

122. **HYLODESMUM** H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 173. 2000.

长柄山蚂蝗属 *chang bing shan ma huang shu*

Huang Puhua (黄普华 *Huang Pu-hwa*); Hiroyoshi Ohashi

Desmodium sect. *Podocarpium* Benth in Miquel, *Pl. Jungh.* 226. 1852; *Podocarpium* (Benth) Y. C. Yang & P. H. Huang (1979), not A. Braun ex Stizenberger (1851), nor Unger (1864).

Perennial herbs or herbaceous subshrubs. Leaves pinnately compound, 3–7-foliolate; leaflets entire or slightly undulate; stipules and stipels present. Racemes terminal, or axillary and terminal, rarely lax panicles, usually 2- or 3-flowered at each node; bracts present; bracteoles often absent. Calyx broadly campanulate, 4- or 5-lobed (upper lobes fully connate when 4-lobed or minutely 2-toothed at apex when 5-lobed). Standard shortly clawed at base; wings and keel clawed. Stamens monadelphous. Ovary long stipitate or slightly shortly stipitate. Legume 2–5-jointed, lower suture very deeply incised nearly to upper one between articles, upper suture straight or shallowly undulate; articles obliquely triangular or slightly broadly subobovate. Seed without rim-aril; cotyledons hypogeous.

Fourteen species: mostly in E Asia, three in North America; ten species (three endemic) in China.

- 1a. Calyx lobes ca. as long as tube or longer; bracts ovate to broadly ovate.
 - 2a. Terminal leaflet entire along margin, base rounded 10. *H. williamsii*
 - 2b. Terminal leaflet slightly undulate or irregularly undulate along margin, base cuneate.
 - 3a. Leaflets caudate or caudate-acuminate at apex, irregularly undulate along margin; roots distinctly tuberos 8. *H. longipes*
 - 3b. Leaflets shortly acuminate at apex, slightly undulate along margin; roots not tuberos 9. *H. repandum*
- 1b. Calyx lobes shorter than tube; bracts narrowly ovate or narrowly triangular.
 - 4a. Leaves 5–7-foliolate 1. *H. oldhamii*
 - 4b. Leaves entirely 3-foliolate.
 - 5a. Stems and leaves densely white strigose 6. *H. densum*
 - 5b. Stems and leaves pubescent or glabrous.
 - 6a. Stems and leaves glabrous 3. *H. menglaense*
 - 6b. Stems and leaves pubescent or subglabrous.
 - 7a. Wings and keel petals not clawed at base; stipules linear-lanceolate, 0.5–1 mm, broadest at base 7. *H. podocarpum*
 - 7b. Wings and keel petals distinctly clawed at base; stipules triangular-lanceolate, lanceolate, or ovate-lanceolate, 2–4 mm, broadest at base.
 - 8a. Articles of legume obliquely triangular, 12–14 × 4–6 mm, stipe 10–12 mm; fruiting pedicel 11–13 mm 2. *H. leptopus*
 - 8b. Articles of legume slightly broadly subobovate, (6–)9–10 × ca. 4 mm, stipe 4–10 mm; fruiting pedicel 4–10 mm.
 - 9a. Leaves often clustered at top of stem, terminal leaflet broadly ovate or ovate; legume articles 9–10 mm, stipe ca. 10 mm 4. *H. laxum*
 - 9b. Leaves often scattered on stem, terminal leaflet lanceolate; legume articles 6–7 mm, stipe 4–6 mm 5. *H. laterale*

1. *Hylodesmum oldhamii* (Oliver) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 180. 2000.

羽叶长柄山蚂蝗 *yu ye chang bing shan ma huang*

Desmodium oldhamii Oliver, *J. Linn. Soc., Bot.* 9: 165. 1865 [“*oldhami*”]; *Podocarpium oldhamii* (Oliver) Y. C. Yang & P. H. Huang.

Herbs, perennial, 50–150 cm tall. Stems glabrescent. Leaves 5–7-foliolate; petiole ca. 6 cm, pubescent; leaflet blade lanceolate, oblong, or ovate-elliptic, 6–15 × 3–5 cm, both surfaces sparsely pubescent, base cuneate or obtuse, apex acuminate. Racemes simple or shortly branched at lowermost part, to 40 cm, uncinately pubescent and yellow pubescent, laxly flowered. Pedicel 4–6 mm, elongated to 6–11 mm at fruiting. Calyx 2.5–3 mm; upper lobes distinctly 2-toothed at apex. Corolla purplish red, ca. 7 mm; standard broadly elliptic; wings and

keel narrowly elliptic, base shortly clawed. Stamens monadelphous. Ovary linear, stipitate. Legume flat, uncinately pubescent, mostly 2-jointed, rarely 1- or 3-jointed; articles obliquely triangular, 1–1.5 cm × 5–7 mm. Seeds ca. 9 × 5 mm. Fl. Aug–Sep, fr. Sep–Oct. *2n* = 22.

Forests on mountain slopes, streamsides, thickets, rocky places; 100–1700 m. Anhui, Fujian, ?Guangdong, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, Sichuan, Zhejiang [Japan, Korea, Russia (Far East)].

The whole plant is used medicinally for diuresis. It also is used as a pesticide.

2. *Hylodesmum leptopus* (A. Gray ex Benth) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 179. 2000.

细长柄山蚂蝗 *xi chang bing shan ma huang*

Desmodium leptopus A. Gray ex Benth in Miquel, *Pl.*

Jungh. 226. 1852; *D. gardneri* Benth; *D. laxum* Candolle subsp. *leptopus* (A. Gray ex Benth) H. Ohashi; *D. tashiroi* Matsumura; *Hylodesmum laxum* (Candolle) H. Ohashi & R. R. Mill var. *leptopus* Y. C. Yang & P. H. Huang; *Podocarpium leptopus* (A. Gray ex Benth) Y. C. Yang & P. H. Huang.

Subshrubs, 30–70 cm tall. Young stems pubescent. Leaves caespitose or scattered, 3-foliolate; petiole 5–10 cm, glabrous or sparsely pubescent; leaflet blade ovate to ovate-lanceolate, 10–15 × 3.5–6 cm, abaxially sparsely pubescent, adaxially glabrous except with minute hooked hairs on midvein, base cuneate, orbicular, or oblique, apex long acuminate. Racemes terminal or laxly branched panicles, laxly flowered. Pedicel 3–4 mm, elongated to 1.1–1.3 cm at fruiting, densely hooked pubescent. Calyx 2–3 mm. Corolla pink, ca. 5 mm; standard broadly elliptic, shortly clawed; wings and keel clawed. Ovary long stipitate. Legume flat, slightly curved, minutely hooked pubescent, 2- or 3-jointed; articles obliquely triangular, 1.2–1.4 cm × 4–6 mm; stipe 1–1.2 cm; fruiting pedicel 1.1–1.3 cm. Fl. and fr. Aug–Sep.

Dense valley forests, shaded places along streams; 700–1000 m. Fujian, Guangdong, Guangxi, Hainan, ?Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, ?Zhejiang [Indonesia, Japan, Laos, Malaysia, New Guinea, Philippines, Thailand, Vietnam].

At first glance, this species is very similar to *Hylodesmum laxum*; but, upon detailed examination, they differ in the abaxial leaflet surface, the shape and size of the articles, and the length of the fruiting pedicel and stipe.

3. *Hylodesmum menglaense* (C. Chen & X. J. Cui) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 180. 2000.

勐蜡长柄山蚂蝗 meng la chang bing shan ma huang

Podocarpium menglaense C. Chen & X. J. Cui, *Acta Bot. Yunnan.* 9: 305. 1987; *Desmodium menglaense* (C. Chen & X. J. Cui) H. Ohashi.

Herbs, erect, 50–100 cm tall. Stems simple, glabrous, somewhat woody near base. Leaves 3-foliolate; petiole 6–11 cm, glabrous; terminal leaflet base broadly ovate or broadly elliptic, 13–19 × 7–10 cm, both surfaces glabrous, abaxially white spotted, base rounded or nearly cuneate, apex acuminate or caudate-acuminate; lateral leaflets slightly smaller, narrowly ovate or narrowly elliptic, base oblique. Racemes terminal and axillary. Pedicel 5–7 mm. Ovary long stipitate, stipe 0.9–1.5 cm, glabrous. Legume 4- or 5-jointed, densely hooked pubescent; articles narrowly ovoid or narrowly ellipsoid, 3.2–5.4 cm × 3.5–4 mm. Fr. Nov.

- Forest margins, streamsides; ca. 600 m. S Yunnan.

4. *Hylodesmum laxum* (Candolle) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 178. 2000.

疏花长柄山蚂蝗 shu hua chang bing shan ma huang

Herbs, erect, 30–100 cm tall. Stem woody at base. Leaves 3-foliolate, clustered at apex or scattered along stem; petiole 3–9 cm, pubescent; terminal leaflet blade broadly ovate, ovate, or lanceolate, 5–12 × 1.1–5.5 cm, both surfaces subglabrous or abaxially slightly pubescent, base orbicular, margin entire, apex acuminate. Racemes terminal or terminal and axillary, often branched, to 30 cm, laxly flowered, 2- or 3-flowered at each

node. Pedicel 3–4 mm, elongated to 4–10 mm at fruiting. Calyx ca. 2 mm; lobes shorter than tube. Corolla pink, 4–6 mm; standard elliptic, clawed; wings narrowly elliptic, auriculate and shortly clawed at base; keel obtuse, clawed, not auriculate. Legume often 2–4-jointed; articles slightly broadly subobovate, (6–)9–10 × ca. 4 mm or smaller, hooked pubescent; stipe 4–10 mm; fruiting pedicel 4–10 mm. Fl. and fr. Aug–Oct.

Broad-leaved forests on mountain slopes, grassy riversides, streamsides in forests; 700–1400 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, ?Jiangxi, Taiwan, Xizang, Yunnan [Bhutan, India, Indonesia, Japan, Laos, Nepal, Philippines, Sri Lanka, Thailand, Vietnam].

- 1a. Leaves evergreen, adaxially lustrous, usually sparse on stem or approximate on lower parts of stem 4a. subsp. *laxum*
- 1b. Leaves probably deciduous, adaxially not lustrous, approximate at apex or upper part of stem.
 - 2a. Leaves approximate at apex of stem; terminal leaflet broadly elliptic or broadly ovate, 4–5 × 2.7–3.2 cm 4b. subsp. *falfolium*
 - 2b. Leaves approximate on upper part of stem; terminal leaflet narrowly elliptic, ca. 4.5 × 1.5 cm 4c. subsp. *lateraxum*

4a. *Hylodesmum laxum* subsp. *laxum*

疏花长柄山蚂蝗(原亚种) shu hua chang bing shan ma huang (yuan ya zhong)

Desmodium laxum Candolle, *Ann. Sci. Nat. (Paris)* 4: 102. 1825; *D. podocarpum* Candolle var. *laxum* (Candolle) Baker; *Podocarpium laxum* (Candolle) Y. C. Yang & P. H. Huang.

Leaves sparse on or clustered at lower part of stem; terminal leaflet elliptic or ovate, 5–12 × 5–5.5 cm. Legume stipe ca. 1 cm. *2n* = 22.

Broad-leaved forests on mountain slopes; 700–1400 m. Fujian, Guangdong, Guizhou, Hainan, Hubei, Hunan, ?Jiangxi, Xizang, Yunnan [Bhutan, India, Indonesia, Japan, Laos, Nepal, Philippines, Sri Lanka, Thailand, Vietnam].

4b. *Hylodesmum laxum* subsp. *falfolium* (H. Ohashi) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 179. 2000.

湘西长柄山蚂蝗 xiang xi chang bing shan ma huang

Desmodium laxum subsp. *falfolium* H. Ohashi, *J. Jap. Bot.* 70: 146. 1995.

Leaves approximate at apex of stem; terminal leaflet broadly elliptic or broadly ovate, 4–5 × 2.7–3.2 cm. Legume stipe 1.2–1.4 cm.

- Mountain forests. W Hunan.
- Only one individual was found.

4c. *Hylodesmum laxum* subsp. *lateraxum* (H. Ohashi) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 179. 2000.

黔长柄山蚂蝗 qian chang bing shan ma huang

Desmodium laxum subsp. *lateraxum* H. Ohashi, J. Jap. Bot. 70: 147. 1995.

Leaves approximate on upper part of stem; terminal leaflet narrowly elliptic, ca. 4.5 × 1.5 cm. Legume stipe 1.2–1.8 cm.

- Guizhou.

Only one individual was found.

5. *Hylodesmum laterale* (Schindler) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 177. 2000.

侧序长柄山蚂蝗 *ce xu chang bing shan ma huang*

Desmodium laterale Schindler, Repert. Spec. Nov. Regni Veg. 22: 258. 1926; *D. hainanense* Isely; *D. laxum* Candolle subsp. *laterale* (Schindler) H. Ohashi; *Podocarpium laxum* (Candolle) Y. C. Yang & P. H. Huang var. *laterale* (Schindler) Y. C. Yang & P. H. Huang.

Herbs, erect, 30–70 cm tall. Stem woody at base. Leaves 3-foliolate, scattered along stem; stipules lanceolate, 5–7 mm; petiole 3–5 cm, pubescent; terminal leaflet blade ovate or lanceolate, 5–13 × 2–4 cm, both surfaces subglabrous or pubescent, base suborbicular, margin entire, apex acuminate or acute. Racemes terminal, or terminal and axillary, to 30 cm, sometimes branched, laxly flowered, 2- or 3-flowered at each node. Pedicel 3–5 mm, elongated to 4–10 mm at fruiting. Calyx ca. 1 mm, glabrous or slightly pubescent; lobes shorter than tube. Corolla pink, 4–6 mm; standard elliptic, clawed; wings narrowly elliptic, auriculate and shortly clawed at base; keel obtuse, clawed, not auriculate. Legume 2- or 3-jointed; articles slightly broadly subobovate, 6–7 × ca. 4 mm or smaller, with hooked hairs; stipe 4–10 mm; fruiting pedicel 4–10 mm. Fl. and fr. Aug–Oct.

Broad-leaved forests; below 1400 m. Fujian, Guangdong, Guangxi, Hainan, ?Jiangxi, Taiwan [S Japan].

6. *Hylodesmum densum* (C. Chen & X. J. Cui) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 176. 2000.

密毛长柄山蚂蝗 *mi mao chang bing shan ma huang*

Podocarpium fallax (Schindler) C. Chen & X. J. Cui var. *densum* C. Chen & X. J. Cui, Acta Bot. Yunnan. 9: 306. 1987; *Desmodium densum* (C. Chen & X. J. Cui) H. Ohashi; *P. densum* (C. Chen & X. J. Cui) P. H. Huang.

Herbs, erect, 50–70 cm tall. Stem simple or with a lateral branch at base, densely white strigose. Leaves 3-foliolate; petiole 12–14 cm; terminal leaflet blade broadly ovate, 5–7 × 3.2–5 cm, both surfaces densely white strigose, base broadly cuneate-rounded, apex acuminate; lateral blade narrowly ovate, slightly smaller, base oblique. Fruiting inflorescences racemose, terminal. Legume 2-jointed; articles obliquely narrowly triangular, 8–10 × 3–4 mm, minutely hooked pubescent, base obliquely cuneate, apex concave; stipe 5–6 mm; fruiting pedicel ca. 5 mm. Fl. unknown, fr. Sep–Oct.

- Forests; 600–800 m. SW Guangxi, SE Yunnan.

This species is characterized by the obliquely narrowly triangular articles and branches at the base of the stem similar to *Hylodesmum leptopus* but easily distinguished by the feature of indumentum, shape

of terminal leaflet, shorter stipe of ovary, and shorter fruiting pedicel. The indumentum is quite distinct.

7. *Hylodesmum podocarpum* (Candolle) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 181. 2000.

长柄山蚂蝗 *chang bing shan ma huang*

Herbs, erect, 50–110 cm tall. Stem and petiole sparsely spreading pubescent or glabrous. Leaves 3-foliolate; petiole 2–12 cm; terminal leaflet blade variable in shape and size, broadly ovate, ovate, or rhombic to narrowly lanceolate. Racemes or panicles, terminal or terminal and axillary, 20–30 cm, elongated to 40 cm at fruiting, often 2-flowered at each node. Pedicel 2–4 mm, elongated to 5–6 mm at fruiting. Calyx ca. 2 mm; lobes shorter than tube. Corolla purplish red, ca. 4 mm; standard broadly obovate; wings narrowly elliptic; keel similar to wings, not clawed. Ovary stipitate. Legume ca. 1.6 cm, often 2-jointed; articles slightly broadly subobovate, 5–10 × 3–4 mm, with hooked and minute straight hairs; stipe 3–5 mm; fruiting pedicel ca. 6 mm. $2n = 22^*$.

Roadsides, grassy slopes, grasslands on high mountains, mountain slopes, forests, thickets, forest margins, ditches; 100–2100 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, ?Hainan, Hebei, E Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Korea, Laos, Myanmar, Nepal, Pakistan, Philippines, Russia (Far East), Vietnam].

The whole plant including the root bark is used medicinally for reducing fever and curing malaria.

The *Hylodesmum podocarpum* complex is extremely variable in the shape of the terminal leaflets, although the taxa resemble each other in having laxly flowered inflorescences, small flowers, non-clawed wings and keel petals, broadly subobovate small articles, and similar areas of distribution. The taxonomic ranks for these infraspecific taxa are somewhat confusing. Huang considers the complex to consist of one species, *Podocarpium podocarpum*, including four varieties, while Ohashi and Mill (loc. cit.) consider it to consist of *Hylodesmum podocarpum* and three subspecies, one of which contains a variety.

- 1a. Terminal leaflet broadly obovate, broadest above middle, apex abruptly acute 7a. subsp. *podocarpum*
- 1b. Terminal leaflet not as above, broadest below middle.
 - 2a. Terminal leaflet broadly ovate or ovate, apex acuminate; leaves approximate below middle 7b. subsp. *fallax*
 - 2b. Terminal leaflet ovate, rhombic-ovate, elliptic-rhombic, lanceolate-rhombic, or lanceolate, apex acute; leaves scattered or partly approximate at middle.
 - 3a. Terminal leaflet lanceolate or narrowly lanceolate, 4–6 × as long as wide 7d. subsp. *szechuenense*
 - 3b. Terminal leaflet neither lanceolate nor narrowly lanceolate, 1–3 × as long as wide 7c. subsp. *oxyphyllum*

7a. *Hylodesmum podocarpum* subsp. *podocarpum*

长柄山蚂蝗(原亚种) chang bing shan ma huang (yuan ya zhong)

Desmodium podocarpum Candolle, Ann. Sci. Nat. (Paris) 4: 102. 1825; *D. bodinieri* H. Léveillé; *Hedysarum podocarpum* (Candolle) Sprengel; *Podocarpium podocarpum* (Candolle) Y. C. Yang & P. H. Huang.

Herbs, 50–110 cm tall. Stem sparsely pubescent. Terminal leaflet broadly obovate, 4–7 × 3.5–6 cm, broadest above middle, both surfaces sparsely pubescent to glabrescent, base cuneate or broadly cuneate, apex abruptly acute; lateral blade obliquely ovate, small, base oblique. Fl. Aug–Sep. $2n = 22$.

Roadsides, grassy slopes, grasslands on high mountains, secondary forests; 100–2100 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [India, Japan, Korea, Nepal, Pakistan, Philippines, may occur in N Vietnam].

7b. *Hylodesmum podocarpum* subsp. *fallax* (Schindler) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 182. 2000.

宽卵叶长柄山蚂蝗 kuan luan ye chang bing shan ma huang

Desmodium fallax Schindler, Bot. Jahrb. Syst. 54: 55. 1916; *D. podocarpum* subsp. *fallax* (Schindler) H. Ohashi; *Hylodesmum podocarpum* var. *fallax* (Schindler) X. F. Gao; *Podocarpium fallax* (Schindler) C. Chen & X. J. Cui; *P. podocarpum* var. *fallax* (Schindler) Y. C. Yang & P. H. Huang.

Herbs, 70–100 cm tall. Stem pubescent. Terminal leaflet broadly ovate or ovate, 3.5–12 × 2.5–8 cm, both surfaces adpressed pubescent, base broadly cuneate or suborbicular, apex acuminate or caudate-acute. Fl. Aug–Nov. $2n = 22$.

Roadsides on mountain slopes, thickets, sparse forests, forest margins; 300–1400 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, ?Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea].

The whole plant is used medicinally for treating dysentery and rheumatism. As well, it is used as forage for livestock.

7c. *Hylodesmum podocarpum* subsp. *oxyphyllum* (Candolle) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 182. 2000.

尖叶长柄山蚂蝗 jian ye chang bing shan ma huang

Desmodium oxyphyllum Candolle, Ann. Sci. Nat. (Paris) 4: 102. 1825; *D. fallax* var. *mandshuricum* (Maximowicz) Nakai; *D. mandshuricum* (Maximowicz) Schindler; *D. oxyphyllum* var. *mandshuricum* (Maximowicz) H. Ohashi; *D. podocarpum* var. *japonicum* Matsumura; *D. podocarpum* var. *mandshuricum* Maximowicz; *D. podocarpum* subsp. *oxyphyllum* (Candolle) Y. C. Yang & P. H. Huang; *D. racemosum* Candolle; *D. racemosum* var. *mandshuricum* (Maximowicz) Ohwi; *D. racemosum* var. *pubescens* F. P. Metcalf; *Hedysarum racemosum* Thunberg (1784), not Aublet (1775); *Hylodesmum oxyphyllum* (Candolle) X. F. Gao; *H. podocarpum* var. *oxyphyllum* (Candolle) H. Ohashi & R. R. Mill; *Podocarpium mandshuricum* (Maximowicz) Czerepanov; *P. podocarpum* var. *japonicum* (Matsumura) P. H. Huang; *P. podocarpum* var. *mandshuricum* (Maximowicz) P. H. Huang; *P. podocarpum* var. *oxyphyllum* (Candolle) Y. C. Yang & P. H. Huang.

Herbs, to 100 cm tall. Stem glabrous or subglabrous. Leaves scattered or approximate at middle; terminal leaflet elliptic-rhombic to lanceolate-rhombic or ovate to rhombic-ovate, 4–10 × 2–5 cm, both surfaces glabrous or subglabrous, or abaxially pubescent on veins, base cuneate or rounded, apex acuminate. Fl. Jul–Sep, fr. Aug–Nov. $2n = 22$.

Mountain slopes, slope forests, thickets, roadsides, ditches, forest margins, broad-leaved forests; 400–2100 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, E Heilongjiang, Henan, ?Hubei, ?Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, Sichuan, ?Xizang, Yunnan, Zhejiang [Bhutan, India, Indonesia, Japan, Korea, Laos, Myanmar, Nepal, Russia (Far East), Vietnam].

Plants with scattered leaves have been named *Hylodesmum podocarpum* var. *japonicum* (Matsumura) H. Ohashi (J. Jap. Bot. 77: 170. 2002). Plants with leaves at least partly approximate at middle have been named *H. podocarpum* var. *mandshuricum* (Maximowicz) H. Ohashi & R. R. Mill (Edinburgh J. Bot. 57: 183. 2000).

7d. *Hylodesmum podocarpum* subsp. *szechuenense* (Craib) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 185. 2000.

四川长柄山蚂蝗 si chuan chang bing shan ma huang

Desmodium podocarpum var. *szechuenense* Craib in Sargent, Pl. Wilson. 2: 104. 1914; *D. oxyphyllum* var. *szechuenense* (Craib) H. Ohashi; *D. podocarpum* subsp. *szechuenense* (Craib) H. Ohashi; *D. szechuenense* (Craib) Schindler; *Hylodesmum szechuenense* (Craib) X. F. Gao; *Podocarpium podocarpum* var. *szechuenense* (Craib) Y. C. Yang & P. H. Huang.

Herbs, to 100 cm tall. Stem pubescent. Terminal leaflet lanceolate or narrowly lanceolate, 4.2–6.8 × 1–1.3 cm, abaxially sparsely pubescent on veins, adaxially glabrescent, base cuneate, apex acute. Fl. Aug–Sep, fr. Sep–Nov.

• Ditches, roadsides, thickets, sparse forests; 300–2000 m. Gansu, N Guangdong, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Yunnan.

8. *Hylodesmum longipes* (Franchet) H. Ohashi & R. R. Mill, Edinburgh J. Bot. 57: 179. 2000.

云南长柄山蚂蝗 yun nan chang bing shan ma huang

Shuteria longipes Franchet, Pl. Delavay. 179. 1890; *Desmodium duclouxii* Pampanini; *D. duclouxii* var. *henryi* (Schindler) H. Ohashi; *D. henryi* Schindler; *Podocarpium duclouxii* (Pampanini) Y. C. Yang & P. H. Huang.

Herbs, perennial, erect, 20–100 cm tall. Rootstocks woody; tubers often 2, fusiform, ca. 4 cm. Leaves 3-foliolate; petiole 5–8 cm, pilose; leaflet blade rhombic-orbicular or broadly ovate, 4–6 × 4–5 cm, both surfaces sparsely adpressed villous, base broadly cuneate or oblique, margin irregularly undulate, apex caudate-acute. Racemes terminal, 20–30 cm; peduncle pubescent, intermixed with hooked hairs, 2- or 3-flowered at each node. Pedicel 1.5–2.5 cm. Calyx ca. 7 mm; lobes longer than tube, lower lobes triangular, upper lobes fully connate. Corolla yellow or pink, ca. 1.5 cm; standard elliptic, shortly clawed; wings oblong; keel subequal to wings. Legume flat, 2- or 3-jointed; articles slightly broadly subobovate, 1.1–1.6 cm × 6–7 mm, with hooked hairy stipe 4–7 mm; fruiting pedicel 1.5–2 cm or more. Fl. and fr. Aug–Nov. $2n = 22^*$.

• Waste slopes, mixed forests; 1900–2100 m. Yunnan.

The roots are used medicinally to moisten the lungs and relieve coughs. The fruits are used medicinally to stop bleeding and as an antiphlogistic.

9. *Hylodesmum repandum* (Vahl) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 185. 2000.

浅波叶长柄山蚂蝗 qian bo ye chang bing shan ma huang

Hedysarum repandum Vahl, *Symb. Bot.* 2: 82. 1791; *Desmodium repandum* (Vahl) Candolle; *D. scalpe* Candolle; *Podocarpium repandum* (Vahl) Y. C. Yang & P. H. Huang.

Subshrubs, erect, 50–150 cm tall. Stem and petiole spreading pubescent. Leaves 3-foliolate; petiole 3–9 cm; leaflet blade rhombic to ovate, 5–8 × 3.5–6 cm, both surfaces sparsely to densely adpressed hairy, more densely especially on veins abaxially, base cuneate, margin repand, apex acute to shortly acute. Racemes or sometimes panicles, terminal or often terminal and axillary, 15–30 cm. Pedicel 1.5–3 cm, with spreading straight or uncinete hairs. Calyx 2.5–3.5 mm; lobes longer than or equal to tube. Corolla red or orangish red; standard broadly elliptic, 8–10 × 7–8 mm, shortly clawed; wings narrowly elliptic, ca. 7 × 2 mm, clawed; keel ca. 10 × 3 mm, clawed. Legume often 3- or 4-jointed; articles slightly broadly subobovate, 6–3 × ca. 3 mm, densely uncinete pubescent; stipe ca. 5 mm; fruiting pedicel 2–4 cm. Fl. and fr. Jun–Nov. $2n = 22$.

Ditches, mixed forests; 1300–2000 m. ?Sichuan, S Yunnan [Bhutan, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea, Philippines, Sri Lanka, Thailand, Vietnam; Africa].

10. *Hylodesmum williamsii* (H. Ohashi) H. Ohashi & R. R. Mill, *Edinburgh J. Bot.* 57: 186. 2000.

大苞长柄山蚂蝗 da bao chang bing shan ma huang

Desmodium williamsii H. Ohashi, *Ginkgoana* 1: 163. 1973; *D. williamsii* subsp. *magnibracteatum* H. Ohashi; *D. williamsii* var. *magnibracteatum* (H. Ohashi) P. C. Li; *Podocarpium williamsii* (H. Ohashi) Y. C. Yang & P. H. Huang.

Herbs, perennial, 20–70 cm tall. Stem simple or branched, white pubescent, becoming glabrous. Leaves 3-foliolate; petiole ca. 11 cm; leaflet blade broadly ovate or rhombic, 3–9 × 2.5–6 cm, both surfaces adpressed pubescent, base obtuse-rounded or often cordate, margin entire, apex acute or shortly acuminate. Racemes terminal, 10–40 cm; peduncle densely uncinete pubescent, laxly flowered, 2–4-flowered at each node. Pedicel 1–2 cm. Calyx 3–3.5 mm; lobes longer than tube. Corolla roseate or roseate-purple; standard elliptic or obovate, 1.2–1.6 cm × 7–8 mm, slightly clawed; wings and keel narrowly elliptic, 1.2–1.5 cm × 3–4 mm, shortly clawed, auriculate. Ovary stipitate. Legume 1- or 2-jointed, uncinete pubescent; fruiting pedicel 1–2 cm. Fl. and fr. Aug–Sep. $2n = 22^*$.

Ditches, grasslands, evergreen forests, limestone soils, thickets; 1400–2700 m. Sichuan, Xizang, Yunnan [Bhutan, India, Nepal].

