

## 82. CLITORIA Linnaeus, Sp. Pl. 2: 753. 1753.

蝶豆属 die dou shu

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Perennial herbs or subshrubs, twining. Leaves pinnately 3–7-foliolate; stipules and stipels persistent. Inflorescence axillary, 1- or 2-flowered. Flowers large and beautiful; bracts paired, stipulelike, persistent; bracteoles similar to bracts or slightly larger, or sometimes leaflike. Calyx membranous, tubular, 5-lobed; lobes lanceolate or triangular, equal to or shorter than tube. Corolla longer than calyx; standard large, almost applanate or sometimes cucullate, abaxially minutely hairy, base clawed, without auricles; wings and keels much shorter. Stamens diadelphous; vexillary stamen free, or ± connate; anthers uniform. Ovary with stipe, with sheathing disk at base; ovules many; style complanate, long, curved, interior with beard. Legume stipitate, linear or linear-oblong, dehiscent, compressed or inflated, filled with soft tissue but not septate. Seeds subglobose or ellipsoid, compressed; hilum small, central or subcentral, strophiole absent.

About 70 species: tropics and subtropics of the world; five species (one introduced) in China.

- 1a. Leaves 5–7-foliolate; bracteoles almost circular, membranous ..... 1. *C. ternatea*
- 1b. Leaves 3-foliolate; bracteoles ovate-lanceolate or elliptic, leathery.
  - 2a. Erect or almost erect shrublets; petiole 0.5–2.5 cm.
    - 3a. Lateral veins of leaflet 5–7 pairs; legume inflated, each valve with a raised midrib; corolla light purple ... 2. *C. laurifolia*
    - 3b. Lateral veins of leaflet 9–12 pairs; legume compressed, without ribs; corolla white or light yellow ..... 3. *C. hanceana*
  - 2b. Climbing shrublets or vines; petiole (1.5–)2–11.5 cm.
    - 4a. Corolla light blue; legume without ribs ..... 4. *C. mariana*
    - 4b. Corolla often absent, when present white; legumes longitudinally ribbed ..... 5. *C. falcata*

1. *Clitoria ternatea* Linnaeus, Sp. Pl. 2: 753. 1753.

?*Clitoria cajanifolia* Benth.

蝶豆 die dou

Herbs. Stems twining, slender, densely deciduous adpressed shortly villous. Leaves 2.5–5 cm, pinnately 5–7-foliolate, usually 5-foliolate; stipules small, linear, 2–5 mm; petiole 1.5–3 cm; stipels small, bristlelike; petiolules 1–2 mm; leaflets broadly elliptic or almost ovate, 2.5–5 × 1.5–3.5 cm, thinly papery or almost membranous, adpressed shortly villous or sometimes glabrous on both surfaces, lateral veins 4 or 5 pairs, base obtuse, apex obtuse, slightly emarginate, usually with mucro. Flowers large, solitary in axil; bracteoles green, small, suborbicular or obovate, membranous, with obvious reticulate veins. Calyx membranous, 1.5–2 cm, 5-lobed; lobes lanceolate, less than 1/2 of tube, apex acuminate. Corolla sky blue, pink, or white, to 5.5 cm; standard faintly white or orange in middle, broadly obovate, ca. 3 cm, base shortly clawed; wings and keels much shorter than standard, both clawed; wings obovate-oblong; keels elliptic. Ovary villous. Legume brown, linear-oblong, 5–11 × 0.7–1 cm, compressed, with long beak. Seeds 6–10, black, oblong, ca. 0.6 × 0.4 cm, with obvious strophiole. Fl. and fr. Jun–Nov.  $2n = (14, 15), 16$ .

Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan, Zhejiang [Bangladesh, Bhutan, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand, Vietnam; Africa, Americas, SW Asia, Australia, Indian Ocean islands, Pacific islands].

This species is grown as a green manure and as an ornamental. It is very widely distributed throughout the tropics such that the native distribution is now obscure.

2. *Clitoria laurifolia* Poir., Encycl., Suppl. 2: 301. 1811.

棱荚蝶豆 leng jia die dou

Shrublets, erect or almost erect, 0.8–1 m tall. Branchlets subterete, densely pubescent, glabrescent. Leaves pinnately 3-foliolate; stipules ovate to ovate-lanceolate, pubescent; petiole 2–7 mm, pubescent; stipels small, bristlelike; petiolules 2–3 mm, pubescent; leaflets obovate-oblong to oblong, 4.5–7 × 1.5–2.8 cm, almost leathery, abaxially densely adpressed pubescent, adaxially glabrous, lateral veins 5–7 pairs, obvious, reticulate veins dense, visible, base rounded or cuneate, apex rounded, slightly emarginate. Raceme axillary, 2.5–5 cm, sparsely shortly villous; peduncle ca. 3 cm; bracts small, ovate. Flowers large, ca. 4 cm, usually paired; bracteoles 2, elliptic, 7–8 mm. Calyx membranous, 5-lobed; lobes ovate, much shorter than tube. Corolla light purple, 2 × or more as long as calyx; standard almost orbicular, base clawed, apex emarginate; wings rhomboid, base long clawed with small auricles; keels semicircular, base long clawed. Legume brown or light brown, linear-ellipsoid, 3–4 cm, inflated, with short beak, near ventral suture with 1 longitudinal rib at each side, clothed with micro-villous hairs. Seed dark brown, suborbicular. Fl. Jul, fr. Aug–Dec.

Below 600 m. Guangdong [India, Indonesia, Malaysia, Myanmar, Singapore, Sri Lanka, Thailand, Vietnam; Africa, Americas].

This species has been grown as a green manure and as an ecological plant for soil restoration.

3. *Clitoria hanceana* Hemsley, J. Linn. Soc., Bot. 23: 187. 1887.

广东蝶豆 guang dong die dou

Shrublets, with several succulent fusiform roots. Stems cylindrical, slightly zigzag, internode short, pubescent. Leaves pinnately 3-foliolate; stipules ovate or ovate-lanceolate to oblong, ca. 1 cm, pubescent; petiole 0.5–2.5 cm, villous; stipels

linear-lanceolate, 5–6 mm; petiolules ca. 2 mm, villous; leaflets subequal to each other or terminal larger, oblong, 6.5–14 × 2.8–5.5 cm, papery or almost leathery, adaxially glabrous, lateral veins 9–12 pairs, base obtuse or almost cuneate, apex acute or sometimes rounded, usually with mucro, villous. Raceme axillary, 1–2.5 cm, (1 or) 2- or 3-flowered, villous; peduncle 0.5–2.5 cm; bracts ovate, 3–5 mm. Flowers ca. 3 cm; bracteoles ovate-lanceolate, 4–5 mm. Calyx membranous, ca. 2 cm, 5-lobed; lobes lanceolate, subequal to tube, hairy, apex acuminate. Corolla white or pale yellow, ca. 3 cm; standard obovate, densely pubescent; wings and keels small, with claws. Ovary with short stipe, hairy, many ovuled. Legume light brown, linear-oblong, 3.5–6 × ca. 0.6 cm, glabrous or pubescent, apex long beaked, shortly stipitate. Seeds 2–7, black, elliptic, ca. 4 × 3 mm. Fl. Apr–Oct.

Deserts, wastelands on slopes, roadsides. Guangdong, Guangxi [Cambodia, Laos, Thailand, Vietnam].

Hance (J. Bot. 16: 9. 1878) applied the name “*Clitoria macrophylla* Wallich” to this species, but that name is a nomen nudum and was therefore not validly published.

This species is used medicinally.

#### 4. *Clitoria mariana* Linnaeus, Sp. Pl. 2: 753. 1753.

三叶蝶豆 san ye die dou

Herbs, 45–60 cm tall. Stems lianescent, sparsely villous. Leaves pinnately 3-foliolate; stipules ovate-lanceolate or ovate-triangular, 5–13 mm; petiole 2.8–11.5 cm; stipels linear or linear-lanceolate, 3–7 mm; petiolules short, 1–2 mm; leaflets elliptic to ovate-elliptic, 2.5–11 × 1.5–5 cm, thinly papery, abaxially sparsely villous or sometimes glabrous, adaxially glabrous, lateral veins 7–11 pairs, obviously convex abaxially, base rounded, apex obtuse or acute, rarely acuminate, with mucro. Peduncle with 4 or 5 or more bracts at base; bracts ovate to ovate-lanceolate, 2–4 mm. Flowers axillary, usually solitary, 2.5–5 cm; bracteoles similar to bracts but larger, 4–8 mm. Calyx large, tubular, membranous, usually glabrous, 5-lobed; lobes lanceolate to ovate-lanceolate, ca. 1/4 as long as to equal to tube, apex acuminate. Corolla light blue or purple, 2.5–5 cm; standard broadly elliptic or almost obovate, base acuminate; wings and keels similar and subequal, much shorter than standard, with slender claws. Ovary and style villous. Legume linear-oblong, 2.5–10 × 0.5–0.8 cm, apex beaked, both ventral and dorsal sutures with ribs. Seeds 2 to many, dark brown, almost cylindrical or reniform. Fl. May–Sep, fr. Sep–Jan.

Shrubs, roadsides, forests; 100–2000 m. Guangxi, Yunnan [Bhutan, India, Laos, Myanmar, Thailand, Vietnam; North America].

#### 5. *Clitoria falcata* Lamarck, Encycl. 2: 51. 1786.

镰刀荚蝶豆 lian dao jia die dou

Herbs. Stems twining, ca. 2 mm thick, pubescent. Leaves imparipinnately 3-foliolate; stipules broadly ovate, 3–3.5 × ca. 2 mm, pubescent; petiole (1.5–)2–5 cm, pubescent; stipels per-

sistent; petiolules 1–2.5 mm; leaflets oblong-elliptic to ovate, (1.8–)2–5.5(–7.5) × (0.8–)2.5–3.5 cm, abaxially pale green and densely pubescent, adaxially dark green and glabrous, lateral veins 6 or 7 pairs, base rounded, apex obtuse or slightly emarginate, mucronate. Inflorescence axillary, 1–4-flowered; peduncle 2–15 cm; bracts ca. 2 mm; bracteoles 7–17 mm. Flowers often cleistogamous. Calyx tube 3–4 mm; lobes narrowly lanceolate, 4–5 mm. Corolla often not developed [when present white, 3–4(–5) cm; standard very finely puberulent appearing glabrous; staminal sheath 20–40 mm]. Legume slightly curved, 3–4 × 0.8–1.1 cm, compressed, usually longitudinally ribbed, minutely puberulent, apex aristate. Seeds 4 or 5, dark reddish brown, ellipsoid to subglobose, ca. 3[–4] × 2 mm.

Among bushes, in open grasslands. Taiwan [native to Central and South America and West Indies; introduced elsewhere].

*Clitoria falcata* has been misidentified as *C. rubiginosa* Persoon. The collections from Taiwan are cleistogamous and lack any corolla, so the description of the corolla is taken from Fantz (Vulpia 4: 43. 2005).

