

6. FAGOPYRUM Miller, Gard. Dict. Abr., ed. 4, [495]. 1754, nom. cons.

荞麦属 qiao mai shu

Li Anjen (李安仁 Li An-ren); Suk-pyo Hong

Herbs annual or perennial, rarely subshrubs, monoecious. Stems erect, glabrous or pubescent. Leaves simple, alternate, petiolate; leaf blade triangular, cordate, broadly ovate, sagittate, or linear; ocrea membranous, oblique, margin entire, apex acute or truncate. Inflorescence racemose or corymbose. Flowers bisexual. Perianth persistent, 5-parted; tepals 5, not accrescent. Stamens 8. Styles 3, elongate; stigmas capitate. Achenes trigonous, not winged or horned at base.

About 15 species: Asia, Europe; ten species (six endemic) in China.

- 1a. Subshrub or perennial herb.
 - 2a. Subshrub; leaves sagittate or ovate-triangular, apex long acuminate or caudate 1. *F. urophyllum*
 - 2b. Perennial herb; leaves broadly ovate or triangular, apex acuminate or acute.
 - 3a. Stems and branches leafless above; leaves broadly ovate or triangular, 2–3 cm, ocrea apically acute; pedicel articulate at apex; achenes ovoid, 2–2.5 mm 2. *F. statice*
 - 3b. Stems and branches leafy above; leaves triangular, 4–12 cm; ocrea apically truncate; pedicel articulate at middle; achenes broadly ovoid, 6–8 mm 3. *F. dibotrys*
- 1b. Annual herb.
 - 4a. Achenes grooved; angles rounded below middle, sharply acute above; pedicel articulate at middle 4. *F. tataricum*
 - 4b. Achenes not grooved; angles sharply acute; pedicel apically articulate or not articulate.
 - 5a. Leaves cordate; inflorescence capitate 5. *F. gilesii*
 - 5b. Leaves not cordate; inflorescence racemose, corymbose, or filiform, terminal spikelike panicle.
 - 6a. Stems, branches leafless above 6. *F. leptopodum*
 - 6b. Stems, branches leafy above.
 - 7a. Leaves triangular or ovate triangular, 1.5–5 cm wide; inflorescence racemose or corymbose.
 - 8a. Inflorescence lax, interrupted; pedicel articulate at apex; achenes ca. 3 mm; plants wild 7. *F. gracilipes*
 - 8b. Inflorescence dense, not interrupted; pedicel not articulate; achenes 5–6 mm; plants cultivated 8. *F. esculentum*
 - 7b. Leaves linear, triangular-sagittate, or narrowly sagittate, 0.2–1 cm wide; inflorescence a dense or lax filiform terminal spikelike panicle.
 - 9a. Leaves linear 9. *F. lineare*
 - 9b. Leaves triangular-sagittate or narrowly sagittate 10. *F. caudatum*

1. *Fagopyrum urophyllum* (Bureau & Franchet) H. Gross, Bull. Acad. Int. Géogr. Bot. 23: 21. 1913.

万年荞 wan nian qiao

Polygonum urophyllum Bureau & Franchet, J. Bot. (France) 5: 150. 1891; *Fagopyrum mairei* (H. Léveillé) H. Gross; *P. mairei* H. Léveillé.

Subshrubs. Stems suberect, 60–90 cm tall, much branched; branches ligneous, bark red-brown, exfoliating, simple, herbaceous, green striate. Petioles 2–5 cm, shortly pubescent; leaf blade greenish abaxially, green adaxially, sagittate or ovate-triangular, 2–8 × 1.5–4 cm, both surfaces shortly pubescent along veins, base broadly sagittate, margin entire, apex long acuminate or caudate; ocrea brown, 4–6 mm, membranous, oblique. Inflorescence terminal, panicle, 15–20 cm; branches spreading, lax; bracts greenish, narrowly funnel-shaped, 2–2.5 mm, apex acute, each 3- or 4-flowered. Pedicels longer than bracts, 3–3.5 mm, slender, apex articulate. Perianth white; tepals elliptic, 2–3 mm. Stamens included. Styles free; stigmas capitate. Achenes exceeding persistent perianth, black-brown, shiny, broadly ovoid, sharply trigonous, 3–4 mm. Fl. Apr–Sep, fr. May–Nov.

- Grassy or gravelly slopes, thickets in valleys; 900–2800 m.

Sichuan, Yunnan.

2. *Fagopyrum statice* (H. Léveillé) H. Gross, Bull. Acad. Int. Géogr. Bot. 23: 26. 1913.

长柄野荞 chang bing ye qiao

Polygonum statice H. Léveillé, Repert. Spec. Nov. Regni Veg. 7: 338. 1909.

Herbs perennial. Rhizomes black, ligneous. Stems 40–50(–65) cm tall, branched at base, glabrous, slenderly striate, leafless above. Petiole 2–4 cm; leaf blade broadly ovate or triangular, 2–3 × 1.5–2.5 cm, both surfaces glabrous, veins rather prominent abaxially, base broadly cordate or nearly truncate, apex acute; ocrea membranous, oblique, margin not ciliate, apex acute. Inflorescence of several spikes aggregated and panicle-like, lax; bracts funnel-shaped, each 2- or 3-flowered. Pedicels longer than bracts, 2–2.5 mm, slender, apex articulate. Tepals elliptic, 1–1.5 mm. Stamens equaling perianth. Styles free; stigmas capitate. Achenes shiny, ovoid, 2–2.5 mm. Fl. Jul–Oct, fr. Aug–Nov.

- Grassy slopes; 1300–2200 m. Guizhou, Yunnan.

3. *Fagopyrum dibotrys* (D. Don) H. Hara, Fl. E. Himal. 69. 1966.

金荞 jin qiao

Polygonum dibotrys D. Don, Prodr. Fl. Nepal. 73. 1825; ?*Fagopyrum acutatum* (Lehmann) Mansfeld ex K. Hammer; *Fagopyrum cymosum* (Treviranus) Meisner; *F. megaspartanum* Q. F. Chen; *F. pilus* Q. F. Chen; ?*P. acutatum* Lehmann; *P. cymosum* Treviranus; *P. labordei* H. Léveillé & Vaniot; *P. tristachyum* H. Léveillé; *P. volubile* Turczaninow.

Herbs perennial. Rhizomes black-brown, stout, ligneous. Stems erect, green or brownish, 40–100 cm tall, much branched, striate, glabrous. Petiole 2–10 cm; leaf blade triangular, 4–12 × 3–11 cm, both surfaces papillate, base nearly hastate, margin entire, apex acuminate; ocrea brown, 5–10 mm, membranous, oblique, apex truncate, not ciliate. Inflorescence terminal or axillary, corymbose; bracts ovate-lanceolate, ca. 3 mm, margin membranous, apex acute, each 4-flowered, rarely 6-flowered. Pedicels equaling bracts, articulate at middle. Perianth white; tepals narrowly elliptic, ca. 2.5 mm. Stamens included. Styles free; stigmas much exceeding persistent perianth, capitate, opaque. Achenes blackish brown, dull, broadly ovoid, 6–8 mm, trigonous, sometimes narrowly winged, angles smooth to repandous, apex acute. Fl. Apr–Oct, fr. May–Nov. *2n* = 24, 32*

Moist valleys, grassy slopes; 300–3200 m. Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan, Zhejiang [Bhutan, India, Kashmir, Myanmar, Nepal, Sikkim, Vietnam].

This species is used medicinally.

4. *Fagopyrum tataricum* (Linnaeus) Gaertner, Fruct. Sem. Pl. 2: 182. 1790.

苦荞 ku qiao

Polygonum tataricum Linnaeus, Sp. Pl. 1: 364. 1753.

Herbs annual. Stems erect, green, 30–70(–100) cm tall, branched, striate, papillate. Petioles ca. as long as blade; leaf blade broadly triangular, 2–7 × 2–8 cm, both surfaces papillate along veins, base cordate or truncate, margin entire, apex acute; ocrea brown, ca. 5 mm, membranous, oblique. Inflorescence terminal or axillary, racemose, several racemes together paniculate, lax; bracts ovate, 2–3 mm, apex acute, each 2–4-flowered. Pedicel 3–4 mm, articulate at middle. Perianth white or greenish; tepals elliptic, ca. 2 mm. Stamens included. Stigmas capitate. Achenes much exceeding persistent perianth, black-brown, narrowly ovoid, trigonous, 5–6 mm, surfaces grooved; angles rounded below middle, sharply acute above, sometimes sinuate-dentate along angles. Fl. May–Sep, fr. Jun–Oct. *2n* = 16*.

Wild or cultivated in mountainous regions; 400–3900 m. Gansu, ?Guangxi, Guizhou, Hebei, Heilongjiang, Hubei, Hunan, Jilin, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan [Afghanistan, Bhutan (cultivated), India, Kazakhstan (introduced), Kyrgyzstan (introduced), Mongolia, Myanmar (cultivated), Nepal, Russia (Far East, introduced), Sikkim (cultivated), Tajikistan (introduced); cultivated in Europe and North America].

5. *Fagopyrum gilesii* (Hemsley) Hedberg, Svensk Bot. Tidskr. 40: 390. 1946.

心叶野荞 xin ye ye qiao

Polygonum gilesii Hemsley, Hooker's Icon. Pl. 18: t. 1756. 1887.

Herbs annual. Stems erect, 10–30(–50) cm tall, branched at base, glabrous, striate. Petioles 1.5–3 cm; leaf blade greenish abaxially, green adaxially, cordate, 1–3 × 0.8–2.5 cm, abaxially small papillate along veins, adaxially glabrous; ocrea 3–5 mm, membranous, glabrous, apex acute, oblique. Inflorescence geminate, capitate, dense; peduncle dichotomous; bracts funnel-shaped, 2.5–3 mm, apex acute, glabrous, each 2- or 3-flowered. Pedicel 3–4 mm, slender, apex articulate. Perianth pinkish; tepals elliptic, 2–2.5 mm. Stamens included. Stigmas capitate. Achenes exceeding persistent perianth, brown, slightly shiny, narrowly ovoid, trigonous, 3–4 mm. Fl. Jul–Aug, fr. Aug–Sep.

Grassy slopes, valleys; 2200–4000 m. Sichuan, Yunnan [Pakistan].

6. *Fagopyrum leptopodum* (Diels) Hedberg, Svensk Bot. Tidskr. 40: 390. 1946.

小野荞 xiao ye qiao

Herbs annual. Stems 6–30 cm tall, slender, glabrate, branched at base, leafless above. Petiole 1–1.5 cm, slender; leaf blade triangular or triangular-ovate, abaxially papillate along veins, adaxially scabrous, midvein slightly prominent abaxially, base sagittate or nearly truncate, margin entire, apex acute; ocrea white or brownish, membranous, oblique, apex acute. Inflorescence racemose, dense or very lax, several racemes together large and panicle-like; bracts membranous, oblique, apex acute, each 2- or 3-flowered. Pedicels longer than bracts, ca. 3 mm, slender, apex articulate. Perianth white or pinkish; tepals elliptic, 1.5–2.5 mm. Stamens included. Styles filiform, free; stigmas capitate. Achenes exceeding persistent perianth, yellow-brown, ovoid, trigonous, 2–2.5 mm. Fl. May–Oct, fr. Jun–Nov.

• Mountain slopes, valleys; 1000–3000 m. Sichuan, Yunnan.

1a. Raceme dense 6a. var. *leptopodum*
1b. Raceme very lax 6b. var. *grossii*

6a. *Fagopyrum leptopodum* var. *leptopodum*

小野荞(原变种) xiao ye qiao (yuan bian zhong)

Polygonum leptopodum Diels, Notes Roy. Bot. Gard. Edinburgh 5: 260. 1912.

Raceme dense. Fl. Jul–Sep, fr. Aug–Oct.

• Mountain slopes, valleys; 1000–3000 m. Sichuan, Yunnan.

6b. *Fagopyrum leptopodum* var. *grossii* (H. Léveillé) L. A. Lauener & D. K. Ferguson, Notes Roy. Bot. Gard. Edinburgh 40: 195. 1982.

疏穗小野荞 shu sui xiao ye qiao

Polygonum grossii H. Léveillé, Repert. Spec. Nov. Regni Veg. 11: 297. 1912; *Fagopyrum grossii* (H. Léveillé) H. Gross; *P. leptopodum* Diels var. *grossii* (H. Léveillé) Samuelsson.

Raceme very lax. Fl. May–Oct, fr. Jun–Nov.

- Mountain slopes, valleys; 1000–3000 m. Sichuan, Yunnan.

7. *Fagopyrum gracilipes* (Hemsley) Dammer ex Diels, Bot. Jahrb. Syst. 29: 315. 1900.

细柄野荞 xi bing ye qiao

Polygonum gracilipes Hemsley, J. Linn. Soc., Bot. 26: 340. 1891; *Fagopyrum bonatii* (H. Léveillé) H. Gross; *F. odontopterum* H. Gross; *P. bonatii* H. Léveillé; *P. gracilipes* var. *odontopterum* (H. Gross) Samuelsson; *P. odontopterum* (H. Gross) H. W. Kung.

Herbs annual. Stems erect, 20–70(–80) cm tall, branched at base, striate, sparsely shortly strigose. Petiole 1–3 cm, shortly strigose; leaf blade ovate-triangular, 2–4 × 1.5–3 cm, both surfaces sparsely shortly strigose, base cordate or hastate, apex acuminate; ocrea 4–5 mm, membranous, shortly strigose, oblique, apex acute. Inflorescence axillary or terminal, racemose, interrupted, pendulous, very lax, 2–4 cm, slender; bracts green, funnel-shaped, margin membranous, each 2- or 3-flowered. Pedicels longer than bracts, slender, apex articulate. Perianth pinkish; tepals elliptic, unequal, 2–2.5 mm, with conspicuous green veins. Stamens included. Stigmas capitate. Achenes exceeding persistent perianth, shiny, broadly ovoid, ca. 3 mm, sharply trigonous, sometimes narrowly winged along angles. Fl. Jun–Oct, fr. Jul–Nov.

- Grassy slopes, wet valleys, field margins; 300–3400 m. S Gansu, Guizhou, Henan, Hubei, Shaanxi, ?Shanxi, Sichuan, Yunnan.

8. *Fagopyrum esculentum* Moench, Methodus, 290. 1794.

荞麦 qiao mai

Fagopyrum emarginatum (Roth) Meisner; ?*F. emarginatum* var. *kunawarensis* Meisner; *F. zuogongense* Q. F. Chen; *Polygonum emarginatum* Roth; *P. fagopyrum* Linnaeus.

Herbs annual. Stems green or red when mature, erect, 30–90 cm tall, branched above, glabrous or papillate on one side. Petiole 1.5–5 cm; leaf blade triangular, 2.5–7 × 2–5 cm, both surfaces papillate along veins, base cordate or nearly truncate, apex acuminate; ocrea caducous, ca. 5 mm, membranous, oblique, not ciliate. Inflorescence axillary or terminal, racemose or corymbose; peduncles 2–4 cm, papillate along one side; bracts green, ovate, 2.5–3 mm, margin membranous, each 3- or 5-flowered. Pedicels longer than bracts, not articulate. Perianth pink or white; tepals elliptic, 3–4 mm. Anthers pinkish. Styles heterostylous. Achenes exceeding persistent perianth, dark brown, opaque, ovoid, sharply trigonous, 5–6 mm, surfaces flat. Fl. May–Sep, fr. Jun–Oct. $2n = 16^*$, 32^* .

Probably native to China, but commonly cultivated and easily escaping [cultivated in Bhutan, Korea, Mongolia, Myanmar, Nepal, Russia, and Sikkim; also Australia, Europe, and North America].

9. *Fagopyrum lineare* (Samuelsson) Haraldson, Symb. Bot. Upsal. 22(2): 81. 1978.

线叶野荞 xian ye ye qiao

Polygonum lineare Samuelsson in Handel-Mazzetti, Symb. Sin. 7: 188. 1929.

Herbs annual. Stems erect, 30–40 cm tall, slender, branched at base, glabrous, striate. Petiole 2–4 mm; leaf blade linear, 1.5–3 cm × 2–5 mm, both surfaces glabrous, midvein promi-

nent abaxially, lateral veins inconspicuous, base hastate, margin entire, revolute, apex acute; ocrea 2–3 mm, membranous, oblique, apex acute. Inflorescence racemose, dense, several racemes aggregated and panicle-like; bracts purplish, oblique, ca. 1.5 mm, each 2- or 3-flowered. Pedicels longer than bracts, slender, apex articulate. Perianth white or pinkish; tepals elliptic, ca. 1.5 mm. Stamens included. Stigmas capitate. Achenes exceeding persistent perianth, brown, shiny, broadly ellipsoid, trigonous. Fl. Aug–Oct, fr. Sep–Nov.

- Forest margins, moist valleys; 1700–2200 m. Yunnan.

10. *Fagopyrum caudatum* (Samuelsson) A. J. Li, Fl. Reipubl. Popularis Sin. 25(1): 117. 1998.

疏穗野芥 shu sui ye qiao

Polygonum caudatum Samuelsson in Handel-Mazzetti, Symb. Sin. 7: 185. 1929.

Herbs annual. Stems 30–50 cm tall, branched at base; branches decumbent or ascending, slender, striate, internodes 1.5–3 cm, upper internodes ca. 8 cm. Petiole 0.8–1.2 cm; leaf blade triangular-sagittate or narrowly sagittate, 1–3 cm × 4–10 mm, both surfaces glabrous, midvein slightly prominent abaxially, basal lobes lanceolate, apex acute; ocrea yellow-brown, 4–5 mm, membranous, oblique, apex acute. Inflorescence terminal or axillary, racemose, very lax, interrupted, 3–6 cm, several racemes aggregated and panicle-like; bracts yellow-brown, 2–2.5 mm, membranous, oblique, apex acuminate, each 2- or 3-flowered. Pedicel 3–4 mm, slender, apex articulate. Perianth white or pinkish; tepals elliptic, ca. 1.5 mm, apex rounded, ac-crescent. Anthers elliptic. Stigmas capitate. Achenes exceeding persistent perianth, slightly shiny, broadly ovoid, trigonous, 3–4 mm. Fl. Jun–Oct, fr. Jul–Nov.

- Valleys, mountain slopes; 1000–2200 m. S Gansu, Sichuan, Yunnan.

