

BASELLACEAE

落葵科 luo kui ke

Lu Dequan (鲁德全)¹; Michael G. Gilbert²

Vines herbaceous or herbs twining, usually fleshy, glabrous. Leaves simple, alternate, usually petiolate, margin entire. Inflorescences of spikes, racemes, or panicles; bracts 3, caducous; bracteoles 2, persistent. Flowers bisexual, actinomorphic, small. Perianth segments 5, white or reddish, distinct or connate at base, imbricate in bud, persistent in fruit. Stamens 5, opposite to petals; filaments inserted on perianth. Ovary superior, 1-loculed; ovule 1, basal, campylotropous. Pistil united from 3 carpels. Style simple with 3 stigmas or 3 free styles. Fruit a utricle, dry or fleshy, often surrounded by persistent bracteoles and perianth. Seed globular; testa membranous; endosperm copious; embryo spirally twisted or semicircular to horseshoe-shaped.

Four genera and 25 species: tropics and subtropics, mostly in the Americas; two genera (introduced) and three species in China.

Lu Dequan. 1996. Basellaceae. *In*: Tang Changlin, ed., *Fl. Reipubl. Popularis Sin.* 26: 43-47.

- 1a. Flowers sessile; perianth segments fleshy, hardly opening at anthesis; filaments erect in bud 1. *Basella*
- 1b. Flowers pedicellate; perianth segments membranous, spreading-rotate at anthesis; filaments reflexed in bud 2. *Anredera*

1. BASELLA Linnaeus, Sp. Pl. 1: 272. 1753.

落葵属 luo kui shu

Herbs twining, annual or biannual. Spikes axillary; rachis long, thick. Bracts minute. Bracteoles and urceolate perianth adnate, ovoid or oblong, opening very little in anthesis, fleshy and enclosing the fruit after flowering. Flowers sessile; perianth segments short, fleshy, blunt, ridged on back, hardly opening at anthesis, not wing-shaped in fruit. Stamens included; filaments inserted near apex of perianth tube, very short, erect in bud; anthers dorsifixed, or versatile. Styles 3; stigmas linear. Utricle globose, fleshy. Embryo spiral; cotyledons large, thin.

Five species: one species endemic to tropical Africa, three endemic to Madagascar, one pantropical; one species (probably introduced) in China.

1. *Basella alba* Linnaeus, Sp. Pl. 1: 272. 1753.

落葵 luo kui

Basella rubra Linnaeus.

Herbs annual. Stems green or red, to 10 m, fleshy, glabrous. Petiole 1-3 cm; leaf blade ovate or rotund, 3-9 × 2-8 cm, base shallowly cordate or rotund, margin entire, apex acuminate. Spikes 3-15(-20) cm. Bracteoles oblong. Perianth red-

dish or purplish, ovate-oblong, 3-4 mm, base pale, margin entire, apex blunt. Filaments white; anthers yellowish. Utricle red to dark red or black, 5-6 mm in diam., containing violet juice. Fl. May-Sep, fr. Jul-Oct.

Widely cultivated in China, naturalized in S China [pantropical].

Sometimes regarded as native, this species has long been cultivated as a vegetable and an ornamental. The juice is harmless and used as a food coloring. The plants are used medicinally.

2. ANREDERA Jussieu, Gen. Pl. 84. 1789.

落葵薯属 luo kui shu shu

Boussingaultia Humboldt et al.

Vines herbaceous, branched. Leaves sessile or petiolate, slightly fleshy. Racemes axillary, rarely branched. Flowers pedicellate; pedicel persistent, articulated below the perianth, apex with 2 pairs of decussate bracteoles adnate to the perianth; lower bracteoles small, connate and persistent or free and caducous; upper bracteoles tepaloid, convex or boat-shaped, often keeled abaxially, sometimes narrowly winged, rarely broadly winged. Perianth segments membranous, spreading rotate at anthesis. Petals connate at base, segments thin, patent in anthesis. Filaments filiform, broadened toward base, reflexed in bud. Styles 3; stigmas globular or club-shaped, papillose. Fruit ovoid to globose, enclosed by perianth, pericarp fleshy or parchmentlike. Seed lens-shaped.

Between five and ten species: warmer parts of the Americas, from the West Indies to Argentina, Galápagos Islands; two species (introduced) in China.

- 1a. Upper bracteoles boat-shaped, with a conspicuously winged keel 1. *A. scandens*
- 1b. Upper bracteoles flattened, orbicular to broadly elliptic, not keeled 2. *A. cordifolia*

1. *Anredera scandens* (Linnaeus) Moquin-Tandon in Candolle, Prodr. 13(2): 230. 1849.

短序落葵薯 duan xu luo kui shu

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

Vines fleshy, with large, tuberous roots. Stems green or purplish, angular, glabrous. Leaves petiolate; petiole ca. 1 cm;

¹ Herbarium, Northwestern Institute of Botany, Yangling, Xianyang, Shaanxi 712100, People's Republic of China (Lu Dequan died in 2002).

² Missouri Botanical Garden, c/o Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AE, England, United Kingdom.

BASELLACEAE

leaf blade ovate to rotund, 3–6 × 1.5–4 cm, thinly fleshy, base decurrent, apex acuminate. Racemes many flowered, erect or pendent with ascending apex, 5–10 cm. Bracts ovate-lanceolate, 3–5 mm, apex acute, caducous. Pedicel 1.5–2 mm, persistent. Lower bracteoles ovate-triangular, apex acute, caducous; upper bracteoles greenish white, boat-shaped, broadly winged abaxially, 2–2.5 mm at anthesis including wings, accrescent, to 3–3.5 mm, wing base semicordate, enclosing perianth and fruit. Perianth greenish white, ca. 2.5 mm, thin, hyaline, little opening in anthesis, not accrescent. Styles 3, white, connate at base. Utricle ovoid to globose. Seed not seen. Fl. and fr. Nov.

Cultivated. Fujian, Guangdong [native to America].

The tuberous roots are used as a poultice applied to boils.

2. **Anredera cordifolia** (Tenore) Steenis, Fl. Malesiana, Ser. 1, Spermatoph. 5(3): 303. 1957.

落葵薯 luo kui shu

Boussingaultia cordifolia Tenore in Ann. Sci. Nat., Bot. sér. 3, 19: 355. 1853; *B. gracilis* Miers; *B. gracilis* f. *pseudobaselloides* Hauman; *B. gracilis* var. *pseudobaselloides* (Hauman) Bailey.

Vines twining, with thick, hardy rhizome. Leaves shortly petiolate; leaf blade ovate to subcordate, 2–6 × 0.5–5.5 cm, thinly fleshy, base rounded or cordate, apex acute, producing small axillary tubercles (bulbils). Racemes many flowered; rachis pendent, thin, 7–25 cm. Bracts not longer than pedicel, narrow, persistent. Pedicel 2–3 mm, receptacular tip cupular, flowers shed from here. Lower bracteoles broadly triangular, hyaline, apex acute, persistent; upper bracteoles greenish white, flattened, orbicular to broadly elliptic, shorter than perianth. Flowers ca. 5 mm in diam., fragrant. Perianth white, inflexed, patent in anthesis; segments ovate or oblong to elliptic, 3 × 2 mm, apex blunt. Stamens white; filaments reflexed at apex in bud, spreading in anthesis. Style white, split to 3 stigmatic arms, each with 1 club-shaped or broadly elliptic stigma. Utricle and seed not seen. Fl. Jun–Oct.

Cultivated. Beijing, Fujian, Guangdong, Hainan, Jiangsu, Sichuan, Yunnan, Zhejiang [native to South America].

The plants are not known to produce seeds, but are propagated vegetatively by the axillary bulbils. The bulbils, leaves, and roots are used medicinally.