2.5 × ca. 0.8 mm, inner ones ca. 2 × 0.4 mm; stamens ca. 1/2 as long as tepals; anthers oblong, ca. 0.5 mm. Female flowers and fruit unknown. Fl. May.

- Forests; ca. 600 m. SE Yunnan (Funing Xian).

**68. *Smilax quadrata*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 183. 1878.

方枝菝葜 fang zhi ba qia

Vines climbing. Stem branched, woody; branches strongly zigzagged, obtusely 4-angled, subsquare in cross section, sometimes sparsely prickly. Petiole 1–1.7 cm, narrowly winged for 1/2–2/3 its length; abscission zone distal; tendrils usually present. Leaf blade oblong to ovate-oblong, 7–11 × 2.5–4.5 cm, thickly papery or thinly leathery, base subtruncate or rounded, apex mucronate. Male inflorescence a raceme of 2–4 umbels, 2.5–4 cm, basally prophyllate; umbels 20–30-flowered, base slightly thickened. Male flowers: tepals 4–5 × ca. 1.5 mm, inner ones ca. 5 × 0.5 mm; stamens 4–5 mm; anthers linear, ca. 1.2 mm. Female flowers and fruit unknown. Fl. Oct.

Forests, shaded places along valleys; 1900–2000 m. ?Xizang, SE and WC Yunnan (Jingdong Xian, Yanshan Xian) [India, Myanmar].

**69. *Smilax lunglingensis*** F. T. Wang & Tang, Bull. Fan Mem. Inst. Biol. 7: 86. 1936.

马钱叶菝葜 ma qian ye ba qia

*Smilax siderophylla* Handel-Mazzetti.

Vines climbing. Stem branched, subterete, 1–3 m or more, woody; branches usually sparsely prickly. Petiole 2–3 cm, wingless or rarely narrowly winged for ca. 1/2 its length; abscission zone distal; tendrils usually present. Leaf blade elliptic, ovate-elliptic, or orbicular, 5–11 × 3–9 cm, thickly leathery, main veins 3, strongly convex abaxially, concave adaxially. Inflorescence a raceme of 2–4 umbels, 3–5 cm, basally prophyllate; umbels of both sexes 15–25-flowered, base subglobose. Male flowers: tepals yellow, outer ones ca. 6 × 2 mm, inner ones much narrower; stamens ca. 6 mm. Female flowers: tepals smaller than male ones; staminodes 3. Berries black, globose, 5–6 mm in diam. Fl. Mar–Apr, fr. Aug–Oct.

- Forests, thickets, shaded and damp places on slopes; 1800–2700 m. Yunnan.

**70. *Smilax bauhinioides*** Kunth, Enum. Pl. 5: 243. 1850.

圆叶菝葜 yuan ye ba qia

Vines climbing. Stem branched, terete, 1–2 m, woody; branches densely verruculose, sparsely prickly. Petiole 1.5–2 cm, scarcely winged; abscission zone distal; tendrils usually present near base. Leaf blade suborbicular, 4.5–7 × 4–6.5 cm, thickly leathery, main veins 5, raised on both sides except midvein concave adaxially, base rounded, apex mucronate.

*Pinus* forests; ca. 300 m. S Guangxi (Dongxing Xian) [Vietnam].

This species is closely related to *Smilax lunglingensis*, which has similar inflorescences and flowers. Only sterile material of *S. bauhinioides* has so far been collected in China; it clearly matches material of the same species from Vietnam.

**71. *Smilax planipes*** F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 255. 1978.

扁柄菝葜 bian bing ba qia

Vines climbing, unarmed. Stem branched, woody; branches striate. Petiole usually curved, 2–4 cm, laterally compressed, abaxially keeled, narrowly winged for 1/2–2/3 its length; abscission zone distal; tendrils well developed. Leaf blade sub-oblong, oblong-lanceolate, or ovate-lanceolate, 6.5–18 × 3–6.5 cm. Male inflorescence of 1 umbel, basally prophyllate; peduncle 2–3.5 cm, proximally articulate, with 2 lanceolate bracts; umbel 4–7-flowered, base scarcely thickened; bracteoles caducous. Male flowers: outer tepals 7–8 × ca. 2 mm, inner ones ca. 7 × 1 mm; stamens subequaling tepals; anthers oblong. Female flowers unknown. Berries globose, 1.2–1.5 cm in diam.; carpodium usually curved. Fr. Dec–Jan.

- Forests; near sea level to 1300 m. S Guangxi, SE Yunnan.

**72. *Smilax gagnepainii*** T. Koyama, Bull. Natl. Sci. Mus., Tokyo, B, 3(4): 163. 1977.

四翅菝葜 si chi ba qia

*Smilax tetraptera* Gagnepain, Bull. Soc. Bot. France 81: 74. 1934, not Schlechter (1906).

Vines climbing. Stem branched, woody; branches 4-angled, sometimes sparsely prickly, angles narrowly winged. Petiole

1.5–4 cm, winged for ca. 2/3 its length; wings 1–3 mm wide; abscission zone distal; tendrils sometimes present. Leaf blade ovate-lanceolate or elliptic-lanceolate, 17–25 × 4–10 cm, thickly leathery, main veins 3(–5), base rounded or broadly cuneate. Inflorescence of 1 umbel, basally prophyllate; peduncle 1.5–4 cm, proximally articulate; umbel 5–20-flowered.

Open forests; ca. 700 m. SW Guangxi, SE Yunnan [Vietnam].

Only a few sterile specimens have been collected in China; one of them possesses immature fruit.

**73. *Smilax densibarbata*** F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 255. 1978.

密刺菝葜 mi ci ba qia

Vines climbing. Stem and branches densely prickly; prickles slightly curved, sometimes forked. Petiole 1–2 cm, minutely verruculose-prickly, winged for 1/4–1/2 its length; abscission zone near middle; tendrils usually present. Leaf blade elliptic to ovate-elliptic, 8–15 × 3–7 cm. Inflorescence of 1 umbel, basally prophyllate; peduncle 1.5–2.5 cm, proximally articulate; umbels of both sexes densely many flowered, base slightly thickened. Male flowers: tepals greenish, ca. 5 × 0.8–1.5 mm; stamens 5–6 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Berries globose, 8–10 mm in diam. Fl. Jan–Feb, fr. Nov–Dec.

• Forests; 1000–1300 m. SE Yunnan.

**74. *Smilax setiramula*** F. T. Wang & Tang, Fl. Reipubl. Popularis Sin. 15: 255. 1978.

密刚毛菝葜 mi gang mao ba qia

Vines climbing. Stem branched, woody; stem and branches densely prickly-bristly; bristles 5–6 mm. Petiole 1.5–2.5 cm, densely bristly, wingless; tendrils usually present. Leaf blade ovate, 10–14.5 × 6–11 cm, papery, abaxially ± bristly from base to middle, adaxially sometimes also sparsely bristly, main veins 3, base usually shallowly cordate, apex acuminate. Male inflorescence of 1 umbel, basally prophyllate; peduncle 2.5–3.5 cm, minutely bristly, proximally articulate; umbel many flowered. Male flowers (not fully at anthesis): tepals greenish, ca. 4 mm; anthers ca. 1.5 mm. Female flowers and fruit unknown. Fl. Nov–Dec.

• Forests, thickets; 1000–1700 m. SE Yunnan.

**75. *Smilax griffithii*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 198. 1878.

墨托菝葜 mo tuo ba qia

*Smilax griffithii* var. *pallescens* (A. de Candolle) T. Koyama; *S. pallescens* A. de Candolle.

Vines climbing, large. Stem and branches woody, smooth or somewhat scabrous, occasionally with sparse prickles. Petiole 2–5 cm, broadly winged for 1/3–2/5 its length; wings 4–13 mm wide; abscission zone distal; tendrils often developed. Leaf blade ovate-elliptic to ovate, 14–22 × 7–9.5 cm, leathery, main veins (5–)7. Inflorescence of 9–12 umbels, 7–9 cm, basally prophyllate; umbels of both sexes ± grouped in whorls of 2–4, 10–

30-flowered, base thickened, ca. 3 mm in diam. Male flowers: tepals yellowish green, outer ones 4–4.5 × ca. 1 mm, inner ones ca. 4 × 0.6 mm; stamens subequaling tepals. Female flowers: tepals smaller than male ones. Fruit unknown.

Broad-leaved forests; 1700–1800 m. SE Xizang (Mêdog Xian) [India, Myanmar, Thailand].

Only a few sterile specimens have been collected. The description of the flowers follows Koyama (in Smitinand et al., Fl. Thailand 2: 226, 228. 1975).

**76. *Smilax ocreata*** A. de Candolle in A. de Candolle & C. de Candolle, Monogr. Phan. 1: 191. 1878.

抱茎菝葜 bao jing ba qia

*Smilax perulata* H. Léveillé & Vaniot.

Vines climbing. Stem and branches usually woody, sparsely prickly. Petiole 2–3.5 cm, broadly winged for 1/3–1/2 its length; wings 0.5–2 cm wide, basally deeply clasping node; abscission zone at middle or distal; tendrils commonly developed. Leaf blade ovate to elliptic, 9–20 × 4.5–15 cm, leathery. Inflorescence a raceme of 2–4(–7) umbels, 4–10 cm, basally prophyllate; umbels of both sexes not grouped, 10–30-flowered, base thickened, subglobose. Male flowers: tepals yellowish green, tinged pink, 5–6 × 0.5–1 mm; stamens 6–10 mm; filaments basally connate, forming a column ca. 2 mm. Female flowers: inner tepals very narrow; staminodes absent. Berries dark red, globose, ca. 8 mm in diam. Fl. Mar–Jun, fr. Jul–Oct.

Forests, thickets, shaded and damp slopes along valleys; near sea level to 2200 m. Guangdong, Guangxi, Guizhou, Hainan, Sichuan, ?Xizang, Yunnan [Bhutan, India, Myanmar, Nepal, Vietnam].

**77. *Smilax perfoliata*** Loureiro, Fl. Cochinch. 2: 622. 1790.

穿鞘菝葜 chuan qiao ba qia

*Smilax prolifera* Wallich ex Roxburgh.

Vines climbing. Stem branched, to 8 m, woody; stem and branches smooth or sometimes sparsely prickly. Petiole 2–4 cm, broadly winged for 1/2–2/3 its length; wings 7–12(–25) mm wide, basally deeply clasping node, tapering toward apex; abscission zone distal; tendrils usually developed. Leaf blade usually ovate, 6–17 × 3–12 cm. Inflorescence of 10–30 umbels, 5–17 cm, basally prophyllate; rachis often slightly zigzagged; umbels of both sexes ± grouped in whorls of 2–4, densely many flowered, base ellipsoid, ca. 4 × 3 mm. Male flowers: outer tepals 5–6 × ca. 1 mm, inner ones ca. 5 × 0.3 mm; stamens ca. 5 mm. Female flowers: tepals slightly smaller than male ones; staminodes 3. Berries globose, 4–6 mm in diam., Fl. Apr, fr. Oct.  $2n = 32$ .

Forests, thickets; near sea level to 1500 m. Hainan, Taiwan, S Yunnan [India, Laos, Myanmar, Thailand, Vietnam].

**78. *Smilax aspera*** Linnaeus, Sp. Pl. 2: 1028. 1753.

穗菝葜 sui ba qia

*Smilax maculata* Roxburgh.

Vines climbing. Stem and branches woody, ridged-angled, usually very sparsely prickly; prickles short, slightly compress-

ed. Petiole often curved or twisted, 3–4 cm, sometimes sparsely prickly, wingless; abscission zone apical; tendrils rather long. Leaf blade cordate-deltoid to ovate-lanceolate, 6–15 × 5–9.5 cm. Inflorescence a spike of 5–25 umbels, 7–45 cm, basally prophyllate; umbels of both sexes sessile on elongate rachis, 3–6-flowered, base slightly thickened; bracteoles many, broadly ovate. Male flowers: tepals white, 4–5 × ca. 1 mm; stamens 2–2.5 mm. Female flowers: tepals slightly smaller than male ones; staminodes 6. Fl. Jan–Feb, fr. Nov–Dec.  $2n = 32^*$ .

Forests; 1000–2000 m. S Xizang, SW Yunnan [Bhutan, India, Myanmar, Nepal; E and N Africa, SW Asia, C and S Europe].

**79. *Smilax elegantissima*** Gagnepain, Bull. Soc. Bot. France 81: 619. 1934.

四棱菝葜 si leng ba qia

*Smilax polycephala* F. T. Wang & Tang.

Vines climbing, unarmed. Stem and branches woody; branches 4-angled, angles narrowly winged. Petiole 6–7 cm, laterally compressed, narrowly winged for ca. 1/3 its length; abscission zone apical; tendrils rather long. Leaf blade abaxially glaucous, elliptic to ovate-elliptic, 20–30 × 8–13 cm, leathery. Inflorescence a spike of 7–12 umbels, 11–28 cm, basally prophyllate; umbels sessile on elongate, slightly zigzagged rachis, 4–12-flowered, base thickened; bracteoles many, broadly ovate. Male flowers: tepals pale yellow, outer ones ca. 5 × 1.5–2 mm; stamens ca. 1/2 as long as tepals; filaments very short; anthers ca. 1.5 mm. Female flowers unknown. Berries globose, ca. 1 cm in diam. Fl. Aug.

Forests; ca. 1500 m. SE Yunnan [Vietnam].

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