

94. **UNCARIA** Schreber, Gen. Pl. 125. 1789, nom. cons.

钩藤属 *gou teng shu*

Chen Tao (陈涛); Charlotte M. Taylor

Agylophora Necker ex Rafinesque; *Ouroparia* Aublet.

Woody vines or lianas, climbing by recurved, usually paired spines generally 1–2 cm. Raphides absent. Leaves opposite, usually with domatia; stipules persistent or caducous, interpetiolar, generally ovate to ligulate in outline, entire to 2-lobed, usually reflexed. Inflorescences axillary and sometimes also terminal, capitate with heads globose and 1 to several in cymes or fascicles, pedunculate, bracteate; peduncles usually articulate in middle or upper portion, often with stipuliform bracts at articulation; bracts enclosing heads sometimes caducous, involucrel, stipuliform. Flowers sessile and bracteolate or pedicellate and bracteolate or ebracteolate, bisexual, monomorphic. Calyx limb 5-lobed. Corolla white to yellow, salverform or funnellform, inside glabrous or pubescent; lobes 5, imbricate in bud. Stamens 5, inserted in corolla tube near throat, exerted; filaments short; anthers dorsifixed. Ovary 2-celled, ovules numerous in each cell on axile placentas attached in upper third of septum; stigma globose or clavate, exerted. Fruiting heads globose, with fruiting pedicels when present often elongating notably. Fruit capsular, fusiform to obovoid, loculicidally dehiscent into 2 valves that usually remain attached at both ends, thinly to thickly papery or cartilaginous, with calyx limb persistent; seeds numerous, small to medium-sized, fusiform, flattened, winged with wing deeply bifid.

About 34 species: 29 in tropical Asia through Australia, three in Africa and Madagascar, two in tropical America; 12 species (five endemic) in China.

Ridsdale (Blumea 24: 43–46. 1978) presented an extensive consideration of the morphology, branching, and architecture of *Uncaria*. The characteristic hooked spines have been interpreted variously as modified plagiotropic shoots (Ridsdale, loc. cit.), peduncles that are modified into spines (e.g., Steyermark in Lasser, Fl. Venezuela 9: 32. 1974), and short shoots modified into thorns (Robbrecht, Opera Bot. Belg. 1: 1–271. 1988). By any name, these structures function to support the plants as they climb and sometimes bear a terminal inflorescence. Ridsdale (loc. cit.: 69) described the corolla lobe aestivation as valvate or thinly imbricate at their apices; other authors described them as imbricate. *Uncaria* was reviewed in detail for China by How (Sunyatsenia 6: 231–262. 1946), who emended the circumscriptions of several species, and then by Hsue and Wu (J. S. China Agric. Coll. 2(8): 21–32. 1981), who recognized ten species. The arrangement of the flowers and fruit, whether sessile or pedicellate, is taxonomically important; however, the pedicels usually elongate shortly before the flowers open and then continue to elongate as the fruit develop, often markedly, so the pedicel length at anthesis may be difficult to discern from inflorescences in bud.

Uncaria is considered medicinally useful, with uses ranging from general tonics to supposedly curing HIV-AIDS (e.g., K. C. Hsia & X. M. Liu, Acta Phytotax. Sin. 20: 319–320. 1982). Various parts of the plants are apparently used, with the materials generally wild-collected. *Uncaria gambir* (W. Hunter) Roxburgh, found from the Malay Peninsula through Borneo, is apparently both cultivated and wild-harvested as the source of gambir or gambier (Ridsdale, loc. cit.: 82; Mabberley, Mabberley's Pl.-Book, ed. 3, 885–886. 2008), a yellowish dry resin chewed together with the betel nut and sometimes used in tanning. How (loc. cit.) noted that the Chinese drug Kou-T'eng is derived from the "hardened sterile peduncle with attached portions of the stem" of a species that is probably *U. rhynchophylla*.

- 1a. Flowers subsessile to pedicellate, fruit pedicellate.
 - 2a. Stipules suborbicular, 14–16 mm, entire 12. *U. yunnanensis*
 - 2b. Stipules ovate, 6–12 mm, shallowly to deeply 2-lobed.
 - 3a. Leaves drying papery, 2–8 cm wide; flowers subsessile; fruit 1–3 mm wide 5. *U. lanosa*
 - 3b. Leaves drying thinly leathery, 6–12 cm wide; flowers with well-developed pedicels; fruit 4–5 mm wide 6. *U. macrophylla*
- 1b. Flowers and fruit sessile to subsessile.
 - 4a. Leaf blade abaxially strigillose, strigose, puberulent, and/or hirsute on lamina (but sometimes with different pubescence on veins); stems strigillose, tomentulose, strigose, hirtellous, hirsute, or pilosulous; stipules 2-lobed.
 - 5a. Flowering heads 18–25 mm in diam. across calyces; stipule lobes ovate to lanceolate; calyx limb with tube 2–4 mm, lobes 2–3 mm 1. *U. hirsuta*
 - 5b. Flowering heads 9–12 mm in diam. across calyces; stipule lobes narrowly triangular, lanceolate, or ovate; calyx limb deeply lobed, lobes 0.75–2 mm.
 - 6a. Corolla lobes ca. 1.25 mm; leaves 2.5–4 cm wide 2. *U. homomalla*
 - 6b. Corolla lobes ca. 2 mm; leaves 3–5.5 cm wide 9. *U. scandens*
 - 4b. Leaf blade abaxially glabrous to puberulent on lamina; stems glabrous, puberulent, sparsely hirsute, or sparsely hirtellous; stipules entire or 2-lobed.
 - 7a. Stipules entire or shallowly emarginate, broadly triangular, ovate, or suborbicular 11. *U. sinensis*
 - 7b. Stipules 2-lobed, elliptic-oblong, ligulate, lanceolate, or ovate, with lobes narrowly triangular, linear, ovate, lanceolate, or triangular-ovate.
 - 8a. Leaf blade drying thinly leathery; calyx lobes 0.1–0.3 mm.
 - 9a. Leaf blade not glaucous abaxially, with tertiary venation mostly reticulate and not strongly scalariform on adaxial surface; peduncles simple; corolla lobes externally glabrous; fruit

- 6–8 mm 3. *U. laevigata*
 9b. Leaf blade often glaucous abaxially, with tertiary venation rather evidently scalariform at least on adaxial surface; peduncles simple or often branched; corolla lobes externally sericeous; fruit 10–14 mm 10. *U. sessilifructus*
 8b. Leaf blade drying thickly papery to thinly papery; calyx lobes 0.5–2 mm.
 10a. Corollas 7–9 mm; leaf blade often drying reddish brown or dark red, often glaucous abaxially; calyx limb ca. 1 mm 7. *U. rhynchophylla*
 10b. Corollas 10.5–14.5 mm; leaf blade drying brown, grayish brown, or green, not glaucous abaxially; calyx limb 1.5–4 mm.
 11a. Calyx limb ca. 1.5 mm 8. *U. rhynchophylloides*
 11b. Calyx limb 2–4 mm.
 12a. Flowering heads 13–15 mm across calyces; leaves glabrous 4. *U. lancifolia*
 12b. Flowering heads 18–20 mm across calyces; leaves glabrous or usually puberulent at least on veins abaxially 5. *U. lanosa*

1. *Uncaria hirsuta* Haviland, J. Linn. Soc., Bot. 33: 88. 1897.

毛钩藤 mao gou teng

Nauclea formosana Matsumura; *Ouroparia hirsuta* (Haviland) Yamamoto; *Uncaria formosana* (Matsumura) Hayata; *U. kawakamii* Hayata; *U. uraiensis* Hayata.

Lianas, height unknown. Young stems slender, terete or weakly 4-angled, sparsely to densely strigillose, strigose, or hirsute. Petiole 3–6 mm, strigose to strigillose; leaf blade drying thickly papery to thinly leathery, ovate, lanceolate-oblong, or elliptic, 8–12 × 3.5–7 cm, adaxially glabrous and smooth to sparsely puberulent-scabrous on lamina and puberulent on veins, abaxially sparsely to densely strigose with trichomes generally produced regularly along and at 90° to tertiary veins, apex acuminate; secondary veins 7–11 pairs, usually with hirtellous domatia; stipules generally deciduous, broadly ovate, 7–10 mm, 2-lobed for at least 2/3, strigillose, puberulent, or glabrescent, lobes ovate to lanceolate, ciliate, acute to acuminate. Inflorescences axillary or frequently paired and terminal on stems (apparently due to terminal bud not developing further), pilose to pilosulous; peduncle 2.5–5 cm, simple; bracts 5–10 mm; flowering heads 18–25 mm in diam. across calyces, 30–40 mm in diam. across corollas; bracteoles linear or spatulate, ca. 2 mm. Flowers subsessile. Calyx with hypanthium portion obconic, ca. 2 mm, densely pilose to strigose; limb densely strigillose, with tube 2–4 mm; lobes linear-oblong, 2–3 mm. Corolla pale yellow or pale red, salverform, outside sparsely to densely strigillose; tube 7–10.5 mm; lobes oblong to elliptic, 2–2.5 mm, obtuse to rounded. Fruiting heads 30–35 mm in diam. Fruit subsessile, obovoid, 5–9 mm (not including persistent calyx limb), densely strigose; seeds ca. 1.5 mm. Fl. and fr. Jan–Dec.

• Thickets or forests at streamsides in valleys; below 100–500 m. Fujian, Guangdong, Guangxi, Guizhou, Taiwan.

H. H. Hsue and H. Wu (in FRPS 71(1): 257. 1999) listed “*Ouroparia setiloba* Sakai” as a synonym of this species, but that name is correctly “*Ouroparia setiloba* (Benth) Sakai,” which is a combination based on *Uncaria setiloba*, here treated as a synonym of *U. lanosa* var. *appendiculata*. Hsue and Wu described the corolla tubes as 7–10 mm, but these are 8–10.5 mm on all the specimens studied and in descriptions of other authors.

2. *Uncaria homomalla* Miquel, Fl. Ned. Ind. 2: 343. 1857.

北越钩藤 bei yue gou teng

Uncaria tonkinensis Haviland.

Lianas, climbing to 25 m tall. Young stems quadrate, sparsely to densely, usually ferruginous tomentulose or -hirtellous. Petiole 3–6 mm, hirtellous to strigose; leaf blade drying papery, elliptic, lanceolate, elliptic-lanceolate, or ovate-lanceolate, 6–10 × 2.5–4 cm, adaxially rather sparsely but evenly puberulent to strigillose on lamina and densely tomentulose on costa, abaxially moderately to densely hirsute or strigose with trichomes produced mostly along veins, base rounded, apex acuminate or caudate; secondary veins 6–8 pairs, usually with well-developed pilosulous domatia; stipules generally deciduous, deeply 2-lobed, lobes narrowly triangular, 4–5 mm, acute. Inflorescences axillary and sometimes also terminal, densely hirtellous to strigose; peduncles simple, 2.5–3 cm, at articulation with narrowly triangular bracts 2–3 mm; flowering heads 7–10 mm in diam. across calyces, 25–30 mm in diam. across corollas; bracteoles apparently absent. Flowers sessile. Calyx with hypanthium portion obconic, ca. 1.2 mm; limb deeply lobed; lobes linear to narrowly triangular, 0.75–1 mm, densely pilosulous, acute. Corolla yellow [to pale green], outside densely strigose to strigillose; tube 5–8.5 mm; lobes ligulate to elliptic-oblong, ca. 1.25 mm, obtuse to rounded. Fruiting heads 12–20 mm in diam. Fruit sessile, obovoid, ca. 4 × 2 mm, strigose to pilosulous; seeds 2–3 mm. Fl. Apr, May.

Evergreen to seasonal forests; 200–600 m. Guangxi, Yunnan [Bangladesh, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam].

H. H. Hsue and H. Wu (in FRPS 71(1): 258. 1999) described the leaves as up to 5.5 cm wide, but this has not been seen on specimens studied nor reported by other authors. Ridsdale (Blumea 24: 95. 1978) reported this species from Guangdong and Hainan but without vouchers. The separation here of *Uncaria homomalla* and *U. scandens* follows previous Chinese authors, but the separation of these species (or possibly the application of these names to the Chinese plants) needs further study. Ridsdale (loc. cit.) separated *U. homomalla* from *U. scandens* based on the size of the flowering heads and leaves; however, Chinese specimens included previously in *U. scandens* (e.g., Henry 11868, MO!) have flowering heads and leaves similar in size to those of *U. homomalla*.

3. *Uncaria laevigata* Wallich ex G. Don, Gen. Hist. 3: 470. 1834.

平滑钩藤 ping hua gou teng

Nauclea laevigata (Wallich ex G. Don) Walpers.

Lianas, height unknown. Young stems slender, quadrangular, glabrous [to puberulent]. Petiole 7–11 mm, glabrous; leaf blade drying thinly leathery, elliptic, lanceolate, or elliptic-oblong, 8.5–12 × 3–6 cm, glabrous on both surfaces or puberulent on veins abaxially, base rounded to cuneate, apex acute or acuminate; secondary veins 4–7 pairs, usually with hirtellous domatia; stipules caducous, elliptic-oblong to ovate, 4–6 mm, 1-lobed for 1/2 or more, glabrous or sparsely puberulent, lobes narrowly triangular, acute. Inflorescences axillary and sometimes in terminal groupings, glabrous; peduncles 2.5–6 cm, simple; bracts 2–4 mm; flowering heads 8–10 mm in diam. across calyces, 25–35 mm in diam. across corollas; bracteoles linear or subspatulate, 2–3 mm. Flowers sessile. Calyx with hypanthium portion obconic, 1–1.5 mm, densely sericeous or strigose; limb densely puberulent to strigillose, with tube 1–1.5 mm; lobes ligulate, 0.1–0.3 mm, obtuse. Corolla color unknown, salverform, glabrous outside; tube 7–10 mm; lobes oblong, ca. 2 mm, obtuse to rounded. Fruiting head 25–30 mm in diam. Fruit sessile, fusiform, 6–8 mm, strigose to strigillose; seeds not seen. Fl. and fr. May–Nov.

Forests; 600–1300 m. Guangxi, Taiwan, Yunnan [Bangladesh, India, Laos, Myanmar, Thailand, Vietnam].

4. *Uncaria lancifolia* Hutchinson in Sargent, Pl. Wilson. 3: 407. 1916.

倒挂金钩 *dao gua jin gou*

Large lianas, height unknown. Young stems quadrangular, glabrous. Petiole 3–5 mm, glabrous; leaf blade drying papery, oblong-lanceolate or ovate-lanceolate, 9–12 × 3–6 cm, glabrous on both surfaces, base rounded to truncate or subcordate, apex acute or acuminate; secondary veins 5–10 pairs, without domatia; stipules often persistent, ovate, 5–8 mm, 2-lobed for 1/3–1/2, glabrous, lobes lanceolate, acute. Inflorescences axillary and terminal, glabrous; peduncles 4–7 cm, simple; bracts caducous, ca. 5 mm; flowering heads ca. 15 mm in diam. across calyces, ca. 45 mm in diam. across corollas; bracteoles linear or linear-spatulate, 3–4.5 mm. Flowers sessile. Calyx with hypanthium portion obconic, ca. 3 mm, densely sericeous to pilose; limb densely puberulent to strigillose, with tube 1–2 mm; lobes spatulate, ca. 2 mm, obtuse to rounded. Corolla greenish white, salverform, glabrous; tube 9–12 mm; lobes oblong, 1.5–2.5 mm, obtuse to rounded. Fruiting head 25–35 mm in diam. Fruit sessile, obovoid, 9–12 mm, sericeous to strigose; seeds 2.5–3 mm. Fl. and fr. Jun–Dec.

Subtropical evergreen broad-leaved forests; 1500–1900 m. Yunnan [Vietnam].

How (Sunyatsenia 6: 252. 1946) first described the flowers of this species. H. H. Hsue and H. Wu (in FRPS 71(1): 253. 1999) described the leaves as having domatia; but the type specimen and several additional specimens studied lack these, and How did not mention them.

5. *Uncaria lanosa* Wallich var. ***appendiculata*** (Benth.) Ridsdale, Blumea 24: 88. 1978.

恒春钩藤 *heng chun gou teng*

Uncaria appendiculata Benth., London J. Bot. 2: 222. 1843; *Ourouparia setiloba* (Benth.) Sakai; *U. lanosa* f. *setiloba* (Benth.) Ridsdale; *U. philippinensis* Elmer; *U. setiloba* Benth.

Woody vines, height not noted. Young stems quadrangular, sparsely hirsute to glabrescent. Petiole 4–10 mm, sparsely hirsute to glabrescent; leaf blade drying papery, ovate, lanceolate, or lanceolate-oblong, 7–11 × 3.5–8 cm, adaxially shiny and glabrous except sparsely hirsute along veins, abaxially glabrescent except sparsely hirsute along veins, base rounded, truncate, or cordulate, apex acute to acuminate; secondary veins 6–9 pairs, usually with domatia in axils of secondary and often also tertiary veins; stipules persistent or caducous, ovate, 6–10 × 8–10 mm, 2-lobed for 1/3–1/2, lobes narrowly triangular, acute to acuminate. Inflorescences axillary and frequently also terminal, strigose to hirsute or glabrescent; peduncle 2.5–4.5 cm; bracts ca. 10 mm; flowering heads solitary (or 2), 18–20 mm in diam. across calyces, 30–37 mm in diam. across corollas; bracteoles apparently absent. Flowers sessile or subsessile. Calyx densely strigillose; hypanthium portion fusiform, ca. 2 mm; limb deeply lobed; lobes linear, ca. 2 mm, obtuse. Corolla color unknown, salverform, externally sparsely sericeous to glabrescent; tube ca. 12 mm; lobes oblong, ca. 2.5 mm, obtuse. Fruiting heads 30–40 mm in diam.; pedicels 5–9 mm. Fruit pedicellate, fusiform, 9–27 × 1–3 mm, strigose; seeds 2.5–3 mm. Fl. Feb, perhaps Oct, fr. Feb.

Forests; ca. 300 m. S Taiwan [Indonesia (Sulawesi), Philippines].

Ridsdale (loc. cit.: 70) keyed *Uncaria lanosa* based on its stipules that are subentire, but in our plants as well as the type of *U. philippinensis*, treated by him as a synonym of *U. lanosa* (NY, Web!), they are markedly 2-lobed.

Uncaria lanosa var. *lanosa* occurs in Australia, Borneo, Indonesia, Malaysia, Myanmar, New Guinea, Pacific islands (Caroline Islands, Palau, Solomon Islands), Philippines, and Thailand.

6. *Uncaria macrophylla* Wallich in Roxburgh, Fl. Ind. 2: 132. 1824.

大叶钩藤 *da ye gou teng*

Large lianas, height not noted. Young stems weakly to markedly quadrangular, pilosulous, tomentulose, or glabrescent. Petiole 3–25 mm, glabrous to densely tomentulose; leaf blade drying thinly leathery and yellowish brown adaxially, ovate or broadly elliptic, 10–16 × 6–12 cm, adaxially glabrous except strigillose along veins, abaxially sparsely to densely hirsutulous with pubescence denser along veins, base rounded, subcordate, or cordate, apex acute or shortly acuminate; secondary veins 6–9 pairs, usually with pubescent domatia; stipules caducous, ovate, 6–12 × 6–15 mm, 2-lobed for 1/2 or 2/3, lobes triangular to ovate. Inflorescences axillary, tomentulose to glabrescent; peduncle 3–7 cm; bracts triangular, 6–8 mm; flowering heads solitary, 15–20 mm in diam. across calyces, 40–50 mm in diam. across corollas; bracteoles absent; pedicels 2–5 mm. Flowers pedicellate. Calyx densely strigillose; hypanthium portion obconic, 2–2.5 mm; limb deeply lobed; lobes linear-oblong, 3–4 mm, obtuse to rounded. Corolla pale green to white, salverform, outside strigillose to tomentulose; tube 9–10 mm; lobes oblong

to ligulate, ca. 2 mm, obtuse to rounded. Fruiting head 8–10 cm in diam.; pedicels 6–18 mm. Fruit pedicellate, fusiform, 14–20 × 4–5 mm, densely strigillose; seeds 6–8 mm. Fl. Jul, Sep, Dec, fr. Mar–Apr, Sep–Nov.

On canopy crowns in secondary forests; 300–900 m. Guangdong, Guangxi, Hainan, Yunnan [Bangladesh, Bhutan, India, Laos, Myanmar, N Thailand, Vietnam].

7. *Uncaria rhynchophylla* (Miquel) Miquel ex Haviland, J. Linn. Soc., Bot. 33: 890. 1897.

钩藤 *gou teng*

Nauclea rhynchophylla Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 108. 1867; *Ourouparia rhynchophylla* (Miquel) Matsumura; *Uncaria rhynchophylla* var. *koutong* Yamazaki.

Lianas, height unknown. Young stems slender, weakly to markedly quadrangular, glabrous, sometimes glaucous. Petiole 5–15 mm, glabrous; leaf blade drying papery and often red-brown or dark red, elliptic, lanceolate, or elliptic-oblong, 5–12 × 3–7 cm, glabrous on both surfaces, often glaucous abaxially, base cuneate, obtuse, or rounded, apex acute to usually acuminate; secondary veins 4–8 pairs, sometimes with pilosulous domatia; stipules often deciduous, lanceolate to ovate, 4–15 mm, 2-lobed for up to 4/5, glabrous, lobes linear to triangular-lanceolate or ovate, acute to acuminate. Inflorescences axillary and terminal, solitary or usually in terminal groups of 7–11, glabrous; peduncles 1.5–5 cm, simple; bracts 1–4 mm; flowering heads 4–8 mm in diam. across calyces, 12–15 mm in diam. across corollas; bracteoles linear or linear-spatulate, ca. 2 mm. Flowers sessile or subsessile. Calyx with hypanthium portion obconic, ca. 1 mm, densely strigillose to strigose; limb densely strigillose, ca. 1 mm, lobed for 1/2 or more; lobes triangular to spatulate, acute to obtuse. Corolla color unknown, salverform, outside puberulent to glabrous; tube 5.5–6 mm; lobes ovate, 1.5–2 mm, rounded to obtuse. Fruiting head 10–20 mm in diam. Fruit sessile or subsessile, obovoid to fusiform, 5–7 mm, strigillose to strigose; seeds 2–3 mm. Fl. and fr. May–Dec.

Sparse forests or thickets at streamsides in valleys; near sea level to 1000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Yunnan, Zhejiang [Japan].

Ridsdale (Blumea 24: 93. 1978) included *Uncaria rhynchophylloides* as a synonym of *U. rhynchophylla*; however, these do appear to be distinct.

8. *Uncaria rhynchophylloides* F. C. How, Sunyatsenia 6: 257. 1946.

侯钩藤 *hou gou teng*

Lianas, to 13 m tall. Young stems quadrangular, puberulent to glabrescent. Petiole 5–7 mm, puberulent to glabrous; leaf blade drying thickly papery and dark brown to grayish brown, ovate, lanceolate, or elliptic-ovate, 5–9 × 2.5–4.5 cm, both surfaces puberulent to glabrescent, base cuneate to obtuse, rounded, or cordulate, apex acuminate; secondary veins 5–7 pairs, usually with pilosulous domatia; stipules generally persistent, ovate, deeply 2-lobed, glabrous to puberulent, lobes triangular to ovate, 3–4 mm, acute to acuminate. Inflorescences axillary and often in terminal groups of 3–5, puberulent to glabrescent;

peduncles 3.5–6 cm, simple but sometimes with 2 articulations; bracts 3–4 mm; flowering heads 9–11 mm in diam. across calyces, 25–30 mm in diam. across corollas; bracteoles linear or linear-spatulate, 2.5–3.5 mm. Flowers sessile. Calyx with hypanthium portion obconic, ca. 1.5 mm, densely sericeous or strigose; limb deeply lobed, densely strigillose; lobes oblong to spatulate, ca. 1.5 mm, obtuse to rounded. Corolla color unknown, salverform, outside puberulent; tube ca. 12 mm; lobes obovate or oblong-obovate, 2–2.5 mm, rounded. Fruiting head 16–20 mm in diam. Fruit sessile, obovoid-ellipsoid, 8–10 × 3–3.5 mm, sericeous to strigillose; seeds not seen. Fl. and fr. May–Dec.

• Forests, forest margins; 500–800 m. Guangdong, Guangxi.

This species was illustrated by How (loc. cit.: 257, f. 31). Ridsdale (Blumea 24: 93. 1978) included *Uncaria rhynchophylloides* as a synonym of *U. rhynchophylla*; however, these do appear to be distinct.

9. *Uncaria scandens* (Smith) Hutchinson in Sargent, Pl. Wilson. 3: 406. 1916.

攀茎钩藤 *pan jing gou teng*

Nauclea scandens Smith in Rees, Cycl. 24: *Nauclea* no. 9. 1813; *Cephalanthus cavaleriei* H. Léveillé; *Uncaria wangii* F. C. How.

Large lianas, height not noted. Young stems slender, weakly to markedly quadrangular, densely hirtellous or pilosulous. Petiole 3–6 mm, hirtellous to pilosulous; leaf blade drying papery, ovate, ovate-oblong, lanceolate, elliptic, or elliptic-oblong, 10–15 × 3–5.5 cm, adaxially sparsely to moderately strigillose or scabrous-puberulent on lamina and densely puberulent to strigillose on veins, abaxially moderately to densely pilosulous, hirtellous, and/or strigillose usually with at least some pubescence spreading, base rounded to truncate, subcordate, or cordulate, apex acute or usually acuminate; secondary veins 7–10 pairs, usually with pilosulous domatia; stipules deciduous, ovate, 6–10 mm, deeply 2-lobed, strigillose, puberulent, or glabrescent, lobes lanceolate, ovate, or narrowly triangular, acute. Inflorescences axillary and often in terminal groups of 5–7 heads, densely pilosulous to tomentulose; peduncles 3–7 cm, simple; bracts 4–9 mm; flowering heads 9–12 mm in diam. across calyces, 25–30 mm in diam. across corollas; bracteoles linear or linear-spatulate, 1–3 mm, sparsely pubescent. Flowers sessile. Calyx with hypanthium portion obconic, 1–1.5 mm, densely strigose or pilose; limb 2–3 mm, lobed for up to 2/3, densely grayish white strigillose; lobes linear or linear-spatulate, 1.5–2 mm, obtuse. Corolla pale yellow sometimes flushed with pink, salverform, outside sparsely to densely hirtellous; tube 8–10 mm; lobes obovate to elliptic, ca. 2 mm, rounded. Fruiting head 20–25 mm in diam. Fruit sessile, obovoid to ob-lanceoloid, 6–9 mm, hirtellous; seeds orange-yellow, ca. 2 mm. Fl. Feb, Apr, fr. Jul, Nov.

• Sparse forests, broad-leaved forests; 100–1500 m. Guangdong, Guangxi, Hainan, Sichuan, Xizang, Yunnan.

This species was illustrated by How (Sunyatsenia 6: t. 42. 1946, as *Uncaria wangii*). See comments about the separation of this species under *U. homomalla*.

10. *Uncaria sessilifructus* Roxburgh, Fl. Ind. 2: 130. 1824.

白钩藤 bai gou teng

Nauclea sessilifructus (Roxburgh) D. Dietrich.

Large lianas, height unknown. Young stems slender, quadrangular, sparsely puberulent or hirtellous to glabrous. Petiole 5–10 mm, glabrous; leaf blade drying thinly leathery, ovate, elliptic, or elliptic-oblong, 8–12 × 4–6.5 cm, glabrous on both surfaces or abaxially puberulent on principal veins, often glaucous abaxially, base cuneate to rounded, apex acute or acuminate; secondary veins 4–7 pairs, usually with pilosulous domatia; stipules deciduous, ligulate to lanceolate, 7–10 mm, 2-lobed for 2/3 or more, glabrous to densely puberulent, lobes narrowly triangular, acute. Inflorescences axillary or terminal, heads solitary or in groups of 5–15, strigillose to glabrescent; peduncles 3–5.5 cm, simple or often branched to 1 order; flowering heads 5–10 mm in diam. across calyces, 25–35 mm in diam. across corollas; bracteoles linear or subspatulate, 2–3 mm. Flowers sessile. Calyx with hypanthium portion obconic, 1.5–2 mm, densely strigose to sericeous; limb densely strigillose to pilosulous, with tube 1–2 mm; lobes oblong to triangular, 0.25–1 mm, obtuse to acute. Corolla yellowish white, salverform; tube 6–10 mm, outside glabrous, pilosulous, or sericeous; lobes oblong, ca. 2 mm, outside sericeous or hirtellous, rounded to obtuse. Fruiting head 25–35 mm in diam. Fruit sessile, fusiform, 10–14 mm, sericeous; seeds not seen. Fl. and fr. Mar–Dec.

Dense forests or thickets in valleys; 300–1500 m. Guangxi, Yunnan [Bangladesh, Bhutan, India, Laos, Myanmar, Nepal, Vietnam].

This species was illustrated by Ridsdale (Blumea 24: 91, f. 11. 1978).

11. *Uncaria sinensis* (Oliver) Haviland, J. Linn. Soc., Bot. 33: 89. 1897.

华钩藤 hua gou teng

Nauclea sinensis Oliver, Hooker's Icon. Pl. 20: t. 1956. 1891; *Uncaria membranifolia* F. C. How.

Lianas, height unknown. Young stems slender, quadrangular, glabrous. Petiole 6–10 mm, glabrous; leaf blade drying thinly papery, elliptic to ovate, 9–14 × 5–8.5 cm, both surfaces sparsely puberulent to glabrous, base obtuse to rounded, apex acuminate; secondary veins 6–8 pairs, without domatia; stipules often persistent, broadly triangular, ovate, or orbicular, 3–10 mm, glabrous, rounded to truncate or sometimes shallowly emarginate. Inflorescences axillary, heads solitary or sometimes in terminal groups of 3–5, glabrous; peduncles 3–7 cm, rather slender; bracts 2–3 mm; flowering heads 10–15 mm in diam. across calyces, ca. 30 mm in diam. across corollas; bracteoles linear or subspatulate, 2–3 mm. Flowers subsessile. Calyx with hypanthium portion ca. 2 mm, densely strigose to strigillose; limb deeply lobed, densely strigillose; lobes linear-oblong, 1–1.5 mm, obtuse to rounded. Corolla color unknown, salverform; tube 7–8 mm, outside glabrous; lobes ligulate to triangular, ca. 2 mm, outside puberulent, acute to obtuse. Fruiting head 20–30 mm in diam. Fruit sessile, ellipsoid, 8–10 mm, strigillose to strigose; seeds not seen. Fl. and fr. Jun–Oct.

• Sparse forests or wet secondary forests at middle elevations; 900–1100 m. Gansu, Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Si-

chuan, Yunnan.

This species was illustrated by How (Sunyatsenia 6: 254, f. 30. 1946, as *Uncaria membranifolia*).

12. *Uncaria yunnanensis* K. C. Hsia, Acta Phytotax. Sin. 20: 319. 1982.

云南钩藤 yun nan gou teng

Woody vines or lianas, to 15–25 m tall. Young branches weakly quadrangular, ferruginous villous. Petiole glabrous or ferruginous hirtellous; leaf blade drying leathery, ovate, elliptic, or elliptic-oblong, 9–18 × 5–8 cm, both surfaces glabrous, base obtuse, apex shortly acuminate; secondary veins ca. 4 pairs; stipules caducous, suborbicular, 14–16 mm, rounded. Inflorescences axillary and sometimes terminal, with heads solitary, brown hirtellous; peduncle 30–35 mm; flowering heads 15–20 mm in diam. in bud. Flowers not seen. Fruiting head ca. 40 mm in diam.; pedicels 6–8 mm. Fruit pedicellate, fusiform, ca. 10 mm, brown hirtellous. Fl. Jul, fr. Jan.

• Forest margins, thickets. Yunnan (Xishuangbanna).

H. H. Hsue and H. Wu (in FRPS 71(1): 249. 1999) described the petioles as ferruginous pubescent, but the protologue description of this species says “*petioli glabri nitiduli*,” though these “*petioli*” are described as structures belonging to “*pedunculus communis*” and may be pedicels rather than petioles.

The possibility cannot be completely excluded based on the information available that this name will be found synonymous with *Uncaria gambir*.

Fl. China 19: 348–353. 2011.