

1. MITREOLA Linnaeus, Opera Varia 214. 1758.

度量草属 du liang cao shu

Cynoctonum J. F. Gmelin.

Herbs, annual or perennial, erect to creeping, branched or not. Branches terete to 4-angled. Leaves opposite, sessile or petiolate; interpetiolar stipules well developed to reduced to a transverse ridge. Inflorescences terminal and/or axillary, usually long pedunculate, 2- or more branched, branches scorpioid; bracts small, sepal-like. Flowers sessile or short pedicellate, 5-merous. Calyx usually parted almost to base, lobes membranous at margin. Corolla urceolate to campanulate, tube as long as to longer than lobes, lobes imbricate in bud. Stamens inserted at base to middle of corolla tube, included; filaments ± as long as anthers to shorter; anthers usually ovate, introrse, 2-locular. Ovary semi-inferior, 2-locular, with many ovules per locule. Styles cleft at base; stigma capitate or 2-cleft. Capsule 2-horned or 2-lobed, with both carpels dehiscent along ventral suture; horns or lobes erect, divergent, or curved inward, terminating by style halves; many seeded. Seeds small, ± subglobose to ellipsoid; seed coat smooth, reticulate, or verrucose; endosperm fleshy; embryo linear.

Seven species: Africa, America, Asia, Pacific Islands; four species in China.

- 1a. Stems terete; internodes villous; interpetiolar stipules reduced to a transverse ridge 1. *M. petiolatoides*
- 1b. Stems 4-angled or nearly so when young; internodes glabrous; interpetiolar stipules triangular, ligulate or ocreate.
 - 2a. Annuals; stem erect; corolla tube ± as long as lobes; stamens inserted at base or nearly at base of corolla tube; capsule horns usually curved inward 2. *M. petiolata*
 - 2b. Perennials; stem creeping; corolla tube longer than lobes; stamens inserted at middle to nearly at corolla mouth; capsule horns or lobes erect.
 - 3a. Leaf blade and petiole glabrous; stipules with glandular hairs at margin; peduncles 1–2.5 cm 3. *M. reticulata*
 - 3b. Leaf blade and petiole abaxially pubescent when young; stipules glabrous at margin; peduncles 3–7 cm 4. *M. pedicellata*

1. *Mitreola petiolatoides* P. T. Li, Acta Phytotax. Sin. 17(3): 116. 1979.

小叶度量草 xiao ye du liang cao

Annuals 5–10 cm tall, villous on stems, petioles, leaf blades, and corolla lobes inside at base. Stems terete; internodes 1–3 mm. Interpetiolar stipules reduced to a transverse ridge. Petiole 3–5 mm; leaf blade ovate, 0.5–2 cm × 3–10 mm, base rounded to obtuse, apex obtuse; lateral veins 4–6 per side. Inflorescences terminal, dichasial cymes, ca. 2 cm; peduncle to 1.5 cm, delicate; bracts and bracteoles lanceolate, 1–1.5 mm. Pedicel 2–3 mm. Calyx campanulate, lower 1/2 to 2/3 connate; lobes very narrowly ovate, ca. 1.5 × 1 mm. Corolla campanulate, ca. 3 mm, tube ca. 1.5 mm; lobes narrowly ovate, ca. 1.5 × 1 mm. Stamens inserted nearly at base of corolla tube; filaments ca. 0.5 mm; anthers ovate, apex adnate just below corolla mouth. Style ca. 0.5 mm, as long as ovary, free at base; stigma capitate. Fl. Apr.

* Open grassy area on limestone; ca. 1600 m. S Yunnan.

2. *Mitreola petiolata* (J. F. Gmelin) Torrey & A. Gray, Fl. N. Amer. 2: 45. 1841.

度量草 du liang cao

Cynoctonum petiolatum J. F. Gmelin, Syst. Nat. ed. 13, 443. 1790; *C. mitreola* (Linnaeus) Britton; *C. oldenlandioides* (Wallich ex A. de Candolle) B. L. Robinson; *C. paniculatum* (Wallich ex G. Don) B. L. Robinson; *Mitreola inconspicua* Zollinger & Moritzi; *M. oldenlandioides* Wallich ex A. de Candolle; *M. paniculata* Wallich ex G. Don; *Ophiorrhiza mitreola* Linnaeus; *Selenocera secundiflora* Zippellius ex Spanoghe.

Annuals 10–50 cm tall, glabrous except for sparsely appressed pubescent or puberulent young leaves, inside of corolla lobes at base, and fruit. Stems erect, simple or branched at base; branches 4-angled to narrowly 4-winged; internodes 1.5–6 cm. Interpetiolar stipules ± triangular, 1–2 mm. Petiole 3–10 mm; leaf blade ovate to narrowly ovate, 4–7 × 1.5–3 cm, membranous to papery, base cuneate, apex acuminate to obtuse; lateral veins 5–7 per side, inconspicuous. Inflorescences terminal or axillary, 6–10 cm, many flowered; peduncle to 7 cm; bracts and bracteoles narrowly elliptic, 1–2 mm. Pedicel very short. Calyx lobes ovate to triangular, ca. 1 × 0.5 mm. Corolla white, ca. 3 mm, tube ± as long as lobes; lobes narrowly ovate, apex obtuse. Stamens inserted at or near base of corolla tube; anthers broadly ovate, apex at ± middle of corolla tube. Ovary ovoid to subglobose, smooth. Style shorter than ovary, free to base; stigma capitate. Capsule ca. 3 mm in diam., pincerlike due to incurved apical horns. Seeds ellipsoid, ca. 0.5 mm, concave on 1 side, smooth. Fl. May–Oct.

Sunny areas on limestone, open woodlands, forest edges, edge of trails, grassy plains, valleys; below 900 m. Guangxi, Guizhou, Yunnan [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea, Philippines, Thailand, Vietnam; S Africa, N Australia, North America, South America].

3. *Mitreola reticulata* Tirel, Adansonia ser. 2, 9: 119. 1969.

网子度量草 wang zi du liang cao

Perennials 30–50 cm tall. Stems creeping, branched at base. Branchlet 4-angled; flowering branch erect, glabrous. Interpetiolar stipules liguliform, ca. 1 mm, with glandular

hairs at margin. Petiole 3–12 mm; leaf blade narrowly ovate, 4–9 × 1.5–3 cm, base broadly cuneate, apex acuminate; lateral veins 6–10 per side. Inflorescences terminal, helicoid cyme, 2- or 3-branched; peduncle 1–2.5 cm. Calyx 1.5 mm; lobes triangular. Corolla urceolate, 2–2.5 mm; tube 0.7–1.6 mm, mouth densely villous; lobes ovate to triangular, 0.4–0.8 mm, inside villous. Stamens inserted at middle of corolla tube; filaments short; anthers broadly ovate, ca. 0.5 mm. Ovary globose. Style very short or not; stigma sessile or subsessile, 2-cleft. Capsule with carpels ovate-triangular, connate for 1/3 to 1/2 length. Fl. May–Jun.

Open grassy places on limestone. SW Guangxi [Vietnam].

4. *Mitreola pedicellata* Benth, J. Linn. Soc., Bot. 1: 91. 1857.

大叶度量草 da ye du liang cao

Cynoctonum pedicellatum (Benth) B. L. Robinson; *Mitreola bodinieri* (H. Léveillé) H. Léveillé; *M. darrisii* (H. Léveillé) H. Léveillé; *Omphalodes bodinieri* H. Léveillé; *Ophiorrhiza darrisii* H. Léveillé; *O. marchandii* H. Léveillé; *Parophiorrhiza khasiana* C. B. Clarke ex Benth; *Trigonotis bodinieri* (H. Léveillé) H. Léveillé.

Perennials to 60 cm tall but usually less, glabrous except sometimes for abaxial surface of young leaves, petioles, and mouth of corollas. Stems creeping. Branchlets 4-angled when young, becoming terete. Interpetiolar stipules reduced to a narrow rim, often with a few small slender lobes on each side. Petiole 1–2 cm; leaf blade lanceolate to oblanceolate, sometimes slightly oblong, 5–15 × 2–5 cm, membranous to papery, base cuneate, apex acuminate to obtuse; lateral veins 8–10 per side. Cymes terminal or axillary, 3-branched, many flowered; peduncle 3–7 cm; bracts and bracteoles narrowly elliptic, ca. 1 mm. Pedicel 1–3 mm. Calyx lobes narrowly ovate, ca. 1 × 0.5 mm. Corolla white, urceolate, tube ca. 1.5 mm; lobes ovate, ca. 0.5 mm. Stamens inserted near corolla mouth. Ovary subglobose, smooth. Styles ca. 0.5 mm, free to base; stigma capitate. Capsule subglobose, 2–2.5 mm in diam., apex horned, straight and divergent. Seeds brownish, glabrous, tuberculate. Fl. Mar–May.

Open woodlands in mountains; 400–2100 m. Guangdong, Guangxi, Guizhou, Hubei, Sichuan, Yunnan [Bhutan, India].

