

132. LESPEDEZA Michaux, Fl. Bor.-Amer. 2: 70. 1803.

胡枝子属 hu zhi zi shu

Huang Puhua (黄普华 Huang Pu-hwa); Hiroyoshi Ohashi, Tomoyuki Nemoto

Subshrubs, shrubs, or perennial herbs. Leaves pinnately compound, 3-foliolate; stipule small, subulate or linear, persistent or caducous; stipels absent; leaflets entire. Racemes axillary or flowers fasciculate; bracts persistent, 2-flowered at each bract; bracteoles 2, often persistent; flowers often dimorphic, corollate or not (cleistogamous plants). Calyx campanulate; tube short; lobes 5, upper 2 often connate at base. Corolla exerted; standard oblong or obovate; wings oblong, straight, clawed, auriculate, connivent with keel; keel obtuse and incurved. Stamens 10, diadelphous (9+1), equal. Ovary superior, 1-ovuled; style incurved; stigma terminal. Legume ovoid, obovoid, or ellipsoidal, rarely slightly globose, lenticular, indehiscent, reticulate veined, 1-seeded.

About 60 species: E Asia to India and North America, introduced from Malesia to NE Australia; 25 species (ten endemic) in China.

Because most species can tolerate arid soils, they are good for soil conservation and sand stabilization. They are also used as honey plants and for nitrogen fixation. The young shoots and leaves are used as forage for livestock and as green manure.

- 1a. Flowers all chasmogamous, usually longer than 10 mm, in compound racemes; standard usually pink to rose-purple, rarely yellowish or white; lomentis shortly stipitate; shrubs to subshrubs (*L. subg. Macrolespedeza* (Maximowicz) H. Ohashi).
- 2a. Inflorescences almost sessile, not longer than subtending leaves; lateral and lowermost calyx lobes acuminate to caudate.
 - 3a. Leaflets broadly ovate, ovate-elliptic, or obovate; bracteoles nearly 1/2 as long as calyx tube; wings longer than keels; legumes globose, less than 7 mm 1. *L. cyrtobotrya*
 - 3b. Leaflets ovate-oblong to oblong; bracteoles ca. as long as calyx tube; wings equal to keels; legumes oblong-ellipsoidal, 13–15 mm 2. *L. fordii*
- 2b. Peduncles distinct, inflorescences longer than subtending leaves; lateral and lowermost calyx lobes obtuse or acute to acuminate.
 - 4a. Winter buds depressed, scales distichously arranged; leaflets sharply acute, rarely obtuse; branches woody.
 - 5a. Corolla pale yellow; calyx lobes acute and not spine-tipped at apex 3. *L. buergeri*
 - 5b. Corolla red-purple; calyx lobes acuminate to caudate and spine-tipped at apex.
 - 6a. Leaflets acute and sharply pointed at apex; standard longer than keel 5. *L. maximowiczii*
 - 6b. Leaflets obtuse to rounded or retuse at apex; standard shorter than keel 7. *L. dunnii*
 - 4b. Winter buds thickened, scales spirally arranged; leaflets rounded, obtuse, or acute; branches herbaceous to herbaceous-woody.
 - 7a. Lateral calyx lobes ovate or triangular to narrowly ovate, apically acute to shortly acuminate, rarely obtuse, less than 2.5 mm; keel claw nearly as long as keel lamina; legumes orbicular 8. *L. bicolor*
 - 7b. Lateral calyx lobes narrowly ovate to narrowly triangular, apically acuminate, longer than 4 mm; keel claw nearly 1/2 as long as keel lamina; legumes ovoid, obovoid, or obovoid-oblong.
 - 8a. Stems distinctly angled, densely spreading tomentose; leaflets thickly papery, broadly ovate-elliptic; calyx lobes long acuminate; legumes ovoid 6. *L. davidii*
 - 8b. Stems terete or striate, appressed sericeous; leaflets papery, usually ovate-elliptic; calyx lobes acute to acuminate; legumes obovoid or obovoid-oblong 4. *L. thunbergii*
- 1b. Flowers chasmogamous and cleistogamous (except *L. forrestii*), usually less than 10 mm (except *L. gerardiana*), in \neq elongated racemes of chasmogamous flowers with basal fascicles of cleistogamous flowers, or composed only of fasciculate racemes of cleistogamous flowers; standard white to yellowish or purplish; lomentis sessile or subsessile; herbs to subshrubs (*L. subg. Lespedeza*).
 - 9a. Stems procumbent to weakly ascending, spreading pilose, rarely appressed sericeous.
 - 10a. Leaflets narrowly obovate; stem short, usually less than 20 cm; corolla pink to purplish red; cleistogamous flowers and legumes unknown 11. *L. forrestii*
 - 10b. Leaflets broadly obovate or broadly elliptic to orbicular; stem elongated, more than 20 cm; both chasmogamous and cleistogamous flowers and legumes known.
 - 11a. Corolla reddish purple; plants spreading pilose, rarely appressed sericeous 10. *L. fasciculiflora*
 - 11b. Corolla yellow-white or white; plants densely spreading pilose.
 - 12a. Leaflets broadly obovate or broadly elliptic to orbicular, both surfaces densely spreading pilose 9. *L. pilosa*
 - 12b. Leaflets narrowly oblong, rarely elliptic to broadly elliptic, abaxially grayish white hispid, adaxially glabrous 17. *L. potaninii*
 - 9b. Stems erect or strongly ascending, mostly appressed sericeous.

- 13a. Stems tomentose.
- 14a. Stems densely tomentose throughout; leaflets elliptic or ovate-oblong, 3–6 × 1.5–3 cm, abaxially densely tomentose 14. *L. tomentosa*
- 14b. Stems tomentose at upper part, downward more sparsely so; leaflets obovate or obcordate, 1–2 × 1–1.3 cm, abaxially densely hirsute 16. *L. mucronata*
- 13b. Stems appressed sericeous.
- 15a. Leaflets narrowly elliptic or narrowly obovate (length:width ratio 3:1–6:1) to linear (length:width ratio 12:1), without visible reticulate venation between principle lateral veins; inflorescence sessile or peduncle 2 mm or less (except *L. caraganae*).
- 16a. Leaflets narrowly obovate (length:width ratio 6:1) above middle; flowers more than 10 mm; calyx with lobes 5–6 mm; bracteoles distinct, 4–5 mm 23. *L. gerardiana*
- 16b. Leaflets ± narrowly elliptic (length:width ratio 3:1) to linear (length:width ratio 12:1); flowers less than 10 mm; calyx with lobes less than 3 mm; bracteoles minute, less than 3 mm.
- 17a. Leaflets oblong-linear (length:width ratio 6:1); principle lateral veins reaching margin and then running upward along margin; lateral calyx lobes sharply narrowly triangular (more than 3 × as long as tube); peduncle 2 mm or more 19. *L. caraganae*
- 17b. Leaflets narrowly elliptic to narrowly obovate (length:width ratio 3:1–6:1); principle lateral veins not reaching margin but running upward within margin; lateral calyx lobes narrowly triangular or slightly narrowly ovate (less than 3 × as long as tube); inflorescence sessile or peduncle less than 2 mm.
- 18a. Flowers reddish purple; corolla almost or more than 2 × as long as calyx; lateral calyx lobes narrowly ovate; abaxial surface of leaflets densely sericeous with rather thick hairs 24. *L. lichiyuniae*
- 18b. Flowers white; corolla 1.3–1.5 × as long as calyx; lateral calyx lobes narrowly triangular.
- 19a. Abaxial surface of leaflets densely appressed or ascending pubescent; bracteoles 1.5–2.5 mm, longer than calyx tube; calyx densely pubescent, lobes with 3–5 conspicuous veins in flower; corolla 1.3–1.5 × as long as calyx 25. *L. hispida*
- 19b. Abaxial surface of leaflets sparsely appressed pubescent; bracteoles less than 1.5 mm, almost equal to or shorter than calyx tube; calyx sparsely appressed pubescent; corolla more than 1.5 × as long as calyx 20. *L. cuneata*
- 15b. Leaflets elliptic (length:width ratio 3:2) or narrowly elliptic-obovate (length:width ratio 3:1–6:1) with visible (with lens) reticulate venation or a thin central vein between principle lateral veins; peduncle usually more than 2 mm.
- 20a. Leaflets narrowly elliptic-obovate (length:width ratio 3:1–6:1); calyx lobes ca. 2 × as long as tube.
- 21a. Leaflets length:width ratio ca. 3:1, large ones more than 5 mm wide; pedicel ca. 1 mm; lateral calyx lobes narrowly acuminate ovate, distinctly veined in flower 22. *L. inschanica*
- 21b. Leaflets length:width ratio ca. 6:1, large ones less than 5 mm wide; pedicel 3–4 mm; lateral calyx lobes narrowly triangular, inconspicuously veined in flower 21. *L. juncea*
- 20b. Leaflets elliptic (length:width ratio ca. 3:2) to narrowly elliptic (length:width ratio 3:1); calyx lobes more than 3 × as long as tube.
- 22a. Leaflet with a thin central vein between principle lateral veins; inflorescence usually densely several to ca. 10-flowered.
- 23a. Flowers white; calyx lobes linear to narrowly triangular (length:width ratio 6:1–12:1); bracteoles longer than calyx tube; cleistogamous legumes with caudate apex 18. *L. chinensis*
- 23b. Flowers reddish purple; calyx lobes narrowly ovate (length:width ratio 6:1); bracteoles shorter than calyx tube; cleistogamous legumes with rounded apex 12. *L. floribunda*
- 22b. Leaflet with reticulate venation between principle lateral veins; inflorescence laxly few flowered or densely flowered.
- 24a. Leaflets elliptic (length:width ratio ca. 3:2); inflorescence laxly few flowered; peduncles filiform, glabrous; flowers sessile or pedicel less than 1 mm; bracteoles shorter than calyx tube 13. *L. virgata*
- 24b. Leaflets narrowly elliptic to elliptic (length:width ratio 2:1–3:1); inflorescence densely flowered; peduncles pubescent; pedicel 1–3 mm; bracteoles longer

1. *Lespedeza cyrtobotrya* Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 48. 1867.

短梗胡枝子 *duan geng hu zhi zi*

Shrubs, erect, 1–3 m tall, much branched. Branchlets adpressed pilose. Leaves 3-foliolate; petiole 1–2.5 cm; leaflets broadly ovate, ovate-elliptic, or obovate, terminal one 1.5–4.5 × 1–3 cm, abaxially adpressed pilose, adaxially glabrous, apex rounded or emarginate, apiculate. Racemes axillary, shorter than subtending leaves, rarely subequal to leaves; peduncle short or inflorescences subsessile. Pedicel short, white hairy. Calyx 2–2.5 mm, 5-lobed; lobes lanceolate. Corolla reddish purple, ca. 1.1 cm; standard obovate, base clawed; wings oblong, ca. 1/3 shorter than standard and keel, base distinctly auriculate, clawed; keel subequal to standard, base auriculate, clawed. Legume globose, slightly flat, 6–7 × ca. 5 mm, densely hairy, reticulate veined. Fl. Jul–Aug, fr. Sep. $2n = 22$.

Mountain slopes, thickets, forests; below 1500 m. Gansu, Guangdong, Hebei, Heilongjiang, Henan, Jiangxi, Jilin, Liaoning, Shaanxi, Shanxi, Zhejiang [Japan, Korea, Russia].

The branchlets are used for making baskets, and the leaves are used as forage for livestock.

2. *Lespedeza fordii* Schindler, Bot. Jahrb. Syst. 49: 586. 1913.

广东胡枝子 *guang dong hu zhi zi*

Lespedeza anhweiensis Ricker; *L. paradoxa* Ricker.

Shrubs, erect, ca. 40 cm tall. Branchlets glabrous. Leaves 3-foliolate; petiole ca. 1 cm, glabrous; leaflets ovate-oblong, obovate-oblong, or oblong, terminal one 2.5–5 × 1–2 cm, abaxially adpressed pubescent or subglabrous, adaxially glabrous, base rounded, apex rounded or emarginate, apiculate. Racemes axillary, shorter than leaves. Pedicel ca. 3.5 mm. Calyx 4–5 mm, 5-lobed to below middle, upper 2 lobes connate to middle. Corolla purplish red, 7–8 mm; standard broadly obovate, base auriculate, shortly clawed; wings narrowly oblong, shorter than standard and keel, base auriculate, clawed; keel slightly obliquely obovate, slightly longer than standard, narrowly clawed. Ovary hairy. Legume oblong-ellipsoidal, flat, ca. 1.5 cm, adpressed hairy, apiculate. Fl. Jun–Aug, fr. Aug–Oct.

• Mountain slopes, roadsides, valleys; below 800 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Zhejiang.

3. *Lespedeza buergeri* Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 47. 1867.

绿叶胡枝子 *lü ye hu zhi zi*

Lespedeza bracteolata Ricker; *L. buergeri* f. *angustifolia* Makino.

Shrubs, erect, 1–3 m tall. Branchlets sparsely hairy. Leaves 3-foliolate; petiole 2–5 cm; leaflets ovate-elliptic, terminal one 3–7 × 1.3–2.5 cm, abaxially adpressed hairy, adaxially glabrous, base slightly acute or obtuse-rounded, apex acute. Racemes axillary or in panicles at upper part of branchlets. Calyx ca. 4 mm, 5-lobed; lobes ovate-lanceolate or ovate, densely villous. Corolla pale yellowish green, ca. 1 cm; standard nearly orbicular, base auriculate, shortly clawed; wings elliptic-oblong,

base auriculate, clawed, sometimes apex slightly purple; keel obovate-oblong, slightly longer than standard, base distinctly auriculate, long clawed. Ovary hairy. Legume oblong-ovoid, ca. 1.5 cm, villous, reticulate veined. Fl. Jun–Jul, fr. Aug–Sep.

Mountain slopes, forests, roadsides, ditches; below 1500 m. Anhui, Gansu, Henan, Hubei, Jiangsu, Jiangxi, Shaanxi, Shanxi, Sichuan, Zhejiang [Japan].

4. *Lespedeza thunbergii* (Candolle) Nakai, Lespedeza Japan Korea 15. 1927.

日本胡枝子 *ri ben hu zhi zi*

Shrubs, subshrubs, or perennial herbs, erect, 1–3 m tall, much branched, pilose. Leaves 3-foliolate; petiole 1–5 cm, pubescent; leaflets elliptic, oblong-elliptic, or ovate, rarely terminal one obovate, terminal one 2.5–6 × 1–3 cm, abaxially adpressed pubescent, adaxially puberulent or glabrescent, rarely glabrous, both ends slightly acute or obtuse. Racemes simple, axillary, longer than leaves, or branched in panicles, terminal; peduncle to 10 cm, pubescent. Pedicel short, hairy. Calyx 4–7 mm, 5-lobed; lobes oblong-lanceolate, 1–4 × as long as tube. Corolla reddish purple or more rarely white, 1–1.5 cm; standard nearly orbicular or slightly long, auriculate, clawed; wings obovate-oblong, 7–8 mm, auriculate, clawed; keel longer than or equal to standard, distinctly longer than wings, auriculate, clawed. Legume obovoid or obovoid-oblong, ca. 8 × 4 mm, pilose, reticulate veined. Fl. Jul–Sep, fr. Sep–Oct. $2n = 40^*$.

Mountain slopes, forest margins, roadsides, thickets; below 2800 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [India, Japan, Korea].

- 1a. Corolla 3–4 × as long as calyx; lateral calyx lobes nearly equal to or slightly shorter than calyx tube 4b. subsp. *formosa*
- 1b. Corolla 2–3 × as long as calyx; lateral calyx lobes longer than or equal to calyx tube.
 - 2a. Lateral calyx lobes usually 1–1.5 × as long as calyx tube 4a. subsp. *thunbergii*
 - 2b. Lateral calyx lobes usually 1.5–3 × as long as calyx tube 4c. subsp. *elliptica*

4a. *Lespedeza thunbergii* subsp. *thunbergii*

日本胡枝子(原亚种) *ri ben hu zhi zi (yuan ya zhong)*

Desmodium thunbergii Candolle, Prodr. 2: 337. 1825; *D. penduliflorum* Oudemans; *Lespedeza bicolor* Turczaninow var. *velutina* Nakai; *L. formosa* (Vogel) Koehne subsp. *velutina* (Nakai) S. Akiyama & H. Ohba; *L. formosa* var. *velutina* (Nakai) S. Akiyama & H. Ohba; *L. intermedia* Nakai var. *angustifolia* Nakai; *L. japonica* L. H. Bailey f. *angustifolia* (Nakai) Murata; *L. liukiensis* Hatusima; *L. penduliflora* (Oudemans) Nakai; *L. sieboldii* Miquel.

Shrubs or perennial herbs. Lateral calyx lobes usually 1–1.5 × as long as calyx tube.

Mountain slopes, forest margins, roadsides, thickets; below 2800 m. Anhui, Fujian, Gansu, Guangdong, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Zhejiang [India, Japan, Korea].

4b. *Lespedeza thunbergii* subsp. *formosa* (Vogel) H. Ohashi in Iwatsuki et al., Fl. Jap. 2b: 262. 2001.

美丽胡枝子 mei li hu zhi zi

Desmodium formosum Vogel, Nov. Actorum Acad. Caes. Leop.-Carol. Nat. Cur. 19(Suppl. 1): 29. 1843; *Lespedeza albiflora* Ricker; *L. bicolor* subsp. *formosa* (Vogel) P. S. Hsu, X. Y. Li & D. X. Gu; *L. chekiangensis* Ricker; *L. formosa* (Vogel) Koehne; *L. formosa* var. *pubescens* (Hayata) S. S. Ying; *L. penduliflora* subsp. *cathayana* P. S. Hsu; *L. pubescens* Hayata; *L. viatorum* Champion ex Benthams; *L. wilfordii* Ricker.

Subshrubs. Leaflets adaxially puberulent or rarely glabrescent. Lateral calyx lobes nearly equal to or slightly shorter than calyx tube. Corolla 3–4 × as long as calyx.

• Mountain slopes, forest margins, roadsides, thickets; below 2800 m. Fujian, Guangdong, Guangxi, Jiangsu, Jiangxi, Taiwan, Zhejiang.

The Chinese record of *Lespedeza patens* Nakai (Li & Chen, FRPS 41: 140. 1995) is referable to *L. thunbergii* subsp. *formosa*.

4c. *Lespedeza thunbergii* subsp. *elliptica* (Benthams ex Maximowicz) H. Ohashi, J. Jap. Bot. 84: 218. 2009.

椭圆叶胡枝子 tuo yuan ye hu zhi zi

Lespedeza elliptica Benthams ex Maximowicz, Trudy Imp. S.-Peterburgsk. Bot. Sada 2: 353. 1873; *L. bicolor* subsp. *elliptica* (Benthams ex Maximowicz) P. S. Hsu, X. Y. Li & D. X. Gu; *L. formosa* subsp. *elliptica* (Benthams ex Maximowicz) S. Akiyama & H. Ohba.

Subshrubs. Lateral calyx lobes usually 1.5–3 × as long as calyx tube.

Guizhou, Hubei, Shaanxi, Sichuan, Yunnan [E India].

5. *Lespedeza maximowiczii* C. K. Schneider, Ill. Handb. Laubholz. 2: 113. 1907.

宽叶胡枝子 kuan ye hu zhi zi

Lespedeza buergeri Miquel var. *praecox* Nakai; *L. friebiana* Schindler.

Shrubs, erect, much branched, white pilose. Leaves 3-foliolate; petiole 1–4.5 cm, pilose; leaflets broadly elliptic or ovate-elliptic, terminal one 3–6(–9) × 2–4 cm, abaxially adpressed pubescent, adaxially sparsely pubescent, base rounded or rounded-cuneate, apex acuminate to acute, mucronate. Racemes axillary or in terminal panicles, overtopping leaves; peduncle 3–5 cm. Pedicel ca. 3 mm, pubescent. Calyx 4–5 mm, middle 4-lobed; lobes ovate-lanceolate, acuminate at apex. Corolla purplish red; standard obovate, 9–10 mm, base clawed, apex emarginate; wings oblong, 6–8 mm, auriculate, slenderly clawed; keel slightly falcate, 8–9 mm, auriculate, slenderly clawed. Ovary hairy. Legume ovoid-elliptic, ca. 9 × 10 mm, pubescent, reticulate veined. Fl. Jul–Aug, fr. Sep–Oct. $2n = 20$.

Mountain slopes, forests; below 1000 m. Anhui, Henan, Zhejiang

[Japan, Korea].

6. *Lespedeza davidii* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 5: 246; Pl. David. 1: 94. 1883 [“*davidii*”].

大叶胡枝子 da ye hu zhi zi

Lespedeza davidii var. *exalata* L. H. Lou; *L. hupehensis* Ricker; *L. merrillii* Ricker.

Shrubs, erect, 1–3 m tall. Branchlets distinctly angular, densely villous. Leaves 3-foliolate; petiole 1–4 cm, densely hispidulous; leaflets broadly ovate or broadly obovate, terminal one 3.5–7(–13) × 2.5–5(–8) cm, both surfaces densely yellowish white sericeous, base rounded or broadly cuneate, apex rounded or emarginate. Racemes axillary or in panicles at apex of branchlets, longer than leaves; peduncle 4–7 cm, densely villous. Calyx ca. 6 mm, 5-lobed, villous; lobes lanceolate, acuminate, more than 2 × as long as tube. Corolla reddish purple; standard obovate-oblong, 1–1.1 cm × ca. 5 mm, auriculate, shortly clawed; wings narrowly oblong, shorter than standard and keel, auriculate, slenderly clawed; keel petals slightly falcate, subequal to standard, distinctly auriculate and clawed. Ovary densely hairy. Legume ovoid, 8–10 mm, somewhat densely sericeous, reticulate veined. Fl. Jul–Sep, fr. Sep–Oct. $2n = 22^*$.

• Arid mountain slopes, roadsides, thickets; ca. 800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, ?Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Zhejiang [naturalized in Japan].

Because this species tolerates arid soils, it is used for soil conservation.

Lespedeza merrillii was described from Zhejiang (Lingnan Sci. J. 20: 202. 1942). Its description is based on a single specimen (C. Y. Chiao 14377). Ricker said that this species is nearest to *L. davidii* but distinguished from it by the sparsely appressed, instead of velvety, pubescence of the stems and longer calyx teeth. One of us (Huang), following Li and Chen (FRPS 41: 140. 1995), retains *L. merrillii* here in synonymy due to the lack of specimens. Two of us (Ohashi and Nemoto) regard this species as merely a glabrous form of *L. davidii*.

7. *Lespedeza dunnii* Schindler, Bot. Jahrb. Syst. 49: 585. 1913.

春花胡枝子 chun hua hu zhi zi

Lespedeza metcalfei Ricker.

Shrubs, erect, much branched, puberulent or tomentose. Leaves 3-foliolate; petiole 7–10 mm, yellow or white pubescent; leaflets narrowly obovate or ovate-elliptic, terminal one 3–5.5 × ca. 2 cm, abaxially villous or sericeous, adaxially pilose, base rounded, apex rounded or emarginate, mucronate. Racemes axillary, 4–5 cm, longer than leaves, densely shortly spreading tomentose. Pedicel 1–5 mm, densely hairy. Calyx 5–9 mm, 5-lobed; lobes linear-lanceolate. Corolla purplish red, ca. 1 cm; standard obovate, base shortly clawed, apex emarginate; wings oblong, slightly shorter than standard and keel, auriculate, clawed; keel obliquely obovate, subequal to standard, clawed. Ovary densely hairy. Legume oblong-elliptic, ca. 8 mm, densely hairy, both ends acute, apex long rostrate. Fl. Apr–May, fr. Jun–Jul.

• Coniferous forests, mountain slopes, roadsides; ca. 800 m. Anhui, Fujian, ?Zhejiang.

8. *Lespedeza bicolor* Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 13: 69. 1840.

胡枝子 hu zhi zi

Lespedeza bicolor var. *japonica* Nakai; *L. bicolor* f. *pendula* S. L. Tung & Z. Lu; *L. ionocalyx* Nakai; *L. veitchii* Ricker.

Shrubs, erect, 1–3 m tall, much branched. Branchlets sparsely pubescent. Leaves 3-foliolate; petiole 2–7(–9) cm; leaflets abaxially pale green, adaxially green, ovate, obovate, or ovate-oblong, terminal one 1.5–6 × 1–3.5 cm, abaxially pilose, adaxially glabrous, base subrounded or broadly cuneate, apex obtuse-rounded or emarginate, mucronate. Racemes axillary, longer than leaves, often branched in large lax panicles; peduncle 4–10 cm. Pedicel ca. 2 mm, densely hairy. Calyx ca. 5 mm, 5-lobed; lobes shorter than tube. Corolla reddish purple, ca. 1 cm; standard obovate, apex emarginate; wings suboblong, short, base auriculate, clawed; keel subequal to standard, base long clawed, apex obtuse. Ovary hairy. Legume obliquely obovoid, slightly flat, ca. 10 × 5 mm, densely pubescent, reticulate veined. Fl. Jul–Sep, fr. Sep–Oct. $2n = 22^*$.

Mountain slopes, forest margins, roadsides, thickets, forests; 100–1000 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Hebei, Heilongjiang, Henan, Hunan, Jiangsu, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Zhejiang [Japan, Korea, ?Mongolia, Russia].

The seed oil is used as a lubricant, the leaves as a tea substitute, and the branchlets for making baskets. Because this species tolerates arid soils, it is grown as a windbreak and for sand stabilization and soil conservation.

9. *Lespedeza pilosa* (Thunberg) Siebold & Zuccarini, Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 121. 1843.

铁马鞭 tie ma bian

Hedysarum pilosum Thunberg in Murray, Syst. Veg., ed. 14, 675. 1784; *Desmodium pilosum* (Thunberg) Candolle; *Lespedeza nantcianensis* Pampanini.

Herbs, perennial, densely villous throughout. Stems procumbent, 60–100 cm, slender. Leaves 3-foliolate; petiole 0.6–1.5 cm; leaflets broadly obovate or obovate, terminal one 1.5–2 × 1–1.5 cm, base rounded or subrounded, apex rounded, subrounded, or emarginate, mucronate. Racemes axillary, shorter than leaves; peduncle short. Calyx 5-parted; lobes lanceolate, upper 2 connate at base. Corolla yellowish white or white; standard elliptic, 7–8 mm, clawed; wings shorter than standard and keel. Cleistogamous flowers often 1–3, crowded in leaf axils on upper stem, sessile or subsessile, fruit-bearing. Legume broadly ovoid, 3–4 mm, convex, both surfaces densely villous, apex acute-rostrate. Fl. Jul–Sep, fr. Sep–Oct. $2n = 20$.

Waste slopes, grasslands; below 1000 m. Anhui, Fujian, Gansu, Guangdong, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xizang, Zhejiang [Japan, Korea].

The whole plant is used medicinally for invigorating the stomach and as a sedative.

10. *Lespedeza fasciculiflora* Franchet, Pl. Delavay. 169. 1890.

束花铁马鞭 shu hua tie ma bian

Herbs, perennial, 60–80 cm tall. Stems much branched at base, procumbent or ascending, densely white hirsute or adpressed strigulose. Leaves 3-foliolate; leaflets obovate or obtriangular, terminal one 4–9 × 2–7 mm, abaxially densely villous or hoary, adaxially sparsely hairy, subglabrous, or sparsely strigulose, base cuneate, apex emarginate or subtruncate, mucronate. Racemes axillary, distinctly overtopping leaves; peduncle densely hirsute. Calyx ca. 7 mm, 5-parted; lobes linear-lanceolate. Corolla pink, pale purplish red, white, or yellowish, slightly overtopping calyx; standard obovate, ca. 1.3 × 0.6 cm, claw with auriculate appendage at upper part; wings oblong, ca. 5 × 1 mm (claw ca. 2.5 mm); keel subequal to standard. Cleistogamous flowers in leaf axils, sessile, fruit-bearing. Legume narrowly ovoid, subequal to persistent calyx, densely hirsute, apex long rostrate.

• Sandy grasslands on high mountains, thickets in dry river valleys; 1600–3000 m. ?Guizhou, Sichuan, Xizang, NW Yunnan.

- 1a. Stems and branchlets densely white hirsute; leaflets obovate, 4–9 × 4–7 mm, abaxially densely villous 10a. var. *fasciculiflora*
- 1b. Stems and branchlets adpressed strigulose; leaflets obtriangular, 4–7 × 2–4 mm, abaxially densely hoary 10b. var. *hengduanshanensis*

10a. *Lespedeza fasciculiflora* var. *fasciculiflora*

束花铁马鞭(原变种) shu hua tie ma bian (yuan bian zhong)

Lespedeza floribunda Bunge var. *fasciculiflora* (Franchet) Schindler; *L. monnayeri* H. Léveillé.

Stems and branchlets densely white hirsute. Leaflets obovate, terminal one 4–9 × 4–7 mm, abaxially densely villous, adaxially sparsely hairy or subglabrous. Corolla pink or pale purplish red. Fl. Jul–Aug, fr. Sep–Feb.

• Sandy grasslands on high mountains; 1600–3000 m. W Sichuan, Xizang, NW Yunnan.

10b. *Lespedeza fasciculiflora* var. *hengduanshanensis* C. J. Chen, Acta Phytotax. Sin. 30: 375. 1992.

横断山铁马鞭 heng duan shan tie ma bian

Stems and branchlets adpressed strigulose. Leaflets obtriangular, terminal one 4–7 × 2–4 mm, abaxially densely hoary, adaxially sparsely strigulose. Corolla white or yellowish. Fl. Aug–Sep.

• Thickets in dry river valleys; 1800–2600 m. Sichuan, Xizang.

Two of us (Ohashi and Nemoto) believe that *Lespedeza fasciculiflora* var. *hengduanshanensis* is included within the range of morphological variation of var. *fasciculiflora*.

11. *Lespedeza forrestii* Schindler, Repert. Spec. Nov. Regni Veg. 10: 406. 1912.

矮生胡枝子 ai sheng hu zhi zi

Lespedeza pampaninii H. Léveillé; *L. variegata* Cambesès var. *cinerascens* Franchet.

Subshrubs, to 20 cm tall, densely spreading white villous throughout. Rhizome creeping; stems numerous, simple, pro-cumbent or ascending. Leaves 3-foliolate; leaflets oblong-linear, terminal one 1–2.5 × 0.3–0.6 cm, base cuneate, apex emarginate or obtuse, mucronate. Flowers 1–3, axillary. Calyx 7–8 mm, 5-parted; upper 2 lobes connate at base, free at apex. Corolla pink, with purple spots, ca. 2 × as long as calyx; standard broadly elliptic, ca. 10 × 5 mm, claw with incurved appendage at upper part; wings oblong, ca. 10 × 2.5 mm, base auriculate and long clawed, apex obtuse; keel ca. 9 × 2 mm, apex obtuse. Ovary pilose, stipitate. Fruit not seen. Fl. Jun–Sep.

- Mountain slopes, thickets; 2200–2800 m. Sichuan, Yunnan.

12. *Lespedeza floribunda* Bunge, Pl. Mongholico-Chin. 13. 1835.

多花胡枝子 duo hua hu zhi zi

Lespedeza dielsiana Schindler; *L. floribunda* var. *alopecuroides* Franchet; *L. stottsae* L. H. Bailey.

Subshrubs, small, 30–60(–100) cm tall. Branchlets grayish white tomentose. Leaves 3-foliolate; leaflets obovate, broadly obovate, or oblong, terminal one 1–1.5 × 0.6–0.9 cm, abaxially densely white adpressed pubescent, adaxially sparsely adpressed hairy, base cuneate, apex emarginate, obtuse-rounded, or subtruncate, mucronate. Racemes axillary; peduncle slender, distinctly overtopping leaves. Flowers numerous. Calyx 4–5 mm, 5-lobed; lobes lanceolate or ovate-lanceolate, upper 2 lobes connate at lower part, free above. Corolla purple, purplish red, or bluish purple; standard elliptic, ca. 8 mm, base clawed, apex rounded; wings slightly short; keel longer than standard, apex obtuse. Legume broadly ovoid, ca. 7 mm, overtopping persistent calyx, densely pubescent, reticulate veined. Fl. Jun–Sep, fr. Sep–Oct.

Rocky mountain slopes; below 1300 m. Anhui, Fujian, Gansu, Guangdong, Hebei, Henan, Hubei, Jiangsu, SW Liaoning, ?Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, ?Zhejiang [India, Pakistan; naturalized in Japan].

Following Li and Chen (FRPS 41: 148. 1995), one of us (Huang) retains *Lespedeza stottsae* (Gentes Herb. 1: 32. 1920), described from Jigong Shan, Henan, and *L. dielsiana* (Repert. Spec. Nov. Regni Veg. 10: 404. 1912), described from Sichuan, here in synonymy due to the lack of authentic specimens. Two of us (Ohashi and Nemoto) agree that these entities are conspecific with *L. floribunda*.

13. *Lespedeza virgata* (Thunberg) Candolle, Prodr. 2: 350. 1825.

细梗胡枝子 xi geng hu zhi zi

Subshrubs or perennial herbs, small, 20–50 cm tall, sometimes to 1 m. Stems branched at base; branchlets purple, thin, adpressed white pubescent. Leaves 3-foliolate; petiole 1–2 cm, adpressed white hairy; leaflets elliptic, oblong, or ovate-oblong, terminal one (0.6–)1–3.5 × 0.4–1.5 cm, abaxially densely adpressed pubescent, adaxially glabrous, base rounded, apex rounded or obtuse-rounded, sometimes emarginate, mucronate. Racemes axillary, laxly flowered, often 3-flowered; peduncle thin, filiform or stouter, distinctly overtopping leaves, adpressed white or spreading hairy. Pedicel short. Calyx 4–7 mm. Standard white, with purple spots at base, ca. 6 mm; wings shorter;

keel longer than standard or subequal. Cleistogamous flowers clustered in leaf axils, sessile, fruit-bearing. Legume nearly orbicular, often not overtopping calyx.

Rocky mountain slopes, mountain forests, roadsides, thickets; below 800 m. Anhui, Fujian, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shandong, Shanxi, Taiwan, Zhejiang [Japan, Korea].

- 1a. Flowering peduncles thin, filiform, adpressed white pubescent; calyx 4–6 mm; leaflets thinner, often elliptic or oblong 13a. var. *virgata*
- 1b. Flowering peduncles stouter, spreading hairy; calyx ca. 7 mm; leaflets thicker, ovate-oblong 13b. var. *macrovirgata*

13a. *Lespedeza virgata* var. *virgata*

细梗胡枝子(原变种) xi geng hu zhi zi (yuan bian zhong)

Hedysarum virgatum Thunberg in Murray, Syst. Veg., ed. 14, 675. 1784; *L. swinhoei* Hance.

Leaflets often elliptic or oblong, terminal one (0.6–)1–2(–3) × 0.4–1(–1.5) cm, abaxially densely adpressed pubescent. Flowering peduncle thin, filiform, adpressed white pubescent. Calyx 4–6 mm. Fl. Jul–Sep, fr. Sep–Oct.

Rocky mountain slopes, mountain forests, roadsides, thickets; below 800 m. Anhui, Fujian, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shandong, Shanxi, Taiwan, Zhejiang [Japan, Korea].

13b. *Lespedeza virgata* var. *macrovirgata* (Kitagawa) Kitagawa, Lin. Fl. Manshur. 289. 1939.

大细梗胡枝子 da xi geng hu zhi zi

Lespedeza macrovirgata Kitagawa, Bot. Mag. (Tokyo) 48: 100. 1934.

Leaflets often ovate-oblong, terminal one 3–3.5 × 1–1.5 cm, abaxially spreading hairy. Flowering peduncle relatively stout, not filiform, spreading hairy. Calyx ca. 7 mm. Fl. Jul–Sep, fr. Sep–Oct.

- S Liaoning.

Two of us (Ohashi and Nemoto) regard this taxon as a hybrid between *Lespedeza tomentosa* and *L. virgata*, i.e., *L. ×macrovirgata*.

14. *Lespedeza tomentosa* (Thunberg) Siebold ex Maximowicz, Trudy Imp. S.-Peterburgsk. Bot. Sada 2: 376. 1873.

绒毛胡枝子 rong mao hu zhi zi

Hedysarum tomentosum Thunberg in Murray, Syst. Veg., ed. 14, 675. 1784; *Desmodium tomentosum* (Thunberg) Candolle; *H. coriaceum* Poirlet; *H. villosa* Willdenow; *Lespedeza macrophylla* Bunge; *L. tomentosa* var. *globiracemosa* S. L. Tung & Z. Lu; *L. villosa* Persoon.

Subshrubs or perennial herbs, to 1 m tall, densely yellowish brown tomentose throughout. Stems simple or branched above. Leaves 3-foliolate; petiole 2–3 cm; leaflets elliptic or ovate-oblong, terminal one 3–6 × 1.5–3 cm, margin slightly involute, apex obtuse or emarginate. Racemes terminal or axillary at upper part of stem; peduncle 4–8(–12) cm, stout. Pedicel

short. Calyx ca. 6 mm, 5-parted; lobes narrowly lanceolate, ca. 4 mm. Corolla yellow or yellowish white; standard elliptic, ca. 1 cm; wings shorter, oblong; keel subequal to standard. Cleistogamous flowers in leaf axils of upper stems. Legume obovoid, 3–4 × 2–3 mm, apex shortly acute. Fl. Jul–Aug, fr. Sep–Oct.

Arid mountain slopes, grasslands, thickets; below 1000 m except in Xinjiang and Xizang. Widely distributed throughout China [India, Japan, Kashmir, Korea, Mongolia, Nepal, Pakistan, Russia].

15. *Lespedeza davurica* (Laxmann) Schindler, Repert. Spec. Nov. Regni Veg. 22: 274. 1926 [*“daurica”*].

兴安胡枝子 xing an hu zhi zi

Trifolium davuricum Laxmann, Novi Comment. Acad. Sci. Imp. Petrop. 15: 560. 1771; *Hedysarum trichocarpum* Stephan ex Willdenow; *Lespedeza davurica* subsp. *huangheensis* C. J. Chen; *L. davurica* var. *sessilis* V. N. Vassiljev; *L. davurica* var. *shimadae* (Masamune) Masamune & Hosokawa; *L. fauriei* H. Léveillé; *L. feddeana* Schindler; *L. medicaginoides* Bunge; *L. shimadae* Masamune; *L. trichocarpa* (Stephan ex Willdenow) Persoon.

Subshrubs or perennial herbs, 30–100 cm tall. Stems often ascending, simple or branched at base. Branchlets pubescent. Leaves 3-foliolate; petiole 1–2 cm; leaflets oblong or narrowly oblong, terminal one 0.8–3 × 0.4–1.6 cm, abaxially adpressed or erect pubescent, adaxially sparsely pubescent or glabrous, base rounded, apex rounded or emarginate, mucronate. Racemes axillary, shorter than or ca. as long as leaves; peduncle densely pubescent. Calyx 3–6 mm, 5-parted; lobes lanceolate. Corolla white or yellowish white; standard oblong, ca. 1 cm, mixed with purple at middle, base clawed; wings oblong, short; keel longer than wings. Cleistogamous flowers clustered in leaf axils, fruit-bearing. Legume obovoid or narrowly obovoid, 3–4 × 2–3 mm, lenticular, pubescent, apex rostrate, enclosed in persistent calyx.

Dry mountain slopes, grasslands, roadsides, sandy soils. Anhui, Gansu, Guizhou, Hebei, Heilongjiang, Henan, ?Jiangsu, Jilin, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan [Korea, Mongolia, Russia].

This is a good plant for livestock forage and is used as green manure.

16. *Lespedeza mucronata* Ricker, Amer. J. Bot. 33: 257. 1946.

短叶胡枝子 duan ye hu zhi zi

Subshrubs, ca. 60 cm tall. Stems erect, tomentose at upper part, downward gradually more sparsely so. Leaves 3-foliolate; petiole 5–6 mm; leaflets obovate or orbiculate, terminal one 1–2 × 1–1.3 cm, abaxially densely hirsute, more densely so on mid-vein, adaxially sparsely adpressed hairy, base broadly cuneate, apex truncate or emarginate. Racemes axillary, few flowered. Calyx ca. 4 mm, 5-parted; lobes narrowly lanceolate, ca. 3 mm, apex aristate. Corolla yellow or white; standard ca. 6 mm, shortly clawed; wings oblong, ca. 7 mm, clawed; keel ca. 7 mm. Cleistogamous flowers clustered in leaf axils of lower stems, fruit-bearing. Legume ovoid to broadly ovoid, 3–4 × 2–3 mm, slightly overtopping persistent calyx, apex mucronate. Fl.

Aug–Sep, fr. Sep–Oct.

• Arid sandy places. Fujian, Guangdong, Jiangxi, Zhejiang.

Two of us (Ohashi and Nemoto) regard this species as conspecific with *Lespedeza chinensis*.

17. *Lespedeza potaninii* V. N. Vassiljev, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 9: 202. 1946.

牛枝子 niu zhi zi

Lespedeza davurica (Laxmann) Schindler subsp. *potaninii* (V. N. Vassiljev) C. J. Chen; *L. davurica* var. *potaninii* (V. N. Vassiljev) Y. X. Liou; *L. davurica* f. *prostrata* (W. Wang & P. Y. Fu) Kitagawa; *L. davurica* var. *prostrata* W. Wang & P. Y. Fu; *L. potaninii* f. *breviracemi* S. L. Tung & Z. Lu; *L. potaninii* var. *breviracemi* (S. L. Tung & Z. Lu) X. Y. Zhu.

Subshrubs, 20–60 cm tall. Stems procumbent or ascending, hispid, much branched at base. Leaves 3-foliolate; leaflets narrowly oblong, rarely elliptic to broadly elliptic, terminal one 0.8–1.5(–2.2) × 0.3–0.5(–0.7) cm, abaxially grayish white hispid, adaxially glabrous, base slightly oblique, apex obtuse-rounded or emarginate, mucronate. Racemes axillary; peduncle long, distinctly overtopping leaves, laxly flowered. Calyx densely villous, 5-parted; lobes lanceolate, 5–8 mm, apex long acuminate, aristate. Corolla yellowish white, slightly overtopping calyx lobes; standard mixed with purple at middle; wings short; keel mixed with purple at apex. Cleistogamous flowers axillary, sessile or subsessile. Legume obovoid, 3–4 mm, lenticular, densely hispid, enclosed in persistent calyx. Fl. Jul–Sep, fr. Sep–Oct.

• Desert steppes, sandy soils of steppe zone, rocky soils, hills, rocky slopes, foot of mountains. Gansu, Hebei, Henan, Jiangsu, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Xizang, Yunnan.

This is a good plant for livestock forage. Because it can tolerate arid soils, it is grown for sand stabilization and soil conservation.

Two of us (Ohashi and Nemoto) regard *Lespedeza potaninii* as conspecific with *L. davurica*.

18. *Lespedeza chinensis* G. Don, Gen. Hist. 2: 307. 1832.

中华胡枝子 zhong hua hu zhi zi

Lespedeza canescens Ricker; *L. chinensis* var. *nokoensis* Ohwi; *L. formosensis* Hosokawa.

Subshrubs, small, to 1 m tall, adpressed white hairy throughout. Stems erect or diffuse. Leaves 3-foliolate; petiole ca. 1 cm; leaflets obovate-oblong, oblong, or ovate-obovate, terminal one 1.5–4 × 1–1.5 cm, margin slightly involute, apex truncate, subtruncate, emarginate, or obtuse, mucronate. Racemes axillary, not overtopping leaves, few flowered; peduncle short. Pedicel 1–2 mm. Calyx 5-parted; lobes narrowly lanceolate. Corolla white or yellow; standard elliptic, ca. 7 × 3 mm, clawed and with 2 auriculate appendages at base; wings narrowly oblong, ca. 6 mm, long clawed; keel ca. 8 mm. Cleistogamous flowers clustered in leaf axils of lower stems. Legume ovoid, ca. 4 × 2.5–3 mm, reticulate veined, densely adpressed white hairy, base slightly oblique, apex rostrate. Fl. Aug–Sep, fr. Oct–Nov.

• Thickets, forest margins, roadsides, mountain slopes, grasslands, forests; below 2500 m. Anhui, Fujian, Guangdong, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Zhejiang.

19. *Lespedeza caraganae* Bunge, Pl. Mongholico-Chin. 11. 1835.

长叶胡枝子 chang ye hu zhi zi

Subshrubs or perennial herbs, ca. 50 cm tall. Stems erect, much angulate, adpressed shortly hairy. Leaves 3-foliolate; petiole 3–5 mm, adpressed shortly hairy; leaflets oblong-linear, terminal one 2–4 × 0.2–0.4 cm, abaxially adpressed hairy, adaxially subglabrous, base narrowly cuneate, margin slightly involute, apex obtuse or emarginate, mucronate. Racemes axillary; peduncle 0.5–1 cm, densely adpressed white hairy, 3–5-flowered. Pedicel ca. 2 mm. Calyx narrowly campanulate, 5-parted. Corolla white or yellow, distinctly overtopping calyx; standard broadly elliptic, ca. 8 × 5 mm; wings oblong, ca. 7 × 1 mm; keel ca. 8.5 mm, base long clawed, apex obtuse. Legume oblong-ovoid, 4.5–5 × ca. 2 mm, sparsely adpressed white hairy, apex rostrate. Legume of cleistogamous flower obovoid-orbicular, ca. 3 × 2.5 mm, apex shortly rostrate. Fl. Jun–Sep, fr. Oct.

• Mountain slopes; below 1400 m. Gansu, Hebei, Henan, Liaoning, ?Nei Mongol, Shaanxi, Shandong.

20. *Lespedeza cuneata* (Dumont de Courset) G. Don, Gen. Hist. 2: 307. 1832.

截叶铁扫帚 jie ye tie sao zhou

Anthyllis cuneata Dumont de Courset, Bot. Cult. 6: 100. 1811; *Aspalathus cuneata* (Dumont de Courset) D. Don; *Hedysarum sericeum* Thunberg (1784), not Miller (1768); *Lespedeza argyraea* Siebold & Zuccarini; *L. juncea* (Linnaeus f.) Persoon var. *sericea* Forbes & Hemsley; *L. sericea* Miquel; *L. sericea* var. *latifolia* Maximowicz.

Subshrubs or perennial herbs, to 1 m tall. Stems erect or ascending, hairy. Leaves crowded, 3-foliolate; petiole short; leaflets cuneate or linear-cuneate, terminal one 1–3 × 0.2–0.7 cm, abaxially densely adpressed hairy, adaxially subglabrous, base cuneate, apex truncate or subtruncate, mucronate. Racemes axillary, 2–4-flowered; peduncle short. Calyx narrowly campanulate, 5-lobed; lobes lanceolate. Corolla yellowish or white; standard with purple spots at base; wings subequal to standard; keel slightly long, sometimes mixed with purple at apex. Cleistogamous flowers clustered in leaf axils. Legume broadly ovoid or subglobose, 2.5–3.5 × ca. 2.5 mm, adpressed hairy. Fl. Jul–Aug, fr. Sep–Oct. $2n = 20^*$.

Mountain slopes, roadsides; below 2500 m. ?Fujian, Gansu, Guangdong, ?Guizhou, ?Hainan, Henan, Hubei, Hunan, ?Jiangsu, Shaanxi, Shandong, Sichuan, Taiwan, Xizang, Yunnan, ?Zhejiang [Afghanistan, Bhutan, India, Indonesia, Japan, Korea, Laos, Malaysia, Nepal, Pakistan, Philippines, Thailand, Vietnam; naturalized in North America and Australia].

21. *Lespedeza juncea* (Linnaeus f.) Persoon, Syn. Pl. 2: 318. 1807.

尖叶铁扫帚 jian ye tie sao zhou

Hedysarum junceum Linnaeus f., Dec. Pl. Horti Upsal. 1: 7. 1762; *Lespedeza cystoides* Nakai; *L. hedysaroides* (Pallas) Kitagawa; *L. hedysaroides* var. *subsericea* (Komarov) Kitagawa; *L. hedysaroides* var. *umbrosa* (Komarov) Kitagawa; *L. juncea* var. *subsericea* Komarov; *L. juncea* f. *umbrosa* Komarov; *Trifolium hedysaroides* Pallas.

Subshrubs or perennial herbs, small, to 1 m tall, adpressed hairy throughout. Leaves 3-foliolate; petiole 0.5–1 cm; leaflets oblanceolate, linear-oblong, or narrowly oblong, terminal one 1.5–3.5 × 0.2–0.7 cm, base attenuate, margin slightly involute, apex acute or obtuse-rounded, mucronate. Racemes axillary, slightly overtopping leaves, 3–7-flowered. Calyx narrowly campanulate, 5-parted; lobes lanceolate, distinctly 3-veined after fruiting. Corolla white or yellowish; standard with purple spots at base, not or rarely reflexed at fruiting; keel mixed with purple at apex; standard and wings subequal to keel, sometimes standard short. Cleistogamous flowers clustered in leaf axils, sessile. Legume broadly ovoid, slightly overtopping persistent calyx, both surfaces adpressed white hairy. Fl. Jul–Sep, fr. Sep–Oct. $2n = 20$.

Mountain slopes, thickets; below 1500 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shandong, Shanxi [Japan, Korea, Mongolia, Russia (Far East, E Siberia)].

22. *Lespedeza inschanica* (Maximowicz) Schindler, Bot. Jahrb. Syst. 49: 603. 1913.

阴山胡枝子 yin shan hu zhi zi

Lespedeza juncea (Linnaeus f.) Persoon var. *inschanica* Maximowicz, Trudy Imp. S.-Peterburgsk. Bot. Sada 2: 371. 1873; *L. cystoides* Nakai var. *inschanica* (Maximowicz) Nakai; *L. hedysaroides* (Pallas) Kitagawa var. *inschanica* (Maximowicz) Kitagawa; *L. inschanica* var. *flava* S. L. Tung & Z. Lu.

Subshrubs or perennial herbs, to 80 cm tall. Stems erect or ascending, pubescent above. Leaves 3-foliolate; petiole 3–10 mm; leaflets oblong or obovate-oblong, terminal one 1–2.5 × 1–1.5 cm, abaxially densely adpressed hairy, adaxially subglabrous, base broadly cuneate or rounded, apex obtuse-rounded or emarginate. Racemes axillary, subequal to leaves, 2–6-flowered. Calyx 5–6 mm, 5-lobed; lobes lanceolate, distinctly 3-veined and ciliate, upper 2 lobes connate above middle. Corolla white; standard suborbicular, ca. 7 × 5.4 mm, base with large purple spots, apex emarginate, reflexed at anthesis; wings oblong, 5–6 × 1–1.5 mm; keel ca. 6.5 mm, often mixed with purple at apex. Legume obovoid, ca. 4 × 2 mm, shorter than persistent calyx, densely adpressed hairy.

Arid mountain slopes. Anhui, Gansu, Hebei, Hubei, Hunan, Jiangsu, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan [Japan, Korea].

23. *Lespedeza gerardiana* Wallich ex Maximowicz, Trudy Imp. S.-Peterburgsk. Bot. Sada 2: 373. 1873.

西藏胡枝子 xi zang hu zhi zi

Subshrubs or perennial herbs, 20–30 cm tall. Stem erect or ascending, densely appressed or ascending pubescent. Leaves 3-foliolate; stipules linear-triangular, 4.8–5.5 × 0.7–1.1 mm, 3-

or 4-veined; petiole 1.6–2.2 mm; leaflets narrowly obovate, terminal one 1–1.4 cm × 2.5–4.4 mm, abaxially sericeous, adaxially glabrous, base cuneate, apex mucronate. Racemes axillary, slightly longer than subtending leaves, almost sessile, 6-flowered. Pedicel 2.5–3.2 mm, densely appressed or ascending pubescent; bracteoles narrowly ovate, 4–4.8 × ca. 0.9 mm, distinctly longer than calyx tube. Calyx 7.3–9 mm, 5-parted; lobes narrowly triangular, densely appressed or ascending pubescent. Corolla pale yellow, 1.4–1.5 × as long as calyx; standard elliptic, 10.5–12.5 × 5–6 mm, clawed and with 2 auriculate appendages at base; wings obliquely narrowly elliptic, 9.5–11 × 1.5–2 mm, obtuse, slightly auriculate at base, claw ca. 3 mm; keel obliquely elliptic, 10.5–12.5 × 2.8–3.3 mm, apex obtuse. Cleistogamous flowers axillary, sessile, 6-flowered. Legumes and seeds unknown (in China). Fl. Sep.

In grass on mountain slopes, at foot of mountains. Xizang [Bhutan, India, Nepal, Pakistan].

24. *Lespedeza lichiyuniae* T. Nemoto, H. Ohashi & T. Itoh, J. Jap. Bot. 82: 223. 2007.

红花截叶铁扫帚 hong hua jie ye tie sao zhou

Subshrubs or perennial herbs, 50–120 cm tall. Stems erect or ascending, ascending or appressed pubescent. Leaves 3-foliolate; petiole (1.5–)2–15 mm; leaflets narrowly obovate, terminal one 0.7–2.8 × 0.2–0.8 cm, abaxially densely adpressed hairy, adaxially glabrous, base cuneate, apex obtuse or truncate, mucronate. Racemes axillary, peduncle short, (1 or)2–4-flowered. Calyx 3–4 mm, 5-parted; lobes appressed or ascending, lanceolate. Corolla pink or pale purple; standard broadly elliptic to circular, 7–7.5 × 5–5.5 mm, base with dark purple spots; wings pale purplish white, narrowly obovate to obovate, 6.7–7.3 × 2–2.3 mm; keel pale purplish white with dark purple tip, 7.2–7.6 × 2.2–2.7 mm. Cleistogamous flowers clustered in leaf axils, sessile. Legumes ellipsoid, ca. 2.4 × 1.7–2 mm, slightly longer than persistent calyx, densely adpressed hairy. Fl. Aug–Sep, fr. (Sep–)Oct–Nov.

• Mountain valleys, sunny mountain slopes; (200–)500–1700 (–3000) m. Anhui, Chongqing, Gansu, Guizhou, Henan, Hubei, Hunan, Jiangsu, Shaanxi, Sichuan, Yunnan [naturalized in Japan].

25. *Lespedeza hispida* (Franchet) T. Nemoto & H. Ohashi, J. Jap. Bot. 84: 156. 2009.

粗硬毛胡枝子 cu ying mao hu zhi zi

Lespedeza juncea (Linnaeus f.) Persoon var. *hispida* Franchet, Pl. Delavay. 170. 1890; *L. sericea* Miquel f. *hispida* (Franchet) Schindler.

Subshrubs or perennial herbs, to 80 cm tall. Stem erect or ascending, densely spreading or ascending pubescent. Leaves 3-foliolate; petiole 0.5–2.5 mm, densely spreading or ascending pubescent (or sericeous); leaflets narrowly obtriangular or narrowly obovate, terminal one 0.7–2.2 cm × 2.2–6.5 mm, abaxially densely appressed or ascending pubescent, adaxially glabrous, base narrowly cuneate, apex truncate, emarginate, or obtuse, mucronate. Racemes axillary, peduncle short, ca. 1 mm, 2–4-flowered. Pedicel 0.7–0.8 mm, pubescent; bracteoles (1.5–)1.7–2.5 mm, longer than calyx tube. Calyx 3.5–5 mm,

5-lobed, densely appressed or ascending pubescent. Corolla white, 1.3–1.5 × as long as calyx; standard elliptic, 5–5.7 × ca. 2.6 mm, inflexed-auriculate at base; wings narrowly or linearly elliptic, ca. 4.7 × 0.8 mm, obviously shorter than other petals; keel obliquely obovate, ca. 6 × 1.8 mm, claw ca. 1.5 mm. Cleistogamous flowers in leaf axils. Legumes ovoid, 3.6–4 × 2.3–2.5 mm, shorter than or almost equal to calyx, densely pubescent, base truncate, apex acuminate. Cleistogamous legumes 2.7–3 × ca. 2 mm, slightly longer than calyx. Fl. Jul–Sep, fr. Oct–Nov.

Grassy slopes, sunny roadsides; 1500–2500 m. Xizang, Yunnan [India, Nepal, Pakistan].

