



**1. *Sanicula rubriflora*** F. Schmidt ex Maximowicz, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 9 [Prim. Fl. Amur.]: 123. 1859.

红花变豆菜 hong hua bian dou cai

Plants up to 1 m high. Taproot bearing fibrous or fleshy-fibrous roots. Stem erect, unbranched. Basal leaves numerous; petiole 13–55 cm; blade round-cordate or reniform-orbicular, 3.5–10 × 6.5–12 cm, palmately 3-parted, segments shallowly 2–3-lobed and setose-serrate; central segment obovate, base cuneate; lateral segments broad-obovate, usually parted to the middle or below. Bracts 2, foliaceous, 3-parted; rays 3; bracteoles 3–7, oblanceolate or linear, 7–35 × 3–6 mm, entire or 1–3-serrate; umbellules many-flowered. Staminate flowers 15–20 per umbellule, pedicellate; calyx teeth ovate-lanceolate, 1.2–1.8 × 0.6–1 mm, midrib conspicuous; petals pinkish to purple, base attenuate, apex notched. Fertile flowers 3–5 per umbellule, subsessile; calyx teeth and petals as in staminate flowers; styles about 2 times as long as the calyx teeth, recurved. Fruit ovoid or ovoid-globose, ca. 4.5 × 4 mm, densely covered with yellow, uncinat bristles; vittae 5. Fl. and fr. Jun–Sep.

Shady wet places; 200–500 m. Heilongjiang, Jilin, Liaoning, Nei Mongol [Japan, Korea, Mongolia, Russia (E Siberia)].

This species has reputed medicinal value.

**2. *Sanicula tuberculata*** Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 2: 431. 1867.

瘤果变豆菜 liu guo bian dou cai

Plants 12–15 cm high. Taproot bearing numerous dark brown fibrous roots. Stem erect, unbranched. Basal leaves several; petiole 5–15 cm; blade cordate to reniform, 2–3.5 × 4–7 cm, 3-parted, segments distally irregularly serrulate; central segment obovate, base cuneate, midrib elongate to tip, apex acute to subtruncate, usually shallowly 3-lobed; lateral segments broadly obovate or oblique-rounded, parted to middle or below. Bracts 2, opposite, foliaceous, 2–3-parted, lobes obovate, 2.5–3.5 × 1–2 cm, serrulate; rays 3, 0.5–3.5 cm; bracteoles 3–6, narrowly lanceolate or linear, 0.5–1.5 mm, entire or 1–2-serrate; umbellules many-flowered. Staminate flowers ca. 20 per umbellule, pedicels ca. 2 mm; calyx teeth ovate or ovate-lanceolate; petals purplish red. Fertile flowers 3 per umbellule, sessile; calyx teeth narrowly deltoid ca. 2 mm; petals ca. 2 × 1 mm; styles about 2 times as long as calyx teeth, recurved. Fruit ovoid-globose, ca. 4.5 × 4 mm, covered with tubercles and straight or slightly curved spinules; vittae 5. Fl. May.

Wet valleys, swamps, roadsides; 200–600 m. Heilongjiang [S Japan, Korea].

**3. *Sanicula hacquetioides*** Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 110. 1894.

鳞果变豆菜 lin guo bian dou cai

Plants 5–30 cm high. Roots fibrous, sometimes with long creeping rhizomes. Stem slender, unbranched. Basal leaves several; petiole 3–22 cm; blade orbicular or cordate-rounded, (1–) 1.5–3(–3.5) × 2–4(–7) cm, palmately deeply 3-parted, serrulate; central segment broadly obovate, base cuneate, apex subtrun-

cate, shallowly 3-lobed; lateral segments rhombic-obovate, 2-lobed. Inflorescence terminal; bracts 2–3, opposite, foliaceous, sessile, 1–1.5 × 0.5–1 cm, 3-parted, segments obovate or lanceolate; rays 3–4, subequal, 0.5–2.5 cm; bracteoles ca. 10, lanceolate or ovate-lanceolate; umbellules 10–15-flowered. Staminate flowers 9–14 per umbellule; pedicels ca. 2 mm; petals white or pinkish, obovate, base tapering, apex deeply notched. Fertile flowers 1–3 per umbellule, sessile; calyx teeth broadly ovate or obovate, ca. 0.5 mm; styles about 1.5 times as long as petals, recurved. Fruit ovoid-globose, 2–2.5 × 2.5–3 mm, covered with scales and tubercles, but never spinulose; vittae obscure. Fl. and fr. May–Sep.

• Forests, mountain slopes, grassy places on stream banks; 2600–3800 m. Guizhou, Sichuan, Xizang, Yunnan.

This species has reputed medicinal value.

**4. *Sanicula tienmuensis*** R. H. Shan & Constance, Univ. Calif. Publ. Bot. 25: 23. 1951.

天目变豆菜 tian mu bian dou cai

Plants 20–30 cm high. Rootstock short, dark brown, bearing numerous fleshy-fibrous roots. Stems 2–5, branched. Basal leaves several; petioles 7–22 cm; blade round-cordate to orbicular, 3–5.5 × 5–9 cm, palmately 3-parted, primary segments shallowly 2–3-lobed, sharply serrate; central segment obovate, 3–5.5 × 1.5–3 cm; lateral segments broadly obovate, usually parted to middle or near base. Peduncles 1–3-trichotomously branched, central branch usually with a simple umbel, lateral branches longer, with compound umbels; bracts 2, opposite, linear or ovate, 2–3-lobed; rays 3–5, unequal, 3–15 mm; bracteoles 7, ovate, ca. 1 × 0.5 mm; umbellules 3–7-flowered. Staminate flowers 2–6 per umbellule; petals white. Fertile flowers 1 per umbellule, sessile; calyx teeth ovate, ca. 0.6 × 0.5 mm; styles 2–3 mm, recurved. Fruit subglobose, ca. 2.5 × 2 mm, densely covered with scales and tubercles; vittae obscure. Fl. and fr. Apr–May.

• Woods in valleys, forest margins, wet places on stream banks, roadsides; 500–2300 m. W Sichuan, Zhejiang.

- 1a. Staminate flowers 5 or 6 per umbellule ..... 4a. var. *tienmuensis*
- 1b. Staminate flowers 2 or 3 per umbellule ..... 4b. var. *pauciflora*

**4a. *Sanicula tienmuensis* var. *tienmuensis***

天目变豆菜(原变种) tian mu bian dou cai (yuan bian zhong)

Staminate flowers 5 or 6 per umbellule.

• Forest margins, wet places on stream banks, roadsides; 500–800 m. Zhejiang (W Tianmu Shan, Tiantai Shan).

**4b. *Sanicula tienmuensis* var. *pauciflora*** R. H. Shan & F. T. Pu, Acta Phytotax. Sin. 27: 66. 1989.

疏花变豆菜 shu hua bian dou cai

Staminate flowers 2 or 3 per umbellule.

• Woods in valleys; ca. 2300 m. W Sichuan (Luding).

**5. *Sanicula serrata*** H. Wolff in Engler, Pflanzenr. 61(IV. 228):

56. 1913.

锯叶变豆菜 *ju ye bian dou cai*

Plants 8–30 cm high. Rootstock short bearing fibrous roots. Stem slender, erect, unbranched. Basal leaves several; petioles 5–15 cm; blade subrounded, round-cordate or subpentagonal, 1.5–3 × 3–6 cm, palmately 3–5-parted; central segment broadly obovate or cuneate-obovate, 1.5–3 × 1–2.5 cm, base attenuate, apex shallowly 3-lobed, margin irregularly sharply serrate. Cauline leaves sessile or petiolate, palmately 3–5-parted. Bracts 2, opposite, long-ovate or ovate-lanceolate; rays 3–5 mm; bracteoles small, linear; umbellules 6–8-flowered. Staminate flowers 5–7 per umbellule; pedicels 1.5–2.5 mm; petals white or pinkish, broadly obovate, apex notched. Fertile flowers 1 or 2 per umbellule, sessile; calyx teeth ovate, ca. 0.5 × 0.3 mm; styles 2–2.5 mm, recurved. Fruit ovoid or ovoid-globose, ca. 1.2 × 1 mm, proximal part covered with scales, distal part covered with slightly uncinat bristles, bristles pale yellow or purplish red; vittae obscure. Fl. and fr. Mar–Jun.

• Mixed forests on mountain slopes; 1300–3200 m. W Hubei, E Qinghai, Sichuan, SE Xizang, NW Yunnan.

**6. *Sanicula elongata*** K. T. Fu in R. H. Shan & M. L. Sheh, Fl. Reipubl. Popularis Sin. 55(1): 297. 1979.

长序变豆菜 *chang xu bian dou cai*

Plants 35–40 cm high. Fibrous roots brown and numerous. Stems 2 or 3, erect. Basal leaves several; petioles 4–15 cm; leaf blade subrounded, round-cordate or pentagonal, 4–22 cm, palmately 3–5-parted, margin sharply irregular-serrate; central segment cuneate-obovate or ovate, 1.5–7 × 1.2–4.5 cm; lateral segments parted nearly to base, base cuneate. Cauline leaves sessile or short-petiolate; blade palmately 3–5-parted. Peduncles 2–3-trichotomously branched, slender and elongate; bracts small, long-ovate, ca. 0.5 mm; rays 0.8–2 cm; umbellules 4–6-flowered. Staminate flowers 3–5 per umbellule; pedicels ca. 3 mm; petals white, broadly obovate. Fertile flowers 1 per umbellule, sessile; calyx teeth narrow-ovate, ca. 0.3 mm; styles 2–2.5 mm, recurved. Fruit ovoid, ca. 3 × 2.5 mm, densely covered with pale yellow scales; vittae obscure. Fl. May, fr. Jun–Jul.

• Mixed forests in valleys; 1200–1600 m. Gansu (Tianshui), Shaanxi (Meixian).

**7. *Sanicula caerulescens*** Franchet, Bull. Soc. Philom. Paris, sér. 8, 6: 109. 1894.

天蓝变豆菜 *tian lan bian dou cai*

*Sanicula dielsiana* H. Wolff; *S. erythrophylla* Bobrov; *S. stapfiana* H. Wolff.

Plants to 40 cm high. Taproot slender, bearing fibrous roots. Stems 2–7, erect. Basal leaves many; petioles purplish tinged, 5–17 cm; blade cordate-ovate, 3–7 × 4–10 cm, palmately 3–5-parted or trifoliolate; central segment ovate, 3–7 × 1.5–4.5 cm, base cuneate, apex shallowly 3-lobed; lateral segments oblique-ovate, usually 2-lobed, abaxially purplish red or tawny, margin crenate with spinulose bristles. Inflorescence subracemose, sometimes several umbels in fascicles; bracts ovate-lanceolate, 1–2 mm; rays 2–7(–12), 0.5–1 cm; bracteoles

5–8, linear ca. 1 × 0.5 mm; umbellules 5–7-flowered. Staminate flowers 4–6 per umbellule, pedicels 2–3 mm; petals white, pale blue to bluish purple. Fertile flowers 1–3 per umbellule, sessile; calyx teeth linear-lanceolate, acute; styles 2.5–3 mm, recurved. Fruit globose or ellipsoid, ca. 2 mm, covered with short and straight spinous-bristles usually fused at the base forming a thin tier; vittae 5, under the ribs; mericarp flattened dorsally, orbicular in cross section. Fl. and fr. Mar–Jul.

• Mixed forests or bamboo forests in wet shady valleys; 800–1600 m. Chongqing (Nanchuan), SC Sichuan (Emei Shan), Yunnan.

This species has reputed medicinal value.

**8. *Sanicula petagnioides*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25: 103. 1908.

台湾变豆菜 *tai wan bian dou cai*

Plants 10–15 cm high. Rootstock short, woody, bearing thinly fibrous roots, sometimes with rhizome or stolons. Stems 1–3, very slender. Basal leaves few; petioles 3–7 cm; blade reniform-orbicular or cordate-pentagonal, 1–2 × 2–3 cm, palmately 3–5-parted or foliolate; central segment broadly obovate or rhombic-obovate, short-petiolate, apex shallowly 3-lobed, sharply serrate, teeth mucronate to spinulose; lateral segments parted to base, trilobulate or entire, base cuneate. Cauline leaves reduced, subsessile, often 3-lobed. Inflorescence terminal, dichotomously branched, umbels 4–8; bracts linear, ca. 1 × 0.5 mm; rays 3–5 mm; umbellules 5–6-flowered. Staminate flowers 4–5 per umbellule, pedicels 1–2 mm; petals white. Fertile flowers 1 per umbellule, sessile; calyx teeth linear-lanceolate, ca. 1 × 0.3 mm; styles ca. 2 mm. Fruit subglobose, 1.5–2 × 1–1.5 mm; ribs bearing spiny crests, furrows smooth; vittae obscure. Fl. and fr. Mar–Oct.

• Forests on mountain slopes; 2500–2700 m. Taiwan.

**9. *Sanicula lamelligera*** Hance, J. Bot. 16: 11. 1878.

薄片变豆菜 *bao pian bian dou cai*

*Sanicula ichangensis* H. Wolff; *S. orthacantha* S. Moore var. *longispina* H. Wolff; *S. satsumana* Maximowicz; *S. yunnanensis* Franchet.

Plants 13–30 cm high. Rootstock short, tuberlike, woody, bearing a fascicle of brown fibrous roots. Stems 2–7, slender, erect. Basal leaves several; petioles 4–18 cm; blade round-cordate, 2–6 × 3–9 cm, palmately 3-parted; central segment cuneate-obovate or rhombic, 2–6 × 1–3 cm, distally 3-lobed, base cuneate; lateral segments oblique-ovate often shallowly 2-lobed; all segments abaxially pale green or purplish red. Upper leaves very small, 3-lobed or undivided, linear-lanceolate. Inflorescence 2–4-dichotomously or trichotomously branched, sometimes subcorymbose; bracts small, linear, 1.5–3 mm; rays 3–7, 2–10 mm; bracteoles 4–5, linear; umbellules 5–6-flowered. Staminate flowers 4–5 per umbellule; petals white, pinkish or pale bluish purple. Fertile flowers 1 per umbellule; calyx teeth linear, ca. 1 mm; styles ca. 1.5 mm, recurved. Fruit long-ovoid, ca. 2.5 × 2 mm, covered with erose lamellae, becoming short and straight spines when mature, never uncinat, fused at the base forming a thin tier; vittae 5. Fl. and fr. Apr–Nov.

Forests, mountain slopes, wet valleys; 500–2000 m. Anhui, Guangdong, Guangxi, Guizhou, Hubei, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [S Japan].

**10. *Sanicula orthacantha*** S. Moore, J. Bot. 13: 227. 1875.

野鹅脚板 *ye e jiao ban*

Plants 8–35(–50) cm high. Rootstock short, tuberlike, woody, bearing a fascicle of thinly fibrous roots. Stems 1–6, erect. Basal leaves several; petioles 5–26 cm; blade round-cordate or cordate-pentagonal, 2–7 × 3.5–7 cm, palmately 3-parted or foliolate; central segment cuneate-obovate or rhombic-cuneate, 2–7 × 1–4 cm; lateral segments oblique-obovate, usually parted to base, base cuneate; all segments abaxially pale green and pale purplish red along veins, distally shallowly 2–3-lobed, serrate, teeth mucronate to spinulose. Cauline leaves small, petiolate, 3-lobed. Inflorescence 2–3-branched; umbels 3–8; bracts 3–5, 1–2.5 mm, unequal; rays 3–8 mm; bracteoles 5, linear to subulate; umbellules 6 or 7-flowered. Staminate flowers 5(or 6) per umbellule, pedicels 2–3.5 mm; petals white, pale blue or purplish red, obovate, 1–1.8 × 0.8–1.2 mm. Fertile flowers 1 per umbellule, sessile; calyx teeth narrow-linear, 0.5–1 mm; styles 3.5–4 mm, recurved. Fruit ovoid, 2.5–3 × 2–2.5 mm, covered with short, straight spines; vittae obscure. Fl. and fr. Apr–Sep.

Forests, mountain summits, stream banks, roadsides on mountain slopes; 200–3200 m. Anhui, Chongqing, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang [Cambodia, India, Laos, Vietnam].

- 1a. Rhizome long ..... 10c. var. *stolonifera*
- 1b. Rhizome short.
  - 2a. Flowers 5 per umbellule; fruit ribs and furrows spinulose ..... 10a. var. *orthacantha*
  - 2b. Flowers 6 or 7 per umbellule; fruit ribs erose-spinulose, furrows tuberculate ..... 10b. var. *brevispina*

**10a. *Sanicula orthacantha* var. *orthacantha***

野鹅脚板(原变种) *ye e jiao ban* (yuan bian zhong)

*Sanicula costata* H. Wolff; *S. orthacantha* var. *costata* (H. Wolff) K. T. Fu; *S. orthacantha* var. *pumila* H. de Boissieu; *S. henryi* H. Wolff; *S. nanchuanensis* R. H. Shan.

Roots fibrous, without rhizome. Inflorescence rather short; usually 5 flowers per umbellule. Fruit spines straight, covering ribs and furrows.

Forests in valleys, stream banks; 200–3200 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang [Cambodia, India, Laos, Vietnam].

This variety is used medicinally in Sichuan and Yunnan.

**10b. *Sanicula orthacantha* var. *brevispina*** H. de Boissieu, Bull. Soc. Bot. France 53: 421. 1906.

短刺鹅脚板 *duan ci e jiao ban*

Roots fibrous, without rhizome. Inflorescence elongate, loose and spreading; 6 or 7 flowers per umbellule. Fruit erose-spinose on the ribs, tuberculate in the furrows.

• Forests, roadsides on mountain slopes; 1700–2400 m. Chongqing (Jinfo Shan), SC Sichuan (Emei Shan).

This variety has reputed medicinal value.

**10c. *Sanicula orthacantha* var. *stolonifera*** R. H. Shan & S. L. Liou in R. H. Shan & M. L. Sheh, Fl. Reipubl. Popularis Sin. 55(1): 297. 1979.

走茎鹅脚板 *zou jing e jiao ban*

Rhizome long, with distinct nodes.

• Mountain summits; 2300–2500 m. SC Sichuan (Emei Shan).

**11. *Sanicula rugulosa*** Diels, Bot. Jahrb. Syst. 29: 491. 1901.

皱叶变豆菜 *zhou ye bian dou cai*

Plants 25–40(–75) cm high. Rootstock short and stout, roots fascicled, fibrous, somewhat fleshy. Stem erect, branched above. Basal leaves several; petioles 6–18 cm, sheaths scarious; blade orbicular, reniform-rounded or broadly cordate, 2–3 × 3–5.5 cm, 3-parted; central segment broadly obovate, distally shallowly 3-lobed, base cuneate, apex obtuse-rounded; lateral segments rhombic-rounded or broadly obovate, 2–3-lobed; all segments abaxially pale purplish red, crenate, primary veins 5, prominent on both surfaces. Cauline leaves reniform-rounded, 3-parted, primary veins 3. Inflorescence 2–3-dichotomously branched; bracts 1–2, 3-parted, segments lanceolate, serrate; rays 0.7–2 cm; bracteoles linear; umbellules 5–7-flowered. Staminate flowers 2 or 3 per umbellule, pedicels ca. 2 mm; petals white, obovate, apex inflexed. Fertile flowers 2 or 3 per umbellule, sessile; calyx teeth narrowly lanceolate, ca. 1 mm; styles longer than the petals, recurved. Fruit ellipsoid, ca. 1.5 × 1 mm, densely covered with uncinat bristles when mature; vittae obscure. Fl. and fr. Jun.

• Grassy places or rock crevices on mountain slopes; 800–2500 m. Chongqing (Jinfo Shan), Xizang.

**12. *Sanicula astantifolia*** H. Wolff, Repert. Spec. Nov. Regni Veg. 27: 308. 1930.

川滇变豆菜 *chuan dian bian dou cai*

*Sanicula potaninii* Bobrov.

Plants 20–70 cm high. Taproot short and stout, roots numerous, fibrous. Stem erect, 2–4-times-dichotomously branched above. Basal leaves several; petioles 5–16(–30) cm; blade round-reniform or broadly ovate-cordate, 2–8 × 2.5–14 cm, palmately deeply 3-parted, primary veins 3–5, prominent on both surfaces, abaxially pale green, serrate or irregularly doubly spinose-serrate; central segment obovate or rhombic; lateral segments oblique-reniform or ovate-lanceolate, often 2-lobed. Upper leaves small, 3-parted, segments ovate-lanceolate. Inflorescence cymose branched; bracts 2, linear-lanceolate, 3–15 mm, 3-parted or entire; rays 0.5–1 cm; bracteoles 7–10, 1–1.5 × 0.5–1 mm, midrib distinct; umbellules ca. 10-flowered. Staminate flowers 6–8 per umbellule, pedicels short; petals greenish white or pinkish. Fertile flowers 2 or 3 per umbellule, sessile; calyx teeth linear-lanceolate, ca. 1 × 0.5 mm; styles ca. 2 mm, recurved. Fruit obovate or subglobose, proximal end with short bristles, distal end with uncinat bristles, bristles yel-

low or purple-red; vittae obscure. Fl. and fr. Jul–Oct.

• Stream banks in mixed forests, grassy places on mountain slopes; 1900–3000 m. SW Sichuan, S Xizang (Yadong), Yunnan.

This species is used medicinally in E Yunnan.

**13. *Sanicula elata*** Buchanan-Hamilton ex D. Don, Prodr. Fl. Nepal. 183. 1825.

软雀花 ruan que hua

*Sanicula europaea* Linnaeus subsp. *elata* (Buchanan-Hamilton ex D. Don) H. de Boissieu; *S. hermaphrodita* Buchanan-Hamilton ex D. Don; *S. montana* Reinwardt ex Blume.

Plants 20–80 cm high. Stem erect, branched above, upper parts purplish brown-tinged. Basal leaves several; petioles 5–25 cm; blade broadly ovate-cordate or subpentagonal, 3–7 × 4–10 cm, palmately 3(–5)-parted, irregularly serrate, teeth mucronate; central segment obovate or rhombic, shallowly 2–3-parted, base cuneate, apex acuminate; lateral segments oblique-ovate, often 2-parted. Cauline leaves short-petiolate; blade 3(–5)-parted, upper leaves greatly reduced. Inflorescence cymose branched, terminal branch often very short, lateral branches elongate; bracts 2, lanceolate; rays ca. 5 mm, unequal; bracteoles 7–10, linear; umbellules 4–8-flowered. Staminate flowers 1–4 per umbellule, pedicels 1–1.5 mm; petals white, pale yellow or pale blue. Fertile flowers 3(or 4) per umbellule; calyx teeth shorter than bristles, persistent; styles 2-times longer than calyx teeth, recurved. Fruit ovoid-globose, 2.5–3 × 2–2.5 mm, densely covered with uncinat bristles; vittae 5, small, commissural vittae 2, larger. Fl. and fr. May–Oct.

Forests, stream banks; 800–3200 m. Guangxi, Sichuan, Xizang, Yunnan [Bhutan, N India, Indonesia, Japan, Nepal, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Vietnam; E Africa].

The species has reputed medicinal value. It is a widespread and very variable species, and the leaf dissection tends to intergrade with that of *Sanicula astrantiifolia* in E Himalayan material.

**14. *Sanicula chinensis*** Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 2: 106. 1835.

变豆菜 bian dou cai

*Sanicula europaea* Linnaeus subsp. *chinensis* (Bunge) Hultén; *S. europaea* var. *chinensis* (Bunge) Diels.

Plants up to 1 m high. Stem erect, branched above. Basal leaves few; petioles 7–30 cm, sheaths scarious; blade suborbicular or round-reniform, 3–5-parted, abaxially pale green, irregularly doubly serrate, teeth mucronate; central segment obovate, 3–10 × 4–13 cm, base cuneate; lateral segments divided to near base. Cauline leaves reduced upward, subsessile; blade 3-parted. Inflorescence usually trichotomously branched, terminal branch short, the lateral branches elongate; bracts foliaceous, 3-lobed; bracteoles 8–10, linear, 1.5–2 × ca. 1 mm; umbellules 6–10-flowered. Staminate flowers 3–7 per umbellule; pedicels 1–1.5 mm; petals white, obovate. Fertile flowers 3 or 4 per umbellule, sessile, slightly longer than the staminate; calyx teeth linear, ca. 1.2 × 0.5 mm; style nearly equaling calyx teeth. Fruit ovoid-globose, 4–5 × 3–4 mm, calyx teeth rostrate, persistent, bristles uncinat above, dilated at base; vittae 5, moderate, commissural vittae 2, larger. Fl. and fr. Apr–Oct.

Mixed forests, stream banks, roadsides on shady slopes; 200–2300 m. Widely distributed in China [N Japan, Korea, Russia (E Siberia)].

This species has reputed medicinal value.

**15. *Sanicula giraldii*** H. Wolff in Engler, Pflanzenr. 61(IV. 228): 60. 1913.

首阳变豆菜 shou yang bian dou cai

Plants 30–60 cm high. Stems 1–4, erect, branched above. Basal leaves numerous; petioles 5–25 cm; blade reniform-orbicular or round-cordate, 2–6 × 3–10 cm, palmately 3–5-parted, irregularly doubly serrate, teeth acute or mucronate; central segment obovate or ovate-lanceolate, base cuneate, apex shallowly 3-lobed; lateral segments 2-parted. Cauline leaves palmately 3-parted, reduced above. Inflorescence 2–4-trichotomously branched, all branches elongate; bracts foliaceous, entire or 2–3-lobed; rays 2–4, 0.5–2 cm; bracteoles small, 1–1.2 × 0.5–0.7 mm; umbellules 6–7-flowered. Staminate flowers 3–5 per umbellule, petals white, broadly obovate. Fertile flowers 1–3 per umbellule; calyx teeth ovate, ca. 0.5 × 0.3 mm; style 2–3-times longer than calyx teeth, recurved. Fruit ovoid to broad-ovoid, 2–2.5 × 2.5–3 mm, densely covered with yellow or purplish red uncinat bristles; vittae obscure. Fl. and fr. May–Sep.

• Shady woods, forests and grassy places on mountain slopes, stream banks, roadsides; 1300–3400 m. Chongqing, Gansu, Hebei, Henan, Qinghai, Shaanxi, Shanxi, N and W Sichuan, S Xizang.

- 1a. Fertile flowers usually 3 per umbellule; calyx teeth small, ca. 0.5 × 0.3 mm ..... 15a. var. *giraldii*  
1b. Fertile flowers usually few, 1–3 per umbellule; calyx teeth larger, ca. 1 × 0.7 mm ..... 15b. var. *ovicalycina*

**15a. *Sanicula giraldii* var. *giraldii***

首阳变豆菜(原变种) shou yang bian dou cai (yuan bian zhong)

Fertile flowers usually 3 per umbellule. Calyx teeth ovate, ca. 0.5 × 0.3 mm. Fruit broadly ovoid, 2–2.5 × 2.5–3 mm.

• Forests on mountain slopes, stream banks, roadsides; 1500–3400 m. Gansu, Hebei, Henan, Qinghai, Shaanxi, Shanxi, N and W Sichuan, S Xizang.

**15b. *Sanicula giraldii* var. *ovicalycina*** R. H. Shan & S. L. Liou in R. H. Sheh & M. L. Shan, Fl. Reipubl. Popularis Sin. 55(1): 297. 1979.

卵萼变豆菜 luan e bian dou cai

*Sanicula subgiraldii* R. H. Shan

Fertile flowers 1–3 in each umbellule. Calyx teeth broadly ovate, ca. 1 × 0.7 mm. Fruit oblong, 2.5–3 × 3–3.5 mm.

• Shady woods, grassy places on mountain slopes; 1300–1600 m. Chongqing, Shaanxi.

**16. *Sanicula pengshuiensis*** M. L. Sheh & Z. Y. Liu, Acta Phytotax. Sin. 29: 469. 1991.

彭水变豆菜 peng shui bian dou cai

Plant 20–50 cm high. Rootstock short and thin, roots

fibrous. Stem erect. Basal leaves numerous; petioles 20–28 cm, purplish tinged, sheaths scarious-margined; blade suborbicular or broadly-ovate, palmately 3-parted, 5–10 × 5–9 cm, shallowly dentate, teeth spinulose; central segment long-elliptic or obovate-elliptic, base cuneate, apex acute, 5–10 × 2.5–3.5 cm; lateral segments oblique-elliptic. Inflorescence cymose branched, peduncles elongate; bracts 5 or 6, small, 1–1.5 × ca. 0.5 mm; rays 5–11, subequal, 2.6–6 mm; bracteoles 5, linear, 0.5–1 mm; umbellules 5–6-flowered. Staminate flowers 4 or 5 per umbellule, pedicels ca. 2 mm. Fertile flower 1 per umbellule, calyx teeth linear, ca. 0.8 mm; styles 3.5–4-times longer than the calyx teeth. Fruit ellipsoid, 2–2.5 × 1–1.7 mm, bristles in regular rows in furrows, ribs glabrous, stout and prominent; vittae 1 under each rib, 2 on commissure. Fl. and fr. Apr–Sep.

- Stream banks, fields; ca. 500 m. Chongqing (Pengshui).

**17. *Sanicula oviformis*** X. T. Liu & Z. Y. Liu, Acta Phytotax. Sin. 29: 471. 1991.

卵叶变豆菜 luan ye bian dou cai

Plants 12–25 cm high. Rootstock stout, short; roots numerous, thin-fibrous, usually bearing many tubercles. Stems 1–3, slender and decumbent, 20–40 cm. Basal leaves numerous; petioles 6–22 cm, sheaths scarious; blade broadly deltoid ovate, palmately 3-parted, 2–4 × 2.5–5 cm, abaxially deeply purplish red, reticulation conspicuous, margins narrowly rolled inward, 2–3-shallowly-crenate, teeth apiculate; central segment obovate or obovate-rounded, 1.2–2.5 × 1–2 cm, thin-leathery, base cuneate, apex obtuse; lateral segments oblique-ovate, base truncate. Inflorescence racemose branched or terminal, unbranched; bracts 3–5, subulate, unequal, rays 3, ca. 7 mm; bracteoles 5, subulate; umbellules ca. 6-flowered. Staminate flowers 5 per umbellule, pedicels ca. 2.5 mm. Fertile flower 1 per umbellule; calyx teeth linear-lanceolate, ca. 0.5 mm; styles ca. 2.5 mm. Fruit ovoid, ca. 2 × 1 mm, densely short and straight-spinulose; ribs prominent; vittae 1 under each rib, 2 on commissure. Fl. and fr. May–Jul.

- Moist grassy places; 600–700 m. Chongqing (Nanchuan).

