

# 1. URTICA Linnaeus, Sp. Pl. 2: 983. 1753.

荨麻属 qian ma shu

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Herbs, rarely shrubs, annual or perennial, armed with stinging hairs. Stems often 4-angled. Leaves opposite; stipules often persistent, interpetiolar, lateral, free or connate; leaf blade 3–5(–7)-veined, margin dentate or incised-lobed; cystoliths often punctiform, sometimes short botuliform. Inflorescences in axillary pairs; glomerules forming spikes, racemes, panicles, or rarely capitula, unisexual (plants monoecious or dioecious) or androgynous. Male flowers: perianth lobes 4, imbricate; stamens 4; rudimentary ovary cuplike. Female flowers: perianth lobes 4, free or connate, enlarged in fruit, enclosing achene, strongly unequal, outer 2 (lateral) smaller than inner 2 (dorsal-ventral) lobes. Ovary straight; stigma sessile or on short style, penicillate-capitate. ovule orthotropous. Achene straight, compressed, enclosed by persistent perianth. Seed erect, with scanty endosperm; cotyledons suborbicular, fleshy.

About 30 species: principally in N and S temperate regions, also in montane areas of tropics; 14 species (three endemic) in China.

The stem fibers are used to make ropes, the leaves are used as fodder, and the young shoots are used as a seasoning substitute for sorrel.

- 1a. Stipules connate; inflorescences often branched.
  - 2a. Leaf blade ovate to lanceolate with margin dentate to doubly denticulate or doubly serrulate.
    - 3a. Leaf blade ovate to lanceolate, surface wrinkled when dried, margin sharply doubly serrulate; stem densely pubescent with many stinging hairs ..... 13. *U. ardens*
    - 3b. Leaf blade lanceolate or rarely narrowly ovate, surface nearly smooth when dried, margin crenate or inconspicuously double-denticulate to serrulate; stems sparsely pubescent with a few stinging hairs at least when old ..... 14. *U. parviflora*
  - 2b. Leaf blade broadly ovate or subcordate, with margin lobed or rarely doubly denticulate.
    - 4a. Stipules partly connate, apex 2-lobed or -cleft ..... 10. *U. thunbergiana*
    - 4b. Stipules wholly connate, apex obtuse.
      - 5a. Leaf margin shallowly 5–7-lobed or palmately 3-lobed (lobes  $\pm$  pinnately lobed again), lobe margin serrulate; inflorescences with a few short branches or almost unbranched ..... 11. *U. fissa*
      - 5b. Leaf margin usually 10- or more lobed, lobe margin doubly serrulate; inflorescences with many long branches ..... 12. *U. mairei*
- 1b. Stipules mostly free (sometimes partly connate with 2-lobed apex on upper parts of plant in *U. laetevirens*); inflorescences unbranched or branched.
  - 6a. Plants usually dioecious; inflorescences branched.
    - 7a. Plants often with dense stinging and setose hairs; leaf blade ovate or lanceolate, base cordate; petiole 1/6–1/2 as long as leaf blade ..... 9. *U. dioica*
    - 7b. Plants with sparse stinging and setose hairs; leaf blade lanceolate to linear, base rounded or notched; petiole 1/15–1/5 as long as leaf blade ..... 8. *U. angustifolia*
  - 6b. Plants monoecious; inflorescences, at least female ones, unbranched or nearly so.
    - 8a. Inflorescences bisexual, containing proximal female flowers and distal male flowers.
      - 9a. Plant always annual; leaf blade broadly elliptic, apex obtuse-rounded; perianth lobes of female flowers connate at base, sparsely setulose along margin ..... 3. *U. urens*
      - 9b. Plant perennial; leaf blade ovate to lanceolate, apex acute to shortly acuminate; perianth lobes of female flowers connate 1/2 of length, subglabrous.
        - 10a. Stipules 4–7 mm; leaf margin dentate or doubly serrate; achene ca. 0.8 mm ..... 1. *U. atrichocaulis*
        - 10b. Stipules ca. 2 mm; leaf margin incised-serrulate; achene ca. 1 mm ..... 2. *U. taiwaniana*
    - 8b. Inflorescences often unisexual, containing either male or female flowers.
      - 11a. Male inflorescences in distal axils; female perianth lobes without stinging hairs; cystoliths often botuliform ..... 7. *U. laetevirens*
      - 11b. Male inflorescences usually in proximal axils; female perianth lobes with stinging hairs; cystoliths often punctiform.
        - 12a. Female perianth lobes membranous, inner pair 2 times as long as achene; petiole 0.2–0.5(–1.6) cm ..... 6. *U. hyperborea*
        - 12b. Female perianth lobes herbaceous, inner pair subequal to achene; petiole 1–8 cm.
          - 13a. Achene smooth; female inflorescences in fruit drooping; outer 2 female perianth lobes 1/7–1/5 as long as inner 2 ..... 9. *U. dioica*
          - 13b. Achene verrucose; female inflorescences in fruit erect or spreading; outer 2 female perianth lobes 1/4–1/2 as long as inner 2.
            - 14a. Leaf margin 3–5-palmatisect or -palmatipartite, with pinnatisect lobes; female perianth lobes connate for 1/3 of length ..... 5. *U. cannabina*

- 14b. Leaf margin coarsely dentate or sharply serrate; female perianth lobes connate at base only ..... 4. *U. triangularis*

1. *Urtica atrichocaulis* (Handel-Mazzetti) C. J. Chen, Bull. Bot. Res., Harbin 3(2): 109. 1983.

小果荨麻 xiao guo qian ma

*Urtica dioica* var. *atrichocaulis* Handel-Mazzetti, Symb. Sin. 7: 110. 1929.

Herbs perennial, monoecious. Rhizomes woody. Stems gracile, simple or branched, 30–150 cm tall; stems, petioles, and both surfaces of leaf blade sparsely hirtellous, armed with stinging hairs, particularly on nodes. Stipules free, oblong-linear, 4–7 mm, puberulent; petiole 1–4 cm; leaf blade ovate or narrowly ovate, rarely lanceolate, 2.5–7(–9) × 1–3 cm, 3-veined, base broadly cuneate, rounded or shallowly cordate, margin 12–15-dentate or rarely doubly serrate, apex acute or shortly acuminate; cystoliths punctiform. Inflorescences containing proximal female flowers and distal male flowers, spicate, as long as petioles. Male flowers short pedicellate, in bud ca. 1.2 mm; perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate 1/2 of length, dorsal-ventral lobes elliptic-ovate, as long as achene, lateral lobes shorter reaching to 1/3 of distal part of larger lobes, subglabrous. Achene ovoid, compressed, 0.8 mm, smooth, enclosed by persistent perianth lobes. Fl. May–Jul, fr. Jul–Sep.

• Valleys, along streams, roadsides; 300–2600 m. SW Guizhou, Sichuan, Yunnan.

2. *Urtica taiwaniana* S. S. Ying, Quart. J. Chinese Forest. 8(3): 107. 1975.

台湾荨麻 tai wan qian ma

Herbs perennial, monoecious. Rhizomes present. Stems simple or shortly branched, 30–80 cm tall, sparsely hirtellous, armed with stinging hairs. Stipules free, lanceolate, ca. 2 mm, puberulent; petiole 1–3 cm, sparsely armed with stinging and appressed-puberulent hairs; leaf blade ovate to ovate-lanceolate, 3–6 × 1.5–4 cm, 3(–5)-veined, with stinging and setulose hairs on both surfaces, base broadly cuneate or shallowly cordate, margin incised-serrulate, apex acute or acuminate; cystoliths punctiform. Inflorescences containing proximal female flowers and distal male flowers, spicate, to 4 cm in fruit. Male flowers short pedicellate, in bud ca. 1.2 mm; perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate 1/2 of length, dorsal-ventral lobes elliptic-ovate, as long as achene, lateral lobes shorter reaching to apical 1/3 of dorsal-ventral lobes, subglabrous. Achene ovoid, compressed, 1 mm, smooth, invested by persistent perianth lobes. Fl. Jun–Jul, fr. Jul–Sep.

• Thickets, along streams, mountain roadsides; 3400–3600 m. C Taiwan.

3. *Urtica urens* Linnaeus, Sp. Pl. 1: 984. 1753.

欧荨麻 ou qian ma

Herbs annual. Stems branched, 10–60 cm tall, sparsely puberulent and somewhat densely armed with stinging hairs; lower internodes 4–7 cm, upper internodes 1–3 cm. Stipules free, narrowly triangular, 1–2.5 mm, ciliate; petiole 1–2.5 cm,

puberulent, sparsely armed with stinging hairs; leaf blade broadly elliptic, sometimes ovate or obovate, 1.2–6 × 0.6–3 cm, 5-veined, often subglabrous except for sparse stinging hairs on both surfaces, base broadly cuneate or rounded, margin 6–11-dentate, apex obtuse-rounded; cystoliths punctiform, distinct adaxially. Inflorescences containing proximal female flowers and distal male flowers, spicate, 0.5–2.5 cm. Male flowers short pedicellate, in bud ca. 1.2 mm; perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate at base, dorsal-ventral lobes ovate, equaling achene, often with 1 stinging hair on dorsal rib, sparsely setulose along margin, lateral lobes ovate, ca. 5 times as small as others. Achene brownish gray, ovoid, compressed, 0.8 mm, verrucose, invested by persistent perianth lobes. Fl. May–Jul, fr. Aug–Sep.

Forest margins, roadsides, near villages; 500–1000 m in N China, 2800–2900 m in SW China. Liaoning, Qinghai, Xinjiang (Altay region), S Xizang [Africa, Asia, Europe, very widely distributed in temperate regions and tropical highlands].

Wright (in 1899) and Handel-Mazzetti (in 1929) reported this species from Zhejiang, in SE China; however, we have seen no material from there. If present in Zhejiang, the plants must be naturalized.

4. *Urtica triangularis* Handel-Mazzetti, Symb. Sin. 7: 110. 1929.

三角叶荨麻 san jiao ye qian ma

Herbs perennial, monoecious. Rhizomes woody, ca. 1 cm in diam. Stems light purplish, branched, 60–150 cm tall; stems and petioles sparsely hirtellous, armed with stinging hairs. Stipules free, linear-lanceolate, 5–10 mm, puberulent; petiole 1–5 cm; leaf blade triangular, triangular-lanceolate, sometimes ovate, 2.5–11 × 1–5 cm, 3-veined, lateral veins 2–4 each side, adaxial surface with sparse stinging hirtellous hairs, abaxial surface with sparse stinging and pubescent hairs, base rounded, truncate, or shallowly cordate, margin coarsely 7–12-dentate or sharply serrate, sometimes doubly serrate or several pinnate lobes in the lower part, apex acute, sometimes short acuminate; cystoliths punctiform. Inflorescences unisexual; male inflorescences in distal axils, paniculate, spreading; female inflorescences in proximal axils, spicate, erect or drooping, with a thick axis and few branches in the proximal part. Male flowers short pedicellate or sessile, in bud ca. 1.5 mm; perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate at base, dorsal-ventral lobes equal to achene in size and shape, setulose and with 1–3 stinging hairs, lateral lobes ovate, 2–3 × as long as dorsal ones, herbaceous. Achene brownish, ovoid, compressed, 1.2–2 mm, verrucose, sometimes puberulent, with sunken dots, invested by persistent perianth lobes. Fl. Jun–Aug, fr. Aug–Oct.

• Thickets, meadows, along streams, valleys, roadsides, near villages; 2500–4100 m. Gansu, Qinghai, W Sichuan, E Xizang, NW Yunnan.

- 1a. Leaf blade ovate or lanceolate, base often rounded, lateral basal nerves reaching to teeth of upper margin;

inflorescences drooping in fruit;

achene asperulate ..... 4c. subsp. *trichocarpa*

- 1b. Leaf blade angustate triangular, base truncate or shallowly cordate, lateral basal nerves reaching to the middle-lower margin; inflorescences straight; achene verrucose.

2a. Leaf margin coarsely dentate or sharply serrate, sometimes double-serrate in the lower part ..... 4a. subsp. *triangularis*

2b. Leaf margin with several pinnatifid lobes in the lower part ..... 4b. subsp. *pinnatifida*

#### 4a. *Urtica triangularis* subsp. *triangularis*

三角叶荨麻(原亚种) san jiao ye qian ma (yuan ya zhong)

Leaf blade often narrowly triangular, lateral basal veins reaching middle-proximal margin, base truncate or shallowly cordate, margin coarsely dentate or sharply serrate, sometimes doubly serrate near base, apex acute; inflorescences erect; female perianth lateral lobes setulose; achene ca. 2 mm, finely verrucose. Fl. Jun–Aug, fr. Aug–Oct.

• Moist places along streams, valleys, roadsides, near villages; 2500–3700 m. S Qinghai, W Sichuan, E Xizang, NW Yunnan.

4b. *Urtica triangularis* subsp. *pinnatifida* (Handel-Mazzetti) C. J. Chen in C. Y. Wu, Fl. Xizang. 1: 526. 1983.

羽裂荨麻 yu lie qian ma

*Urtica triangularis* f. *pinnatifida* Handel-Mazzetti, Symb. Sin. 7: 111. 1929.

Leaf blade often narrowly triangular, lateral basal veins reaching middle-proximal margin, base truncate or shallowly cordate, margin coarsely dentate or sharply serrate distally and pinnatifid near base; inflorescences erect; female perianth lateral lobes setulose and with stinging hairs; achene coarsely verrucose. Fl. Jun–Aug, fr. Aug–Sep.

• Thickets, meadows, along streams; (2700–)3400–4100 m. S Gansu, Qinghai, E Xizang, NW Yunnan.

4c. *Urtica triangularis* subsp. *trichocarpa* C. J. Chen, Bull. Bot. Res., Harbin 3(2): 111. 1983.

毛果荨麻 mao guo qian ma

Leaf blade ovate or lanceolate, lateral basal veins reaching teeth of distal margin, base often rounded, sometimes shallowly cordate, margin coarsely dentate, apex acute or acuminate; inflorescences drooping; female perianth lateral lobes narrowly ovate or oblong, setulose; achene sparsely setulose, with sunken dots. Fl. Jul–Aug, fr. Aug–Sep.

• Thickets, roadsides; 2200–3000 m. Gansu, NE Qinghai, NW Sichuan.

5. *Urtica cannabina* Linnaeus, Sp. Pl. 2: 984. 1753.

麻叶荨麻 ma ye qian ma

*Urtica cannabina* f. *angustiloba* Chu.

Herbs perennial, monoecious. Rhizomes woody. Stems

branched, 50–150 cm tall, sparsely hirtellous, sparsely armed with stinging hairs. Stipules free, linear, 5–15 mm, puberulent on both surfaces; petiole 2–8 cm, puberulent, with stinging hairs; leaf blade 5-angled in outline, 7–15 × 3.5–10 cm, abaxial surface puberulent and sparsely armed stinging hairs on veins, adaxial surface sparsely setulose, then glabrescent, margin 3-palmatisect or parmatipartite, primary lobes pinnatisect, gradually shortened distally, secondary lobes irregularly incised-serrate or shallowly serrate; cystoliths punctiform, densely adaxially. Inflorescences unisexual; male inflorescences in proximal axils, paniculate, 5–8 cm; female ones in distal axils, spicate, 2–7 cm, often erect, with a thick axis and few branches in proximal part. Male flowers short pedicellate or sessile, in bud 1.2–1.5 mm; perianth lobes connate 1/2 of length, ovate, puberulent. Female flowers: perianth lobes connate at basal 1/3, herbaceous, dorsal-ventral lobes elliptic-ovate, 2–4 mm, setulose and with 1–4 stinging hairs, lateral lobes ovate or oblong-ovate, 3–4 times as short as dorsal ones, often with single stinging hair. Achene gray-brownish, ovoid, slightly compressed, 2–3 mm, apex acute, verrucose, invested by persistent perianth lobes. Fl. Jul–Aug, fr. Aug–Oct.

Thickets, grasslands, sand dunes, sandy beaches, river banks, roadsides, near villages, weed-infested places; 800–2800 m. Gansu, Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, N and W Sichuan, Xinjiang [Mongolia, Russia (Siberia); C and SW Asia, Europe].

6. *Urtica hyperborea* Jacquin ex Weddell, Monogr. Urtic. 68. 1856.

高原荨麻 gao yuan qian ma

Herbs perennial, caespitose, monoecious or dioecious. Rhizomes woody, thick. Stems pale brownish and purplish, simple or branched, cylindric basally, somewhat 4-angled apically, 10–50 cm tall, sparsely puberulent and densely armed with stinging hairs; internodes compact. Stipules free, reflexed, oblong or oblong-ovate, 2–4 mm, ciliate; petiole 0.2–0.5(–1.6) cm, puberulent, with stinging hairs; leaf blade green-blue when dry, ovate or cordate, 1.5–7 × 1–5 cm, 3(–5)-veined, lateral basal veins arcuate, reaching distal margin and anastomosing, impressed adaxially, prominent abaxially, both surfaces with stinging and puberulent hairs, base cordate, margin 6–11-dentate, apex acute or short acuminate; cystoliths punctiform, conspicuous adaxially. Inflorescences unisexual, male ones in proximal axils, short spicate or in clusters, 1–2.5 cm. Male flowers long pedicellate, in bud ca. 1.3 mm, perianth lobes connate 1/2 of length, hirtellous. Female flowers: perianth lobes connate at base, membranous, unequal, dorsal-ventral lobes much larger, suborbicular, 3–5 mm, 2 times as long as achene, setulose and sometimes with 1 or 2 stinging hairs on ribs, lateral lobes ovate, 8–10 times as short as dorsal ones. Achene pale gray, oblong-ovoid, compressed, ca. 2 mm, smooth, invested by persistent perianth lobes. Fl. Jun–Jul, fr. Aug–Sep.

Alpine meadows, thickets, crevices; 3000–5200 m. S Gansu, Qinghai, NW Sichuan, S Xinjiang, Xizang [Sikkim].

The invalidly published "*Urtica kunlunshanica*" Chang Y. Yang (Claves Pl. Xinjiang. 2: 84. 1982) belongs here.

7. *Urtica laetevirens* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 22: 236. 1877.

宽叶荨麻 *kuan ye qian ma*

Herbs perennial, monoecious, rarely dioecious. Rhizomes woody. Stems simple or few branched, 30–100 cm tall, subglabrous or sparsely hirtellous and with sparsely stinging hairs, particularly on nodes. Stipules free (sometimes partly connate with 2-lobed apex on upper parts of plant), lanceolate or oblong, 3–8 mm, puberulent; petiole slender, 1.5–7 cm, with sparse stinging and hirtellous hairs; leaf blade ovate, cordate or lanceolate, often gradually narrow distally, 4–10 × 2–6 cm, often membranous, 3-veined, lateral basal veins arcuate, reaching distal margin and anastomosing, secondary veins 2 or 3 on each side, both surfaces with sparse stinging and hirtellous hairs, base broadly cuneate, rounded, or cordate, margin dentate or serrate, apex short acuminate to caudate-acuminate; cystoliths often botuliform, sometimes punctiform. Inflorescences unisexual; male inflorescences in distal axils, spicate, to 8 cm; female ones in proximal axils, subspicate, slender, sometimes glomerules interrupted along axis. Male flowers sessile or short pedicellate, in bud ca. 1 mm; perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate at base, dorsal-ventral lobes elliptic-ovate, ca. 1 mm, sparsely or densely setulose, lateral lobes narrowly ovate, 3–5 times as short as dorsal ones. Achene gray-brown, ovoid or narrowly ovoid, slightly compressed, ca. 1 mm, inconspicuously verrucose or smooth, invested by persistent perianth lobes. Fl. Jun–Aug, fr. Aug–Oct.

Moist places in forests, thickets, along streams, river banks; 100–3500 m. Anhui, Gansu, Hebei, Heilongjiang, Henan, Hubei, Hunan, E Jilin, Liaoning, Nei Mongol, SE Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, SE Xizang, Yunnan [Japan, Korea, Russia (Far East)].

Dmitry Geltman (pers. comm.) believes that *Urtica silvatica* should be treated as a separate species and not as a synonym of *U. laetevirens*. The former species has connate stipules, whereas the latter species always has free stipules.

- 1a. Stipules on upper parts of stems partially connate; achene ovoid, apex obtuse, verrucose ..... 7a. subsp. *laetevirens*  
 1b. Stipules all free; achene narrowly ovoid, apex acute, smooth ..... 7b. subsp. *cyanescens*

**7a. *Urtica laetevirens* subsp. *laetevirens***

宽叶荨麻(原亚种) *kuan ye qian ma* (*yuan ya zhong*)

*Urtica dentata* Handel-Mazzetti; *U. laetevirens* subsp. *dentata* (Handel-Mazzetti) C. J. Chen; *U. pachyrrhachis* Handel-Mazzetti; *U. silvatica* Handel-Mazzetti.

Stipules free below, partially connate in upper stems; leaf blade green or dark green when dry, ovate or lanceolate, outer secondary veins often reaching teeth, base broadly cuneate or rounded; cystoliths botuliform with mixture of punctiform ones; achene ovoid, apex obtuse, verrucose, persistent perianth lobes sparsely setulose. Fl. Jun–Aug, fr. Aug–Sep.

Moist places in forests, thickets, along streams; 800–3500 m. Anhui, Gansu, Hebei, Henan, Hubei, Hunan, Liaoning, Nei Mongol, SE Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, SE Xizang, Yunnan [Japan, Korea, Russia (Far East)].

**7b. *Urtica laetevirens* subsp. *cyanescens* (Komarov ex Jar-**

molenko) C. J. Chen, Bull. Bot. Res., Harbin 3(2): 115. 1983.

乌苏里荨麻 *wu su li qian ma*

*Urtica cyanescens* Komarov ex Jarmolenko in Komarov, Fl. URSS 5: 714. 1936.

Stipules all free; leaf blade blue-green when dry, broadly ovate or ovate, thin membranous, outer secondary veins often reaching teeth, base broadly cuneate or rounded; cystoliths linear or botuliform; achene narrowly ovoid, apex acute, smooth, persistent perianth lobes densely setulose. Fl. Jul–Aug, fr. Aug–Sep.

Moist places in *Pinus* or mixed forests, river banks; 100–1000 m. Heilongjiang, E Jilin, E Liaoning [N Korea, Russia (Far East)].

Dmitry Geltman (pers. comm.) believes that *Urtica cyanescens* is a pure synonym of *U. laetevirens*. If an extremely narrow species concept were adopted, *U. cyanescens* could be separated from *U. laetevirens*, but then it would be necessary to treat *U. laetevirens* as an endemic of Hokkaido, Japan, from where it was described.

**8. *Urtica angustifolia* Fischer ex Hornemann, Suppl. Hort. Bot. Hafn. 107. 1819.**

狭叶荨麻 *xia ye qian ma*

*Urtica dioica* var. *angustifolia* (Fischer ex Hornemann) Ledebour; *U. foliosa* Blume.

Herbs perennial, dioecious. Rhizomes woody, stoloniferous. Stems branched or simple, 40–150 cm tall; stems, petioles, and both surfaces of leaf blade sparsely hirtellous and armed with stinging hairs. Stipules free, linear, 6–12 mm; petiole short, 0.5–2 cm; leaf blade oblong-lanceolate to ovate-lanceolate, rarely linear or ovate, 4–15 × 1–3.5(–5.5) cm, often herbaceous, 3-veined, lateral basal veins parallel to midvein in middle of blade, with secondary veins 2 or 3 on each side, adaxial surface often rough, base rounded, rarely shallowly cordate, margin coarsely 9–15(–19)-dentate or serrate, teeth tapered or incurved-tipped, ciliate, apex long acuminate or acute; cystoliths often punctiform. Inflorescences paniculate, sometimes with few, short branchlike spikes, 2–8 cm. Male flowers in bud ca. 2 mm, perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate at base, dorsal-ventral lobes elliptic-ovate, ca. 1 mm, sparsely setulose or subglabrous, lateral lobes narrowly obovate, 1/2 the length of dorsal ones. Achene brownish gray, ovoid or broadly ovoid, slightly compressed, 0.8–1 mm, smooth or inconspicuously verrucose, invested by persistent perianth lobes. Fl. Jun–Aug, fr. Aug–Oct.

Moist places in forests, thickets, stream banks; 800–2200 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shandong, Shanxi [Japan, Korea, Mongolia, Russia (Far East, Siberia)].

The species is similar to *Urtica dioica* in having dioecious plants, paniculate inflorescences, and similar stipule and achene features; however, it differs in having sparser stinging hairs, narrower leaves with a rounded base, and much shorter petioles. The taxa could either be sister species, or *U. angustifolia* could be an eastern geographical vicariant of *U. dioica*.

**9. *Urtica dioica* Linnaeus, Sp. Pl. 2: 984. 1753.**

异株荨麻 *yi zhu qian ma*

URTICACEAE

Herbs perennial, dioecious, rarely monoecious. Rhizomes woody, stoloniferous. Stems simple or few branched, 40–100 cm tall; stems and petioles often densely or sometimes sparsely covered with stinging and setulose hairs. Stipules free, linear, (2–)5–8 mm; petiole 2.5–4 cm; leaf blade ovate, sometimes lanceolate, 5–13 × 2.5–6 cm, often herbaceous, (3–)5-veined, lateral basal veins reaching distal margin and anastomosing, secondary veins 3–5 each side, adaxial surface sparsely covered with stinging and setulose hairs, abaxial surface often densely covered with long, stinging and setulose hairs along veins, base cordate, margin coarsely 15–21-serrate or -dentate, teeth often incurved-tipped, apex acuminate or long acuminate; cystoliths punctiform. Inflorescences paniculate, 3–7 cm; female inflorescences with slender axes, often drooping in fruit. Male flowers in bud ca. 1.4 mm; perianth lobes connate 1/2 of length, puberulent. Female flowers: perianth lobes connate at 1/4 of lower part, dorsal-ventral lobes elliptic-ovate, 1.2–1.5 mm, sparingly setulose, lateral lobes narrowly elliptic, 2–3 × as long as the dorsal ones, Achene brownish gray, ovoid or narrowly ovoid, slightly compressed, 1–1.2(–1.4) mm, smooth, invested by persistent perianth lobes. Fl. Jun–Aug, fr. Aug–Sep.

Moist places in forests, thickets, grasslands, stream banks; (500–)2200–5000 m. E Gansu, Qinghai, NW Sichuan, W Xinjiang, Xizang [Afghanistan, C Himalayas; N Africa, Europe, North America].

Dmitry Geltman (pers. comm.) notes that *U. dioica* subsp. *sondenii* (Simmons) A. Löve & D. Löve (*U. dioica* var. *sondenii* Simmons; *U. soudenii* (Simmons) Avrorin ex Geltman) occurs in the mountainous regions of Xinjiang (Altay Shan, etc.).

- 1a. Plants sparsely covered with stinging and puberulent hairs or subglabrous; petiole 1/6–1/3 as long as leaf blade; leaf blade lanceolate with rounded base ..... 9b. subsp. *afghanica*
- 1b. Plants densely covered with stinging and setulose hairs; petiole 1/2 as long as leaf blade; leaf blade often ovate with cordate base.
  - 2a. Leaf blade (3–)5–11 × (1.3–)2.5–4 cm, margin serrate; stipules (2–)5–8 mm; female inflorescences paniculate, longer than petioles ..... 9a. subsp. *dioica*
  - 2b. Leaf blade 4–7 × 2.5–6 cm, margin incised denticulate; stipules 1–3 mm; female inflorescences subspicate, shorter than petioles ..... 9c. subsp. *gansuensis*

**9a. *Urtica dioica* subsp. *dioica***

异株荨麻(原亚种) *yi zhu qian ma* (yuan ya zhong)

*Urtica dioica* var. *vulgaris* Weddell; *U. tibetica* W. T. Wang.

Plants densely covered with stinging and setulose hairs. Stipules 5–8 mm; petiole 1/2 as long as leaf blade; leaf blade often ovate, sometimes lanceolate, 5–11 × 2.5–4 cm, base cordate, margin serrate. Female inflorescences paniculate, longer than petioles, often drooping. Fl. Jul–Aug, fr. Aug–Sep.

Partly shady and moist places in forests, thickets, stream banks; 3200–4800 m. Qinghai, W Xinjiang, C and W Xizang [C Asia (C

Himalayas); N Africa, Europe, North America].

*Urtica tibetica* is treated here as merely a shade form of *U. dioica* subsp. *dioica*.

**9b. *Urtica dioica* subsp. *afghanica*** Chrtek, Fl. Iran. Cont. Nr. 105: 3. 1974.

尾尖异株荨麻 *wei jian yi zhu qian ma*

*Urtica dioica* subsp. *xingjiangensis* C. J. Chen.

Plants sparsely covered with stinging and puberulent hairs or subglabrous. Stipules 5–9 mm; petiole 5–6 times as long as leaf blade; leaf blade lanceolate, 9–13 × 3–5 cm, base rounded, margin coarsely serrate, teeth incurved or tapered, apex long caudate. Female inflorescences paniculate, longer than petioles, often drooping. Fl. Jun–Aug, fr. Aug–Oct.

Partly shady and moist places in forests, thickets, grasslands, stream banks; (500–)2400–5000 m. W Xinjiang, NE and W Xizang [Afghanistan].

**9c. *Urtica dioica* subsp. *gansuensis*** C. J. Chen, Bull. Bot. Res., Harbin 3(2): 119. 1983.

甘肃异株荨麻 *gan su yi zhu qian ma*

Plants densely covered with stinging and setulose hairs. Stipules triangular or linear, 1–3 mm; petiole equal to or 1/2 as long as leaf blade; leaf blade cordate often ovate-cordate, 4–7 × 2.5–6 cm, base cordate, margin incised denticulate. Female inflorescences subspicate, shorter than petioles, often drooping. Fl. Jun–Aug, fr. Sep.

• Moist places in forests, stream banks; 2200–2800 m. E Gansu, NW Sichuan.

**10. *Urtica thunbergiana*** Siebold & Zuccarini, Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(3): 214. 1846.

咬人荨麻 *yao ren qian ma*

*Urtica macrorrhiza* Handel-Mazzetti.

Herbs perennial, dioecious or monoecious. Rhizomes woody. Stems caespitose, simple or many branched, 60–150 cm tall, ca. 1 cm in diam., antrorsely setulose, armed with spreading stinging hairs, dense in lower parts, sparser in upper parts. Stipules brownish or greenish, interpetiolar, connate, narrowly ovate, oblong or oblong-ovate, 7–15 mm, herbaceous, with several ribs, puberulent, with cystoliths, apex shallowly 2-cleft or emarginate, petiole 1–9 cm, armed with stinging and retrorsely setulose hairs; leaf blade greenish brown abaxially, dark brownish adaxially when dry, triangular-ovate, oblong-ovate, broadly ovate or cordate, 5–12 × 2.5–11 cm, herbaceous or thinly papery, 5-veined, lateral basal veins arcuate, reaching distal margin, secondary veins 2 or 3 each side, both surfaces sparsely armed with stinging and appressed setulose hairs, base truncate to cordate, margin coarsely doubly dentate or incised-lobed, lobes 1- or 2-denticulate each side, apex shortly acuminate or acute; cystoliths botuliform on both surfaces. Inflorescences unisexual, male inflorescences in proximal axils; paniculate, with a few branches, longer than petioles; female ones in distal axils. Male flowers subsessile, in bud 1–1.2 mm; perianth lobes

connate 1/2 of length, sparsely puberulent. Female perianth lobes connate at base, dorsal-ventral lobes brownish, elliptic-ovate, setulose, lateral lobes broadly ovate, 1/4–1/3 as long as dorsal ones. Achene light brownish, broadly ovoid, slightly compressed, ca. 1 mm, conspicuously verrucose, invested by persistent perianth lobes. Fl. Jul–Sep, fr. Aug–Oct.

Shady, moist places in forests, along streams, valleys; 1200–2500 m. Taiwan, W Yunnan [S Japan].

The coarsely doubly dentate margins of the leaves on the main stem of the type of *Urtica macrorrhiza*, from Yunnan, correspond very well with *U. thunbergiana*, from Taiwan and, outside China, Japan. This disjunction in distribution is most unusual.

**11. *Urtica fissa*** E. Pritzl, Bot. Jahrb. Syst. 29: 301. 1900.

荨麻 qian ma

*Urtica pinfaensis* H. Lévillé & Blin.

Herbs perennial, monoecious or rarely dioecious. Rhizomes stoloniferous. Stems branched, 40–100 cm tall; stems and petioles densely puberulent and covered with spreading, stinging hairs. Stipules greenish, interpetiolar, connate, oblong-ovate or oblong, 10–20 mm, herbaceous, 10–20-ribbed, puberulent, with cystoliths, apex obtuse, petiole 2–8 cm; leaf blade dark greenish or greenish, broadly ovate, elliptic, 5-angled, or suborbicular in outline, 5–15 × 3–14 cm, submembranous or herbaceous, 5-veined, lateral basal veins reaching distal lobes, secondary veins 3–6 each side, adaxial surface sparsely armed with stinging and setulose hairs, abaxial surface densely light greenish pubescent and with stinging hairs on veins, base truncate or cordate, margin shallowly 5–7-lobed or palmately 3-lobed (irregularly 2–4-lobed again), lobes gradually enlarged distally, deltoid or oblong, 1–5 cm, dentate-serrulate, apex acuminate or acute; cystoliths botuliform or subpunctiform on both surfaces. Inflorescences unisexual, male inflorescences usually in proximal axils, paniculate with a few branches or sometimes subspicate, to 10 cm, longer than petioles; female ones in distal axils. Male flowers pedicellate, in bud ca. 1.4 mm; perianth lobes connate below middle, sparsely puberulent. Female perianth lobes connate at base, dorsal-ventral lobes suborbicular, setulose, lateral lobes suborbicular, ca. 4 times as short as dorsal ones. Achene light brownish, broadly ovoid or subglobose, slightly compressed, ca. 1 mm, conspicuously verrucose, invested by persistent perianth lobes. Fl. Jul–Oct, fr. Sep–Nov.

Partly shady, moist places in forests, thickets, along streams, roadsides; 100–2000 m. Anhui, Fujian, SE Gansu, Guangxi, Guizhou, Henan, Hubei, Hunan, S Shaanxi, C Yunnan, Zhejiang [Vietnam].

This species is widely distributed in the temperature areas of China. It is variable in its leaf margin: populations in Hubei, Shaanxi, and Sichuan have more palmately 3-partite or 3-lobed leaf blades.

**12. *Urtica mairei*** H. Lévillé, Repert. Spec. Nov. Regni Veg. 12: 183. 1913.

滇藏荨麻 dian zang qian ma

Herbs perennial, monoecious. Rhizomes stoloniferous. Stems few branched, to 100 cm tall; stems and petioles puberulent and densely or sparsely covered with stinging hairs. Stipules greenish, interpetiolar, connate, oblong or ovate-oblong,

10–15 mm, herbaceous, 7–10-ribbed, puberulent and with cystoliths on both surfaces, apex obtuse; petiole 3–8 cm; leaf blade broadly ovate or cordate, sometimes oblong, 6–15 × 3–10 cm, 5-veined, lateral basal veins reaching middle lobes, secondary veins 3–5 each side, adaxial surface with sparse, stinging and setulose hairs, abaxial surface densely setulose and sparsely armed with stinging hairs on veins, base cordate or rounded, margin doubly dentate or many lobed, lobes deltoid, denticulate, interlobes 0.7–2 cm, apex shortly acuminate; cystoliths punctiform, rarely botuliform adaxially. Inflorescences unisexual, paniculate with many long branches, spreading, 4–10 cm, longer than petioles; male flowers in proximal axils; female flowers in distal axils. Male flowers shortly pedicellate, in bud ca. 1.4 mm, perianth lobes connate below middle, sparsely puberulent. Female flowers slenderly pedunculate; perianth lobes connate at base, dorsal-ventral lobes suborbicular, setulose, lateral lobes suborbicular, ca. 1/3 as long as dorsal ones. Achene light brownish, oblong-globose or subglobose, slightly compressed, ca. 1 mm, inconspicuously verrucose, invested by persistent perianth lobes. Fl. May–Aug, fr. Jul–Dec.

Partly shady, moist places in forests, thickets, along streams, roadsides; 1500–3400 m. SW Sichuan, SE Xizang, Yunnan [Bhutan, N India, Myanmar].

**13. *Urtica ardens*** Link, Enum. Hort. Berol. 2: 385. 1822.

须弥荨麻 xu mi qian ma

*Urtica himalayensis* Kunth & Bouché; *U. mairei* H. Lévillé var. *oblongifolia* C. J. Chen; *U. zayuensis* C. J. Chen.

Herbs perennial, monoecious. Rhizomes woody. Stems branched, to 150 cm tall; stems, at least when old, and petioles sparsely armed with stinging and setulose hairs. Stipules dark brownish, interpetiolar, connate, oblong, 7–14 mm, herbaceous, with several ribs, appressed puberulent abaxially, apex obtuse; petiole 1.5–4.5 cm; leaf blade black or dark brownish when dry, narrowly ovate to lanceolate, 5–15 × 2–6 cm, herbaceous, 5-veined, lateral basal veins reaching middle, secondary veins 3 or 4 on each side, anastomosing before margin, adaxial surface glabrescent, abaxial surface setulose, base rounded or cordate, margin dentate or doubly denticulate, apex acuminate; cystoliths punctiform, rarely botuliform. Inflorescences containing male and female flowers, paniculate, with few short branches, longer than petioles. Male flowers subsessile, in bud ca. 1 mm; perianth lobes connate 1/2 of length, sparsely puberulent. Female flowers: perianth lobes connate at base, dorsal-ventral lobes broadly ovate, setulose, lateral lobes ovate, ca. 1/4 as long as dorsal ones. Achene light brownish, broadly ovoid, slightly compressed, ca. 1 mm, verrucose, invested by persistent perianth lobes. Fl. Jul–Aug, fr. Sep–Nov.

Open or partly shady moist places in forests, thickets, along streams; 2400–2700 m. W Guangxi, SE Xizang, C and S Yunnan [Bhutan, N India, Nepal, Sikkim].

This species has been confused with *Urtica parviflora*, but that species has leaves broadly ovate, almost smooth when dried, with margins coarsely doubly dentate and stipules 2-cleft. Hara confused this species in SE Xizang and Yunnan with *U. mairei*, which has leaf margins doubly dentate (not lobed), stipules membranous, male inflores-

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cences borne in distal axils, and achenes smooth.

**14. *Urtica parviflora*** Roxburgh, Fl. Ind., ed. 1832, 3: 581. 1832.

圓果荨麻 yuan guo qian ma

Herbs perennial, monoecious. Rhizomes long stolonifer-

ous. Stems slender, simple or few branched, 25–50 cm tall; stems, petioles, and both surfaces of leaf blade sparsely hirtellous and armed with stinging hairs. Stipules greenish, interpetiolar, connate, ovate or oblong-ovate, 4–6 mm, membranous, with several ribs, apex shallowly 2-cleft or emarginate; petiole slender, 2.5–7 cm; leaf blade broadly ovate or ovate-cordate, 2.5–8.5 × 2–7 cm, often membranous, 5-veined, lateral basal veins arcuate, reaching middle margin, secondary veins 2–4 each side, base rounded or shallowly cordate, margin doubly dentate, teeth increasing in size distally, apex acuminate; cystoliths botuliform or sometimes punctiform. Inflorescences unisexual; male inflorescences in distal axils, spicate, 4–7 cm; female ones in proximal axils, subspicate, slender, with a few short branches, or male flowers in middle axils, female flowers in proximal and distal axils, subequal to or shorter than petioles. Male flowers sessile or short pedicellate, in bud ca. 1.3 mm; perianth lobes connate 1/2 of length, densely hirtellous, then glabrescent. Female flowers: perianth lobes connate at base, unequal, dorsal-ventral lobes suborbicular, sparsely setulose, lateral lobes broadly obovate, ca. 2 times as short as dorsal ones. Achene yellowish green, broadly ellipsoid-ovoid, slightly compressed, ca. 1 mm, smooth, invested by persistent perianth lobes. Fl. May–Jun, fr. Jul–Aug.

Partly shady, moist places of evergreen forests, along streams, roadsides; 1500–2400 m. W Guangxi, S Xizang, NW Yunnan [Bhutan, N India, Kashmir, Nepal, Sikkim].

This species has been confused with *Urtica ardens*, e.g., by Chen (in FRPS), but that species has a denser, setulose indumentum and an often ovate leaf blade with the surface conspicuously wrinkled and the margin sharply doubly serrulate.

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