

26. GELIDOCALAMUS T. H. Wen, *J. Bamboo Res.* 1(1): 21. 1982.

短枝竹属 *duan zhi zhu shu*

Zhu Zhengde (朱政德 *Chu Cheng-de*); Chris Stapleton

Shrubby bamboos. Rhizomes leptomorph, with running underground stems. Culms pluricaespitose, erect; internodes terete; nodes weakly prominent. Branches 7–12 per node, rarely more than 20, slender, without secondary branching. Culm sheaths persistent, much shorter than internodes; auricles absent or conspicuous; ligule arched or truncate, short; blade broadly conical or narrowly lanceolate. Leaves usually solitary on each branch; sheaths narrow, closely appressed to branchlets and inconspicuous, usually solitary or rarely 2 or more; blade lanceolate or broadly lanceolate to elliptical, short transverse veins distinct. Inflorescence paniculate, large, open, terminal to leafy branches. Spikelets mostly light green, small, 3–5-flowered; pedicel slender. Rachilla compressed. Glumes 2; lemma compressed laterally, ridged abaxially; palea 2-keeled, truncate at apex; lodicules 3. Stamens 3; filaments free. Stigmas 2, or rarely 1, plumose. Caryopsis globose, beaked. New shoots autumn–winter.

- Nine species: China.

In addition to the species treated below, *Gelidocalamus dongdingensis* C. F. Huang & C. D. Dai (*Wuyi Sci. J.* 8: 173. 1991) was described from Fujian (Wuyi Shan), but no specimens have been seen by the authors and this taxon must be left as a doubtful species. *Gelidocalamus velutinus* W. T. Lin (*Acta Phytotax. Sin.* 26: 233. 1988) was described from Guangdong (Yunan). This plant has 14–16 branches per node and distinctive, oblong culm sheath auricles, and looks more like a species of *Pleioblastus* than a *Gelidocalamus*.

- 1a. Culms dwarf, ca. 1 m, 3–6 mm in diam., culm sheath initially pink 9. *G. rutilans*
- 1b. Culms tall, 1–6 m, more than 10 mm in diam.
 - 2a. Young culms glabrous; culm sheath auricles small or weak.
 - 3a. Culm sheath auricles weak, oral setae radiate; leaf blade 1.2–2.2 cm wide, secondary veins 4- or 5-paired 1. *G. stellatus*
 - 3b. Culm sheath auricles small, oral setae not radiate; leaf blade 2–3.5 cm wide, secondary veins 7–9-paired 2. *G. kunishii*
 - 2b. Young culms hairy; culm sheath auricles present or absent.
 - 4a. Young culms setose, especially at basal nodes.
 - 5a. Culms ca. 5 m, to 3 cm in diam., internodes 50–70 cm; leaf blade 28–40 cm 3. *G. longinternodus*
 - 5b. Culms 1–3 m, 0.7–1.5 cm in diam., internodes 30–40 cm; leaf blade 14–22 cm 4. *G. latifolius*
 - 4b. Young culms pubescent, not setose.
 - 6a. Culms solid; culm sheath auricles elliptic; culm sheath oral setae radiate, ca. 5 mm 8. *G. solidus*
 - 6b. Culms hollow; culm sheath auricles and oral setae absent.
 - 7a. Leaves 2–4 or more per ultimate branch; sheath subglabrous 7. *G. multifolius*
 - 7b. Leaves mostly 1 or 2 per ultimate branch, rarely 4-leaved; sheaths sparsely streaked with diverse colors.
 - 8a. Culm sheaths distally finely purple-brown checkered 5. *G. tessellatus*
 - 8b. Culm sheaths generally darker, with pale elliptical blotches 6. *G. annulatus*

1. *Gelidocalamus stellatus* T. H. Wen, *J. Bamboo Res.* 1(1): 22. 1982.

井冈短枝竹 *jing gang duan zhi zhu*

Gelidocalamus monophyllus (T. P. Yi & B. M. Yang) B. M. Yang; *Yushania monophylla* T. P. Yi & B. M. Yang.

Culms to 2 m, to 0.8 cm in diam.; internodes initially green, 25–30 cm, glaucous below nodes, glabrous; nodes prominent, sheath ring with persistent remains of sheath base. Culm sheaths retrorsely setose, margins ciliate; auricles weak or absent, oral setae radiate; ligule prominent, 2–3 mm, glabrous; blade conical, striate, margins ciliate. Leaves 1(or 2) per ultimate branch; blade abaxially light green, adaxially green, lanceolate, 12–17 × 1.2–2.2 cm, abaxially pubescent near midrib, adaxially glabrous, secondary veins 4- or 5-paired, one margin serrulate, other margin entire. Inflorescence paniculate, 12–19 × 7–9 cm. Spikelets 5–7 mm; florets 3–5. Glumes 2; lemma ca. 3 mm, 5-veined; palea longer than lemma, not veined; lodicules

3, ovate, not veined. Stamens 3; filaments short; anthers yellow. Ovary 3-angled or ovoid, glabrous; stigmas 2, usually united, compressed, slender. New shoots Oct–Nov.

- Hardwood forests, near streams. Hunan, Jiangxi.

The shoots are edible, and the plants are cultivated for ornament.

2. *Gelidocalamus kunishii* (Hayata) P. C. Keng & T. H. Wen, *J. Bamboo Res.* 2(1): 20. 1983.

台湾矢竹 *tai wan shi zhu*

Arundinaria kunishii Hayata, *Icon. Pl. Formosan.* 6: 136. 1916; *Pleioblastus kunishii* (Hayata) Ohki; *Pseudosasa kunishii* (Hayata) Makino & Nemoto; *P. taiwanensis* Masamune. & Mori; *Sinarundinaria kunishii* (Hayata) Kanehira & Hatusima; *Sinobambusa kunishii* (Hayata) Nakai.

Culms 2–6 m, 1–2.5 cm in diam.; internodes 20–35 cm, smooth, glabrous; nodes weakly prominent. Culm sheaths deciduous, light green, initially purple, gray-brown in age, densely

setose, margins not ciliate; auricles brown, small, sparsely ciliate; oral setae not radiate; ligule truncate; blade conical, margins entire, sharply pointed. Leaves 1(–3) per ultimate branch; sheath glabrous; auricles obscure; ligule prominent, arcuate; blade lanceolate-oblong or oblong, 10–25 × 2–3.5 cm, margins nearly entire, secondary veins 7–9-paired. Inflorescence unknown.

- 300–1500 m. C and N Taiwan.

3. *Gelidocalamus longinternodus* T. H. Wen & Shi C. Chen, *J. Bamboo Res.* 5(2): 24. 1986.

箭把竹 jian ba zhu

Culms to 5 m, to 3 cm in diam.; internodes green, 50–70 cm, densely dark brown setose below nodes; wall 2–4 mm thick; nodes prominent. Culm sheaths initially green-purple, much shorter than internodes, densely dark brown setose, nearly glabrous at base, margins uniformly brown ciliate; auricles erect, triangular to elliptic, roughly brown hairy; oral setae dense, 5–7 mm (to 1.3 cm on apical sheath); ligule 2–3 mm, roughly hairy, cilia pale yellow and ca. 1.5 cm; blade erect, narrowly lanceolate, glabrous. Leaves 1(–3) per ultimate branch; sheath initially brown setose; auricles extended, falcate, fragile, margins brown ciliate; oral setae erect or spreading, ca. 1.2 cm; ligule strongly arcuate, ca. 2 mm, apex ciliate; blade broadly lanceolate or elliptic, 28–40 × 4.5–5.5 cm, abaxially pubescent near midrib, secondary veins 9–11-paired. Inflorescence unknown. New shoots autumn–winter.

- Lowlands. Hunan.

4. *Gelidocalamus latifolius* Q. H. Dai & T. Chen, *J. Bamboo Res.* 4(1): 53. 1985 [*“latifolius”*].

掌秆竹 zhang gan zhu

Culms 1–3 m, 0.7–1.5 mm in diam.; internodes initially deep green, 30–40 cm, initially densely brown deciduously setose, pubescent below nodes; supra-nodal ridge weakly swollen, sheath base more prominent, persistent. Culm sheaths initially light green or slightly purple, deciduously brown setose, margins ciliate; auricles and oral setae absent; ligule short, scabrous; blade triangular-lanceolate, weakly rugose, abaxially glabrous, adaxially scabrous. Leaves 1 per ultimate branch; blade green, ovate-lanceolate, 14–22 × 4–6 cm, glabrous except for hairy midrib, base rounded, apex acute. Inflorescence unknown.

- Hardwood forests on low hills; ca. 200 m. NW Guangxi.

The large leaves are used for roofing shelters and also to wrap traditional rice dumplings known as “zong zi” (粽子).

5. *Gelidocalamus tessellatus* T. H. Wen & C. C. Chang, *J. Bamboo Res.* 1(1): 24. 1982.

抽筒竹 chou tong zhu

Culms 2–3 m, to 1 cm in diam.; internodes initially purple-green, 20–40(–65) cm, initially densely tomentose, sparsely setose in age; nodes slightly prominent. Culm sheaths pale yellow, with purple-brown streaks, sparsely setose, tomentose near

base, margins ciliate, apex tomentose; auricles absent; oral setae few, erect; ligule arcuate, short, pubescent, apex ciliate; blade triangular, sharply pointed. Leaves 1 per ultimate branch; blade broadly lanceolate, 19–23 × 2–3.2 cm, abaxially pubescent near midrib, proximally densely so, secondary veins 7-paired, asymmetrical, margins entire or one side serrulate. Inflorescence paniculate, terminal, 13–20 cm, lower branches horizontal. Spikelets green, 6–8 mm; pedicel 5–7 mm, slender; florets 3–5; rachilla pubescent. Glumes 2; lemma ca. 4 mm, 7-veined; palea about as long as lemma, not veined; lodicules ovate, not veined. Styles 2. New shoots Jun–Oct.

- Undergrowth in hardwood forests on low hills. Guangxi, Guizhou.

Gelidocalamus subsolidus W. T. Lin & Z. J. Feng (*Guihaia* 10: 18. 1990), based on a specimen collected in Guangdong (Xinyi), may be a synonym of this species.

The shoots are delicious, and the culms are split for weaving.

6. *Gelidocalamus annulatus* T. H. Wen, *J. Bamboo Res.* 7(1): 27. 1988.

亮秆竹 liang gan zhu

Culms 1–2.5 m, 1–1.5 cm in diam.; internodes 20–30 cm, slightly flexuose, initially pubescent, later papillose; nodes prominent, sheath ring glabrous. Culm sheaths white spotted, sparsely setose, margins smooth, glabrous; ligule truncate, ca. 1 mm, scabrid, ciliate; blade erect, narrowly triangular. Leaves 1 or 2 per ultimate branch; sheath sparsely golden setose, margins golden ciliate; auricles absent or weak with a few, erect oral setae; ligule truncate, ca. 1 mm, scabrous; blade broadly lanceolate or oblong, 16–27 × 1.7–3.5 cm, glabrous or abaxially roughly hairy at base of midrib, secondary veins 5- or 6-paired, asymmetrical. Inflorescence unknown.

- N Guizhou.

7. *Gelidocalamus multifolius* B. M. Yang, *Nat. Sci. J. Hunan Norm. Univ.* 9(3): 4. 1986.

多叶短枝竹 duo ye duan zhi zhu

Culms to 1.5 m, ca. 1 cm in diam.; internodes initially green, 10–26 cm, brown tomentellate below nodes; nodes slightly prominent. Culm sheaths green, nearly glabrous, sparsely tomentellate at base; auricles absent; oral setae 2 or 3, erect; ligule purple, truncate or slightly concave, ca. 1 mm, ciliate; blade reflexed, narrowly lanceolate, glabrous. Leaves 3–5 per ultimate branch; sheath glabrous, ribbed; auricles and oral setae absent; ligule truncate, ca. 1.5 mm; blade lanceolate or broadly lanceolate, 8–14 × 1.5–2.5 cm, abaxially pubescent, adaxially glabrous, secondary veins 4–6-paired. Inflorescence terminal, paniculate, sparsely branched, 10–15 × 5–7 cm. Spikelets 8–14 mm; florets 2–4. Glumes 2, lanceolate; lemma ovate-lanceolate; palea about as long as lemma or longer, glabrous; lodicules obovate, posterior one narrowly so, margins ciliate. Ovary ovoid-ellipsoid; styles 2, connate at base; stigmas 2. Caryopsis gray-green, obovoid, ca. 3 mm in diam.; suture long, narrow. New shoots winter, fl. Nov.

- Hunan (Ningyuan).

8. *Gelidocalamus solidus* C. D. Chu & C. S. Chao, J. Nanjing Inst. Forest. 1984(2): 75. 1984.

实心短枝竹 shi xin duan zhi zhu

Culms to 2 m, ca. 1 cm in diam.; internodes initially green, 30–50 cm, pubescent, brown hirsute below nodes, solid; nodes slightly prominent. Culm sheaths leathery, hirsute, margins ciliate; auricles oblong, 2–3 × ca. 1 mm; oral setae few, radiate; ligule slightly concave, apex ciliate; blade erect, narrowly lanceolate. Leaves 1 or 2 per ultimate branch; sheaths glabrous or initially pubescent; auricles and oral setae present; ligule truncate, ca. 1 mm, with cilia ca. 2 mm; blade broadly lanceolate, 8–25 × 3–4.5 cm, glabrous, secondary veins 5–8-paired. Inflorescence unknown. New shoots Nov.

• Guangxi.

Gelidocalamus albopubescens W. T. Lin & Z. J. Feng (Acta Phytotax. Sin. 30: 561. 1992), described from Guangdong (Guangning), may be a synonym of this species.

9. *Gelidocalamus rutilans* T. H. Wen, J. Bamboo Res. 2(1): 66. 1983.

红壳寒竹 hong ke han zhu

Culms to 1 m, 0.3–0.6 cm in diam.; internodes 10–15 cm,

not waxy, initially densely white pubescent, tomentellate below nodes; nodes slightly prominent. Culm sheaths persistent, pink when fresh, initially hirsute; auricles absent; oral setae minute; ligule slightly concave, ca. 1 mm, ciliate; blade erect, linear-lanceolate or subulate, base ca. 1/3 as wide as sheath apex. Leaves 1 per ultimate branch; pseudopetiole 4–5 mm; blade narrowly lanceolate to oblong, 17–31 × 2–4 cm, abaxially hirsute, secondary veins 6–8-paired. Inflorescence unknown.

• Zhejiang.

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