

# Chapter 1

## Medicinal Angiosperms of Hydrocharitaceae, Alismataceae, Potamogetonaceae, Commelinaceae, Eriocaulaceae, and Musaceae



Huagu Ye, Chuyuan Li, Wencai Ye, Feiyan Zeng, Fangfang Liu,  
Yuanyuan Liu, Faguo Wang, Yushi Ye, Lin Fu, and Jianrong Li

### Contents

1.1	Family: Hydrocharitaceae.....	3
1.1.1	Ottelia acuminata.....	3
1.2	Family: Alismataceae.....	5
1.2.1	Alisma orientale [1].....	5
1.3	Family: Alismataceae.....	9
1.3.1	Alisma plantago-aquatica.....	9
1.4	Family: Alismataceae.....	11
1.4.1	Sagittaria guyanensis subsp. lappula.....	11
1.5	Family: Alismataceae.....	12
1.5.1	Sagittaria pygmaea.....	12
1.6	Family: Alismataceae.....	14
1.6.1	Sagittaria trifolia [2].....	14

---

H. Ye (✉) · F. Zeng · F. Wang · Y. Ye · L. Fu · J. Li

South China Botanical Garden, The Chinese Academy of Sciences, Guangzhou, China

e-mail: [yehuagu@scbg.ac.cn](mailto:yehuagu@scbg.ac.cn); [zengfeiy@scbg.ac.cn](mailto:zengfeiy@scbg.ac.cn); [wangfg@scib.ac.cn](mailto:wangfg@scib.ac.cn);

[yeyushi@scbg.ac.cn](mailto:yeyushi@scbg.ac.cn); [fulin@scbg.ac.cn](mailto:fulin@scbg.ac.cn); [lijianrong@scbg.ac.cn](mailto:lijianrong@scbg.ac.cn)

C. Li

Guangzhou Pharmaceutical Holdings Limited, Guangzhou, China

e-mail: [lichuyuan@813zy.com](mailto:lichuyuan@813zy.com)

W. Ye

Jinan University, Guangzhou, China

F. Liu

Huizhou Hospital Affiliated to Guangzhou University of Traditional Chinese Medicine,

Huizhou, China

Y. Liu

Faculty of Military Language Education, University of Defence Technology,

Changsha, China

© Chemical Industry Press 2021

H. Ye et al. (eds.), *Common Chinese Materia Medica*,

[https://doi.org/10.1007/978-981-16-5920-1\\_1](https://doi.org/10.1007/978-981-16-5920-1_1)

1.7	Family: Potamogetonaceae.....	17
1.7.1	Potamogeton crispus.....	17
1.8	Family: Potamogetonaceae.....	19
1.8.1	Potamogeton distinctus [3].....	19
1.9	Family: Potamogetonaceae.....	21
1.9.1	Potamogeton natans.....	21
1.10	Family: Commelinaceae.....	23
1.10.1	Amischotolype hispida.....	23
1.11	Family: Commelinaceae.....	25
1.11.1	Commelina benghalensis.....	25
1.12	Family: Commelinaceae.....	27
1.12.1	Commelina communis.....	27
1.13	Family: Commelinaceae.....	30
1.13.1	Commelina diffusa.....	30
1.14	Family: Commelinaceae.....	32
1.14.1	Commelina paludosa.....	32
1.15	Family: Commelinaceae.....	34
1.15.1	Cyanotis vaga.....	34
1.16	Family: Commelinaceae.....	35
1.16.1	Floscopa scandens.....	35
1.17	Family: Commelinaceae.....	38
1.17.1	Murdannia bracteata.....	38
1.18	Family: Commelinaceae.....	39
1.18.1	Murdannia edulis.....	39
1.19	Family: Commelinaceae.....	41
1.19.1	Murdannia loriformis.....	41
1.20	Family: Commelinaceae.....	43
1.20.1	Murdannia triquetra.....	43
1.21	Family: Commelinaceae.....	45
1.21.1	Pollia japonica.....	45
1.22	Family: Commelinaceae.....	47
1.22.1	Pollia miranda.....	47
1.23	Family: Commelinaceae.....	48
1.23.1	Setcreasea purpurea.....	48
1.24	Family: Commelinaceae.....	50
1.24.1	Streptolirion volubile.....	50
1.25	Family: Commelinaceae.....	52
1.25.1	Tradescantia spathacea.....	52
1.26	Family: Commelinaceae.....	55
1.26.1	Tradescantia zebrina.....	55
1.27	Family: Eriocaulaceae.....	56
1.27.1	Eriocaulon buergerianum.....	56
1.28	Family: Eriocaulaceae.....	59
1.28.1	Eriocaulon cinereum.....	59
1.29	Family: Eriocaulaceae.....	61
1.29.1	Eriocaulon sexangulare.....	61
1.30	Family: Musaceae.....	63
1.30.1	Musa basjoo.....	63
	References.....	66

This chapter introduces 29 species of medicinal plants in 6 families, mainly including *Ottelia acuminata* of Hydrocharitaceae; *Alisma orientale*, *Alisma plantago-aquatica*, *Sagittaria guyanensis*, and *Sagittaria trifolia* of Alismataceae; *Potamogeton crispus*, *Potamogeton distinctus*, and *Potamogeton natans* of Potamogetonaceae; *Amischotolype hispida*, *Commelina benghalensis*, *Commelina communis*, *Commelina diffusa*, *Cyanotis vaga*, *Floscopa scandens*, *Murdannia bracteata*, *Pollia japonica*, *Pollia miranda*, *Setcreasea purpurea*, *Streptolirion volubile*, *Tradescantia spathacea*, and *Tradescantia zebrina* of Commelinaceae; *Eriocaulon buergerianum*, *Eriocaulon cinereum*, and *Eriocaulon sexangulare* of Eriocaulaceae; and *Musa basjoo* of Musaceae.

This chapter introduces the scientific names, medicinal names, morphologies, habitats, distributions, acquisition and processing methods, medicinal properties, tastes, functions, and use and dosages of these medicinal plants, with clear original plant photos and part photos of herbal medicines of each plant.

## 1.1 Family: Hydrocharitaceae

### 1.1.1 *Ottelia acuminata*

**Chinese Name(s):** hai cai hua, shui bai cai, hai hua cai, shui qing cai

**Source:** This medicine is made of the whole plants of *Ottelia acuminata* (*Ottelia acuminata* (Gagnep.) Dandy.)

**Morphology:** The plants are herbs, submerged; the stems are cormlike; the leaves are all basal, linear, long elliptic, lanceolate, ovate, and broadly cordate. The petioles vary according to depth of water, usually with fleshy spines on petioles and along abaxial veins. The flowers are solitary, dioecious. The spathes are unwinged, 2–6-angled. The male spathes include 40–50 male flowers; there are 3 sepals, lanceolate, 8–15 mm long and 2–4 mm wide; there are 3 petals, white, basally yellow or dark yellow, obcordate, 1–3.5 cm long, and 1.5–4 cm wide. There are 9–12 stamens, yellow; there are 3 staminodes, linear, yellow. The female spathes include 2–3 female flowers; the pedicels are short; the calyxes and petals are similar to those of male flowers; there are 3 styles, orangish yellow, 2-cleft to base, lobes being linear, 0.9–1.4 cm long. The ovaries are sterile, triangular-cylindric, with 3 staminodes, linear, yellow, 3–5 mm long. The fruits are triangular-cylindric, fusiform, 6–8 cm long, conspicuously fleshy spiny and verrucose on ridges. The flowering and fruiting periods are from May to October.

**Habitat:** It grows on lakes, ponds, ditches, and paddy fields.

**Distribution:** It's distributed in provinces of Guangdong, Hainan, Guangxi, Sichuan, Guizhou, and Yunnan.

**Acquisition and Processing:** The whole plants are harvested in spring and summer and used when fresh or dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet in taste and neutral in property.

**Functions:** Clearing heat and relieving coughing, promoting diuresis, and reducing swelling; it's often used for treatment of cough due to heat in the lungs, strangury, dysuria, edema, etc.

**Use and Dosage:** 20–30 g per dose, decocted in water for oral use





## 1.2 Family: Alismataceae

### 1.2.1 *Alisma orientale* [1]

**Chinese Name(s):** ze xie, wen xie, min xie

**Source:** This medicine is made of the rhizome of *Alisma orientale* (*Alisma orientale* (Sam.) Juzep.)

**Morphology:** The herbs are perennial, aquatic, or of marshes. The tubers are 1–2 cm in diam. There are numerous leaves; the emergent leaves are broadly lanceolate, elliptic, 3.5–11.5 cm long and 1.3–6.8 cm wide, apically acuminate, basally suborbicular or shallowly cordate, 5–7-veined; the petioles are 3.2–34 cm long, rather than stout, gradually broader toward base, margins being narrowly membranous. The scapes are 35–90 cm tall or taller. The inflorescences are 20–70 cm long, in 3–9 whorls of 3–9 branches. The flowers are bisexual, ca. 6 mm in diam. The pedicels are unequal in length, (0.5–)1–2.5 cm long. The outer whorl of petals are ovate, 2–2.5 mm long and ca. 1.5 mm wide, margins being narrowly membranous, 5–7-veined; the inner whorl of petals are suborbicular, larger than the outer one, white, pale red, rarely yellowish green, margins being undulate. The carpels are irregularly arranged; the styles are ca. 0.5 mm long, erect; the stigmas are ca. 1/5 as long as styles. The filaments are 1–1.2 mm long, basally ca. 0.3 mm wide, gradually narrower upward; the anthers are yellowish green or yellow, 0.5–0.6 mm long, and ca. 0.3–0.4 mm wide. The receptacles are uneven when fruiting, ca. 0.4 mm tall. The achenes are ellipsoid, 1.5–2 mm long and 1–1.2 mm wide, abaxially 1–2-grooved, adaxially raised from beak, membranous winged; the lateral pericarps are papery, translucent; the beaks of fruits are ca. 0.5 mm long, exerted from adaxial-lateral parts over middle. The seeds are purplish red, ca. 1.1 mm long, and ca. 0.8 mm wide. The flowering and fruiting periods are from May to September.

**Habitat:** It grows on lakes, ponds, ditches, and marshes or is cultivated.

**Distribution:** It's distributed in provinces of Heilongjiang, Jilin, Liaoning, Inner Mongolia, Hebei, Shanxi, Shaanxi, Ningxia, Gansu, Qinghai, Xinjiang, Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Henan, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Guizhou, and Yunnan, as well as in Russia, Japan, Mongolia, and India.

**Acquisition and Processing:** The rhizomes are dug up in winter when the stems and leaves begin to wither. After the stems and leaves are removed, the rhizomes are washed and baked on fire for 5–6 days. After the fibrous roots and rough skin are removed, they are dried in the sun.

**Medicinal Properties:** The product is subspherical or oblong-ovate, 2–8 cm long and 2–6 cm in diameter, yellowish white or yellowish brown on the surface, with irregular annular grooves, many protuberant fibrous root marks, and with verrucous bud marks. It is solid, yellowish white in cross section, silty, with many pores and scattered brown tendons. It is slightly fragrant, and slightly bitter in taste. The products large, solid, pruinose, yellow, and white inside and outside are better in quality

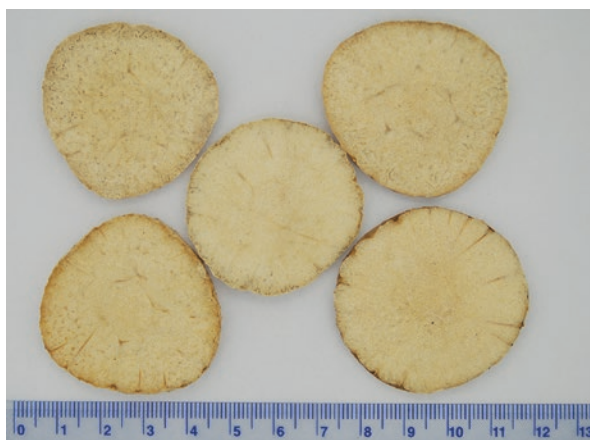
**Natural Taste and Meridian Tropism:** It's sweet and bland in taste and cold in property and belongs to the meridians of the kidneys and bladder.

**Functions:** Promoting diuresis, clearing dampness and heat, and purging kidney fire; it's often used for treatment of dysuria, edema and distention, strangury, diarrhea, and leucorrhea.

**Use and Dosage:** 6–15 g per dose, decocted in water for oral use

**Prescription Example(s):**

**Prescription Example(s):** edema, dysuria: *Alisma orientale*, *Atractylodes macrocephala* 12 g each, *Plantago* 9 g, poria peel 15 g, watermelon peel 24 g, decocted in water for oral use











### 1.3 Family: Alismataceae

#### 1.3.1 *Alisma plantago-aquatica*

**Chinese Name(s):** dong fang ze xie

**Source:** This medicine is made of the carmus of *Alisma plantago-aquatica* (*Alisma plantago-aquatica* Linn.)

**Morphology:** The herbs are perennial and aquatic. The tubers are 1–3.5 cm in diam. There are often numerous leaves. The submerged leaves are linear or lanceolate. The emerged leaves are broadly lanceolate, elliptic to ovate, 2–11 cm long and 1.3–7 cm wide, apically acuminate, rarely acute, basally broadly cuneate, shallowly cordate, often 5-veined; the petioles are 1.5–30 cm long, basally gradually wider, margins being membranous. The scapes are 78–100 cm tall; the inflorescences are 15–50 cm long, in 3–8 whorls of 3–9 branches. The flowers are bisexual; the pedicels are 1–3.5 cm long. The outer whorls of petals are broadly ovate, 2.5–3.5 mm long and 2–3 mm wide, often 7-veined, margins being membranous; the inner whorls of petals are suborbicular, much larger than the outer ones, margins being irregularly and sparsely dentate, white, pink, or pale purple. There are 17–23 carpels, regularly arranged; the styles are erect, 7–15 mm long, and longer than carpels; the stigmas are short, ca. 1/9–1/5 as long as styles. The filaments are 1.5–1.7 mm long, basally ca. 0.5 mm wide; the anthers are ca. 1 mm long, ellipsoid, yellow or pale green. The receptacles are flattened convex, ca. 0.3 mm tall, suborbicular. The achenes are ellipsoid, or nearly oblong, ca. 2.5 mm long and ca. 1.5 mm wide, abaxially shallowly 1–2-grooved, the lower parts being flattened; the beaks of fruits are exerted from adaxial lateral parts, raised on beaks basally, membranous. The seeds are purplish brown, raised. The flowering and fruiting periods are from May to October.

**Habitat:** It grows on marshes or is cultivated.

**Distribution:** It's distributed in provinces of Hebei, Shaanxi, Shanxi, Inner Mongolia, Heilongjiang, Jilin, Liaoning, Guangdong, Yunnan, and Xinjiang, as well as in Russia, Japan, Europe, North America, and Oceania.

**Acquisition and Processing:** The carmus are dug up in winter and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet in taste and cold in property.

**Functions:** Clearing heat, excreting dampness, and promoting diuresis; it's often used for treatment of nephritis, edema, pyelonephritis, enteritis, diarrhea, and dysuria.

**Use and Dosage:** 3–12 g per dose, decocted in water for oral use

**Prescription Example(s):** edema, dysuria: *Alisma orientale*, *Atractylodes macrocephala* 12 g each, *Plantago* 9 g, poria peel 15 g, watermelon peel 24 g, decocted in water for oral use



## 1.4 Family: Alismataceae

### 1.4.1 *Sagittaria guyanensis* subsp. *lappula*

**Chinese Name(s):** guan guo cao, tian lian ou, tu zi wan, jia leng jiao

**Source:** This medicine is made of the whole plants of *Sagittaria guyanensis* subsp. *lappula* (*Sagittaria guyanensis* H. B. K. subsp. *lappula* (D. Don) Bojin).

**Morphology:** The herbs are perennial, aquatic, and floating. The leaves are submerged or floating. The submerged leaves are linear, linear-lanceolate, or petiole-like. The floating leaves are broadly ovate, elliptic, or suborbicular, basally deeply cleft to deeply cordate. The leaf blades are 1.5–10.5 cm long and 1–9 cm wide, apically obtuse-orbicular, slightly tipped at ends. There are 4–8 veins spreading forward, and the other 3–6 veins are spreading backward. The petioles are 15–50 cm long. The scapes are erect, above water, 5–60 cm tall, sometimes shorter than petioles. The inflorescences are racemose, 2–20 cm long, in 1–6 whorls of (2–)3 flowers. There are 3 bracts, more or less connate at base, membranous or herbaceous. The flowers are bisexual or unisexual, and the one borne in the lower 1–3 whorls of inflorescences is often bisexual; the pedicels are short and thick, 1–1.5 cm long, more or less reflexed after anthesis. There are numerous carpels, free, 2 lateral surfaces being compressed; the styles are exerted from adaxial-lateral parts, obliquely ascending. The female flowers have numerous whorls, in upper part of inflorescences; the pedicels are slender, 2–5 cm long. The perianths of bisexual flowers and female flowers are subequal in size, and the inner whorls of perianths are slightly larger than the outer ones; the outer whorls of perianths are broadly ovate, ca. 5–9 mm long and 3–8 mm wide, or larger, persistent, wrapping lower part of fruits after anthesis; the inner whorls of perianths are white, basally pale yellow, rarely with purple spots at base, obovate, caducous. There are 6 to numerous stamens; the filaments are unequal in length, often 2–3(–4) mm long. The anthers are 1–2(–3) mm long and 1–1.5 mm wide, ellipsoid, yellow. The achenes are compressed laterally; the pericarps are thickly papery, obovoid or ellipsoid, 2–3 mm long and 1.5–2.5 mm wide, with short petiole at base, cristate denticulate on adaxial-lateral parts. The beaks of fruits are obliquely exerted from adaxial-lateral parts. The flowering and fruiting periods are from May to November.

**Habitat:** It grows on ponds and shallow water area of lakes, marshes, fields, and ditches.

**Distribution:** It's distributed in Guangdong, Hong Kong, Hainan, Taiwan, Fujian, Jiangxi, Zhejiang, Anhui, Hunan, Guangxi, Guizhou, and Yunnan of China, as well as in Nepal, India, Vietnam, Malaysia and tropical regions of Africa.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's slightly bitter in taste and cold in property.

**Functions:** Clearing heat and dampness, detoxicating; it's often used for treatment of cough due to heat in the lungs, and dysentery due to damp-heat.

**Use and Dosage:** 9–15 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.



## 1.5 Family: Alismataceae

### 1.5.1 *Sagittaria pygmaea*

**Chinese Name(s):** ai ci gu, ya she cao, shui chong cao

**Source:** This medicine is made of the whole plants of *Sagittaria pygmaea* (*Sagittaria pygmaea* Miq.).

**Morphology:** The herbs are annual, rarely perennial, paludose, or submerged, sometimes with short rhizomes. The stolons are short and thin, rootlike, often unexpanded on buds at ends. The new plants are often germinated in the current year, and rarely go through the winter. The leaves are linear, rarely lanceolate, 2–30 cm long

and 0.2–1 cm wide, smooth, apically acuminate, or slightly obtuse, sheathing at base, often with horizontal veins. The scapes are 5–35 cm tall, erect, often emerged. The inflorescences are racemose, 2–10 cm long, in 2(–3) whorls. The bracts are 2–3 mm long and ca. 2 mm wide, elliptic, membranous. The flowers are unisexual; the outer whorl of perianths are green, obovate, 5–7 mm long and 3–5 mm wide, striate, persistent; the inner whorl of perianths are white, 1–1.5 cm long and 1–1.6 cm wide, orbicular or oblate. There is 1 female flower, solitary, or in 1 whorl of 2 male flowers; the carpels are numerous, compressed on 2 lateral surfaces, densely packed, globose; the styles are exerted from adaxial-lateral parts, upward. The male flowers are pedicellate, with numerous stamens; the length and width are variable in different anthesis, often 1–2 mm long and 0.5–1 mm wide; the anthers are long ellipsoid, ca. 1–1.5 mm long. The achenes are compressed laterally, winged, nearly obovoid, 3–5 mm long and 2.5–3.5 mm wide, abaxially cristate, with a broad wing and an adaxial beak 1–1.5 mm long. The flowering and fruiting periods are from May to November.

**Habitat:** It grows on shallow water areas of ponds, lakes, marshes, ditches, and fields.

**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Taiwan, Fujian, Jiangxi, Zhejiang, Jiangsu, Anhui, Hunan, Hubei, Henan, Shandong, Shaanxi, Guangxi, Guizhou, Yunnan, and Sichuan of China, as well as in Vietnam, Thailand, North Korea, and Japan.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bland in taste and neutral in property.

**Functions:** Clearing heat and detoxicating, promoting blood circulation; it's often used for treatment of nameless swelling and poisoning, snakebite, strangury, scald, etc.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.





## 1.6 Family: Alismataceae

### 1.6.1 *Sagittaria trifolia* [2]

**Chinese Name(s):** ye ci gu, ci gu

**Source:** This medicine is made of the whole plants of *Sagittaria trifolia* (*Sagittaria trifolia* Linn.)

**Morphology:** The herbs are perennial, aquatic, or paludose. The rhizomes are horizontal, rather stout, may be dilated at ends. The emerged leaves are sagittate, and the leaf blades are highly varied in length and width; the apical lobes are often

shorter than the lateral ones, ca. 1:1.2–1:1.5 in ratio; sometimes the lateral lobes are longer, and constricted between apical lobes and lateral ones. The petioles are gradually wider at base, sheathlike, margins being membranous, with horizontal veins, or inconspicuous. The scapes are erect, emerged, 20–70 cm tall or taller, often stout. The inflorescences are racemes or panicles, 5–20 cm long, sometimes longer, with 1–2 branches, in numerous whorls of 2–3 flowers. There are 3 bracts, more or less connate at base, apically acute. The flowers are unisexual. The perianths are reflexed; the outer whorls of perianths are elliptic or broadly ovate, 3–5 mm long and 2.5–3.5 mm wide. The inner whorls of perianths are white or pale yellow, 6–10 mm long and 5–7 mm wide, constricted at base; the female flowers are often in 1–3 whorls; the pedicels are short and thickened; there are numerous carpels, compressed laterally; the styles are obliquely upward adaxially. There are numerous whorls of male flowers; the pedicels are obliquely lifted, 0.5–1.5 cm long; there are numerous stamens; the anthers are yellow, 1–1.5 mm long; the filaments are unequal in length, ca. 0.5–3 mm long, often shorter in out whorls, and longer inward. The achenes are compressed laterally, ca. 4 mm long and ca. 3 mm wide, obovoid, winged, more or less irregular on wings abaxially. The beaks of fruits are short, obliquely ascending from adaxial-lateral part. The seeds are brown. The flowering and fruiting periods are from May to October.

**Habitat:** It grows in lakes, ponds, marshes, ditches, and paddy fields.

**Distribution:** It's distributed in provinces and regions nearly throughout China, except in Tibet and a few other regions.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet and slightly bitter in taste and slightly cold in property.

**Functions:** Clearing heat and dampness, dispersing nodules, and detoxicating; it's often used for treatment of strangury, turbid of urine, sore, conjunctivitis, scrofula, orchitis, and snakebite.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.







## 1.7 Family: Potamogetonaceae

### 1.7.1 *Potamogeton crispus*

**Chinese Name(s):** ju cao, xia zao, xia cao, mai huang cao

**Source:** This medicine is made of the whole plants of *Potamogeton crispus* (*Potamogeton crispus* Linn.)

**Morphology:** The herbs are perennial, submerged, with subterete rhizomes. The stems are slightly flattened, with numerous branches, often creeping near base, with sparsely or slightly dense fibrous roots from nodes. The leaves are linear, sessile, 3–8 cm long and 3–10 mm wide, apically obtuse-orbicular, connate with stipules at the basal 1 mm, but without leaf sheaths, leaf margins being more or less undulate, sparsely or densely serrulate. The leaves are 3–5-veined, parallel, connate apically.

The stipules are thinly membranous, 5–10 mm long, caducous. The dormant buds are at apex, 1–3 cm long, leaves being leathery, dense arranged in 2 rows on the left and right, expanded at base, fleshy, rigid, margins being serrulate. The spikes are terminal, in 2–4 whorls, 2 flowers being opposite per whorl at first; the axes of spikes are often slightly asymmetric after elongating. The peduncles are clavate, thinner than stems. The flowers are small, with 4 perianths, pale green; there are 4 pistils, connate at base. The fruits are ovoid, ca. 3.5 mm long; the beaks of fruits are up to 2 mm in length, slightly recurved. The flowering and fruiting periods are from April to July.

**Habitat:** It grows in ponds, ditches, paddy fields, and slow rivers.

**Distribution:** It's distributed in provinces and regions in the south and north of China, and all over the world.

**Acquisition and Processing:** The whole plants are harvested from March to April, washed, and dried in the sun or used when fresh.

**Natural Taste and Meridian Tropism:** It's bitter in taste and cold in property.

**Functions:** Clearing heat and detoxicating, removing dampness and relieving strangury, stopping bleeding, and driving away ascaris; it's often used for treatment of dysentery due to damp-heat, jaundice, fever, diarrhea, epistaxis, hemorrhoid bleeding, ascariasis, carbuncle, swelling, and toxin.

**Use and Dosage:** 9–15 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied.





## 1.8 Family: Potamogetonaceae

### 1.8.1 *Potamogeton distinctus* [3]

**Chinese Name(s):** yan zi cai, shui an ban, shui ban deng, ya shui cao

**Source:** This medicine is made of the whole plants of *Potamogeton distinctus* (*Potamogeton distinctus* A. Benn.).

**Morphology:** The herbs are perennial and aquatic. The rhizomes are well developed, white, 1.5–2 mm in diam., multibranched, often with fusiform dormant buds at apexes, and with slightly dense fibrous roots at nodes. The stems are columnar, 1.5–2 mm in diam., often unbranched. The floating leaves are leathery, lanceolate, broadly lanceolate to ovate-lanceolate, 2–10 cm long and 1–4 cm wide, apically acute or obtuse-orbicular, basally obtuse-orbicular or sometimes subcuneate, with 5–20 cm long petioles. There are numerous veins, connate at apexes. The submerged leaves are lanceolate to narrowly lanceolate, herbaceous, petiolate, often caducous. The stipules are membranous, 2–7 cm long, apically acute, sheathing amplexicaul. The spikes are terminal, in numerous whorls of flowers, exerted from water at anthesis, submerged after anthesis. The peduncles are slightly dilated, thicker than stems, erect at anthesis, curved from base after anthesis, 3–10 cm long. The flowers are small, with 4 perianths, green. There are 2 pistils (rarely 1 or 3 pistils). The fruits

are broadly obovoid, ca. 3.5 mm long, with 3 distinct abaxial keels, midribs being sharp, and distinctly raised above middle part of fruits, lateral keels being obtuse, with 2 raised protrusions at basal and upper parts; the beaks are impressed and obliquely spreading. The flowering and fruiting periods are from May to October.

**Habitat:** It grows in ponds, paddy fields, and ditches.

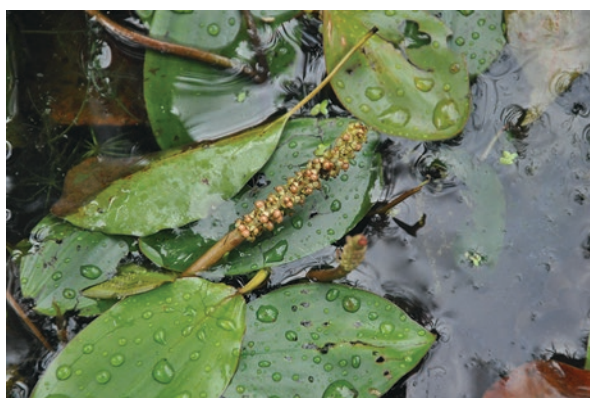
**Distribution:** It's distributed in most provinces and regions in southern and northern China, as well as in Russia, North Korea, and Japan.

**Acquisition and Processing:** The whole plants are harvested in spring and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bitter in taste and cold in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis, dispersing accumulations; it's often used for treatment of acute conjunctivitis, jaundice, edema, leucorrhea, infantile malnutrition, ascariasis, etc.

**Use and Dosage:** 15–20 g per dose, decocted in water for oral use





## 1.9 Family: Potamogetonaceae

### 1.9.1 *Potamogeton natans*

**Chinese Name(s):** fu ye yan zi cai

**Source:** This medicine is made of the whole plants of *Potamogeton natans* (*Potamogeton natans* Linn.)

**Morphology:** The herbs are perennial and aquatic. The rhizomes are well developed, white, usually with red spots, multibranched, with fibrous roots at nodes. The stems are columnar, 1.5–2 mm in diam., often unbranched or rarely branched. The floating leaves are leathery, ovate to oblong-ovate, sometimes ovate-elliptic, 4–9 cm long and 2.5–5 cm wide, apically orbicular or with obtuse tips, basally cordate to orbicular, rarely attenuated, with long petioles. There are 23–35 veins, connate at leaf ends, 7–10 of which are conspicuous. The submerged leaves are thick, petiole-like, semicolumnar-linear, apically rather obtuse, 10–20 cm long and 2–3 mm wide, with 3–5 inconspicuous veins often caducous. The stipules are nearly discolored, 4–8 cm long, sheathing amplexicaul, with many veins, often fibrous and persistent. The spikes are terminal, 3–5 cm long, in numerous whorls of flowers, exerted from water at anthesis. The peduncles are slightly dilated, thicker than stems or sometimes equal to it, often erect at anthesis, but curved and sunk below water after anthesis, 3–8 cm long. The flowers are small, with 4 perianths, green, reniform to subcolumnar, ca. 2 mm in diam. There are 4 pistils, free. The fruits are obovoid, exocarps being often grayish yellow, 3.5–4.5 mm long and 2.5–3.5 mm wide, obtuse-orbicular, or with obscure midribs at the back. The flowering and fruiting periods are from July to October.

**Habitat:** It grows on lakes, ditches, and other still waters or slow rivers.

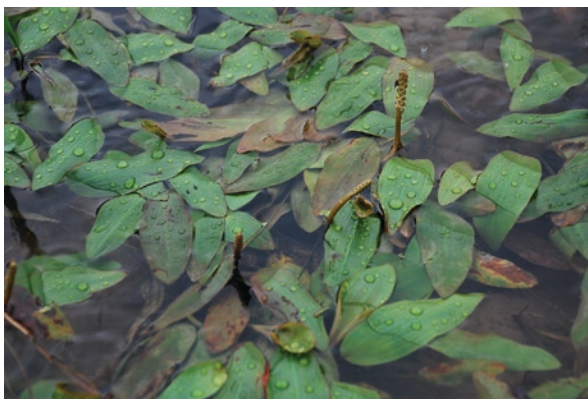
**Distribution:** It's distributed in provinces of Fujian, Guangdong, Jiangxi, Jiangsu, Hunan, Hubei, Henan, Gansu, Shaanxi, Guangxi, Guizhou, Yunnan, Sichuan, Tibet, Xinjiang, and many other places in the Northern Hemisphere.

**Acquisition and Processing:** The whole plants are harvested in spring and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bitter in taste and cold in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis, dispersing accumulations; it's often used for treatment of acute conjunctivitis, jaundice, edema, leucorrhea, infantile malnutrition, ascariasis, etc.

**Use and Dosage:** 6–15 g per dose, decocted in water for oral use. For external treatment, the products are mashed and applied.





## 1.10 Family: Commelinaceae

### 1.10.1 *Amischotolype hispida*

**Chinese Name(s):** chuan qiao hua

**Source:** This medicine is made of the whole plants of *Amischotolype hispida* (*Amischotolype hispida* (Less. et A. Rich.) Hong).

**Morphology:** The herbs are perennial and stout. The rhizomes are long, with glabrous roots at nodes. The stems are erect, 5–15 mm in diam. The total length of rhizomes and stems is up to 1 m. The leaf sheathes are up to 4 cm in length, densely brownish yellow hirsute, as hirsute at mouth. The leaf blades are elliptic, 15–50 cm

long and 5–10.5 cm wide, apically caudate, basally cuneate-attenuated into winged petioles, densely brownish yellow hirsute near margins on both surfaces and below the middle of abaxial major veins. The capitulum is large, often with ten flowers, up to 4–6 cm in diam. when fruiting. The bracts are ovate, apically acute, and sparsely ciliate. The sepals are cymbiform, apically galeate, ca. 5 mm at anthesis, up to 13 mm when fruiting, often densely brown hirsute on adaxial midveins, rarely glabrous, elsewhere glabrous or glabrescent. The petals are oblong, slightly shorter than sepals. The capsules are ovoid-globose, trigonous, apically obtuse, sparsely hirsute near apex, ca. 7 mm long, much shorter than persistent sepals. The seeds are ca. 3 mm long, ca. 2 mm in diam., rugose. The flowering period is from July to August. The fruiting time is after September.

**Habitat:** It grows in humid places below 1000 m.

**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Taiwan, Fujian, Jiangxi, Zhejiang, Jiangsu, Anhui, Hunan, Shandong, Hubei, Henan, Hebei, Shaanxi, Guangxi, Yunnan, and Sichuan of China, as well as in tropical and subtropical regions of Asia and Africa.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bitter in taste and cold in property.

**Functions:** Expelling wind and dampness, removing blood stasis, and relieving pain; it's often used for treatment of rheumatic arthralgia and injury.

**Use and Dosage:** 5–15 g per dose, decocted in water for oral use. For external treatment, the products are mashed and applied.







## 1.11 Family: Commelinaceae

### 1.11.1 *Commelina benghalensis*

**Chinese Name(s):** fan bao cao, zhu ye cai

**Source:** This medicine is made of the whole plants of *Commelina benghalensis* (*Commelina benghalensis* Linn.)

**Morphology:** The herbs are perennial and diffuse. The stems are mostly creeping, with roots at nodes, ascending in the upper parts and upper branches, up to 70 cm in length, sparsely pilose. The leaves have distinct petioles. The leaf blades

are ovate, 3–7 cm long and 1.5–3.5 cm wide, apically obtuse or acute, subglabrous. The leaf sheaths are sparsely and long ciliate along mouths. The involucre bracts are funnellform, opposite to leaves, often aggregated at apex of branches, lower margins being connate, 8–12 mm long, sparsely hairy, abruptly acute or obtuse at apex, with extremely short petioles. The lower parts of inflorescences have single slender stalks, with 1–3 sterile flowers, with exserted spathes; the upper one shoot has several flowers, seeded, without exserted spathes. The sepals are membranous, lanceolate, ca. 2 mm long, glabrous. The petals are blue, orbicular, 3–5 mm long. The inner 2 petals have long claws. The capsules are ellipsoid, 4–6 mm long, 3-valved, 2-valved adaxially, with 2 seeds per valve, dehiscent; the posterior one is only 1-seeded or seedless, indehiscent. The seeds are about 2 mm long, rugose and irregularly reticulate, black. The flowering time is in summer and autumn.

**Habitat:** It grows in humid places below 1000 m.

**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Taiwan, Fujian, Jiangxi, Zhejiang, Jiangsu, Anhui, Hunan, Shandong, Hubei, Henan, Hebei, Shaanxi, Guangxi, Yunnan, and Sichuan of China, as well as in tropical and subtropical regions of Asia and Africa.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bitter in taste and cold in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis, and relieving swelling; it's often used for treatment of short voidings of reddish urine, dysentery with bloody stool, and sores.

**Use and Dosage:** 60–90 g per dose, decocted in water for oral use. For external treatment, the plant is mashed and applied.





## 1.12 Family: Commelinaceae

### 1.12.1 *Commelina communis*

**Chinese Name(s):** ya zhi cao, zhu jie cai, ya jiao cao

**Source:** This medicine is made of the whole plants of *Commelina communis* (*Commelina communis* Linn.).

**Morphology:** The herbs are annual and diffuse. The stems are creeping and rooting, multibranched, up to 1 m in length, glabrous proximally and puberulent distally. The leaves are lanceolate to ovate-lanceolate, 3–9 cm long, and 1.5–2 cm wide. The involucral bracts are spathe-like, with 1.5–4 cm petioles, opposite to leaves, folded, cordate after spreading, apically abruptly acute, basally cordate, 1.2–1.5 cm long, margins being often hirsute. The inflorescences are cymes, proximal branch with only one flower and peduncle that ca. 8 mm long, sterile. The distal

one branch with 3–4 flowers is shortly pedunculate, nearly included in spathe. The pedicels are only 3 mm long at anthesis, curved when fruiting, less than 6 mm long. The sepals are membranous, ca. 5 mm long; the inner 2 sepals are often close to each other and connate. The petals are dark blue; the inner 2 petals are clawed, nearly 1 cm long. The capsules are ellipsoid, 5–7 mm long, 2-loculed, 2-valved, with 4 seeds. The seeds are 2–3 mm long, brownish yellow, truncate at one end and flattened adaxially, irregularly porous.

**Habitat:** It often grows in humid places.

**Distribution:** It's distributed in Hong Kong, Guangdong, Yunnan, Sichuan, and southern and northern Gansu of China, as well as in Vietnam, North Korea, Japan, the Russian Far East, and North America.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Medicinal Properties:** The whole plant is up to 60 cm in length, yellow green. The stems are cylindrical, but the old stems are slightly square, glabrescent, with longitudinal ribs, about 2 mm in diam., many branched. It dilates slightly on nodes, with residual fibrous roots on nodes, and the internode length is 3–9 cm. It's soft, with pith in the middle of the cross section. The leaves are alternate and often shrunk. After being flattened, the complete leaves are lanceolate to ovate lanceolate, 3–9 cm long and 1.5–2 cm wide, apically acuminate, basally extended into a leaf sheath, entire. The whole leaf is parallel under the vein. The petals are wrinkled, blue black. It's slightly odored, and bland in taste.

**Natural Taste and Meridian Tropism:** It's sweet and bland in taste and slightly cold in property and belongs to the meridians of the lungs and large intestine.

**Functions:** Clearing heat and detoxicating, promoting diuresis, and relieving swelling; it is often used for treatment of influenza, acute tonsillitis, pharyngitis, edema, urinary tract infection, acute enteritis, and dysentery, as well as for external treatment of hordeolum, sores, and furuncles.

**Use and Dosage:** 30–60 g per dose, decocted in water for oral use. For external treatment, proper amounts of the plant are mashed and applied.







## 1.13 Family: Commelinaceae

### 1.13.1 *Commelina diffusa*

**Chinese Name(s):** jie jie cao, zhu hao cao, zhu jie hua

**Source:** This medicine is made of the whole plants of *Commelina diffusa* (*Commelina diffusa* Burm.).

**Morphology:** The herbs are annual and diffuse. The stems are creeping. There are roots at nodes, up to 1 m in length, multibranched, sometimes branched at each node, glabrous or single-rowed hispidulous. The leaves are lanceolate or oblong on proximal branches, 3–12 cm long and 0.8–3 cm wide, often acuminate apically, rarely acute, glabrous or hispid. The leaf sheathes have red spots, hispid only along the mouth or on one surface, or entirely hispid. The cincinni are often solitary in proximal leaf axils, sometimes pseudoterminal, with only one inflorescence per branch. The involucre bracts are petiolate, 2–4 cm long, folded, ovate-lanceolate after spreading, apically acuminate or abruptly acuminate, basally cordate or orbicular, glabrous or hispid outside. The inflorescences are dichotomously branched from base; one branch has 1.5–2 cm long peduncles, vertical to involucre bracts, forming one straight line with stalk of involucre bracts, 1–4-flowered, sterile, exerted from involucre bracts; another branch has much shorter pedicel, with a right angle to pedicel, but in the same direction to involucre bracts, 3–5-flowered, fertile, included in involucre bracts. The bracts are tiny. The pedicels are ca. 3 mm long, up to 5 cm when fruiting, stout and curved. The sepals are elliptic, shallowly cymbiform, ca. 3–4 mm long, persistent, glabrous. The petals are blue. The capsules are oblong-trigonous, ca. 5 mm long, 3-valved. The adaxial 2 valves each has 2 seeds, dehiscent, and the abaxial valve only has 1 seed, indehiscent. The flowering and fruiting periods are from May to November.

**Habitat:** It grows in humid wilderness or forest margins.

**Distribution:** It's distributed in Hainan, Guangdong, Taiwan, Fujian, Jiangxi, Hubei, Hebei, Shaanxi, Jilin, Guangxi, Guizhou, Yunnan, Sichuan, and Tibet of China, as well as in tropical and subtropical regions all over the world.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bland in taste and cold in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis and relieving swelling, stopping bleeding; it's often used for treatment of acute pharyngitis, dysentery, sore, furuncle, and dysuria, as well as for external treatment of traumatic bleeding.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use. For external treatment, proper amount of dried medicinal powder is sprinkled to the wounds.

**Prescription Example(s):** dysuria: *Commelina diffusa*, *Asiatic plantain* 60 g each, decocted and taken instead of tea





## 1.14 Family: Commelinaceae

### 1.14.1 *Commelina paludosa*

**Chinese Name(s):** da bao ya zhi cao, qi jie feng

**Source:** This medicine is made of the whole plants of *Commelina paludosa* (*Commelina paludosa* Bl.).

**Morphology:** The herbs are perennial and stout. The stems are often erect, sometimes rooting at basal nodes, up to 1 m in height, unbranched or sometimes branched distally. The leaves are sessile. The leaf blades are lanceolate to ovate-lanceolate, 7–20 cm long and 2–7 cm wide, apically acuminate, glabrous on both surfaces or sometimes adaxially granular hairy and abaxially densely hirsute. The leaf sheaths are 1.8–3 cm long, often densely brown hispid at the mouth on one side, but sometimes nearly glabrous, only a few hairs along the mouth, sometimes hirsute throughout. The involucre bracts are funnelform, ca. 2 cm long and 1.5–2 cm wide, glabrous, sessile, aggregated at apex of stems, forming capitula by 4–10 involucre bracts, proximal margins being connate, distal margins being acute or abruptly acute. The cincinni have numerous flowers, nearly included, with ca. 1.2 cm long peduncles. The pedicels are short, ca. 7 mm long, twisted. The sepals are membranous, 3–6 mm long, lanceolate. The petals are blue, spatulate or obovate-orbicular, 5–8 mm long and 4 mm wide; the inner 2 petals are clawed. The capsules are ovoid-globose, trigonous, 3-loculed, 3-valved, with 1 seed per locule, ca. 4 mm long. The seeds are ellipsoid, blackish brown, slightly compressed adaxially, ca. 3.5 mm long, finely reticulate. The flowering period is from August to October. The fruiting period is from October to April of the following year.

**Habitat:** It grows in forests and streamside ravines.



**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Taiwan, Fujian, Jiangxi, Hunan, Guangxi, Guizhou, Yunnan, Sichuan, and Tibet of China, as well as in Nepal, India, and Indonesia.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet and bland in taste and slightly cold in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis, and relieving swelling; it is often used for treatment of influenza, acute tonsillitis, pharyngitis, edema, urinary tract infection, acute enteritis, and dysentery, as well as for external treatment of hordeolum, sores, and furuncles.

**Use and Dosage:** 30–60 g per dose, decocted in water for oral use. For external treatment, proper amounts of fresh products are mashed and applied to the affected areas.





## 1.15 Family: Commelinaceae

### 1.15.1 *Cyanotis vaga*

**Chinese Name(s):** lan er cao, ji guan shen

**Source:** This medicine is made of the whole plants of *Cyanotis vaga* (*Cyanotis vaga* (Lour.) Reem. et Schult. f.)

**Morphology:** The herbs are perennial, diffuse, densely hirsute entirely, sometimes arachnoid or glabrous, with globose and hairy bulbs, bulbs being ca. 1 m in diam. The stems often have numerous branches at base, or distally branched, or few branched, 10–60 cm long. The leaves are linear to lanceolate, 5–10(15) cm long and 0.3–1(1.5) cm wide. The cincinni are terminal, and also axillary, solitary, rarely few aggregated in terminal capitate, pedunculate or not. The involucral bracts are wider and shorter than leaves, spathe-like; the bracts are falcate-curved and acuminate, 5–10 mm long and ca. 3 mm wide, in 2 imbricate lines. The sepals are connate at base, oblong-lanceolate, apically acute, near 5 mm long, white hirsute outside. The petals are blue or bluish purple, 6–8 mm long, apical lobes being spatulate-oblong. The filaments are blue lanate. The capsules are obovoid-trigonous, apically hirsute, ca. 2.5 mm long and ca. 3 mm in diam. The seeds are grayish brown, with numerous pores. The flowering period is from July to September. The fruiting time is in October.

**Habitat:** It grows on sandy beaches and slope grasslands or in sparse forests.

**Distribution:** It's distributed in Taiwan, Guangxi, Guizhou, Sichuan, Yunnan, and Tibet of China.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet in taste and neutral in property.

**Functions:** Activating blood circulation and relieving pain, dispelling wind, and activating collaterals; it's often used for treatment of lumbago and leg pain, injuries, and rheumatoid arthritis.

**Use and Dosage:** 9–15 g per dose, decocted in water for oral use



## 1.16 Family: Commelinaceae

### 1.16.1 *Floscopa scandens*

**Chinese Name(s):** ju hua cao, shui cao, da xiang zhu hao cao, zhu ye cao, shui zhu cai

**Source:** This medicine is made of the whole plants of *Floscopa scandens* (*Floscopa scandens* Lour.)

**Morphology:** The herbs are perennial, with extremely long rhizomes, rhizomes being densely fibrous roots at nodes. The plants have multicellular hairs throughout or only on leaf sheaths and inflorescences, but sometimes leaf sheaths being hairy only on one side. The stems are 20–70 cm tall, unbranched. The leaves are sessile or

with winged short petioles. The leaf blades are elliptic to lanceolate, 4–12 cm long and 1–3 cm wide, scaly convex on the adaxial side. There are numerous panicles, terminal or also axillary, forming broomlike compound panicles, up to 8 cm in length and 4 cm in width; the lower involucral bracts are foliaceous, in the same shape as leaves and equal in size; the upper ones are much smaller than leaves. The pedicels are tiny. The bracts are scaly. The sepals are 2–3 mm long, shallowly cymbiform. The petals are blue or purple, rarely white, obovate, slightly longer than sepals. The filaments are long and glabrous. The capsules are ovoid, ca. 2 mm long and wide, lateral compressed. The seeds are semiellipsoid, grayish blue. The flowering and fruiting periods are from July to November.

**Habitat:** It grows on grassy ravines and forests.

**Distribution:** It's distributed in Guangdong, Hong Kong, Hainan, Taiwan, Fujian, Jiangxi, Zhejiang, Hunan, Guangxi, Yunnan, and Sichuan of China, as well as in tropical regions of Asia and Oceania.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's bitter in taste and cold in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis, and relieving swelling; it's often used for treatment of fever, cough due to heat in the lungs, conjunctivitis, strangury, edema, sores and furuncles, swollen lymph nodes, and acute nephritis.

**Use and Dosage:** 9–15 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied.





## 1.17 Family: Commelinaceae

### 1.17.1 *Murdannia bracteata*

**Chinese Name(s):** da bao shui zhu ye, tan huo cao, qing zhu ke cai

**Source:** This medicine is made of the whole plants of *Murdannia bracteata* (*Murdannia bracteata* (Clarke) Kuntze [*Aneilema bracteatum* (Clarke) Kuntze].)

**Morphology:** The herbs are perennial. There are numerous fibrous roots, densely tomentose. The main stems are extremely short. The leaves are aggregated in rosulate, sagittate, 20–30 cm long and 1.2–1.8 cm wide, proximal margins being ciliate, adaxially glabrous, abaxially short hairy or glabrous; the leaves on fertile shoots are ovate-lanceolate to lanceolate, 3–12 cm long and 1–1.5 cm wide, glabrous on both surfaces or abaxially scabrid; the leaf sheathes are villous or only hispid along 1 surface of the mouth. The inflorescences are cincinni, often 3–5, rarely solitary. The flowers are dense, capitata. The peduncles are 2–3 cm long. The involucre bracts are foliaceous, rather small. The bracts are orbicular, 5–7 mm long. The pedicels are tiny, elongated when fruiting, 2–3 mm long, strongly curved. The sepals are ovate-elliptic, shallowly cymbiform, ca. 4 mm long. The petals are blue, obovoid-columnar. There are 2 fertile stamens; the filaments are pubescent. There are 3 staminodes. The capsules are broadly ellipsoid-trigonous, ca. 4 mm long. The seeds are yellowish brown and white reticulate, not porous. The fruiting period is from May to November.

**Habitat:** It grows in dense forests or sandy places in ravines.

**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Guangxi, and Yunnan of China, as well as in the Indo-China Peninsula.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn, sliced, and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet and bland in taste and cool in property.

**Functions:** Resolving phlegm and dispersing nodules; it's often used for treatment of lymph node tuberculosis, turbid urine, and strangury.

**Use and Dosage:** 30–60 g per dose, decocted in water for oral use





## 1.18 Family: Commelinaceae

### 1.18.1 *Murdannia edulis*

**Chinese Name(s):** ting hua shui zhu ye, da ye shui zhu ye

**Source:** This medicine is made of the rhizomes of *Murdannia edulis* (*Murdannia edulis* (Stokes) Faden [*M. scapiflora* (Roxb.) Royle]).

**Morphology:** The herbs are perennial; some (or all) roots are fusiform thickened at ends into tubers up to 8 mm in diam. The leaves are basal, rosulately aggregated, more than 6-leaved, sagittate, 10–42 cm long and 2–4.5 cm wide, apically acute to acuminate, margins being undulate, glabrous on both surfaces or sparsely puberulent, margins often being sparsely hispid-ciliate. The main stems are undeveloped. There are numerous scapes, arising from leaves of basal main stems or lower leaves, nearly as long as leaves, slender, ca. 2 mm in diam., glabrescent to densely hispid. The involucral bracts are sheathlike, gradually smaller from lower part to upper part of scapes; the lower involucral bracts are up to 3 cm in length and the upper ones are

only 2 mm long; the lower ones have foliaceous parts except sheathes, often have 1–3 sterile involucre bracts; sometimes there are single scorpioid cymes in involucre bract axils, or a few cymes in branched inflorescence; in case of a single cyme, there is sheathlike, membranous involucre bracts on peduncles, forming reduced inflorescence shoots. The cyme stalks are 1–2 cm long, often only 1–2 flowers seeded per cyme. The bracts are tiny, cupular, and red. The pedicels are ca. 5–8 mm when fruiting; the sepals are lanceolate, shallowly cymbiform, glabrous, ca. 4 mm long, persistent when fruiting, up to 7 mm in length. The petals are pink or purple, longer than sepals. The capsules are ellipsoid-trigonous, ca. 7 mm long, with 5 seeds per valves. The seeds are slightly dorsiventrally compressed, reticulate; the hila are elliptic. The flowering period is from June to August. The fruiting period is from August to September.

**Habitat:** It grows in humid places on slope forests.

**Distribution:** It's distributed in Hainan, Guangdong, Taiwan, and Guangxi of China, as well as in Nepal, South India, Thailand, Vietnam, Laos, Cambodia, the Philippines, and Papua New Guinea.

**Acquisition and Processing:** The rhizomes are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet and slightly bitter in taste and cool in property.

**Functions:** Clearing away the heart-fire and moistening the lungs, relieving heat and dysphoria, tonifying the stomach, and promoting secretion of saliva; it's often used for treatment of asthenia and cough due to consumption diseases, hemoptysis, hemorrhage, fever, xerostomia, constipation due to lack of body fluid, etc.

**Use and Dosage:** 3–6 g per dose, decocted in water for oral use





## 1.19 Family: Commelinaceae

### 1.19.1 *Murdannia loriformis*

**Chinese Name(s):** niu e cao, xia ye shui zhu ye

**Source:** This medicine is made of the whole plants of *Murdannia loriformis* (*Murdannia loriformis* (Hassk.) Rolla et Kammathy).

**Morphology:** The herbs are perennial. The main stems are undeveloped, rosulate, with several fertile stems arising from rosettes, diffuse or ascending, with roots at proximal nodes, glabrous, or puberulent on one side, very rarely densely hirsute, 15–20 cm long. The leaves on main stems are dense, rosulate, grasslike or sagittate, 5–15(30) cm long and nearly 1 cm wide, margins being ciliate only at proximal parts. The leaves on fertile stems are rather short, ciliate only on surface of sheath mouth, very rarely densely hispidulous on leaves abaxially and leaf sheathes. The cincinni are terminal, solitary or 2–3 forming a panicle. The proximal involucre bracts are foliaceous and rather small, but the distal ones are tiny, less than 1 cm in length. The cymes have peduncles, 2.5 cm long; the cymes have several densely arranged flowers, subcapitate. The bracts are caducous, ca. 4 mm long. The pedicels are 2.5–4 mm long when fruiting, slightly curved. The sepals are herbaceous, ovate-elliptic, shallowly cymbiform, ca. 3 mm long. The petals are purplish red or blue, obovate, 5 mm long. There are 2 fertile stamens. The capsules are ovoid-trigonous, 3–4 mm long. The seeds are yellowish brown, radiate striate, finely reticulate, neither porous nor white mastoid verrucose. The flowering and fruiting periods are from May to October.

**Habitat:** It grows on valleys and streamsides or in humid places.

**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Taiwan, Fujian, Jiangxi, Zhejiang, Anhui, Hunan, Guangxi, Guizhou, Yunnan, Sichuan, and Tibet of China, as well as in Japan, the Philippines, Papua New Guinea, Indonesia, Vietnam, Thailand, South India, and Sri Lanka.

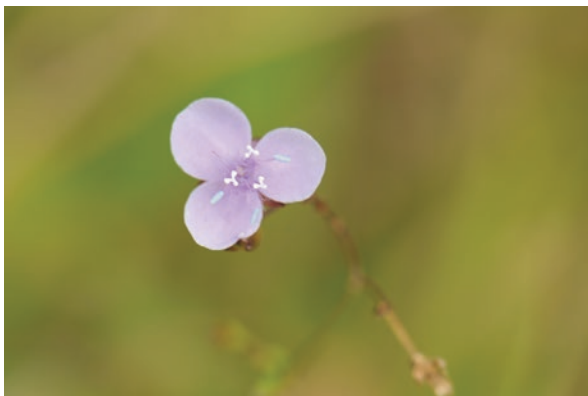
**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet, bland and slightly bitter in taste, and cold in property.

**Functions:** Clearing heat and detoxicating, relieving coughing, and promoting diuresis; it's often used for treatment of children with high fever, cough due to heat in the lungs, conjunctivitis, heat dysentery, sore, carbuncle, and dysuria.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.





## 1.20 Family: Commelinaceae

### 1.20.1 *Murdannia triquetra*

**Chinese Name(s):** shui zhu ye, rou cao, xi zhu ye gao cao

**Source:** This medicine is made of the whole plants of *Murdannia triquetra* (*Murdannia triquetra* (Wall.) Brückn).

**Morphology:** The herbs are perennial, with elongated and horizontal rhizomes. The rhizomes have leaf sheathes, internodes being ca. 6 cm long, with slender fibrous roots at nodes. The stems are fleshy, creeping proximally, with roots at nodes, ascending distally, often with numerous branches, up to 40 cm in length, internodes being ca. 8 cm long, with one row of dense white bristles which are contiguous with a line of hairs on next leaf sheath. The leaves are sessile, ciliate only in proximal blades, and with a line of hairs on the commissure with leaf sheath; the hairs are joint with previous hairs on nodes, forming series, glabrous elsewhere. The leaf blades are linear-lanceolate, spreading or slightly folded, 2–6 cm long and 5–8 mm wide, apically acuminate and tips being obtuse. The cymes are terminal and axillary, usually only 1-flowered; the peduncles are 1–4 cm long; the terminal ones are long and the axillary ones are short, with linear bracts in the middle of peduncles, sometimes with 1 flower in bract axils. The sepals are green, narrowly oblong, shallowly cymbiform, 4–6 mm long, glabrous, persistent when fruiting. The petals are pink, purplish red, or bluish purple, obovate, slightly longer than sepals. The filaments are densely bearded. The capsules are ovoid-globose, trigonous, 5–7 mm long and 3–4 mm in diam., obtuse or abruptly acute at both ends, with 3 seeds per valve, sometimes only 1–2 seeds. The seeds are shortly columnar, not flattened, reddish gray. The flowering period is from September to October. The fruiting period is from October to November.

**Habitat:** It grows in paddy fields or wet places.

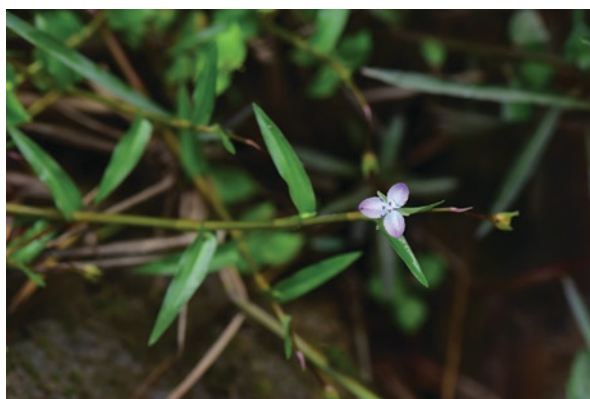
**Distribution:** It's distributed in Hainan, Guangdong, Taiwan, Fujian, Jiangxi, Zhejiang, Anhui, Hunan, Hubei, Henan, Shaanxi, Guangxi, Guizhou, Yunnan, and Sichuan of China, as well as in India to Vietnam, Laos, and Cambodia.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet, bland and slightly bitter in taste, and cold in property.

**Functions:** Clearing heat and detoxicating, relieving coughing, and promoting diuresis; it's often used for treatment of cough due to heat in the lungs, dysentery with blood and white stool, dysuria, sore throat, carbuncle, and furuncle.

**Use and Dosage:** 12–20 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.



## 1.21 Family: Commelinaceae

### 1.21.1 *Pollia japonica*

**Chinese Name(s):** du ruo, zhu ye lian, shui ba jiao

**Source:** This medicine is made of the whole plants of *Pollia japonica* (*Pollia japonica* Thunb.)

**Morphology:** The herbs are perennial, with elongated and horizontal rhizomes. The stems are erect or ascending, stout, unbranched, 30–80 cm tall, pubescent. The leaf sheathes are glabrous. The leaves are sessile or attenuated into winged petioles at base. The leaf blades are long elliptic, 10–30 cm long and 3–7 cm wide, basally cuneate, apically long acuminate, subglabrous, scabrous adaxially. The cincinni are 2–4 cm long, often in several distant whorls, sometimes not in whorls, often in panicles; the peduncles are 15–30 cm long; the inflorescences are far exerted from leaves; all peduncles and pedicels have densely hooked hairs. The involucre bracts are lanceolate; the pedicels are ca. 5 mm long. There are 3 sepals, ca. 5 mm long, glabrous persistent. The petals are white, obovate-spatulate, ca. 3 mm long. There are 6 stamens, all fertile, subequal, sometimes 3 smaller stamens, rarely 1–2 sterile stamens. The fruits are globose, pericarps being black, ca. 5 mm in diam., with numerous seeds per valves. The seeds are purplish gray. The flowering period is from July to September. The fruiting period is from September to October.

**Habitat:** It grows in wet places under forests.

**Distribution:** It's distributed in Jiangxi, Taiwan, Fujian, Zhejiang, Anhui, Hunan, Hubei, Guangdong, Guangxi, Guizhou, and Sichuan of China, as well as in Japan and North Korea.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's pungent in taste and slightly warm in property.

**Functions:** Regulating qi, relieving pain, dispersing wind, and reducing swelling; it's often used for treatment of pain of the chest and hypochondrium, stomachache, low back pain, swelling and pain of the head, and streaming eyes, as well as for external treatment of snakebite.

**Use and Dosage:** 6–12 g per dose, decocted in water for oral use. For external treatment, the products are mashed and applied to the affected areas.





## 1.22 Family: Commelinaceae

### 1.22.1 *Pollia miranda*

**Chinese Name(s):** chuan du ruo, zhu ye lan

**Source:** This medicine is made of the whole plants of *Pollia miranda* (*Pollia miranda* (Lévl.) Hara).

**Morphology:** The herbs are perennial. The rhizomes are horizontal and slender, with membranous sheathes, 1.5–3 mm in diam., internodes being 1–6 cm long. The stems are ascending, 20–50 cm tall; the proximal internodes are 10 cm long. The leaf sheathes are 1–2 cm long, puberulent. The leaves are elliptic or ovate-elliptic, 5–15 cm long and 2–5 cm wide, granulate-scabrous adaxially and sparsely hispidulous abaxially. The panicles are terminal, with 2 to several cincinni; the peduncles are 2–6 cm long, hispidulous. The bracts are funnellform. The sepals are ovate-orbicular, cymbiform, ca. 2.5 mm long, persistent. The petals are white, pink spotted, ovate-orbicular, clawed at base, ca. 4 mm long. There are 6 stamens; the filaments are slightly shorter than petals. The ovaries have 4–5 ovules per locule. The fruits are black when mature, globose, ca. 5 mm in diam. The seeds are flattened, polygonal, bluish gray. The flowering period is from June to August. The fruiting period is from August to September.

**Habitat:** It grows on valley forests below sea level to 1600 m.

**Distribution:** It's distributed in Sichuan, Chongqing, Guizhou, Yunnan and Guangxi, and Taiwan of China, as well as in Japan.

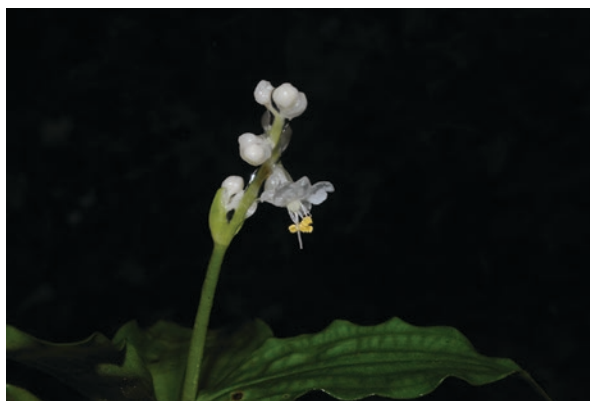
**Acquisition and Processing:** The whole plants are harvested in summer, washed, sectioned, and dried in the sun.

**Natural Taste and Meridian Tropism:** It's pungent in taste and slightly warm in property.

**Functions:** Regulating qi, relieving pain, reducing swelling, and tonifying kidneys; it's often used for treatment of lumbago, injuries, skin swelling, stomachache,

and strangury, as well as for external treatment of snakebite, carbuncle, furuncle, and anal prolapse.

**Use and Dosage:** 9–15 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.



## 1.23 Family: Commelinaceae

### 1.23.1 *Setcreasea purpurea*

**Chinese Name(s):** zi ya zhi cao, zi jin cao, zi zhu mei

**Source:** This medicine is made of the whole plants of *Setcreasea purpurea* (*Setcreasea purpurea* B. K. Boom).

**Morphology:** The herbs are perennial, diffuse, and 20–50 cm tall. The stems have numerous branches, fleshy, purplish red, creeping proximally, often with



fibrous roots at nodes, suberect distally. The leaves are alternate, lanceolate, 6–13 cm long and 6–10 cm wide, apically acuminate, margins being entire, basally amplexicaul into sheathes, white ciliate at the mouth of sheathes, adaxially dark green, margins being greenish purple, abaxially purplish red. The divergent peduncles have dense flowers, with linear-lanceolate bracts at proximal parts, ca. 7 mm long. There are 3 sepals, green, ovate-orbicular, persistent. There are 3 petals, bluish purple, broadly ovate. There are 6 stamens, 2 of which fertile, 3 of which reduced; the filament of the other 1 is short and slender, without anther. There is 1 pistil; the ovaries are ovoid, 3-loculed; the styles are filiform and long; the stigmas are capitate. The capsules are ellipsoid, with 3 prominent ridges. The seeds are trigonous-semicolumnar. The flowering period is in summer and autumn.

**Habitat:** It is mainly cultivated in gardens.

**Distribution:** Originating from Mexico, it's cultivated in provinces and regions in south China.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's astringent in taste and cool in property.

**Functions:** Activating blood circulation, stopping bleeding, and detoxicating the snake venom; it's often used for the treatment of snake blister, sores, snakebite, injury, and rheumatism.

**Use and Dosage:** 10–15 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.





## 1.24 Family: Commelinaceae

### 1.24.1 *Streptolirion volubile*

**Chinese Name(s):** zhu ye zi, da ye zhu cai, zhu bi kong, suan zhu cao, xiao zhu ye cai

**Source:** This medicine is made of the whole plants of *Streptolirion volubile* (*Streptolirion volubile* Edgew.)

**Morphology:** The herbs are perennial, climbing; the stems are rarely suberect. The stems are 0.5–6 m long, often glabrous. The petioles are 3–10 cm long; the leaf blades are cordate-orbicular, sometimes cordate-ovate, 5–15 cm long and 3–15 cm wide, apically often caudate, basally deeply cordate, more or less pilose adaxially. The cincinni have one to several flowers, in panicles; the involucre bracts at lower part of panicles are foliaceous, 2–6 cm long; the upper ones are small, ovate-lanceolate. The pedicels of flowers are absent. The sepals are 3–5 mm long, apically acute. The petals are white, pale purple, and later white, linear, slightly longer than sepals. The capsules are ca. 4–7 mm long, with an aristiform tip at apex, to 3 mm long. The seeds are brownish gray, ca. 2.5 mm long. The flowering period is from July to August. The fruiting period is from September to October.

**Habitat:** It grows on valleys and in streamside wet places.

**Distribution:** It's distributed in provinces of Zhejiang, Henan, Hebei, Shanxi, Shaanxi, Gansu, Liaoning, Guangdong, Guangxi, Yunnan, Sichuan, and Tibet, as well as in Bhutan, northeast India to Vietnam, Laos, Cambodia, North Korea, and Japan.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet in taste and neutral in property.

**Functions:** Clearing heat and detoxicating, promoting diuresis and relieving swelling, removing blood stasis, and killing pain; it's often used for treatment of cold and fever, tuberculosis, polydipsia due to heart-fire, edema, pyretic strangury, morbid leukorrhoea, sore throat, carbuncle, injury, and rheumatism arthralgia.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied to the affected areas.





## 1.25 Family: Commelinaceae

### 1.25.1 *Tradescantia spathacea*

**Chinese Name(s):** zi wan nian qing, bang hua

**Source:** This medicine is made of the whole plants of *Tradescantia spathacea* (*Tradescantia spathacea* Sw. [*Rhoeo discolor* (L. Hér.) Hance]).

**Morphology:** The herbs are perennial; the stems are stout, somewhat fleshy, less than 1 m tall, unbranched. The leaves are alternate and close to each other, lanceolate, 15–30 cm long and 2.5–6 cm wide, apically acuminate, basally sheathlike, adaxially green, abaxially purplish red. The flowers are white, axillary, shortly petiolate, numerous, aggregated, included in bracts. There are 2 bracts, large and compressed, 3–4 cm long, pale purple. There are 3 sepals, oblong-lanceolate, free, petaloid. There are 3 petals, free. There are 6 stamens; the filaments are hairy. The ovaries are sessile, 3-loculed. The capsules are dehiscent. The flowering time is in summer.

**Habitat:** It's cultivated.

**Distribution:** Originating from tropical America, it's cultivated in provinces and regions in south China.

**Acquisition and Processing:** The flowers and leaves are harvested in summer and autumn, dried in the sun, or used when fresh.

**Natural Taste and Meridian Tropism:** It's sweet in taste and neutral in property.

**Functions:** Moistening the lungs and relieving coughing, cooling blood, and detoxicating; it's often used for treatment of cough due to heat in the lungs with bloody phlegm blood, pertussis, epistaxis, bacillary dysentery, and lymphatic tuberculosis.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use





## 1.26 Family: Commelinaceae

### 1.26.1 *Tradescantia zebrina*

**Chinese Name(s):** shui zhu cao, diao zhu lan, diao zhu mei

**Source:** This medicine is made of the whole plants of *Tradescantia zebrina* (*Tradescantia zebrina* Bosse [*Zebrina pendula* Schnizl]).

**Morphology:** The herbs are perennial. The stems are slightly slender, green, pendent, half fleshy, multibranching, rooting at nodes, oblong, diffuse or decumbent, ca. 1 m long, glabrous or sparsely hairy. The leaves are sessile, elliptic-ovate to oblong, 3–7 cm long and 1.5–3 cm wide, apically cuspidate, adaxially purplish green and with silver stripes, middle margins being purplish striped, abaxially purplish red; the apical and basal sheaths are sparsely villous or entirely sparsely villous. The small flowers are white, axillary; the flowers in clusters subtended by 2 leaves that are unequal in size, bractlike, terminal. There are 3 sepals, connate to a columnar tube, ca. 6 mm long. The corolla tubes are white, slender, ca. 1 cm long; there are 3 lobes, rose red, ca. 3 mm long. There are 6 stamens. The ovaries are 3-loculed. The fruits are capsules.

**Habitat:** It's cultivated.

**Distribution:** Originating from Mexico, it's cultivated in provinces and regions throughout China.

**Acquisition and Processing:** The whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet in taste, slightly cold in property, and a little toxic.

**Functions:** Clearing heat and detoxicating, promoting diuresis and reducing swelling, increasing secretion of saliva, stopping bleeding; it's often used for treatment of edema, urinary calculi, laryngitis, diarrhea, hemoptysis, dysentery, conjunctivitis, burn, snake injury, leukorrhea, strangury and turbid of urine, and wind-heat headache.

**Use and Dosage:** 15–30 g per dose, decocted in water for oral use





## 1.27 Family: Eriocaulaceae

### 1.27.1 *Eriocaulon buergerianum*

**Chinese Name(s):** gu jing cao, mai miao gu jing cao

**Source:** This medicine is made of the inflorescence or whole plants of *Eriocaulon buergerianum* (*Eriocaulon buergerianum* Koern.).

**Morphology:** The plants are herbs. The leaves are linear, caespitose, translucent, up to 4–10(–20) cm long, 2–5 mm wide in the middle, with 7–12(–18) veins. There are numerous scapes, 20–30 cm long, twisted, 4–5-ribbed. The sheathlike bracts are 3–5 cm long, obliquely lobed at the mouth. The inflorescences are subglobose when mature, straw-colored, 3–5 mm long, and 4–5 mm wide. The involucre bracts are obovate to suborbicular, straw-colored, rather rigid at proximal half, papery at distal half, not reflexed, 2–2.5 mm long and 1.5–1.8 mm wide, glabrous or with a few hairs on margins; the hairs at proximal parts are longer. The total receptacles are often densely pilose. The bracts are obovate to long obovate, 1.7–2.5 mm long and



0.9–1.6 mm wide, with white short hairs on distal back and apex. Male flowers: the sepals are spathe-like, dehiscent outside, 3-lobed, 1.8–2.5 mm long, somewhat hairy abaxially and apically; there are 3 corolla lobes, nearly subulate, subequal, with 1 black gland near apical, often with bicellular white short hairs at ends; there are 6 stamens, anthers being black. Female flowers: the calyxes are connate, apically 3-lobed, 1.8–2.5 mm long, with short hairs abaxially and apically, outside cleft margins being hairy, 1 longer at proximal part and 1 shorter at distal part; there are 3 petals, free, compressed clavate, fleshy, with 1 black gland and several white short hairs at apex; the hairs are deciduous after maturity, often villous inside. The ovaries are 3-loculed; the stigmas are 3 branched, shorter than styles. The seeds are oblong, 0.75–1 mm long, reticulate and with T-shaped protrusions at surfaces. The flowering and fruiting periods are from July to December.

**Habitat:** It grows on streamside and in wet places on fields.

**Distribution:** It's distributed in Taiwan, Fujian, Guangdong, Hong Kong, Jiangxi, Zhejiang, Jiangsu, Anhui, Hunan, Hubei, Guangxi, Guizhou, and Sichuan of China, as well as in Japan.

**Acquisition and Processing:** The capitula or whole plants are harvested in summer and autumn and dried in the sun.

**Medicinal Properties:** The capitula of this product are hemispherical, 4–5 mm in diam. There are many layers of bracts closely arranged at the bottom. The bracts are yellowish green and glossy, densely white pilose on the upper margins. The inflorescence is gray-white apically. When the inflorescence is crushed, there are many black anthers and small, yellow-green immature fruits. The involucre bracts are slender, of different lengths, less than 1 mm in diam., yellowish green, with several twisted ridges. It is soft in texture, slightly odored, and bland in taste.

**Natural Taste and Meridian Tropism:** It's pungent and sweet in taste and neutral in property and belongs to the meridians of liver and lungs.

**Functions:** Dispelling wind and heat, brightening eyes, and removing nebula; it's often used for treatment of conjunctivitis, corneal cloudiness, night blindness, retinoblastoma, and infantile malnutrition.

**Use and Dosage:** 9–15 g per dose, decocted in water for oral use

**Prescription Example(s):**

1. Clinical diagnoses and symptoms: central retinal choroiditis – *Eriocaulon buergerianum*, *Codonopsis pilosula* (or *Campanumoea javanica*), cassia seed, plantain, licorice, each 6 g, *Imperata* root 9 g, added with 500 ml of water, decocted into 100–150 ml, and taken 1 dose twice a day for 10–15 days as a course of treatment. The second course of treatment can be continued after 5–7 days of interval.
2. Clinical diagnoses and symptoms: night blindness – *Eriocaulon buergerianum* 30 g, sheep liver 1, added with water to stew. The liver and soup should all be taken.





## 1.28 Family: Eriocaulaceae

### 1.28.1 *Eriocaulon cinereum*

**Chinese Name(s):** bai yao gu jing cao, liu xing cao, sai gu jing cao

**Source:** This medicine is made of the inflorescence or whole plants of *Eriocaulon cinereum* (*Eriocaulon cinereum* R. Br.).

**Morphology:** The herbs are annual. The leaves are caespitose, narrowly linear, 2–5(–8) cm long, 0.8–1(–1.7) mm wide in the middle, to 1.5–2.5 mm at base, glabrous, translucent, 3(–5)-veined. There are 6–30 scapes, 6–9(–19) long, twisted,

(4–)5(–6)-ribbed. The sheathlike bracts are 1.5–2(–3.5) cm long, membranous obliquely lobed at the mouth. The inflorescences are broadly ovoid to subglobose when mature, pale yellow to dark green, 4 mm long, and 3–3.5 mm wide. The involucre bracts are obovate to long elliptic, pale yellowish green to grayish black, not reflexed, membranous, 0.9–1.9 mm long and 1–1.4 mm wide, glabrous. The total receptacles are often densely pilose, sometimes glabrous. The bracts are long orbicular to oblanceolate, 1.5–2 mm long and 0.4–0.7 mm wide, glabrous or rarely hirsute abaxially, midveins being often black at midribs. Male flowers: the calyxes are spathe-like connate, 3-lobed, 1.3–1.9 mm long, glabrous or abaxially hairy at apex; there are 3 corolla lobes, ovate to oblong, each one has 1 black or brown gland, with shortly pilose at apex, distal ones being slightly larger, sometimes sparsely pilose adaxially; there are 6 stamens, and antipetalous filaments are slightly longer, anthers being white, milky white to pale yellowish brown. Female flowers: there are 2 sepals, rarely 3, linear, blackish; the lateral sepals are 1–1.7 mm long, middle sepals being absent or 0.1–1.0 mm long, with several long hairs on the abaxial side and margins; the petals are absent; the ovaries are 3-loculed; the stigmas are 3 branched, shorter than styles. The seeds are ovoid-globose. The flowering period is from June to August. The fruiting period is from September to October.

**Habitat:** It grows on field and ditches.

**Distribution:** It's distributed in Henan, Hubei, Hunan, Jiangxi, Anhui, Shandong, Jiangsu, Zhejiang, Fujian, Taiwan, Guangdong, Guangxi, Guizhou, and Shaanxi of China, as well as in India, Sri Lanka, Thailand, Vietnam, Laos, Cambodia, the Philippines, Japan, and Australia.

**Acquisition and Processing:** The capitula or whole plants are harvested in summer and autumn and dried in the sun.

**Medicinal Properties:** The capitula of this product are hemispherical, 4–5 mm in diam. There are many layers of closely arranged basal bracts which are yellowish green and glossy, densely white pilose on the upper margins. The inflorescence is gray white apically. When the inflorescence is crushed, there are many black anthers and small, yellow green immature fruits. The involucre bracts are slender, of varying lengths, less than 1 mm in diam., yellowish green, with several twisted ridges. It is soft in texture, slightly odored, and bland in taste.

**Natural Taste and Meridian Tropism:** It's pungent and sweet in taste and neutral in property and belongs to the meridians of liver and lungs.

**Functions:** Curing inflammation, promoting diuresis, clearing the liver and eye, dispelling wind and heat, brightening eyes, and removing nebula; it's often used for treatment of wind-heat headache, conjunctivitis, epistaxis, and toothache.

**Use and Dosage:** 15–20 g per dose, decocted in water for oral use



## 1.29 Family: Eriocaulaceae

### 1.29.1 *Eriocaulon sexangulare*

**Chinese Name(s):** hua nan gu jing cao, gu jing zhu

**Source:** This medicine is made of the inflorescence or whole plants of *Eriocaulon sexangulare* (*Eriocaulon sexangulare* Linn. [*E. wallichianum* Mart.])

**Morphology:** The plants are herbs. The leaves are caespitose, linear, 10–37 cm long and 4–13 mm wide, apically obtuse, rather thick, 15–37-veined. There are 5–20 scapes, sometimes up to 60 cm in length, twisted, 4–6-ribbed; the sheathlike bracts are 4–12 cm long, obliquely lobed at the mouth; the lobes are grasslike. The inflorescences are subglobose when mature, not compressed, glaucous, 6.5 mm in diam., basally truncate. The involucre bracts are obovate, straw-colored, spreading, thickly membranous, 2.2–2.4 mm in diam., adaxially white short pilose, margins being glabrous. The receptacles are glabrous. The bracts are obovate to obovate-cuneate, 2–2.5 mm in diam., white short hairs at distal back. Male flowers: the calyxes are connate, spathe-like, proximally deeply lobed and half lobed, apically 2(–3)-lobed, sometimes truncate and indehiscent at apex, 2 lateral ones are winged, irregularly dentate at winged ends, glabrous; the corollas are 3-lobed, lobes being linear, each one often has 1 indistinct gland, lobes being shortly pilose at apex; there are 6 stamens, occasionally 5 or 4; the anthers are black. Female flowers: there are 3 sepals, rarely 2, glabrous, 2 lateral lobes, cymbiform, 2–2.3 mm long, with broad abaxial wings; the ends of wings are dentate; the middle sepals (proximal sepals) are smaller, wingless, 1.7–2.5 mm long, linear, orbicular to dichotomous, even reduced entirely; there are 3 membranous, linear petals; the middle petal (distal petal) is slightly larger, each one has 1 pale brown, indistinct gland near apex, with white short hairs at apex, sometimes villous in distal half on lateral sides; the ovaries

are 3-loculed; the stigmas are 3 branched, flattened. The flowering and fruiting periods are from summer and autumn to winter.

**Habitat:** It grows in wet places in ravines and rice fields.

**Distribution:** It's distributed in Hong Kong, Guangdong, Hainan, Taiwan, Fujian, and Guangxi of China, as well as in India, Sri Lanka, Burma, Thailand, Indonesia, Malaysia, Vietnam, Laos, and Cambodia.

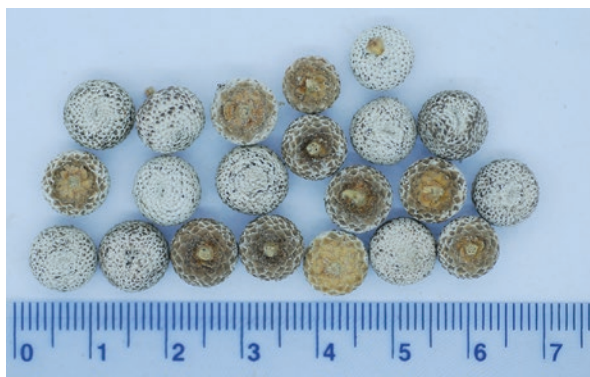
**Acquisition and Processing:** The inflorescence or whole plants are harvested in summer and autumn and dried in the sun.

**Natural Taste and Meridian Tropism:** It's sweet in taste and neutral in property and belongs to the meridians of liver and lungs.

**Functions:** Dispersing wind and fire, curing inflammation, brightening eyes, and removing nebula; it's a key ophthalmic medicine which is often used for treatment of red and swelling of eyes, blurred eyes, photophobia and eye streaming, all kinds of hectic diseases, wind-heat cold, sore throat, dysuria, strangury, and turbidity of urine.

**Use and Dosage:** 10–15 g per dose, decocted in water for oral use





### 1.30 Family: Musaceae

#### 1.30.1 *Musa basjoo*

**Chinese Name(s):** ba jiao

**Source:** This medicine is made of the roots of *Musa basjoo* (*Musa basjoo* Sieb.).

**Morphology:** The plants are large herbs, 2.5–4 m tall. The leaf blades are oblong, 2–3 m long and 25–30 cm wide, apically obtuse, basally orbicular or asymmetric, adaxially bright green, shiny. The petioles are thick, up to 30 cm in length. The inflorescences are terminal, pendulous. The bracts are reddish brown or purple. The male flowers are borne at distal inflorescence; the female flowers are borne at proximal inflorescence. There are ca. 10–16 female flowers per bract, in 2 rows. The compound tepals are 4–4.5 cm long, 5-denticulate; the free petals are subequal

compound ones, apically mucronate. The berries are trigonous, oblong, 5–7 cm long, 3–5-angled, sessile, fleshy, with numerous seeds included. The seeds are black, tuberculate and irregularly angled, 6–8 mm wide.

**Habitat:** It's cultivated.

**Distribution:** It originated from the Ryukyu Islands in Japan and cultivated in provinces and regions south of Qinling Mountains-Huaihe River.

**Acquisition and Processing:** The roots are dug up all year round, dried in the sun, or used when fresh.

**Natural Taste and Meridian Tropism:** It's bland in taste, cool in property, and non-poisonous.

**Functions:** Clearing heat and detoxicating, relieving thirst, and promoting diuresis; it is used for the treatment of acute febrile infectious diseases, vexation, thirst, jaundice, edema, beriberi, hematuria, metrorrhagia, carbuncle, furuncle, and erysipelas.

**Use and Dosage:** 25–50 g per dose, decocted in water for oral use. For external treatment, the fresh products are mashed and applied.







## References

1. Pharmacopoeia of the People's Republic of China (Part 1: 212) [S], The Medicine Science and Technology Press of China, 2015.
2. Xie ZW et al. Compilation of the national Chinese herbal medicine, Vol. 2: 2106 [M]. Beijing: People's Medical Publishing House, 1975.
3. Xie ZW et al. Compilation of The National Chinese Herbal Medicine, Vol. 1: 818 [M]. Beijing: People's Medical Publishing House, 1975.