

# 1. BAMBUSA Schreber, Gen. Pl. 236. 1789, nom. cons.

籐竹属 le zhu shu

Xia Nianhe (夏念和), Jia Liangzhi (贾良智 Chia Liang-chih), Li Dezhu (李德铎); Chris Stapleton

*Arundarbor* Kuntze; *Bambos* Retzcius, nom. rej.; *Bambus* Blanco; *Bambus* J. F. Gmelin.

Arborescent bamboos, occasionally shrubby or scrambling, 1–20 m. Rhizomes short necked, pachymorph. Culms unicaespitose, erect to pendulous, rarely subscaudent; internodes terete; nodes not raised. Branches several to many, often 1–3 dominant (subequal in *Bambusa* subg. *Lingnania*), branchlets of lower branches sometimes forming tough or weak thorns. Culm sheaths deciduous, rarely persistent; auricles usually conspicuous, always with marginal oral setae; blade usually erect. Leaf blade variable in size, transverse veins inconspicuous. Inflorescence iterant, fully bracteate, subtended by a broad 2-keeled prophyll; pseudospikelets rarely solitary, usually several to many clustered to capitate on flowering branches. Pseudospikelets prophyllate; florets 2 to many, terminal floret sterile or imperfect, sessile; fertile glumes preceded by 1 or more gemmiferous, glumaceous, or spathaceous bracts and/or 1–3 empty glumes; rachilla internodes usually distinct and usually disarticulating with florets, falling separately; lemma broad, many veined; palea 2-keeled, apex acute or shortly bifid; lodicules 3 or 2. Stamens 6; filaments free. Ovary usually stalked, apex thickened and hairy; style solid, usually short; stigmas (1–)3, long, hairy, plumose. Caryopsis terete, apex hairy; pericarp slightly thickened.

More than 100 species: tropical and subtropical Asia; pantropical in cultivation; 80 species (67 endemic) in China, mainly in the south and southwest.

Most species in this genus are very useful cultivated plants, with no known or only limited wild populations. *Bambusa lapidea*, *B. pervariabilis*, *B. rigida*, *B. sinospinosa*, and *B. tuldoidea* are used for building construction and scaffolding; *B. albolineata*, *B. lenta*, and *B. textilis* are split for woven bamboo goods; the shoots of *B. gibboidea* and *B. variostrata* are edible; *B. multiplex*, *B. ventricosa*, and *B. vulgaris* are very famous ornamental bamboos.

- 1a. Culm sheath blade narrow, base only 1/3 width of sheath apex; culm internodes usually longer than 30 cm, with thin walls often less than 8 mm thick ..... 3. *B.* subg. *Lingnania*
- 1b. Culm sheath blade broad, base 1/2–3/4 width of sheath apex; culm internodes shorter than 30 cm, with thick walls to 2 cm thick.
  - 2a. Culm sheath auricles small, rounded; spikelets dense at maturity ..... 4. *B.* subg. *Dendrocalamopsis*
  - 2b. Culm sheath auricles large, rounded or irregular, or absent; spikelets loose at maturity, with broad florets on short rachilla segments.
    - 3a. Branchlets of lower branches specialized into tough or weak leafless thorns; culm sheath blade persistent ..... 1. *B.* subg. *Bambusa*
    - 3b. Branchlets of lower branches normal, leafy; culm sheath blade deciduous ..... 2. *B.* subg. *Leleba*

## 1. *Bambusa* subg. *Bambusa*

籐竹亚属 le zhu ya shu

Xia Nianhe (夏念和), Jia Liangzhi (贾良智 Chia Liang-chih); Chris Stapleton

*Bambusa* subg. *Ischurochloa* (Buse) P. C. Keng; *Ischurochloa* Buse.

Culm internodes mostly shorter than 30 cm; wall to 2 cm thick; branches usually arising from basal, mid-culm, and apical nodes, usually 3 co-dominant; branchlets of lower branches specialized into tough or weak thorns. Culm sheaths thickly leathery; auricles large, rounded or irregular, or absent; blade persistent, broad, base 1/2–3/4 width of sheath apex. Pseudospikelets loose at maturity, with broad florets on short rachilla segments.

More than 35 species: widely distributed in tropical and subtropical Asia; widely planted in other parts of the world; 27 species (24 endemic) in China, mainly in the south, some in the southwest.

- 1a. Branches on lower nodes of culms densely interwoven, with many, tough, sharp thorns.
  - 2a. Culm sheaths pubescent only near base.
    - 3a. Lower internodes of culms glabrous; culm sheath apically subtruncate; auricles subequal, usually reflexed ..... 3. *B. sinospinosa*
    - 3b. Lower internodes of culms with longitudinally arranged, stiff hairs; culm sheath apically broadly arched; auricles dissimilar, not reflexed ..... 4. *B. funghomii*
  - 2b. Culm sheaths pubescent on basal half to entire sheath.
    - 4a. Lower nodes of culms usually with a ring of silky white hairs below and above sheath scar; culm sheaths densely stiffly hairy; auricles usually crescent-shaped, reflexed ..... 1. *B. blumeana*

- 4b. Lower nodes of culms without silky hair rings or with only a ring of brown hairs below sheath scar.
- 5a. Culm sheath apically broadly concave, with a triangular protuberance on each shoulder; auricles tiny or absent, narrowly filiform if present ..... 2. *B. flexuosa*
- 5b. Culm sheath apically broadly convex, without protuberance on each shoulder; auricles well developed, ovate-oblong to ovate-lanceolate ..... 4. *B. funghomii*
- 1b. Branches on lower nodes of culms with tough and/or weak thorns but not densely interwoven.
- 6a. Culm sheath auricles large, to 2 cm wide.
- 7a. Culm sheath blade width 2/3–3/4 width of sheath apex.
- 8a. Lowest internodes of culms usually with purple streaks; nodes with a ring of brown silky hairs below and above sheath scar; culm sheaths uniformly hairy, apex nearly truncate, ligule ca. 3 mm ..... 24. *B. insularis*
- 8b. Lowest internodes without purple streaks; nodes with a ring of gray-white hairs below and above sheath scar; culm sheaths only hairy at central base, apex broadly convex, ligule ca. 7 mm ..... 25. *B. xiashanensis*
- 7b. Culm sheath blade width 2/5–3/5 width of sheath apex.
- 9a. Lower culm internodes densely hairy; culm sheath apically subtruncate, larger auricles nearly 3 × size of smaller ones ..... 11. *B. rutila*
- 9b. Lower culm internodes glabrous; culm sheath apically usually broadly convex, sometimes subtruncate, larger auricles to 2 × size of smaller ones.
- 10a. Basal culm internodes with pale green stripes; leaf blade abaxially glabrous ..... 12. *B. lapidea*
- 10b. Basal culm internodes without stripes; leaf blade abaxially pubescent.
- 11a. Culm sheaths glabrous, ligule ca. 6 mm ..... 10. *B. macrotis*
- 11b. Culm sheaths with dense, stiff, brown hairs, ligule ca. 2 mm ..... 13. *B. latidelta*
- 6b. Culm sheath auricles small, less than 1 cm wide.
- 12a. Culm sheath ligule 5–8 mm.
- 13a. Culm sheath apically obliquely truncate, with unequal, triangular protuberance on each shoulder and white stripes ..... 5. *B. chunii*
- 13b. Culm sheath apically obliquely asymmetrically arched, with neither protuberance on each shoulder, nor white stripes.
- 14a. Culm sheath auricles very unequal, usually wrinkled; basalmost culm internodes sometimes with pale yellow stripes ..... 8. *B. dissimulator*
- 14b. Culm sheath auricles subequal; culm internodes with purple stripes initially ..... 15. *B. longipalea*
- 12b. Culm sheath ligule 0.5–3(–4) mm.
- 15a. Culm sheath blade base more than 4/5 width of sheath apex.
- 16a. Culm sheaths hairy at least near base, rarely glabrous.
- 17a. Lower culm nodes with a ring of stiff, pale brown hairs below and above sheath scar, basal ca. 3 nodes with a ring of gray-white silky hairs above sheath scar; culm sheaths with stiff, appressed, dark brown hairs ..... 23. *B. diaoluoshanensis*
- 17b. Lower culm nodes with a ring of gray-white silky hairs below and above sheath scar; culm sheaths with hairs absent, pale, or restricted to base.
- 18a. Culm sheath apically slightly asymmetrically arched-convex, usually glabrous or with stiff, dark brown hairs near base ..... 14. *B. indigena*
- 18b. Culm sheath apically ± truncate, distal half with deciduous, stiff, appressed, pale hairs ..... 16. *B. cornigera*
- 16b. Culm sheaths glabrous throughout.
- 19a. Culms both normal and abnormal, internodes of normal culms terete, lower internodes of abnormal culms greatly shortened and swollen; culm sheath ligule 0.5–1 mm ..... 21. *B. ventricosa*
- 19b. Culms all normal, internodes terete; culm sheath ligule 3(–4) mm.
- 20a. Culm sheaths with 1 or 2 pale yellow stripes near outer margin, apex slightly asymmetrical, broadly triangular or broadly arched.
- 21a. Lower culm internodes hairy; leaf blade linear-lanceolate to lanceolate, 1.3–1.7 cm wide ..... 14. *B. indigena*
- 21b. Lower culm internodes glabrous; leaf blade narrow, linear-lanceolate, 1–1.3 cm wide ..... 17. *B. subaequalis*
- 20b. Culm sheaths without stripes, apex subtruncate or obliquely truncate.
- 22a. Basal nodes with a ring of gray-white silky hairs below and above sheath scar; culm sheath apically subtruncate, with a protuberance on one shoulder ..... 22. *B. corniculata*
- 22b. Basal nodes with a ring of gray-white silky hairs below sheath scar only; culm sheath apically obliquely truncate, without protuberance on shoulders ..... 27. *B. ramispinosa*

- 15b. Culm sheath blade base less than 3/4 width of sheath apex.
- 23a. Culm sheaths obliquely truncate, or obliquely truncate and convexly arched, or slightly asymmetrical and concavely arched.
- 24a. Culm sheaths with a triangular protuberance on higher shoulder, blade not narrowed at base ..... 18. *B. gibba*
- 24b. Culm sheaths without a protuberance on higher shoulder, blade basally narrowed and incurved.
- 25a. Culm sheaths hairy ..... 20. *B. angustiaurita*
- 25b. Culm sheaths glabrous.
- 26a. Culms 3–7 m, 1.5–4 cm in diam., culm sheath ligule ca. 1 mm ..... 7. *B. glabrovagina*
- 26b. Culms 8–10 m, 4–6 cm in diam., culm sheath ligule 3–4 mm ..... 19. *B. malingensis*
- 23b. Culm sheaths symmetrical, apex convexly or triangularly arched, or asymmetrically triangular.
- 27a. Culm sheaths with stiff, dark brown hairs only near base, apex symmetrical, ligule 3–4 mm; foliage leaf blade abaxially densely pubescent ..... 26. *B. prominens*
- 27b. Culm sheaths glabrous or only hairy below blade, apex asymmetrically triangular; ligule 1–2 mm; foliage leaf blade abaxially sparsely villous or subglabrous.
- 28a. Basal culm nodes with rings of gray-white to pale brown silky hairs below and above sheath scars; culm sheaths hairy below blade; auricles long decurrent, ca. 3 mm wide; ligule finely dentate, fimbriate ..... 6. *B. angustissima*
- 28b. Basal culm nodes glabrous; culm sheaths glabrous; auricles not decurrent, ca. 5 mm wide; ligule entire, very shortly ciliolate ..... 9. *B. aurimuda*

**1. *Bambusa blumeana*** J. H. Schultes in Schultes & J. H. Schultes, Syst. Veg. 7(2): 1343. 1830.

籐竹 le zhu

*Bambusa spinosa* Blume ex Nees, Flora 8: 580. 1825, not Roxburgh (1814); *B. stenostachya* Hackel; *B. teba* Miquel; *Ischurochloa stenostachya* (Hackel) Nakai.

Culms 15–24 m, 8–15 cm in diam., apically nodding; basal internodes slightly flexuose, green, 25–35 cm, distally initially sparsely strigose, later glabrous; wall 20–30 mm thick; each node of lower culm with a ring of aerial roots or root primordia, with a gray or brown sericeous ring below and above sheath scar. Branches to base, solitary on lower nodes, with branchlets usually forming tough, sharp, curved thorns and densely interwoven. Branches 3 to several on upper nodes, central markedly longer and thicker. Culm sheaths tardily deciduous, apex broadly convex or concave, with a triangular protuberance on each shoulder, densely stiffly brown hairy; auricles usually reflexed, crescent-shaped, linear-oblong, slightly unequal; oral setae dense, pale brown, curved, long, thick; ligule 4–5 mm, lacinate, fimbriate; blade usually reflexed, ovate to narrowly ovate, abaxially strigose, adaxially densely stiffly dull brown hairy, base ca. 2/5 as wide as sheath apex, margins ciliate. Ultimate branches with 5–9 leaves; leaf blade linear-lanceolate to narrowly lanceolate, 10–20 × 1.2–2.5 cm, both surfaces scabrid, mainly subglabrous but abaxially densely villous near base. Pseudospikelets 2 to several, clustered at nodes of flowering branches. Spikelets pale purple-green, linear, 2.5–4 × 0.3–0.4 cm; florets 4–12, central 2–5 perfect. Glumes 2, ca. 2 mm, glabrous; lemma ovate-oblong, 6–9 × 2.5–4 mm, glabrous, 9–11-veined, margins glabrous, apex acute; palea ca. 7 × 1.8 mm, 3-veined between and 3-veined on either side of keels, apex bifid. Filaments separate, 6–7 mm; anthers yellow, 3–4 mm. Ovary narrowly ovoid, 1.2–2 mm; style short; stigmas 3. New shoots Jun–Sep, fl. spring.

Probably introduced, cultivated on river banks and around villages; below 300 m. Fujian, Guangxi, Taiwan, Yunnan [Indonesia, Malaysia, Philippines, Thailand, Vietnam].

*Bambusa blumeana* ‘Wei-fang Lin’ (Guihaia 8: 122. 1988) was cultivated in Taiwan. It is characterized by the golden yellow culm and branch internodes, which turn orange with deep green stripes.

The culms are used for scaffolding.

**2. *Bambusa flexuosa*** Munro, Trans. Linn. Soc. London 26: 101. 1868.

小籐竹 xiao le zhu

*Bambusa scabriculma* W. T. Lin.

Culms 6–7 m, 3.5–6 cm in diam., basally flexuose, apically nodding; internodes 20–30 cm, sparsely stiffly brown strigose, with a ring of silky brown hairs below each node; wall thick. Branches to base, solitary at lower nodes, flexuose, densely interwoven, branchlets specialized into tough thorns, higher nodes with 3 to several branches. Culm sheaths tardily deciduous, leathery, prominently ribbed-striate when dry, sparsely stiffly dark brown strigose, apex concave with a triangular protuberance on each shoulder; auricles narrowly filiform or absent; ligule 4–5 mm, dentate or lacinate, fimbriate; blade erect or recurved, ovate-lanceolate to lanceolate, base ca. 1/2 as wide as sheath apex. Leaf blade narrowly lanceolate to lanceolate, 7–11 × 1.2–1.6 cm, both surfaces glabrous. Pseudospikelets solitary or clustered, slightly compressed, 2–3 cm, gemmiferous bracts ca. 4; florets 8–12 with middle florets perfect; rachilla flexuose, internodes flat, 2–2.5 mm, hispid. Glumes usually absent; lemma oblong-lanceolate, 8–10 mm, apex acute; palea usually shorter than lemma, keels ciliate; lodicules 3, subequal, margins long ciliate, apex obtuse. Filaments enlarged at base; anther obtuse at apex. Style short; stigmas 3.

• Hills, river banks. Guangdong, Hainan.

*Bambusa flexuosa* is usually planted as a thorny hedge to keep out

animals. It has been named incorrectly by some authors as *Bambusa bambos* (Linnaeus) Voss.

**3. *Bambusa sinospinosa*** McClure, Lingnan Sci. J. 19: 411. 1940.

车筒竹 *che tong zhu*

Culms 15–24 m, 8–14 cm in diam., apically slightly drooping; internodes 20–26 cm, mainly glabrous but with a ring of gray silky hairs below basal 1 or 2 nodes; wall 10–30 mm thick; branching to base. Branches usually solitary at lower nodes, with tough thorns; branchlets interwoven; branches 3 to several above lower nodes. Culm sheaths tardily deciduous, leathery, densely stiffly dark brown hairy toward base, apex truncate; auricles usually reflexed, oblong to obovate, subequal, rugose, adaxially densely strigose, margin with undulate or erect setae; ligule 3–5 mm, dentate, fimbriate; blade erect or recurved, base ca. 1/2 width of sheath apex. Leaf blade linear-lanceolate, 7–17 × 1.2–1.6 cm, both surfaces glabrous or abaxially proximally pilose. Pseudospikelets solitary or several clustered at each node of flowering branch, linear to linear-lanceolate, slightly compressed, to 4 cm, prophylls obtuse, keels ciliolate; gemmiferous bracts 3–5, narrowly triangular or subovate, glabrous, obtuse; fertile florets 6–12; rachilla internodes 2–4 mm. Glumes usually absent; lemma ovate-oblong, 5–9.5 mm, many veined, apex obtusely acute or acute with fine tip; palea usually slightly longer than lemma, keels ciliolate, 3–5-veined between keels; lodicules 3, unequal, obovate, ca. 1.4 mm, obtuse, margins ciliate. Filaments distinct; anther obtuse at apex. Ovary narrow, apex thickened and hispidulous; style slender, hispidulous; stigmas 3. New shoots May–Jun, fl. Aug–Dec.

- Riversides, near villages. Guangdong, Guangxi, Hainan.

The correct position of *Bambusa sinospinosa* var. *inermis* Keng & P. C. Keng is not known, and it is included with the *taxa incertae sedis* at the end of the genus.

This species is planted along rivers to protect the banks, and the culms are used for construction.

**4. *Bambusa funghomii*** McClure, Lingnan Sci. J. 19: 535. 1940.

鸡窠箬竹 *ji dou le zhu*

Culms 13–15 m, 6–7 cm in diam., basally flexuose, apically erect or slightly drooping; internodes slightly curved, 25–32 cm, not white powdery, lower internodes stiffly longitudinally dark brown strigose; wall 1–1.5 cm thick; branching to base. Branches solitary at lower nodes, 3 to several at upper nodes; lower branches densely interwoven with branchlets specialized into sharp, tough thorns. Culm sheaths tardily deciduous, leathery, abaxially white powdery, lower half sparsely stiffly dark brown hairy, margins white ciliolate or glabrous, apex broadly convex; auricles well developed, extremely unequal, ovate-oblong to ovate-lanceolate, undulate, wrinkled, inflated, both sides strigose; oral setae pale, ca. 1 cm, undulate; ligule 5–7 mm, dentate or laciniate, with unequal fimbriae; blade erect or those on upper nodes recurved, ovate-triangular to broadly lanceolate, base 1/3 width of sheath apex or broader,

abaxially glabrous, adaxially stiffly dark brown hairy between veins, margin strongly involute, apex acuminate. Leaf blade linear-lanceolate, 6–15 × 0.6–1.6 cm, both surfaces glabrous or adaxially pubescent near base. Inflorescence unknown.

- Open places on hills or around villages. Guangdong, Guangxi.

*Bambusa funghomii* is usually grown as a hedge, and the culms are used for scaffolding and poles.

**5. *Bambusa chunii*** L. C. Chia & H. L. Fung, Kew Bull. 37: 593. 1983.

焕镛箬竹 *huan yong le zhu*

Culms 10–12 m, 4.5–6.5 cm in diam., basally flexuose, apically drooping; internodes slightly curved, 25–30 cm, very thinly white powdery, very sparsely stiffly hairy, with a ring of gray hairs below each node; wall thick; branching to base. Branches at lower nodes usually solitary, with tough, sharp thorns, at upper nodes 3 to several with central 3 longer and thicker. Culm sheaths tardily deciduous, with several marginal white stripes on each side, leathery, glabrous, apex obliquely truncate with unequal, triangular protuberance on each shoulder; auricles unequal, linear-lanceolate, small, usually wrinkled, abaxially hispidulous; oral setae well developed, 5–10 mm, undulate, hispidulous at base; ligule 5–7 mm, margin irregular, dentate, laciniate; blade erect, broadly lanceolate, abaxially glabrous, base nearly 1/2 width of sheath apex. Leaf blade lanceolate, 9.5–19 × 1.5–2 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

- Cultivated around villages. Hong Kong.

The origin of this plant is not known.

**6. *Bambusa angustissima*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 367. 1981.

狭耳箬竹 *xia er le zhu*

Culms to 9 m, ca. 5 cm in diam., basally slightly flexuose, apically slightly drooping; internodes ca. 25 cm, glabrous; wall thick; nodes toward base with a ring of gray-white to pale brown silky hairs below and above sheath scar; sheath scar with a persistent ring of stiff, brown hairs; branching to base. Branches at lower nodes usually with branchlets specialized into tough or weak thorns; from mid-culm nodes upward usually many and clustered with central 3 dominant. Culm sheaths somewhat persistent, ribbed-striate when dry, mostly glabrous, pubescent only below blade, apex asymmetrically triangular; auricles unequal, narrowly linear and extremely decurrent, small, slightly wrinkled, margin with both long and short setae 1–3 mm; ligule 1–2 mm, sparsely dentate or shortly fimbriate; blade erect, narrowly triangular, with stiff, brown hairs at joint with sheath, base nearly 1/2 as wide as sheath apex. Leaf blade lanceolate to narrowly lanceolate, 6–9 × 1.1–1.5 cm, abaxially subglabrous, adaxially glabrous. Inflorescence unknown.

- River banks. S Guangdong (Gaozhou).

**7. *Bambusa glabrovagina*** G. A. Fu, Acta Phytotax. Sin. 20: 489. 1982 [*“glabro-vagina”*].

光鞘石竹 *guang qiao shi zhu*

Culms 3–7 m, 1.5–4 cm in diam.; internodes 21–27 cm, initially thinly white powdery, glabrous; wall thick; branching to base. Branches 3 to several at each node, clustered, central 3 dominant; branchlets at lower nodes sometimes forming tough, curved thorns. Culm sheaths deciduous, glabrous, apex slightly inclined to outer side and asymmetrical, broadly convex or subtruncate; auricles unequal, linear-lanceolate or oblong, less than 3 mm wide, margin with curved setae; ligule ca. 1 mm, margin irregular, finely dentate; blade erect, ovate to ovate-lanceolate, base ca. 3/5 width of sheath apex, abaxially glabrous, adaxially slightly scabrid near base, apex acuminate. Leaf blade linear-lanceolate to lanceolate, 5–12 × 0.8–1.7 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets several, clustered at each node, linear-lanceolate to lanceolate, 1.5–2 cm; prophylls ovate, 3–3.5 mm, 2-keeled; gemmiferous bracts 2 or 3, ovate-elliptic to ovate-oblong, 3–3.5 mm, apex obtuse to acute, very shortly mucronate; florets 6 or 7, middle 3 or 4 perfect; rachilla segments flat, 2–3 mm, apex inflated and cupular. Glumes absent; lemma ovate-oblong, 7.5–8 mm, glabrous, 9–11-veined, apex acute, mucronate; palea linear-lanceolate, slightly longer than lemma, 4-veined between and 2-veined on either side of keels, apex with a cluster of white hairs; lodicules 3, unequal; anterior oblique, ca. 2 mm, margins long ciliate; posterior subobovate, ca. 1.2 mm. Filaments slender; anthers ca. 4 mm. Ovary ovoid, ca. 0.4 mm, base with stalk ca. 1 mm, apex thickened and hispidulous; style ca. 0.2 mm; stigmas 3, ca. 0.8 mm. Mature caryopsis unknown.

- Low hills, around villages. Hainan (Dunchang).

**8. *Bambusa dissimulator*** McClure, Lingnan Sci. J. 19: 413. 1940 [*“dissemulator”*].

坭籐竹 ni le zhu

Culms 10–18 m, 4–7 cm in diam., basally slightly flexuose, apically suberect or slightly drooping; internodes 25–35 cm, sometimes several at base with pale yellow stripes, initially thinly white powdery, usually glabrous; wall thick; basal nodes sometimes with short aerial roots; branching to base. Branches solitary at basal nodes, 3 to several at higher nodes, with central 3 dominant; branchlets at lower nodes usually condensed into tough or weak thorns. Culm sheaths deciduous, leathery, subglabrous or inconspicuously strigose, apex asymmetrical, arched-concave; auricles unequal, usually wrinkled; larger auricle oblong to oblanceolate, 4–5 mm wide; smaller auricle ovate to elliptic, 3–4 mm wide; oral setae undulate; ligule 5–7 mm, dentate, lacinate, shortly white fimbriate; blade erect, ovate-triangular to ovate-lanceolate, base nearly 1/2–3/5 width of sheath apex, abaxially glabrous, adaxially stiffly dark brown hairy, margins with undulate setae near base. Leaf blade linear-lanceolate to lanceolate, 7–18 × 1–1.8 cm, abaxially sparsely pubescent, adaxially glabrous. Flowering branches with pseudospikelets solitary or clustered at each node, lanceolate, ca. 3 cm, compressed; prophylls 2-keeled; gemmiferous bracts usually 2, ovate, apex obtuse; fertile florets 4 or 5, apical 2 to several florets sterile; rachilla segments 2–3 mm, apex inflated and ciliate. Glumes 1 or sometimes absent, similar to lemma but shorter; lemma lanceolate, to 1.2 cm, base glabrous, veins inconspicuous, base rounded or broadly cuneate, margins cilio-

late near apex, apex obtuse or acute with a subulate tip; palea keels strongly folded near apex, ciliolate or scabrous, 5-veined between keels, apex usually penicillate; lodicules 3, subequal, ovate or obovate, margins long ciliate. Filaments distinct; anthers apex obtuse, slightly concave. Ovary obovoid or ovoid, stalked, apex thickened and strigose; style solitary, very short, hairy; stigmas 3. New shoots Jul–Aug, fl. Mar–Apr.

- Open fields, hills, cultivated around villages. Guangdong.

- 1a. Culm internodes glabrous ..... 8a. var. *dissimulator*
- 1b. Culm internodes hairy.
  - 2a. Lower culm internodes with a ring of gray silky hairs below and above sheath scar ..... 8b. var. *albinodia*
  - 2b. Culm nodes, internodes, and abaxial surfaces of culm sheaths obviously strigose ..... 8c. var. *hispidia*

**8a. *Bambusa dissimulator* var. *dissimulator***

坭籐竹(原变种) ni le zhu (yuan bian zhong)

Culms internodes glabrous.

- Guangdong.

**8b. *Bambusa dissimulator* var. *albinodia*** McClure, Lingnan Sci. J. 19: 415. 1940.

白节籐竹 bai jie le zhu

Lower culm internodes with a ring of gray silky hairs below and above sheath scar.

- Usually cultivated around villages. Guangdong.

**8c. *Bambusa dissimulator* var. *hispidia*** McClure, Lingnan Sci. J. 19: 415. 1940.

毛籐竹 mao le zhu

Culm nodes, internodes, and abaxial surface of culm sheaths evidently strigose.

- Cultivated around villages. Guangdong.

**9. *Bambusa aurinuda*** McClure, Lingnan Univ. Sci. Bull. 9: 3. 1940.

裸耳竹 luo er zhu

Culms 5–10 m, ca. 2.5 cm in diam., basally nearly straight, apically slightly drooping; internodes ca. 30 cm, basal nodes sometimes with short aerial roots, glabrous; branching to base or 2nd node. Branches 3 to many, clustered on each node; branchlets on lower nodes usually specialized into thorns; central 3 branches dominant. Culm sheaths slightly persistent, ribbed-striate when dry, glabrous, margins ciliate, apex asymmetrically triangular; auricles unequal; larger auricle oblong, ca. 2 × 0.5 cm; smaller auricle obovate to elliptic, ca. 1 × 0.5 cm; oral setae usually absent or 1 or 2 at distal nodes, deciduous, pale yellow or brown-yellow, 5–10 mm, undulate; ligule arched, ca. 2 mm, entire, very shortly white ciliate; blade erect, ovate-triangular to ovate-lanceolate, base nearly 2/3 width of sheath apex, abaxially glabrous, apex subulate, abruptly acumi-

nate. Leaf blade linear-lanceolate to oblong-lanceolate, 8.5–14 × 0.8–1.2 cm, abaxially initially sparsely pilose, adaxially glabrous or subglabrous. Pseudospikelets linear, 4.5–5 cm; basal rachilla very short, glabrous; gemmiferous bracts usually 2, ovate, obtuse; fertile florets 5–12, distal 2 or 3 and sometimes proximal 1 sterile; rachilla segments 2–3 mm, nearly 1/4–1/3 length of palea. Glumes 1, similar to lemma, 5–6(–8) mm, glabrous; lemma navicular, to 1 cm, papery, glabrous, with many pale purple veins, apex acute with fine tip; palea nearly as long as lemma, keels sparsely ciliolate, apex penicillate; lodicules 3, subequal, ovate-lanceolate, margins ciliate, apex obtuse. Anthers yellow, apex obtuse. Ovary hispidulous at apex; style short, slightly thickened, hispidulous; stigmas 3. Fruit unknown.

Forest margins, riversides. S Guangxi [Vietnam].

**10. *Bambusa macrotis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 371. 1981.

大耳坭竹 da er ni zhu

Culms 6–7 m, to 6 cm in diam., basally slightly flexuose, apically drooping; internodes glabrous; wall slightly thick; lower nodes usually with a ring of gray-white silky hairs above sheath scar; branching to base. Culm sheaths rather tardily deciduous, glabrous, apex slightly asymmetrical, broadly arched; auricles unequal, strongly wrinkled; larger auricle ovate-elliptic, ca. 3 × 1.5 cm, smaller auricle elliptic, ca. 2 × 1 cm; oral setae undulate; ligule ca. 6 mm, dentate with ca. 2 mm fimbriae; blade erect, narrowly ovate to ovate-triangular, base nearly 1/2 as wide as sheath apex. Leaf blade linear-lanceolate, 5–10 × 0.7–0.9 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

• Riversides. Guangdong (Qingyuan).

*Bambusa macrotis* is similar to *B. rutila*, but has glabrous culm internodes and culm sheaths, a slightly asymmetrical, broadly arched culm sheath apex, and narrower leaf blades.

**11. *Bambusa rutila*** McClure, Lingnan Sci. J. 19: 533. 1940.

木竹 mu zhu

*Bambusa shuangliuensis* T. P. Yi.

Culms 8–12 m, 4–6 cm in diam., basally slightly flexuose, apically slightly drooping; internodes 30–35 cm; wall thick; lower internodes usually initially densely stiffly dark brown strigose, basal internodes sometimes with several inconspicuous pale yellow stripes; nodes with a ring of gray-white silky hairs below and above sheath scar and a ring of stiff, brown hairs on sheath scar, several basal nodes usually with short aerial roots; branching from 3rd or 4th node up. Branches usually 3–12 on mid-culm and basal nodes; central 3 dominant, reflexed; those on lower nodes usually with branchlets specialized into weak or tough thorns. Culm sheaths tardily deciduous, ribbed-striate when dry, glabrous or with stiff, dark brown hairs near margins and base, apex slightly oblique and truncate; auricles extremely unequal, abaxially densely hispidulous; larger auricle ovate-oblong, oblong, or narrowly reniform, inflated outward, undulate, wrinkled, ca. 1.5 cm wide; smaller auricle subovate or elliptic, ca. 1 cm wide, undulate, wrinkled; ligule 4–5 mm, den-

tate, fimbriate; blade persistent, erect, subtriangular or ovate, base nearly 2/5 as wide as sheath apex. Leaf blade linear-lanceolate to narrowly lanceolate, usually 10–18 × 1–1.7 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets linear-lanceolate, compressed, to 3 cm; prophylls obtuse at apex, keels ciliolate; gemmiferous bracts 3–8, ovate, 1–4 mm, margins ciliolate or subglabrous near apex, apex obtuse and finely tipped; florets ca. 9, apical 1 or 2 florets sterile; rachilla segments 2–3 mm, apex ciliolate. Glumes absent; lemma ovate-lanceolate, to 8 mm, abaxially glabrous, many veined, margins ciliolate near apex, finely tipped, apex obtuse or acute and scabrous; palea longer or shorter than lemma, keels ciliate or scabrous at apex, 2- or 3-veined between keels, apex penicillate; lodicules 3, subequal, ovate or obovate, margins ciliate. Anther obtuse at apex. Ovary obovoid, apex thickened and hairy; style very short; stigmas 3, scabrid. Fl. Oct–Dec.

• Open fields, around villages. Fujian, Guangdong, Guangxi, Sichuan.

The culms are used for poles and scaffolding, and the young shoots are edible.

**12. *Bambusa lapidea*** McClure, Lingnan Sci. J. 19: 531. 1940.

油箬竹 you le zhu

*Bambusa miyiensis* T. P. Yi.

Culms 7–17 m, 4–7 cm in diam., basally straight, apically slightly drooping; internodes 20–35 cm, obviously shorter and slightly swollen near base and sometimes inconspicuously pale green striped and purple streaked, glabrous; wall 1–2 cm thick; nodes with a ring of gray-white silky hairs below and above sheath scar, several basal nodes usually with short aerial roots, lower ones with a ring of silky hairs above sheath scar; branching from basal 3rd or 4th node up. Branches usually several to many, clustered at mid-culm and basal nodes, central 3 codominant; branchlets usually specialized into weak or tough thorns. Culm sheaths tardily deciduous, leathery, glossy when fresh, ribbed-striate when dry, glabrous or stiffly hairy at basal margins only, apex subtruncate or slightly asymmetrical, arched; auricles undulate, wrinkled, inflated outward, densely hispidulous or subglabrous abaxially, unequal; larger auricle slightly decurrent, orbicular or ovate, 3.5–4 × 1–1.5 cm; small ones oblong or ovate, ca. 3 × 1–1.5 cm; ligule 4–5 mm, margin nearly entire and densely fimbriate; blade persistent, erect, inflated outward, ovate to oval, base slightly narrowed and then extended toward both sides and joined to auricles, apex abruptly acuminate, sharply tipped. Leaf blade linear-lanceolate to lanceolate, usually 8–23 × 1–2 cm, both surfaces glabrous. Pseudospikelets linear, compressed, more than 2 cm; gemmiferous bracts 2–4; fertile florets 5 or 6, then 2 sterile florets; rachilla segments usually fistulose, ca. 2.5 cm, apex ciliolate. Glumes absent; lemma to 8.5 mm, abaxially glossy and glabrous, many veined, margins glabrous, apex obtuse or acute and finely tipped; palea slightly shorter than lemma, keels ciliate near apex, 2-veined between and scabrous on either side of keels, apex obtuse or sometimes emarginate; lodicules 3, subequal, ovate or obovate, ca. 1.5 mm, margins ciliate, apex obtuse. Anthers ca. 4 mm, apex obtuse. Ovary narrowly obovoid, apex thickened and scabrous; style very short, scabrous;

stigmas 3. New shoots Oct, fl. Aug–Sep.

• Plains, hills, riversides, around villages. Guangdong, Guangxi, Sichuan, Yunnan.

The culms are used for scaffolding and construction.

**13. *Bambusa latideltata*** W. T. Lin, J. Bamboo Res. 13(2): 15. 1994.

软籐竹 ruan le zhu

Culms 4–8 m, 2–5 cm in diam.; internodes 25–30 cm, glabrescent; wall 1–1.2 cm thick; nodes with a pale hispid ring below and above sheath scar. Branches usually arising from basal culm node upward, clustered, central 3 dominant, lower branchlets sometimes shortened into weak or tough thorns. Culm sheaths deciduous, densely stiffly brown hairy, margins ciliate, apex asymmetrically convex; auricles unequal, larger auricle ca.  $2.5 \times$  as large as smaller one; oral setae angular; ligule ca. 2 mm, margin dentate; blade erect, broadly triangular. Leaf blade linear,  $4-18 \times 0.7-1.6$  cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

• Guangdong (Foshan).

*Bambusa latideltata* is similar to *B. lapidea*, but has branches from the culm base, green culms, lower internodes with stiff, gray-white hairs, culm sheaths with dense, brown hairs, and shorter, dentate ligules.

**14. *Bambusa indigena*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 370. 1981.

乡土竹 xiang tu zhu

*Bambusa dissimilis* W. T. Lin.

Culms 10–14 m, 4.5–7 cm in diam., basally slightly flexuose, apically slightly drooping; internodes slightly curved, 25–35 cm, initially thinly white powdery, sparsely stiffly white strigose; wall thick; nodes each with a persistent ring of deciduous, stiff, brown hairs, lower ones with a ring of gray-white silky hairs below and above sheath scar. Branches usually solitary on basal ca. 2 nodes, 3 to many from 3rd node upward, 3 dominant branches longer and thicker, branchlets on lower nodes usually specialized into a few weak thorns. Culm sheaths deciduous, thick, leathery, with 1 very narrow pale yellow stripe near outer margin, usually glabrous or with dark brown hairs near base, apex slightly asymmetrical, broadly arched; auricles small, unequal; larger auricle elliptic or suboblong, ca.  $1 \times 0.6-0.7$  cm; smaller auricle contiguous with blade, subelliptic, ca. 1/3 size of larger one; oral setae slender, undulate; ligule 3–4 mm, sparsely dentate or shortly fimbriate; blade erect, asymmetrical, triangular or narrowly triangular, base to 9/10 width of sheath apex. Leaf blade linear-lanceolate to lanceolate,  $6.5-12 \times 1.3-1.7$  cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets linear, 2–3 cm; prophyll keels ciliate; gemmiferous bracts 3–5, 2.5–3.5 mm, 7–9-veined, obtuse or mucronate; florets 5–12, apical ones sterile; rachilla segments flat, 3–3.5 mm, apex inflated and cupulate with ciliolate margins. Glumes 1, ovate-elliptic, ca. 5 mm, 11-veined, apex acute, mucronate; lemma 9–11 mm, glabrous, 13–15-veined, apex acuminate; palea nearly as long as lemma or slightly longer, keels glabrous, 6-veined between and 2-veined on either side of

keels, apex penicillate; lodicules 3, ca. 1.5 mm, long ciliate, anterior 2 oblique, posterior broadly obovate. Filaments slender; anthers ca. 4 mm. Ovary broadly ovoid, ca. 0.5 mm, base stalked, apex thickened and hispid; style ca. 0.3 mm, hispid; stigmas 3, ca. 1.5 mm.

• Low hills, around villages. Guangdong (Guangzhou).

*Bambusa indigena* is similar to *B. diaoluoshanensis* but has more glabrous culm sheaths with smaller auricles.

**15. *Bambusa longipalea*** W. T. Lin, Acta Phytotax. Sin. 26: 224. 1988.

紫斑籐竹 zi ban le zhu

Culms to 8 m, to 6 cm in diam.; basally  $\pm$  flexuose; internodes deep green, initially with purple stripes, 25–34 cm; nodes glabrous. Branches usually arising from 1st or 2nd node up, central 3 dominant, lower branchlets sometimes shortened into weak thorns. Culm sheaths deciduous, glabrous, apex obliquely asymmetrically arched; auricles subequal, elliptic, margin ciliate; ligule ca. 8 mm, denticulate; blade triangular. Leaf blade linear-lanceolate,  $6.5-20 \times 0.5-1.8$  cm, abaxially pubescent, adaxially glabrous. Pseudospikelets 4–5 cm; gemmiferous bracts 4–7; florets 7 or 8; rachilla segments 3.5–4 mm, apices pubescent; glumes absent or 1; lemma 1–1.1 cm, subglabrous; palea longer than lemma, pubescent, keels ciliolate toward apex, 6-veined between keels; lodicules 3–3.5 mm, margins ciliate; anterior 2 obliquely obovate, posterior oblong. Anthers ca. 5 mm. Ovary obovoid. Fruit unknown.

• Guangdong (Guangzhou).

*Bambusa longipalea* is similar to *B. indigena* but has internodes deep green, initially with purple stripes, glabrous nodes, and subequal culm sheath auricles.

**16. *Bambusa cornigera*** McClure, Lingnan Univ. Sci. Bull. 9: 7. 1940.

牛角竹 niu jiao zhu

Culms 8–13 m, 6–8 cm in diam., basally straight or flexuose, apically pendulous; internodes slightly curved, often swollen near base, 24–28 cm, glabrous, initially thinly white powdery; basal nodes with rings of gray-white silky hairs below and above sheath scar. Branches usually arising from 2nd node upward, primary branches longer and thicker; branchlets of lower branches sometimes specialized into fine, weak thorns. Culm sheaths deciduous, ribbed-striate when dry, with deciduous, stiff, appressed, pale hairs on upper half, apex  $\pm$  truncate; auricles equal, oblong, small; oral setae fine; ligule to 3 mm, entire, ciliate; blade erect, triangular to narrowly triangular. Leaf blade lanceolate to oblong-lanceolate,  $12-20 \times 2-3$  cm, abaxially pubescent. Inflorescence unknown.

• Riversides. Guangxi (Changwu).

**17. *Bambusa subaequalis*** H. L. Fung & C. Y. Sia, Acta Phytotax. Sin. 19: 374. 1981.

锦竹 jin zhu

Culms 8–12 m, 4–6 cm in diam., basally straight, apically

drooping; internodes 40–50 cm, initially thinly white powdery, glabrous; wall rather thick; nodes glabrous; branching to base. Branches 1–3 on lower nodes, nearly horizontal; branchlets on lower nodes usually specialized into weak thorns, on middle and upper nodes many, clustered. Culm sheaths deciduous, usually with 1 or 2 pale yellow-green stripes near outer margin, glabrous, apex somewhat broadly triangular or broadly arched; auricles inconspicuous, usually joined to base of blade; ligule ca. 3 mm, margin finely ciliate; blade persistent, erect, subtriangular, base nearly as wide as sheath apex, extending outward to form inconspicuous auricles, margin involute, apex sharp. Leaf blade linear, usually  $9\text{--}16 \times 1\text{--}1.3$  cm, abaxially pilose, adaxially glabrous. Inflorescence unknown.

- Hills, around villages. Guangdong (cultivated), Sichuan.

*Bambusa subaequalis* differs from *B. indigena* by its more slender culms with longer internodes, glabrous nodes, inconspicuous culm sheath auricles, and narrower leaf blades.

**18. *Bambusa gibba*** McClure, Lingnan Univ. Sci. Bull. 9: 10. 1940.

坭竹 ni zhu

Culms 7–10 m, 3.5–6 cm in diam., basally flexuose, apically suberect; internodes 30–40 cm, inflated near base, initially white powdery, basal internodes initially sparsely stiffly gray-white or brown strigose; wall 3–5 mm thick; nodes glabrous; branching to base. Branches usually 3 at lower nodes with branchlets sometimes specialized into weak thorns; several on middle and upper nodes, 3 central branches dominant. Culm sheaths deciduous, ribbed-striate when dry, glabrous, apex obliquely truncate, with a triangular protuberance on higher shoulder; auricles obviously unequal, sometimes weak; larger auricle ovate-lanceolate or narrowly oblong, 5–6 mm; smaller auricle ovate or elliptic, 2–3 mm; oral setae slender, undulate; ligule arched, 2–3 mm, finely dentate and fimbriate; blade deciduous, erect, narrowly triangular, base not narrowed, nearly 2/3 as wide as sheath apex. Leaf blade linear-lanceolate to narrowly lanceolate,  $8.5\text{--}14.5 \times 0.8\text{--}1.3$  cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets linear, 2–3 cm; prophylls ovate, ca. 1.5 mm, keels ciliate, apex obtuse; gemmiferous bracts 4, ovate, 1.5–3.5 mm, apex obtuse and mucronate; florets 4–8; rachilla segments flat, ca. 3.5 mm, slightly hairy, apex inflated and ciliolate. Glumes 1, ovate-elliptic, 6–6.5 mm, 15-veined, apex acute, mucronate; lemma ovate-oblong, ca. 1.1 cm, 17-veined, apex acute, mucronate; palea nearly as long as lemma or shorter, keels glabrous, 3-veined between and on either side of keels, apex obtuse with a cluster of white hairs; lodicules 3, subequal, ca. 1.5 mm, margins long ciliate toward apex, base thickened, anterior 2 broadly elliptic, posterior ovate. Anther obtuse at apex. Ovary ovoid, ca. 0.5 mm, base stalked, apex hairy; style ca. 0.5 mm; stigmas 3. Fruit unknown.

Low hills, around villages. Fujian, Guangdong, Guangxi, Hainan, Jiangxi [Vietnam].

This species was misidentified as *Bambusa tulda* by Merrill and Chun (Sunyatsenia 2: 207. 1935).

**19. *Bambusa malingensis*** McClure, Lingnan Univ. Sci. Bull.

9: 11. 1940.

马岭竹 ma ling zhu

Culms 8–10 m, 4–6 cm in diam., basally straight or slightly flexuose, apically suberect or slightly drooping; internodes 25–30 cm, initially thinly white powdery, glabrous except for basal ca. 5 nodes with rings of gray-white silky hairs below sheath scar; wall thick; branching from ca. 2nd node up. Branches usually solitary at basal nodes, 3 to many at mid-culm and distal nodes, central 3 branches dominant; branchlets on lower branches usually forming weak or sometimes sharp, tough thorns. Culm sheaths slightly persistent, ribbed-striate when dry, abaxially glabrous, apex obliquely truncate and arched; auricles unequal, oblong or sometimes narrowly lanceolate, adaxially and marginally with undulate slender setae; larger auricle slightly slanted downward and extending downward, ca. 5 mm, ca.  $2 \times$  size of smaller one; ligule arched or subtruncate, 3–4 mm, margin irregularly dentate and ciliolate; blade deciduous, erect, triangular or narrowly triangular, base slightly arched, narrowed, to 2/3 width of sheath apex. Leaf blade narrowly lanceolate,  $8\text{--}15 \times 1\text{--}1.7$  cm, abaxially very sparsely pubescent or subglabrous, adaxially glabrous. Inflorescence unknown.

- Open fields on hills. Guangdong (cultivated), Hainan.

**20. *Bambusa angustiaurita*** W. T. Lin, Bamboo Res. 1983(2): 52. 1983.

狭耳坭竹 xia er ni zhu

Culms 8–10 m, 3–6 cm in diam., basally slightly flexuose, apically slightly drooping; internodes ca. 30 cm, initially stiffly dull brown hairy; wall thick; basal ca. 3 nodes with persistent ring of gray-white silky hairs above sheath scar; branching from 2nd to 5th node up. Branches solitary or 3 to several per node, dominant 3 longer and thicker; branchlets of those on lower nodes sometimes forming weak thorns. Culm sheaths deciduous, thickly leathery, ribbed-striate when dry, uniformly stiffly dull brown hairy or hairy only near base, apex subtruncate or slightly asymmetrical, broadly arched; auricles unequal, linear; larger auricle  $1.5\text{--}2 \times$  ca. 0.3 cm; smaller auricle ca.  $1 \times 0.2$  cm; oral setae ca. 3 mm, undulate; ligule 3–4 mm, dentate, shortly fimbriate; blade erect, narrowly ovate to ovate-lanceolate, base slightly arched, narrowed, nearly 1/2 width of sheath apex, apex acuminate, sharply tipped. Leaf blade linear-lanceolate to lanceolate,  $8\text{--}16 \times 1.3\text{--}2.3$  cm, both surfaces glabrous. Inflorescence unknown.

- Low hills, around villages. Guangdong (Huajiji).

**21. *Bambusa ventricosa*** McClure, Lingnan Sci. J. 17: 57. 1938.

佛肚竹 fo du zhu

*Leleba ventricosa* (McClure) W. C. Lin.

Culms dimorphic; normal culms 8–10 m, 3–5 cm in diam., basally flexuose, apically slightly drooping; internodes 30–35 cm, basally slightly swollen, not white powdery, initially glabrous; lower nodes with rings of gray-white silky hairs below



and above sheath scar; branching from 3rd or 4th node up, basal 1 or 2 nodes also with short aerial roots; branches 1–3 on lower nodes; branchlets of these sometimes condensed into weak thorns; branches several to many at mid-culm and upper nodes, with central 3 slightly longer and thicker. Abnormal culms (usual in potted plants) 25–50 cm, 1–2 cm in diam., internodes shortened and swollen at base, branch internodes also shortened and swollen; branches only on upper nodes, usually solitary, without thorns. Culm sheaths deciduous, obviously ribbed-striate, glabrous, apex nearly symmetrical, broadly arched or subtruncate; auricles unequal; larger auricle narrowly ovate to ovate-lanceolate, 5–6 mm; smaller auricle ovate, 3–5 mm; oral setae curved; ligule 0.5–1 mm, very shortly finely fimbriate; blade deciduous, erect or recurved, ovate to ovate-lanceolate, base slightly arched, narrowed, slightly narrower than sheath apex. Leaf sheath glabrous; ligule subtruncate, very short; auricles ovate or falcate; oral setae several, curved; blade linear-lanceolate to lanceolate, 9–18 × 1–2 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets solitary or many clustered on each node, linear-lanceolate, slightly compressed, 3–4 cm; prophylls oval, 2.5–3 mm, 2-keeled, apex obtuse; gemmiferous bracts 1 or 2, narrowly ovate, 4–5 mm, 13–15-veined, apex acute; florets 6–8, basal 1 or 2 and apical 2 or 3 usually sterile; rachilla segments flat, 2–3 mm, apex inflated and cupular. Glumes absent or 1, ovate-elliptic, 6.5–8 mm, 15–17-veined, apex acute; lemma ovate-elliptic, 9–11 mm, glabrous, 19–21-veined, apex acute; palea nearly as long as lemma, ciliolate near apex, 4-veined between and on either side of keels, apex acuminate with a cluster of white hairs; lodicules 3, ca. 2 mm, margins long ciliate, anterior 2 slightly asymmetrical, posterior broadly elliptic. Filaments slender; anthers yellow, ca. 6 mm, apex obtuse. Ovary broadly ovoid, 1–1.2 mm, stalked, apex thickened and hairy; style very short, hairy; stigmas 3, ca. 6 mm. Fruit unknown.

- Guangdong.

Widely cultivated in S China as an ornamental potted plant, this bamboo is sometimes considered to be a cultivar of *Bambusa tuldooides*, but the flowering material on which that decision was based, collected in the United States, may not represent this species. Moreover, in China the culm sheath of *B. ventricosa* is substantially different from that of *B. tuldooides*.

**22. *Bambusa corniculata*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 368. 1981.

东兴黄竹 dong xing huang zhu

Culms to 8 m, 4–7 cm in diam., basally slightly flexuose, apically drooping; internodes 20–32 cm, those at base markedly shorter, usually flat and shallowly grooved above branches, white powdery, sparsely deciduously stiffly strigose; wall thick; basal nodes with rings of gray-white silky hairs below and above sheath scar and with short aerial roots; branching from 2nd or 3rd node up. Branches solitary on lower nodes, lower branchlets usually shortened into weak, curved thorns, 3 to several per node at mid-culm with primary dominant. Culm sheaths deciduous, glabrous, apex subtruncate, with a triangular protuberance on one shoulder; auricles unequal, larger auricle to 3 × size of smaller one, oblong or elliptic, ca. 8 mm; oral

setae ca. 1 cm, undulate; ligule ca. 3 mm, shortly fimbriate, densely strigose; blade erect, triangular or narrowly ovate, base 4/5 width of sheath apex. Leaf blade linear-lanceolate to lanceolate, usually 13–20 × 1–2 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

- Hills, around villages. Guangxi (Dongxing).

**23. *Bambusa diaoluoshanensis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 369. 1981.

吊罗坭竹 diao luo ni zhu

Culms ca. 10 m, 4–5 cm in diam., basally slightly flexuose, apically pendulous; internodes 25–30 cm, initially stiffly brown strigose; wall thick; lower nodes with rings of stiff, pale brown hairs and white powder below sheath scar, basal ca. 3 nodes also with a ring of gray-white silky hairs and sometimes aerial roots above sheath scar; branching from base. Branches solitary at basal ca. 3 nodes, 3 on mid-culm, many on upper culms with primary dominant; branchlets of lower branches sometimes shortened into weak thorns. Culm sheaths deciduous, stiffly dark brown hairy, apex asymmetrical, broadly arched; auricles extremely unequal; larger auricle to 4 × size of smaller one, narrowly oblong, ca. 5 mm; smaller auricle sub-elliptic, usually covered or pressed against base of blade; oral setae undulate; ligule ca. 3 mm, finely dentate, shortly fimbriate; blade erect, narrowly triangular, base rounded, to 8/9 width of sheath apex. Leaf blade linear-lanceolate to lanceolate, usually 7.5–16 × 1.3–1.8 cm, abaxially densely pubescent, adaxially glabrous. Inflorescence unknown.

- Margins of montane forests. Hainan.

*Bambusa diaoluoshanensis* is similar to *B. ramispinosa*, but has hairs on the culm internodes and sheaths and an asymmetrical culm sheath apex with more unequal auricles.

**24. *Bambusa insularis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 370. 1981.

黎庵高竹 li an gao zhu

Culms 8–10 m, 4–5 cm in diam., basally slightly flexuose, apically slightly drooping; internodes 30–35 cm, basal ca. 3 usually with purple streaks, with rings of brown silky hairs below and above sheath scars; wall thick; branching from base. Branches solitary on basal nodes, 3 to many on other nodes; branchlets of lower branches sometimes shortened into weak thorns. Culm sheaths deciduous, ribbed-striate when dry, densely stiffly dark brown strigose, apex usually subtruncate; auricles unequal, larger auricle to 1.5 × size of smaller one, elliptic, usually wrinkled, ca. 1 cm; oral setae ca. 1 cm; ligule ca. 3 mm, finely dentate and fimbriate; blade erect, ovate-triangular to narrowly ovate, base ca. 3/4 width of sheath apex, glabrous or abaxially sparsely stiffly dark brown strigose. Leaf blade linear-lanceolate, 8–14 × 1.1–1.5 cm, abaxially densely pubescent, adaxially sparsely pilose near base. Inflorescence unknown.

- Low hills. Hainan.

**25. *Bambusa xiashanensis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 374. 1981.

霞山坭竹 xia shan ni zhu

*Bambusa sanzaoensis* W. T. Lin.

Culms 12–13 m, 4.5–5.5 cm in diam., basally slightly flexuose, apically slightly drooping; internodes usually grooved above branches, 35–45 cm, glabrous; wall thick; nodes usually with a persistent ring of stiff, gray-white hairs, basal ca. 4 nodes with a ring of gray-white silky hairs below and above sheath scar, basal node sometimes with short aerial roots; branching from base. Branches solitary on basal 2 nodes, 3 to many on other nodes with primary dominant; dominant branches usually inflated at base and flexuose, lower branchlets sometimes shortened into weak thorns. Culm sheaths deciduous, apex slightly asymmetrical, broadly arched, stiffly dark brown strigose near central base; auricles unequal, larger auricle to  $1.5 \times$  size of smaller one, ascending, broadly elliptic, ca. 1.5 cm; oral setae undulate; ligule ca. 7 mm, dentate, shortly fimbriate; blade erect, triangular to ovate-triangular, base ca.  $2/3$  width of sheath apex. Leaf blade lanceolate to linear-lanceolate,  $10\text{--}20 \times 1.5\text{--}2$  cm, abaxially densely pubescent, adaxially glabrous. Inflorescence unknown.

- Low hills and plains. Guangdong (Zhanjiang).

*Bambusa xiashanensis* is similar to *B. rutila*, but has culm sheaths with central rather than marginal hairs, a more symmetrical apex with more equal auricles, a broader blade, and a taller ligule.

**26. *Bambusa prominens*** H. L. Fung & C. Y. Sia, Acta Phytotax. Sin. 19: 372. 1981.

牛儿竹 niu er zhu

Culms 10–15 m, 5–7 cm in diam., basally slightly flexuose, apically drooping; internodes 40–50 cm, usually grooved above branches, initially white powdery, glabrous; wall thick; basal nodes with rings of pale brown silky hairs below and above sheath scar and with short aerial roots, with a ring of stiff, dull brown hairs shortly after falling of sheaths; branching from base. Branches many, clustered, central dominant; branchlets of lower branches sometimes shortened into weak thorns. Culm sheaths tardily deciduous, stiffly dull brown strigose near basal margin, apex symmetrical, broadly arched, with a triangular protuberance on one shoulder; auricles unequal, larger auricle to  $2 \times$  size of smaller one, oblong; oral setae undulate; ligule 3–4 mm, fimbriate; blade persistent, erect, subtriangular, base slightly rounded, nearly  $3/4$  width of sheath apex. Leaf blade linear-lanceolate, usually  $15\text{--}25 \times 2\text{--}2.5$  cm, abaxially densely pubescent, adaxially glabrous. Inflorescence unknown.

- Hills, riversides. Sichuan.

*Bambusa prominens* differs from *B. tuldoidea* by the culm sheaths having a triangular apical protuberance and dull brown hairs near the basal margin, and the presence of weak thorns.

**27. *Bambusa ramispinosa*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 373. 1981.

坭黄竹 ni huang zhu

Culms ca. 8 m, to 3.8 cm in diam., basally slightly flexuose, apically drooping; internodes ca. 30 cm, initially white

powdery, glabrous; several basal nodes with rings of gray-white silky hairs below sheath scars, branching from 3rd node up. Branches many at mid-culm, central 3 dominant, swollen at base, branchlets of lower branches sometimes shortened into weak thorns. Culm sheaths deciduous, glabrous, apex obliquely truncate; auricles unequal, larger auricle to  $2 \times$  size of smaller one, narrowly oblong, ca. 5 mm; oral setae fine, ca. 5 mm; ligule ca. 3 mm, irregularly dentate, very shortly ciliolate or subglabrous; blade erect, narrowly triangular, base nearly  $6/7$  width of sheath apex. Leaf blade linear-lanceolate to lanceolate, usually  $9.5\text{--}13 \times 1.1\text{--}1.6$  cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

- Plains, slopes. Guangxi (Bobai).

Fl. Reipubl. Popularis Sin. 9(1): 75. 1996.

孝顺竹亚属 *xiao shun zhu ya shu*

Xia Nianhe (夏念和), Jia Liangzhi (贾良智 Chia Liang-chih); Chris Stapleton

*Leleba* Rumphius ex Nakai, Fl. Sylv. Kor. 20: 13. 1933; *Tetragonocalamus* Nakai.

Culm internodes mostly shorter than 30 cm; wall to 2 cm thick; branchlets of lower branches never specialized into tough or weak thorns. Branches usually absent toward culm base, usually 3 co-dominant. Culm sheaths thickly papery; auricles large, rounded or irregular, or absent; blade deciduous, broad, base 1/2–3/4 width of sheath apex. Pseudospikelets loose at maturity, with broad florets on short rachilla segments.

More than 35 species: widely distributed in tropical and subtropical Asia; widely planted in other parts of the world; 30 species (22 endemic) in China, mainly in the south, some in the southwest.

*Bambusa crispaurita* (species no. 37) could not be included in the following key because the available description is inadequate.

- 1a. Culm sheath auricles to 1 cm or wider, or if less than 1 cm then branches arising from lower nodes (sometimes from basal node), or leaf blade abaxially glabrous and culm internodes 20–30 cm.
  - 2a. Culm sheath blade nearly 1/2 width of sheath apex or narrower.
    - 3a. Culm sheath auricles unequal; sheaths apically asymmetrical broadly arched, with short, stiff hairs near inner margin ..... 38. *B. rigida*
    - 3b. Culm sheath auricles subequal; sheaths apically convex and undulate, uniformly hairy.
      - 4a. Culm sheaths with pale brown or white silky hairs; auricles 2.5–3 cm; ligule 7–8 mm; leaf blade abaxially densely pubescent at least when young ..... 28. *B. polymorpha*
      - 4b. Culm sheaths with stiff, dark brown hairs; auricles 0.8–1 cm; ligule 3–4 mm; leaf blade abaxially glabrous ..... 41. *B. vulgaris*
  - 2b. Culm sheath blade more than 1/2 width of sheath apex.
    - 5a. Culm sheath blade joined with auricles for 1–1.3 cm.
      - 6a. Culm sheath apically arched, broadly symmetrically triangular; ligule 1.5–2 mm ..... 30. *B. teres*
      - 6b. Culm sheath apically asymmetrical, arched or truncate; ligule 3–5 mm.
        - 7a. Culm sheaths broadly triangular, length less than 1/2 basal width, apex very broadly arched-convex or subtruncate; auricles ± horizontal ..... 29. *B. tulda*
        - 7b. Culm sheaths triangular, length more than 1/2 basal width, apex asymmetrically arched, convex; larger auricle slanted downward along sheath margin.
          - 8a. Culm internodes subsolid; culm sheath blade broadly lanceolate to triangular-ovate, ligule entire, white ciliolate; leaf blade abaxially glaucous ..... 31. *B. burmanica*
          - 8b. Culm internodes hollow; culm sheath blade triangular to narrowly triangular, ligule dentate, fimbriate; leaf blade abaxially green ..... 32. *B. eutuldoides*
    - 5b. Culm sheath blade joined with auricles for 3–7 mm.
      - 9a. Culm sheath apically subtruncate; ligule 1.5–2 mm ..... 36. *B. subtruncata*
      - 9b. Culm sheath apically asymmetrical or broadly arched, sometimes obliquely truncate; ligule 3–5 mm.
        - 10a. Culm sheaths ± pubescent.
          - 11a. Larger culm sheath auricle slanted downward along sheath margin, gradually tapering ..... 33. *B. pervariabilis*
          - 11b. Larger culm sheath auricle not slanted downward, not tapering ..... 40. *B. dolichoclada*
        - 10b. Culm sheaths glabrous.
          - 12a. Lower culm internodes without colored stripes ..... 35. *B. tuldoidea*
          - 12b. Lower culm internodes with yellow-green or pale green stripes.
            - 13a. Branches arising from basal node up; larger auricle of culm sheath obovate-oblong or oblanceolate, tapering ..... 33. *B. pervariabilis*
            - 13b. Branches arising from basal 3rd or 4th node up; larger auricle of culm sheath oblong, not tapering ..... 34. *B. longispiculata*
  - 1b. Culm sheath auricles less than 1 cm wide, or if ca. 1 cm, then culm blade base less than 1/3 width of sheath apex.
    - 14a. Leaf blade abaxially pale and glaucous.
      - 15a. Culm sheath auricles very small or inconspicuous ..... 57. *B. multiplex*
      - 15b. Culm sheath auricles well developed.
        - 16a. Culm sheath auricles obviously unequal, usually partially covered by base of blade; sheaths asymmetrical, apex broadly convex ..... 39. *B. boniopsis*
        - 16b. Culm sheath auricles subequal, not covered by base of blade; sheath apically subtruncate ..... 46. *B. pallida*
    - 14b. Leaf blade abaxially green or pale green.
      - 17a. Culm sheath blade base narrower than 1/2 width of sheath apex.

- 18a. Culm sheath auricles extremely unequal, larger to 3.5 × size of smaller; ligules ca. 1 mm; base of culm sheath blade nearly 3/7 width of sheath apex ..... 53. *B. mollis*
- 18b. Culm sheath auricles less unequal, larger to 2 × size of smaller; ligules ca. 2 mm; base of culm sheath blade ca. 1/4 width of sheath apex ..... 54. *B. contracta*
- 17b. Culm sheath blade base wider than 1/2 width of sheath apex.
- 19a. Culm sheath auricles inconspicuous; sheath apex truncate ..... 56. *B. truncata*
- 19b. Culm sheath auricles well developed; sheath apex asymmetrically arched, broadly arched, or shallowly undulate, subtruncate.
- 20a. Culm sheath apically subtruncate, sometimes also extremely broadly arched.
- 21a. Culm sheaths stiffly hairy near margins and base; auricles subequal; ligules ca. 1 mm ..... 47. *B. duriuscula*
- 21b. Culm sheaths stiffly hairy near base or inner margin but not both; auricles obviously unequal, larger at least 2 × size of smaller; ligules 2–3 mm.
- 22a. Branches usually arising from 1st or 2nd node; culm sheaths pubescent only near base ..... 43. *B. gibboides*
- 22b. Branches usually arising from 8th to 10th node; culm sheaths pubescent only near inner margin ..... 51. *B. lenta*
- 20b. Culm sheath apically asymmetrically arched, broadly arched, or shallowly undulate.
- 23a. Culm sheath ligule ca. 5 mm ..... 42. *B. utilis*
- 23b. Culm sheath ligule 1–3 mm.
- 24a. Culm sheaths substantially pubescent; ligule 0.6–1 mm.
- 25a. Culm sheaths white pubescent, auricles falcate and cupped ..... 49. *B. amplexicaulis*
- 25b. Culm sheaths stiffly brown hairy, auricles not falcate.
- 26a. Culm sheaths densely and uniformly dull brown hairy; auricles not covered by blade ..... 48. *B. pachinensis*
- 26b. Culm sheaths ± brown hairy; auricles usually partly covered by blade ..... 50. *B. semitecta*
- 24b. Culm sheaths glabrous or pubescent only near margins; ligule (<1–)1–3 mm.
- 27a. Culm nodes glabrous; usually branching from 7th to 11th node up ..... 55. *B. textilis*
- 27b. Basal culm nodes usually with a ring of gray-white silky hairs above sheath scar; usually branching from 4th to 6th (rarely 7th) node up.
- 28a. Culm sheaths with stiff marginal hairs; ligule 1–1.5 mm ..... 45. *B. albolineata*
- 28b. Culm sheaths glabrous; ligule 2–3 mm.
- 29a. Culm sheath auricles never covered by blade base, the larger oblanceolate and tapering ..... 44. *B. piscatorum*
- 29b. Culm sheath auricles partly covered by blade base, the larger oblong with rounded ends ..... 52. *B. mutabilis*

**28. *Bambusa polymorpha*** Munro, Trans. Linn. Soc. London 26: 98. 1868.

灰秆竹 hui gan zhu

Culms 15–20 m, 7–15 cm in diam., apically nodding; internodes gray-green, 40–65 cm, initially with white powdery chaff; wall thick; nodes slightly prominent, several basal nodes with rings of aerial roots; branching only from mid-culm up. Branches many, clustered, arched, slender. Culm sheaths quite persistent, short, broad, leathery, rigid, densely pale brown or silky white hairy, apex curved-truncate; auricles subequal, not slanted downward, projecting up or down, falcate, broadly belt-shaped, 7–8 × 2.5–3 cm, strongly wrinkled; oral setae dense, 1–1.5 cm, thick, scabrous; ligule 7–8 mm, shortly fimbriate; blade erect, nearly symmetrical, broadly lanceolate, base slightly narrowed and joined to auricles for ca. 2.5 cm, ca. 1/3 width of sheath apex, abaxially brown silky hairy, apex acute, sharply tipped. Leaf blade linear to narrowly lanceolate, 15–20 × 0.9–1.5 cm, both surfaces initially pubescent, later adaxially hairy near base and abaxially along midrib. Pseudospikelets em-

braced by sheathlike bracts; bracts terete, 1–1.5 cm, glossy; florets 2 or 3, apical one sterile; rachilla segments flat, glabrous. Glumes 3, ovate, apex mucronate; lemma ovate, many veined, apex mucronate; palea lanceolate, about as long as or slightly longer than lemma, keels glabrous, apex acute; lodicules 3, posterior 1 smaller, suborbicular, 3–5-veined, margins ciliolate. Anthers purple, apex obtuse, sometimes finely tipped. Ovary ovoid, apex hairy; style short; stigmas 3, white hairy. Caryopsis obovoid, unilaterally compressed, ca. 5 mm, apex hairy, with persistent style base.

Montane forests. S Yunnan [Bangladesh, India, Myanmar, Thailand].

**29. *Bambusa tulda*** Roxburgh, Fl. Ind., ed. 1832, 2: 193. 1832.

俯竹 fu zhu

Culms to 14 m, 7–8 cm in diam., apically slightly drooping; internodes 30–35 cm, initially white powdery, lower internodes slightly flexuose, basal internodes often with 2 or 3 faint yellow stripes; wall very thick; nodes with rings of gray-white

silky hairs below and above sheath scar, basal nodes with short aerial roots; branching from ca. 4th node up. Branches many, clustered, central 3 dominant. Culm sheaths deciduous, usually less than 1/2 as wide as long at base, leathery, densely stiffly dull brown strigose, apex subtruncate; auricles unequal, not slanted downward along sheath margin, 1.5–2.5 × 1.3–1.5 cm, one tall and ovate, one low and oblong, undulate, wrinkled; oral setae long, undulate; ligule ca. 5 mm, dentate, shortly fimbriate; blade erect, slightly asymmetrical, broadly triangular, base slightly narrowed and joined to auricles for ca. 1 cm, nearly 3/4 width of sheath apex, both surfaces stiffly pale hairy, apex acutely acuminate. Leaf blade broadly linear or linear-lanceolate, 15–19 × 1.4–1.7 cm, abaxially pale gray, densely villous, adaxially deep green, glabrous. Inflorescence unknown from China.

Slopes. Yunnan [Bangladesh, Bhutan, India, Nepal, Thailand, Vietnam].

Often misidentified as *Bambusa nutans* subsp. *cupulata* (*B. teres* in this account), *B. tulda* is distinguished by its smaller, more erect auricles, brown rather than black culm sheath hairs, persistent, uncupped culm sheath blade, and shorter, thicker walled culms with stripes on the basal internodes. It was treated as *B. nutans* Munro in FRPS (9(1): 78. 1996).

**30. *Bambusa teres*** Buchanan-Hamilton ex Munro, Trans. Linn. Soc. London 26: 95. 1868.

马甲竹 ma jia zhu

*Bambusa lixin* Hsueh & T. P. Yi; *B. nutans* Munro subsp. *cupulata* Stapleton.

Culms 8–20 m, 5–7 cm in diam., basally very straight, apically slightly drooping; internodes 40–46 cm, initially white powdery; wall thick; nodes flat, basal several with rings of gray-white silky hairs above sheath scar and with aerial roots; branching from basal node up. Branches several to many, clustered, central 3 dominant, lower branches bent downward, middle branches horizontal. Culm sheaths deciduous, convex, thickly leathery, initially white powdery, densely deciduously stiffly black strigose, later dark brown strigose, margin ciliate, apex asymmetrically triangular; auricles obviously unequal, strongly undulate and wrinkled, larger ones conspicuously slanted downward to 1/3 of height of sheath, narrowly reniform or obovate-lanceolate, 4.5–5 × ca. 1.5 cm; oral setae curved; ligule 1.5–2 mm, entire, glabrous or very shortly ciliate; blade deciduous, nearly symmetrical, broadly triangular-ovate and acuminate, base broadly cordate and inflated, extending to both sides to join auricles for 1–1.3 cm, base ca. 5/8 as wide as sheath apex, abaxially glabrous, adaxially strigose or scabrous. Leaf blade broadly linear to linear-lanceolate, 15–20 × 1.5–2.5 cm, abaxially pale green, densely pubescent, adaxially glabrous or sometimes hispidulous near base. Pseudospikelets solitary or 2–5 clustered at each node of flowering branches. Spikelets linear to linear-lanceolate, 2.5–7.5 × ca. 0.5 cm; florets 4–6, apical 1 or 2 sterile; rachilla segments clavate, striate, apex ciliate. Glumes 1 or 2, many veined, apex acute; lemma ovate to oblong, 1.2–2.5 × ca. 0.8 cm, glabrous, many veined, margin ± slightly ciliate, apex acute or acuminate and finely tipped; palea slightly shorter than lemma, keels ciliate, 5–7-veined be-

tween keels, apex penicillate; lodicules 3, ca. 3.8 mm, anterior 2 thickened at base, 5-veined, margins long ciliate, posterior 1 not thickened at base. Anthers purplish red, 7.5–10 mm, apex obtuse or emarginate. Ovary obovate or ovate-ellipsoid, apex thickened and long hispid; style very short, long hispid; stigmas 3. Caryopsis ellipsoid, ca. 7.5 mm, apex long hispid.

Open fields, riversides, around villages. Guangdong, Guangxi, SE Xizang [Bangladesh, Bhutan, India, Myanmar, Nepal].

*Bambusa teres* is not recognized as a separate species in S Asia, where the name *B. nutans* subsp. *cupulata* is used instead, partially because the name *B. teres* was long overlooked, while this bamboo became widely known as *B. nutans*, the type of which, from Kathmandu in Nepal, represents a contiguous allopatric, very similar bamboo from the western Himalayas to E Nepal. The inclusion of *B. lixin* requires critical investigation.

This species was treated as *Bambusa tulda* in FRPS (9(1): 80. 1996).

**31. *Bambusa burmanica*** Gamble, Ann. Roy. Bot. Gard. Calcutta 7: 35. 1896.

缅甸竹 mian dian zhu

Culms 7–8 m, 2.5–3.5 cm in diam., subsolid; internodes green, ca. 30 cm, initially sparsely brown strigose, yellow and glabrous when old; nodes slightly prominent, with rings of gray-white or yellow-white silky hairs below and above sheath scar, several basal nodes with short aerial roots. Culm sheaths deciduous, short, broad, height more than 1/2 of basal width, both surfaces distally with erect or appressed, stiff, brown hairs, apex slightly asymmetrical, arched; auricles unequal, slightly wrinkled; larger auricle slightly slanted downward to 1/5 of sheath height, oblong to oblong-lanceolate, 3–3.5 × ca. 1 cm, ends extending outside sheath margin, smaller auricle elliptic, ca. 1 × 0.8 cm; oral setae well developed; ligule ca. 3.5 mm, finely serrulate, very shortly ciliate; blade erect, slightly asymmetrical, triangular-ovate, base cordate and joined with auricles for ca. 1 cm, ca. 5/7 width of sheath apex, adaxially with pale stiff hairs between veins, apex sharply pointed. Leaf blade linear-lanceolate, 16–25 × 1.5–3 cm, abaxially glaucous, densely pubescent, adaxially glabrous. Inflorescence unknown.

Yunnan [Malaysia, Myanmar, Thailand].

The Chinese material included here is possibly distinct from true *Bambusa burmanica*.

**32. *Bambusa eutuldoides*** McClure, Lingnan Univ. Sci. Bull. 9: 8. 1940.

大眼竹 da yan zhu

Culms 6–12 m, 4–6 cm in diam., basally straight, apically slightly drooping; internodes 30–40 cm, fistulose, initially thinly white powdery, sometimes sparsely deciduously stiffly hairy below nodes; wall ca. 5 mm thick; nodes slightly prominent, basal several with rings of gray-white silky hairs below and above sheath scar; branching from 2nd or 3rd node up. Branches several or many, clustered, central 3 dominant. Culm sheaths deciduous, triangular to narrowly triangular, leathery, glabrous or sometimes very sparsely stiffly strigose, apex long

slanted along one side, extremely asymmetrical, arched; auricles extremely asymmetrical, of various shapes, rigid, wrinkled; larger auricle extremely decurrent, oblanceolate to narrowly oblong, 5–6.5 × ca. 1.5 cm; smaller auricle suborbicular or oblong, ca. 1 cm in diam., or sometimes thoroughly joined to blade base; oral setae undulate; ligule 3–5 mm, irregularly dentate or lacinate, shortly fimbriate; blade deciduous, erect, asymmetrical, triangular to narrowly triangular, base slightly narrowed and then extending outward to join auricles, nearly 3/5 width of sheath apex, abaxially sparsely stiffly deciduous-hairy. Leaf blade abaxially green, lanceolate to broadly lanceolate, usually 12–25 × 1.4–2.5 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets sessile, clustered at each node of flowering branches and branchlets, linear, 2.5–5.5 cm, with several bud-bearing bracts at base; florets 5 or 6; rachilla segments flat, 3–4 mm, apex inflated and ciliolate. Glumes 1, with very small purple spots, oblong, 9–10 mm, 11-veined, glabrous, apex acute, apiculate; lemma similar to glumes, oblong, 1.2–1.3 cm, 13–15-veined; palea lanceolate, ca. 1.1 cm, keels ciliolate toward tip, 4-veined between and 2-veined on either side of keels; lodicules 3, unequal, anterior 2 narrow, ca. 2 mm, apex long ciliate, posterior 1 larger, broadly ovate or suborbicular, ca. 2 mm. Anthers ca. 5 mm, apex bifid. Ovary subglobose, ca. 1 mm in diam., apex hispidulous; style very short, hispidulous; stigmas 3. Caryopsis initially nearly obovoid, ca. 5 mm, apex hispidulous with persistent style base.

• Usually cultivated along river banks and around villages. Guangdong, Guangxi.

- 1a. Culm internodes uniformly green; culm sheath auricles slightly wrinkled ..... 32a. var. *eutuldoides*
- 1b. At least lower culm internodes with colored stripes; culm sheath auricles strongly wrinkled.
  - 2a. Culm internodes and abaxial surface of culm sheaths green, with yellow-white stripes ..... 32b. var. *basistriata*
  - 2b. Culm internodes yellow with green stripes, abaxial surface of culm sheaths green with yellow stripes ..... 32c. var. *viridivittata*

**32a. *Bambusa eutuldoides* var. *eutuldoides***

大眼竹(原变种) da yan zhu (yuan bian zhong)

Culm internodes uniformly green. Culm sheath auricles slightly wrinkled.

• Usually cultivated along river banks and around villages. Guangdong, Guangxi.

**32b. *Bambusa eutuldoides* var. *basistriata* McClure, Lingnan Univ. Sci. Bull. 9: 9. 1940.**

银丝大眼竹 yin si da yan zhu

Culm internodes and abaxial surface of culm sheaths green, with yellow-white stripes. Larger culm sheath auricles strongly wrinkled.

• Guangdong; cultivated in Guangxi.

**32c. *Bambusa eutuldoides* var. *viridivittata* (W. T. Lin) L. C. Chia, Guihaia 8: 123. 1988 [“*viridi-vittata*”].**

青丝黄竹 qing si huang zhu

*Bambusa viridivittata* W. T. Lin, Bamboo Res. 1983(2): 54. 1983 [“*viridi-vittata*”].

Culm internodes yellow, with green stripes. Culm sheaths initially green, with yellow stripes. Larger culm sheath auricles shorter, strongly wrinkled.

• Cultivated for ornament. Guangdong.

**33. *Bambusa pervariabilis* McClure, Lingnan Univ. Sci. Bull. 9: 13. 1940.**

撑篙竹 cheng gao zhu

Culms 7–10 m, 4–5.5 cm in diam., basally straight, apex suberect; internodes straight, ca. 30 cm, basal internodes with yellow-green stripes, initially thinly white powdery or strigose; nodes slightly prominent, basal nodes with rings of gray-white silky hairs below and above sheath scar; branching from basal node up. Branches several to many, clustered, with central 3 dominant. Culm sheaths deciduous, initially with yellow-green stripes, thinly leathery, abaxially glabrous or sometimes strigose, apex asymmetrically arched; auricles unequal, undulate, wrinkled; larger auricle slanted along 1/6–1/5 of sheath margin, obovate-oblong to oblanceolate, 3.5–4 × ca. 1 cm, attenuate; smaller auricle suborbicular or elliptic, ca. 1.5 × 0.8 cm; oral setae fine, undulate; ligule 3–4 mm, irregularly dentate or sometimes lacinate, shortly fimbriate; blade deciduous, erect, nearly symmetrical, initially abaxially yellow-green striped, narrowly ovate-acuminate, base rounded and then extending outward and joined with auricles for 3–7 mm, nearly 2/3 width of sheath apex. Leaf blade linear-lanceolate, usually 10–15 × 1–1.5 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets linear, 2–5 cm, gemmiferous bracts 2 or 3; florets 5–10; rachilla segments ca. 4 mm. Glume 1, oblong, ca. 6 mm, 9-veined, glabrous, apex acute; lemmas oblong-lanceolate, 1.2–1.4 cm, glabrous, 13–15-veined, apex acute; palea nearly as long as or slightly shorter than lemma, ciliolate toward apex, 6-veined between and 3-veined on either side of keels; lodicules 3, unequal; anterior 2 oblique, ca. 2.7 mm, margins long ciliate, posterior larger, obovate-oblong, ca. 3 mm. Filaments short; anthers ca. 5 mm. Ovary ellipsoid, ca. 1 mm, apex hispidulous; style ca. 1 mm, hispidulous; stigmas 3, ca. 3 mm, hairy. Young caryopsis broadly ovoid, ca. 1.5 mm, apex hispidulous, remains of style base persistent.

• River banks, around villages. Guangdong, Guangxi.

Two varieties may be recognized in China. In addition, *Bambusa pervariabilis* var. *multistriata* W. T. Lin (J. Bamboo Res. 16(3): 25. 1997) was described from cultivated, sterile material from Guangdong (Guangzhou).

- 1a. Basal culm internodes green, with pale yellow stripes ..... 33a. var. *pervariabilis*
- 1b. All internodes of culms and branches yellow, with green stripes ..... 33b. var. *viridistriata*

**33a. *Bambusa pervariabilis* var. *pervariabilis***

撑篙竹(原变种) cheng gao zhu (yuan bian zhong)

Basal several culm internodes green, with yellow white stripes.

- River banks, around villages. Guangdong.

**33b. *Bambusa pervariabilis* var. *viridistriata* Q. H. Dai & X. C. Liu, Acta Phytotax. Sin. 24: 395. 1986 [“*viridi-striata*”].**

花撑篙竹 hua cheng gao zhu

All internodes of culms and branches yellow, with green stripes.

- Cultivated. Guangxi (Nanning).

This variety is cultivated for ornament.

**34. *Bambusa longispiculata* Gamble in Brandis, Indian Trees 668. 1906.**

花眉竹 hua mei zhu

Culms 8–12 m, 4–5 cm in diam., basally slightly flexuose, apically erect or slightly drooping; internodes ca. 30 cm, initially thinly white powdery, glabrous, lower ones with yellow-green or pale green stripes; wall thick; nodes flat, lower ones with a ring of gray-white silky hairs below and above sheath scar, basal 1 or 2 nodes with short aerial roots; branching from 3rd or 4th node up. Branches several to many per node with central dominant. Culm sheaths deciduous, leathery, ribbed-striate when dry, glabrous, margins densely ciliate, apex slightly asymmetrical, broadly arched; auricles unequal, undulate, wrinkled; larger auricle slightly slanted downward for 1/7–1/6 of sheath, oblong, 2.5–3 × ca. 1 cm, ends subrounded; smaller auricle suborbicular, ca. 1/2 size of larger; oral setae slender, undulate, densely covering margins of auricles; ligule 4–5 mm, margin irregular, finely dentate and lacinate, densely ciliate; blade erect, slightly asymmetrical, ovate-triangular, base slightly rounded, then extending outward and joined with auricles for 4–5 mm, base nearly 2/3 as wide as sheath apex. Leaf blade linear or linear-lanceolate, 9–15 × 1–1.5 cm, abaxially densely pubescent, adaxially glabrous. Inflorescence not known from China.

Cultivated. Guangdong [native to Bangladesh and Myanmar].

The determination of Chinese gatherings as this species is doubtful.

The culms are used for scaffolding.

**35. *Bambusa tuldoidea* Munro, Trans. Linn. Soc. London 26: 93. 1868.**

青秆竹 qing gan zhu

*Bambusa angulata* Munro; *B. breviflora* Munro; *B. fauriei* Hackel; *B. flavonoda* W. T. Lin; *B. longiflora* W. T. Lin; *B. parvifolia* W. T. Lin; *Chimonobambusa angulata* (Munro) Nakai; *Leleba fauriei* (Hackel) Nakai; *L. tuldoidea* (Munro) Nakai; *Tetragonocalamus angulatus* (Munro) Nakai.

Culms 6–10 m, 3–5 cm in diam., apically slightly drooping; internodes 30–36 cm, initially thinly white powdery; wall

thick; nodes slightly prominent, basal 1 or 2 with rings of gray-white silky hairs below and above sheath scar; branching from base up. Branches several to many, clustered, central 3 dominant. Culm sheaths deciduous, convex and slanted along outer margin for 1/10–1/8 of length of sheath, with 1–3 pale yellow stripes toward outer margin, glabrous, apex asymmetrically arched; auricles unequal, outer one larger, ovate to ovate-elliptic, ca. 2.5 × 1–1.4 cm, slightly wrinkled; inner one smaller, ovate to elliptic, ascending, ca. 1/2 size of larger; oral setae slender, undulate; ligule 3–4 mm, lacinate, densely fimbriate; blade deciduous, erect, asymmetrically ovate-triangular to narrowly triangular, sparsely deciduously stiffly brown or pale brown strigose, base slightly rounded and then extending outward to join auricles for 5–7 mm, nearly 2/3–3/4 width of sheath apex, margin slightly wrinkled near base and fringed, apex subulate, acuminate. Leaf blade lanceolate to narrowly lanceolate, 10–18 × 1.5–2 cm, abaxially densely pubescent, adaxially glabrous or sparsely pilose near base. Pseudospikelets several at each node of flowering branches, pale green, linear-lanceolate, slightly flat, 2–3 × 0.3–0.4 cm; prophylls 2-keeled, keels ciliate, subtended by sheathlike bracts; gemmiferous bracts 2, glabrous, apex obtuse; florets 6 or 7, proximally and distally sterile; rachilla segments flat, 3–4 mm, apex inflated and cupular, hairy. Glume 1, ovate-oblong, ca. 8.5 mm, glabrous, apex acute; lemma ovate-oblong, 1.1–1.4 cm, ca. 19-veined, glabrous, apex obtuse, mucronate; palea about as long as or slightly shorter than lemma, 4-veined between and 4-veined on either side of keels, penicillate; lodicules 3, anterior 2 obovate, oblique, short, ca. 2.5 mm, broad, margins long ciliate; posterior one long, ca. 3 mm, narrow. Anthers ca. 3 mm, apex emarginate. Ovary obovoid, ca. 1.2 mm, stalked, apex thickened and hispid; style ca. 0.7 mm, hispid; stigmas 3, ca. 5.5 mm. Caryopsis terete, slightly curved, ca. 8 mm, ca. 1.5 mm in diam., apex obtuse and thickened, hispid, with remains of style.

- Low hills, river banks, commonly cultivated around villages. Guangdong, Guangxi.

*Bambusa tuldoidea* ‘Swollen Internode’ (鼓节竹 gu jie zhu), with culm internodes shortened and swollen at base, is frequently found in gardens. The compression of its internodes is weaker than in *B. ventricosa*.

This species was misidentified as *Bambusa tulda* by Benthham and as *B. blumeana* by Hooker and Arnott.

**36. *Bambusa subtruncata* L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 378. 1981.**

信宜石竹 xin yi shi zhu

Culms 4–5 m, 2–2.5 cm in diam., basally nearly straight, apically slightly drooping; internodes 25–30 cm, initially thinly white powdery, several lower internodes striped yellow-green; wall thick; nodes slightly prominent; basal ca. 3 nodes with rings of gray-white silky hairs below and above sheath scars; usually branching from 3rd or 4th node up. Branches many, clustered, nearly horizontal, central dominant. Culm sheaths deciduous, initially yellow-green striped, glabrous or with stiff, brown hairs near inner margin and base, apex subtruncate; auricles unequal, larger auricle nearly 2.5 × as large as smaller one, broadly elliptic or elliptic, ca. 2 × 1.3 cm, wrinkled; oral

setae undulate; ligule 1.5–2 mm, margin ciliate; blade deciduous, erect, triangular to narrowly triangular, base slightly rounded extending outward to join auricles for 6–7 mm, nearly 3/5 as wide as sheath apex. Leaf blade linear-lanceolate, 8–15 × 0.9–1.3 mm, abaxially densely pubescent, adaxially glabrous. Inflorescence unknown.

- Slopes, around villages. Guangdong (Xinyi).

*Bambusa subtruncata* is similar to the Chinese form of *B. longispiculata*, but differs in its truncate culm sheath apex with larger, broadly elliptic or elliptic auricles, 1.5–2 mm ligules, and narrower blade base, only 3/5 as wide as the sheath apex.

**37. *Bambusa crispiaurita*** W. T. Lin & Z. M. Wu, J. S. China Agric. Univ. 13(2): 81. 1992.

皱耳石竹 *zhou er shi zhu*

Culms to 8 m, 2–6 cm in diam.; internodes 15–25 cm, upper parts ± uniformly stiffly brown strigose; wall thick; nodes slightly prominent, usually with rings of pale silky hairs below and above sheath scar. Branches usually from 1st or 2nd nodes up, dominant ones longer and thicker. Culm sheaths deciduous, sparsely stiffly brown hairy, margins ciliate, apex truncate; auricles subequal, narrowly oblong, wrinkled, margin with a few bristles; ligule 4–5 mm, denticulate; blade erect, ovate-lanceolate, base as wide as sheath apex. Leaf blade linear-lanceolate, 8–17 × 0.8–1.8 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

- Slopes of low hills. Guangdong (Guangning).

**38. *Bambusa rigida*** Keng & P. C. Keng, J. Wash. Acad. Sci. 36(3): 81. 1946.

硬头黄竹 *ying tou huang zhu*

*Bambusa stipitata* W. T. Lin.

Culms 5–12 m, 2–6 cm in diam., basally upright, apically slightly arched; internodes 30–45 cm, initially thinly white powdery, glabrous; wall 1–1.5 cm thick; nodes slightly prominent, sometimes basal node with a ring of gray-white silky hairs above sheath scar; branching from basal or 2nd node up. Branches several to many, clustered, central dominant, 4–6 mm in diam. Culm sheaths deciduous, leathery, basally stiffly deciduously dull brown strigose on inner margin, apex slanted outward and slightly asymmetrical, broadly arched; auricles deep brown, unequal, slightly wrinkled; larger auricle usually ovate, ca. 2.5 × 1.5 cm, those on upper culms nearly oblong or lanceolate; smaller auricle ovate or suborbicular, ca. 2/3 size of larger one; oral setae ca. 1 cm, undulate; ligule 2.5–3 mm, lacinate, fringed; blade deciduous, erect, nearly symmetrical, ovate-triangular to ovate-lanceolate, base rounded and extending outward to join auricles for 3–4 mm, nearly 2/5 width of sheath apex, abaxially very sparsely stiffly brown hairy, adaxially densely stiffly brown hairy near base, distally scabrid, apex acuminate, apiculate. Leaf blade linear-lanceolate, 7.5–18 × 1–2 cm, abaxially densely pubescent, adaxially glabrous or sparsely hairy near base. Pseudospikelets solitary, or several to many clustered at each node of flowering branches, clustered ones usually sterile, solitary ones usually fertile, fertile pseudospikelets 3–4.5 cm; florets 3–7, preceded by several gemmi-

ferous bracts; rachilla segments flat, 2–4 mm, glabrous, apex thickened and cupular. Glumes elliptic, 6–7 mm, many veined, apex acute; lemma oblong-lanceolate, 1–1.5 × 0.4–0.8 cm, many veined, apex mucronate; palea slightly shorter than lemma, ciliate toward apex, 5-veined between keels; lodicules 3, 1.5–3 mm, upper margins long ciliate; anterior 2 subspatulate; posterior 1 slightly longer, obovate-lanceolate. Anthers 4–6 mm, apex penicillate. Ovary 3-ribbed, ovoid, 2–2.5 mm with stalk, apex hispidulous; style hairy, 1.5–2 mm; stigmas 3, shortly hairy, less than 1 mm. Mature caryopsis unknown.

- Usually cultivated along riversides and around villages of the Sichuan basin. Sichuan.

**39. *Bambusa boniopsis*** McClure, Lingnan Univ. Sci. Bull. 9: 7. 1940.

妈竹 *ma zhu*

*Bambusa fecunda* McClure.

Culms 3–6 m, 1–2.5 cm in diam., basally erect, apically suberect; internodes slightly curved or straight, 23–30 cm, initially thinly white powdery, glabrous; wall slightly thick; nodes flat, from mid-culm upward with a ring of white powder above sheath scar; branching from 3rd to 5th node up. Branches several to many, clustered, central dominant. Culm sheaths deciduous, rigid when dry, glabrous, apex slightly slanted outward and asymmetrically broadly arched; auricles unequal, minutely wrinkled, usually partly covered by blade base; larger auricle usually elliptic to broadly elliptic, 1–1.3 × 0.7–0.8 cm; smaller auricle usually elliptic, ca. 0.4 × 0.2 cm; oral setae very fine, curved; ligule ca. 1.5 mm, margin erose, very fine ciliate; blade deciduous, erect, asymmetrically ovate-lanceolate, longer than sheath, abaxially initially thinly white powdery, glabrous, base rounded, swollen on one side, obviously narrower than sheath apex. Leaf blade linear-lanceolate, 10–16 × 1.4–2 cm, abaxially glaucous, densely pubescent, adaxially sparsely deciduously long hispid. Pseudospikelets solitary or in clusters of 2 or 3 at each node of flowering branches, linear or linear-lanceolate, 2–3 × 0.5–0.7 cm; prophylls 2-keeled; basal bracts gemmiferous; florets 3–7, middle 2 or 3 fertile; rachilla segments flat, 3–4 mm, apex thickened and cupular, hairy. Glumes 1, ovate-oblong, 6.5–7 mm, 11–13-veined, glabrous, acute; lemma with very small purple spots, oblong-lanceolate, 1.2–1.5 cm, glabrous, 17–19-veined, apex acute, mucronate; palea 1–1.2 cm, ciliate toward apex, 4-veined between and 3-veined on either side of keels, apex penicillate; lodicules 3; anterior 2 narrow and oblique, ca. 4 mm, margins long ciliate; posterior 1 nearly oblong, apex 3-toothed. Anthers yellow, ca. 4.5 mm, apex retuse. Ovary very broadly ovoid, stalked, apex thickened and hispidulous; style ca. 0.8 mm, hispidulous; stigmas 3, ca. 2 mm, plumose. Caryopsis initially obconiform, ca. 7 mm, apex hispidulous, style base persistent.

- Ravines, forests, around villages. Hainan.

**40. *Bambusa dolichoclada*** Hayata, Icon. Pl. Formosan. 6: 144. 1916.

长枝竹 *chang zhi zhu*

*Leleba dolichoclada* (Hayata) Odashima.



Culms 10–15 m, 4.5–8 cm in diam., basally erect, apically slightly drooping; internodes 30–45 cm, initially thinly white powdery; wall slightly thick; nodes flat, lower several with rings of gray-white silky hairs; branching from basal node up. Branches 3 to many per node, central 3 dominant. Culm sheaths deciduous, leathery, thinly white powdery, densely shortly stiffly brown hairy around apex and upper parts of both sides, apex slightly slanted along one side and slightly asymmetrical, broadly arched, sometimes subtruncate; auricles usually slightly wrinkled with obtuse ends, obviously unequal; larger auricle oblong or narrowly ovate, 2–2.5 × 0.8–1 cm, smaller auricle ovate or elliptic, to 1/3 size of larger one; oral setae undulate, densely covering margins and adaxial surface; ligule 3–4 mm, slightly dentate, fringed with hairs ca. 5 mm; blade deciduous, erect, asymmetrically ovate-triangular, base slightly narrowed and then joined with auricles for 3–5 mm, nearly 2/3 width of sheath apex, abaxially sparsely stiffly dull brown hairy, adaxially densely stiffly pale brown hairy between veins, apex acuminate, apiculate. Leaf blade linear to linear-lanceolate, 10–26 × 1–2.3 cm, abaxially pubescent, adaxially glabrous and glossy. Pseudospikelets in clusters of 3–9 at nodes of flowering branches. Spikelets linear, 3–4 × 0.6–0.8 cm; florets 4–12 preceded by several gemmiferous bracts. Glumes 2, ovate or oval, 2–4.5 mm, 14-veined, apex acute; lemma ovate, ca. 9 mm, 18–20-veined, apex acute; palea ca. 8.5 mm, keels densely ciliolate. Anthers yellow, ca. 4.5 mm, apex emarginate. Ovary obovoid, ca. 2 mm, apex sparsely hispidulous; style very short; stigmas 3.

- Forest margins, around villages; below 300 m. Fujian, Taiwan.

A cultivar, *Bambusa dolichoclada* 'Stripe' (条纹长枝竹 *tiao wen chang zhi zhu*) is cultivated in S Taiwan. This differs from the typical plant by its yellow-green culms and branches, later becoming pale yellow with deep green stripes, and its pale green culm sheaths, initially with several fine milky-yellow stripes.

**41. *Bambusa vulgaris*** Schrader ex J. C. Wendland, Coll. Pl. 2: 26. 1810.

龙头竹 *long tou zhu*

*Bambusa auriculata* Kurz; *B. humilis* Reichenbach ex Ruprecht; *B. madagascariensis* Rivière & C. Rivière; *B. sieberi* Grisebach; *B. striata* Loddiges ex Lindley; *B. surinamensis* Ruprecht; *B. thoursii* Kunth; *B. vulgaris* var. *striata* (Loddiges ex Lindley) Gamble; *B. vulgaris* var. *vittata* Rivière & C. Rivière; *Leleba vulgaris* (Schrader ex J. C. Wendland) Nakai; *L. vulgaris* var. *striata* (Loddiges ex Lindley) Nakai.

Clumps rather open. Culms 8–15 m, 5–9 cm in diam., basally straight or flexuose, apically drooping; internodes deep green, 20–30 cm, initially thinly white powdery, stiffly pale brown strigose; wall slightly thick; nodes slightly prominent, basal several with aerial roots and rings of grayish white silky hairs below and above sheath scar; usually branching from lower nodes. Branches several to many, clustered, central dominant. Culm sheaths deciduous, ribbed-striate when dry, densely stiffly deciduously dark brown hairy, apex arched below blade, concave below auricles; auricles conspicuous, ascending, nearly equal in shape and size, oblong or reniform, 8–10 mm; oral

setae curved, fine; ligule 3–4 mm, serrate, very shortly white ciliolate; blade deciduous, erect or deflexed, broadly triangular to triangular, base slightly rounded, ca. 1/2 width of sheath apex, abaxially sparsely stiffly dull brown hairy, adaxially densely stiffly dull brown hairy between veins, apex involute, sharply apiculate. Leaf blade narrowly lanceolate, 10–30 × 1.3–2.5 cm, both surfaces glabrous. Pseudospikelets several, clustered at nodes, narrowly lanceolate to linear-lanceolate, slightly flattened, 2–3.5 × 0.4–0.5 mm, apparently bifid; gemmiferous bracts several; florets 5–10; rachilla segments 1.5–3 mm. Glumes 1 or 2, abaxially shortly hairy near apex, apex apiculate; lemma 8–10 mm, abaxially shortly hairy near apex, apex apiculate; palea slightly shorter than lemma, keels ciliolate; lodicules 3, 2–2.5 mm, margins long ciliate. Anthers ca. 6 mm, apex penicillate. Style 3–7 mm, slender; stigmas 3, short.

Riversides, open forests. Yunnan [SE Asia; pantropical].

Two cultivars, *Bambusa vulgaris* 'Vittata' (黄金间碧竹 *huang jin jian bi zhu*), with culm internodes yellow with green stripes, and *B. vulgaris* 'Wamin' (大佛肚竹 *da fo du zhu*), with culm internodes shortened and basally swollen, are widely cultivated in gardens and parks. Although they have been given varietal or even specific status elsewhere, they are recognized as cultivars here.

This species was incorrectly named by Aiton as *Bambusa arundinacea* Willdenow.

**42. *Bambusa utilis*** W. C. Lin, Bull. Taiwan Forest. Res. Inst. 98: 2. 1964.

乌叶竹 *wu ye zhu*

Culms 3–14 m, 2–7 cm in diam.; internodes 15–50 cm; wall rather thick; nodes slightly prominent; branching from basal nodes up. Branches several to many, clustered, central 3 dominant. Culm sheaths deciduous, leathery, asymmetrical, broadly arched, densely stiffly brown hairy, distal margins initially ciliolate, apex slightly slanted along outer side; auricles unequal, not slanted, slightly wrinkled; larger auricle oblong to lanceolate, ca. 1.5 × 0.7 cm; smaller auricle narrowly ovate to ovate-lanceolate, ca. 1/3 size of larger one; oral setae undulate, brown; ligule ca. 5 mm, finely dentate, ciliolate; blade erect, slightly asymmetrically triangular, base slightly rounded and joined to auricles for ca. 2 mm, ca. 5/6 width of sheath apex, abaxially sparsely stiffly dull brown hairy or glabrous; adaxially scabrous or densely stiffly dull brown hairy between veins, apex shortly acuminate, apiculate. Leaf blade linear, 10–25 × 1.2–2.5 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets solitary or many and clustered at each node of flowering branches, linear, 2.5–4 × 0.5–0.7 cm; florets 4–6. Glumes 2, subovate, ca. 5 mm, 9–11-veined, apex acute, mucronate; lemma ovate-lanceolate, ca. 1.3 cm, 17–20-veined, apex acute, mucronate; palea lanceolate, ca. 1 cm, keels ciliolate, 7-veined between and 2-veined on either side of keels, apex truncate; lodicules 3, nearly broadly elliptic, ca. 1.8 mm, margins long ciliate. Anthers ca. 6 mm. Ovary obovoid; style short; stigmas 3. Caryopsis unknown.

- Low hills, around villages; below 300 m. Taiwan.

**43. *Bambusa gibboides*** W. T. Lin, Acta Phytotax. Sin. 16(1): 70. 1978.

鱼肚脐竹 *yu du nan zhu*

Culms 10–12 m, 5–7 cm in diam., basally flexuose, apically drooping; internodes slightly curved, basally slightly swollen, 40–47 cm, initially thinly white powdery, stiffly brown strigose; wall slightly thick; nodes slightly prominent, basal 2 usually with rings of gray-white silky hairs; branching from basal or 2nd node up. Branches solitary on basal nodes, several to many at mid-culm and distal nodes, central obviously dominant. Culm sheaths deciduous, ribbed-striate when dry, with appressed, dull brown hairs near base, apex subtruncate; auricles unequal, horizontal along both sides of sheath apex, larger ones oblong to narrowly oblong, ca.  $2 \times 0.5\text{--}0.6$  cm, smaller auricle elliptic, ca. 1/2 size of larger one; oral setae undulate; ligule 2–3 mm, dentate, shortly fringed; blade erect, narrowly ovate to ovate-triangular, ca. 1/2 as long as sheath, base slightly rounded and joined to auricles for ca. 3 mm, ca. 2/3 width of sheath apex. Leaf blade linear-lanceolate to narrowly lanceolate,  $10\text{--}20 \times 1.3\text{--}2$  cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets several, clustered at nodes of flowering branches, linear-lanceolate, slightly flat, 3–4 cm; prophylls ovate, keels ciliolate toward apex, apex obtuse; gemmiferous bracts usually 2, ovate; florets 5–7, apical 1 or 2 usually sterile; rachilla segments flat, 3–4 mm, apex inflated and hairy. Glumes 1, ovate, 6–8 mm, many veined, apex mucronate; lemma ovate-elliptic, 1–1.4 cm, glabrous, many veined, apex acute, mucronate; palea slightly longer than lemma, sparsely very shortly ciliolate near apex or sometimes subglabrous, 6- or 7-veined between and 3- or 4-veined on either side of keels, apex obtuse; lodicules 3, unequal, posterior 1 slightly larger, obovate, base thickened, margin finely ciliate. Filaments short; anthers yellow, apex obtuse. Ovary ovoid, apex hispidulous; style very short; stigmas 3. Caryopsis unknown.

- Cultivated. Guangdong.

The shoots are edible.

**44. *Bambusa piscatorum*** McClure, Lingnan Univ. Sci. Bull. 9: 14. 1940 [*“piscaporum”*].

石竹子 *shi zhu zi*

Culms 6–10 m, 2.5–3.5 cm in diam., apically suberect; internodes 50–60 cm, initially thinly white powdery, glabrous; wall rather thin; nodes flat, basal node with a ring of gray-white silky hairs below and above sheath scar, 2nd node with a ring of gray-white silky hairs above sheath scar; branching from 4th to 6th node up. Branches many, clustered, central slightly longer and thicker. Culm sheaths deciduous, thickly leathery, rigid, glossy, glabrous, apex slightly asymmetrically arched; auricles unequal, minutely wrinkled with obtuse ends; larger auricle oblanceolate, ca.  $1.5 \times 0.5$  cm; smaller auricle usually pressed against blade base and wrinkled, or narrowly obovate, ca. 2/5 size of larger one; oral setae dense, deciduous, curved; ligule 2–3 mm, dentate, fringed or glabrous; blade persistent, erect, asymmetrically ovate-triangular to narrowly ovate-triangular, base slightly rounded and joined with auricles for ca. 5 mm, ca. 4/5 width of sheath apex, apex subulate, acuminate. Leaf blade linear-lanceolate to lanceolate,  $8\text{--}16\text{--}20 \times 1.2\text{--}1.6\text{--}2$  cm,

abaxially densely villous, adaxially glabrous. Inflorescence unknown.

- Around villages. Hainan.

*Bambusa piscatorum* is very similar to *B. mutabilis*, but has thicker culm sheaths with smaller, rigid auricles usually pressed against the blade base and not partly covered, the larger auricle oblanceolate, the smaller narrowly ovate, both with obtuse tips.

**45. *Bambusa albolineata*** L. C. Chia, Guihaia 8: 121. 1988 [*“albo-lineata”*].

花竹 *hua zhu*

*Bambusa textilis* McClure var. *albostrata* McClure, Lingnan Univ. Sci. Bull. 9: 15. 1940 [*“albo-striata”*]; *B. albostrata* (McClure) Ohrnberger, nom. superfl.

Culms 6–8 m, 3.5–5.5 cm in diam., apically drooping; internodes 40–60(–80) cm, basal 1st to 4th (to 6th) internodes with pale yellow stripes; wall slightly thin; nodes flat, basal 1st to 4th nodes usually with a ring of gray-white silky hairs above sheath scar; branching from 4th to 6th node up. Branches many, clustered, central 3 dominant. Culm sheaths deciduous, leathery, rigid, apex slightly asymmetrical, arched or shallowly undulate, abaxially with yellow-white stripes, both sides sparsely stiffly dull brown strigose, sparser to nearly absent abaxially, denser adaxially, sheaths on basal 2 nodes densely hairy on lower half; auricles unequal, minutely wrinkled, margin sparsely thickly shortly setose near ends, larger ones oblong or nearly oblanceolate, ca.  $1.5 \times 0.5\text{--}0.7$  cm, smaller usually continuous with blade base, oblong-oblanceolate if separated from blade, 1/3–1/2 size of larger one; ligule 1–1.5 mm, shortly dentate, very shortly fringed; blade erect, asymmetrically ovate to narrowly ovate-triangular, those on lower nodes usually with yellow-white stripes, base slightly rounded and joined to auricles for 4–5 mm, ca. 5/7 width of sheath apex, apex acuminate, apiculate. Leaf blade linear,  $7\text{--}15\text{--}24 \times 0.9\text{--}1.5\text{--}2.2$  cm, abaxially pilose, adaxially scabrous. Pseudospikelets usually in clusters of 3–5 at nodes of flowering branches, linear-lanceolate,  $2\text{--}2.5 \times 0.4\text{--}0.5$  cm; prophylls ca. 3 mm, 2-keeled, keels ciliolate; gemmiferous bracts subovate, ca. 4.5 mm, glabrous, 15-veined, apex obtuse and mucronate; florets 5–7, apical one sterile; rachilla segments flat, ca. 3 mm, glabrous, margin erose, apex enlarged. Glumes 1, oval, ca. 5 mm, 15–17-veined, glabrous, apex obtuse and mucronate; lemma elliptic, 7–9 mm, glabrous, 17–19-veined, apex obtuse, mucronate; palea linear-lanceolate, 7.5–9.5 mm, keels glabrous, 8-veined between and 2-veined on either side of keels, margin very shortly ciliolate, bifid with apices of keels extended and deflexed, apex subtruncate; lodicules 3, unequal; anterior 2 oblique, ca. 3 mm, margins long ciliate; posterior 1 nearly obovate-elliptic, ca. 2 mm. Anthers ca. 4 mm. Ovary broadly ovoid, ca. 1 mm, base stalked, apex thickened and hispidulous; style very short, 0.4–0.5 mm, hispidulous; stigmas 3, ca. 6 mm. Mature caryopsis unknown.

- Cultivated on low hills, plains, and along riversides. Fujian, Guangdong, Jiangxi, Taiwan, Zhejiang.

The *nomen novum* *Bambusa albolineata* was published in the belief that the original epithet *“albostrata”* was blocked by the earlier but not validly published *nomen nudum* *“B. albostrata* Hort. ex Laval-

leé” (Arbor. Segrez. 306. 1877). Nevertheless, *B. albolineata* is legitimate because of the change in rank.

**46. *Bambusa pallida*** Munro, Trans. Linn. Soc. London 26: 97. 1868.

大薄竹 da bao zhu

*Bambusa critica* Kurz.

Culms to 15 m, 5.5–7.5 cm in diam.; internodes 30–57 cm, initially thinly white powdery and stiffly gray hairy; wall thin; nodes flat, basal nodes usually with a ring of gray-white silky hairs and short aerial roots when old; branching from 6th or 7th node up. Branches many, clustered, central 3 dominant. Culm sheaths deciduous, attenuate, broadly trapezoid, leathery, initially white powdery, glabrous or sparsely deciduously dull brown strigose, apex subtruncate; auricles spreading, subequal, broadly elliptic or suborbicular, small, 5–6 mm wide; oral setae present; ligule very short; blade erect, narrowly triangular, usually longer than sheath, base slightly rounded, slightly narrower than sheath apex, sparsely stiffly deciduously dull brown hairy. Leaf blade linear-lanceolate, 10–20 × 1.2–2 cm, abaxially chalky-white. Pseudospikelets in capitate clusters, glaucous, 2.5–3 cm, gemmiferous bracts present; florets 7–14, basal 1 male, apical 3–5 imperfect; rachilla segments clavate, apex enlarged and ciliate. Glumes 1 or 2, ovate, apex acute; lemma ovate, abaxially glabrous, many veined, adaxially slightly hairy, apex acute, mucronate; palea obviously shorter than lemma, keels ciliate, 3–5-veined between keels; lodicules 3, oblong or narrowly obovate, base thickened, margin ciliate, anterior 2 slightly asymmetrical, posterior symmetrical and smaller. Ovary oblong, tapering; stigmas 3.

Open areas; 100–2000 m. SW Yunnan [Bangladesh, India, Myanmar, Thailand].

**47. *Bambusa duriuscula*** W. T. Lin, Bull. Bot. Lab. N.-E. Forest. Inst., Harbin 1980(6): 87. 1980.

蓬萊黃竹 peng lai huang zhu

*Bambusa breviligulata* L. C. Chia & H. L. Fung.

Culms suberect, 6–7 m, 3–4 cm in diam.; internodes straight, 38–55 cm, sparsely stiffly dull brown hairy, initially partly white powdery below sheath scar but powder not in rings; wall slightly thin; nodes flat, glabrous; branching from 5th or 6th node up. Branches many, clustered, horizontal, central slightly dominant. Culm sheaths deciduous, glossy, abaxially and near margins ± stiffly dull brown hairy, apex subtruncate; auricles subequal, narrowly oblong, ca. 1.5 × 0.6–0.7 cm; oral setae undulate; ligule ca. 1 mm, erose, very shortly ciliate; blade deciduous, erect, ovate-triangular, nearly as long as or slightly shorter than sheath, base ca. 2/3 width of sheath apex. Leaf blade linear, 9–14 × 0.8–1.2 cm, abaxially subglabrous, adaxially pubescent near base. Pseudospikelets 2 or 3 clustered on each node of flowering branches, linear-lanceolate, 2–3 cm; gemmiferous bracts 2 or 3, ovate, ca. 5 mm, 13-veined, base cordate, apex acute; florets 6 or 7, apical one sterile; rachilla segments flat, 2–4 mm, subglabrous. Glumes absent;

lemma oblong, ca. 1.2 cm, slightly asymmetrical, 21-veined, apex acute; palea narrow, longer than or about as long as lemma, keels sparsely ciliate near apex, 5-veined between and 3-veined on either side of keels; lodicules 3, unequal, anterior 2 oblique, ca. 2 mm, margins long ciliate, posterior narrowly obovate, ca. 1.5 mm. Anthers ca. 5 mm, apex retuse. Ovary subglobose, ca. 1 mm in diam., stalked, apex hispidulous; style hairy, ca. 1.5 mm; stigmas 3, ca. 5 mm. Mature caryopsis unknown. New shoots May–Oct.

- Usually cultivated, slopes near villages. Hainan.

*Bambusa duriuscula* is similar to *B. pachinensis*, but has shorter internodes, the culm sheath with hairs only near the base and margins, the apex subtruncate, the blade nearly as long as the sheath proper, and the leaf blade narrower and abaxially glabrous. The paratype *W. T. Lin 31826* should be excluded from this species.

**48. *Bambusa pachinensis*** Hayata, Icon. Pl. Formosan. 6: 150. 1916.

米篩竹 mi shai zhu

Culms 3–8 m, 1–4.5 cm in diam., apically slightly drooping; internodes 30–70 cm, initially thinly white powdery, sparsely stiffly pale or dark brown strigose; wall thin; nodes flat, basal 5 nodes usually with rings of gray-white silky hairs below and above sheath scar; branching from 8th to 10th node up. Branches several to many, clustered, 3 central dominant. Culm sheaths deciduous, leathery, rigid, broadly arched, uniformly stiffly dull brown strigose, apex slanted on outer side, asymmetrical; auricles unequal, slightly wrinkled, larger ones oblong or lanceolate, 1–1.5 × 0.4–0.5 cm, ends subrounded and slanted downward, smaller auricle subovate, ca. 1/3 size of larger one, ends slightly ascending; oral setae fine, curved, long; ligule ca. 1 mm, irregularly dentate or long fimbriate; blade erect, slightly asymmetrically ovate to ovate-triangular, 1/3–1/2 length of sheath, base slightly cordate, narrowed and joined with auricles for 2–3 mm, abaxially very sparsely brown hairy, adaxially scabrous, apex acuminate, apiculate. Leaf blade linear to lanceolate, 8–18 × 1–2 cm, abaxially densely villous, adaxially glabrous. Pseudospikelets lanceolate to linear-lanceolate, 2–3.5 × 0.4–0.5 cm; prophylls ca. 2.5 mm, keels ciliate; gemmiferous bracts 2 or 3, ovate, to 7 mm, glabrous, 15–17-veined, apex obtuse and mucronate. Lemma ovate-elliptic, ca. 1.2 cm, glabrous, 17–19-veined, apex acute, mucronate; palea lanceolate, ca. 1.1 cm, slightly shorter than lemma, keels not ciliate, 5- or 6-veined between and 3- or 4-veined on either side of keels, margin irregularly dentate, apex 3-fid and with a cluster of white long hairs; lodicules 3, unequal, anterior 2 spatulate, ca. 3 mm, margins long ciliate, posterior 1 nearly obovate-elliptic, ca. 1.6 mm. Filaments slender; anthers ca. 4 mm. Ovary ovoid, ca. 1.5 mm, base stalked, apex thickened and hispid; style ca. 0.5 mm, hispid; stigmas 3, ca. 5 mm. Mature caryopsis unknown.

- Usually cultivated, river banks, low hills, around villages. Fujian, Guangdong, Guangxi, Jiangxi, Taiwan, Zhejiang.

- 1a. Culm sheath ligule irregularly dentate ..... 48a. var. *pachinensis*
- 1b. Culm sheath ligule long fimbriate,

fimbriae 5–10 mm ..... 48b. var. *hirsutissima*

**48a. *Bambusa pachinensis* var. *pachinensis***

米筛竹(原变种) mi shai zhu (yuan bian zhong)

*Bambusa beisitiku* (Odashima) P. C. Keng; *Leleba beisitiku* Odashima; *L. pachinensis* (Hayata) Nakai.

Culm sheath ligule irregularly dentate.

• Usually cultivated, river banks, around villages. Fujian, Guangdong, Guangxi, Jiangxi, Taiwan, Zhejiang.

**48b. *Bambusa pachinensis* var. *hirsutissima*** (Odashima) W. C. Lin, Bull. Taiwan Forest. Res. Inst. 98: 21. 1964.

长毛米筛竹 chang mao mi shai zhu

*Leleba beisitiku* Odashima var. *hirsutissima* Odashima, J. Soc. Trop. Agric. 8: 58. 1936; *Bambusa textilis* McClure var. *fusca* McClure; *Leleba pachinensis* (Hayata) Nakai var. *hirsutissima* (Odashima) W. C. Lin.

Culm sheath ligule with long fimbriae, 5–10 mm.

• Usually cultivated, low hills, around villages. Fujian, Guangdong, Guangxi, Taiwan, Zhejiang.

**49. *Bambusa amplexicaulis*** W. T. Lin & Z. M. Wu, Bull. Bot. Res., Harbin 12: 349. 1992.

抱秆黄竹 bao gan huang zhu

Culms to 3 m, to 2.5 cm in diam., basally slightly flexuose; internodes 13–31 cm, glabrous; nodes slightly prominent, branching from 3rd node up. Culm sheaths deciduous, apically arched-convex, white pubescent, margins ciliolate; auricles unequal, falcate, cupped, deflexed; oral setae subulate, 6–8 mm; ligule 0.6–1 mm, margin nearly entire; blade deciduous, erect, ovate-triangular, base slightly rounded, ca. 3/5 width of sheath apex. Leaf blade linear-lanceolate, 3–11 × 0.4–1.2 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

• Bases of hills, open fields. Guangdong.

**50. *Bambusa semitecta*** W. T. Lin & Z. M. Wu, J. S. China Agric. Univ. 14(3): 111. 1993.

掩耳黄竹 yan er huang zhu

Culms 2–3 m, 1–1.5 cm in diam.; internodes 20–30 cm, glabrous; nodes slightly prominent, branching from 7th to 8th node up. Culm sheaths deciduous, ± stiffly brown hairy, margins glabrous, apex convex; auricles unequal, oblong, ends ascending, usually partly covered by blade; ligule ca. 1.5 mm, denticulate, ciliolate; blade deciduous, erect, base slightly rounded, ca. 1/4 × as wide as sheath apex. Leaf blade linear-lanceolate, 5.5–21 × 0.8–1.8 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

• Low hills. Guangdong (Guangning).

This species is inadequately known.

**51. *Bambusa lenta*** L. C. Chia, Guihaia 8: 125. 1988.

藤枝竹 teng zhi zhu

Culms 5–10 m, 4–4.5 cm in diam., apically slightly drooping; internodes 35–50 cm, basal internodes swollen on alternate sides, initially thinly white powdery, stiffly dull brown hairy; wall slightly thin; nodes flat, basal 3 usually with rings of gray-white silky hairs above sheath scar, higher nodes initially with white powdery rings, sometimes also with rings of gray-white silky hairs below sheath scar; branching from 8th to 10th node up. Culm sheaths deciduous, leathery, rigid, usually sparsely stiffly dull brown hairy toward inner margin, apex slightly slanted at outer side, subtruncately broadly arched; auricles ascending, unequal, slightly wrinkled, larger one suboblong, ca. 8 × 6 mm, ends exerted beyond margin, smaller auricle sub-elliptic, 1/4–1/3 size of larger one, usually partly covered by blade base; oral setae fine, undulate; ligule 2–3 mm, finely dentate, shortly fringed at both sides; blade erect, slightly asymmetrical, triangular to narrowly triangular, base rounded, joined to auricles for 2–3 mm, ca. 3/4 × as wide as sheath apex, abaxially glabrous, adaxially scabrous. Leaf blade linear, 9–17 × 1.2–2 cm, abaxially densely pubescent, adaxially glabrous. Inflorescence unknown.

• Cultivated, along rivers, around villages; low elevations. S Fujian.

**52. *Bambusa mutabilis*** McClure, Lingnan Univ. Sci. Bull. 9: 12. 1940.

黄竹仔 huang zhu zi

Culms 5–7 m, 2.5–3.5 cm in diam., apically suberect; internodes 40–50 cm, initially thinly white powdery, lower ones with many purple streaks, and with a ring of white powder below sheath scar, glabrous or sometimes very sparsely stiffly strigose; wall rather thin; nodes slightly prominent, basal ca. 3 nodes with a ring of gray-white silky hairs above sheath scar, only basal node with a ring of gray-white silky hairs below sheath scar; branching usually from 5th to 7th node upward. Branches many, clustered, central branch slightly longer and thicker. Culm sheaths deciduous, glossy, with many purple streaks, leathery, rigid, initially thinly white powdery, glabrous, apex slightly asymmetrically arched; auricles unequal, oblong, minutely wrinkled, partly covered by blade base, ends suborbicular, larger ones 1–1.4 × 0.3–0.4 cm, smaller auricle usually 1/2 size of larger one; oral setae dense, deciduous, curved; ligule ca. 2 mm, dentate, shortly fringed or glabrous; blade deciduous, erect, slightly asymmetrically ovate to narrowly ovate, base narrowed and slightly cordate, ca. 2/3 × as wide as sheath apex, abaxially with many purple streaks, apex acuminate, apiculate. Leaf blade linear-lanceolate to lanceolate, 8.5–15.5(–20) × 1.1–1.6(–2) cm, abaxially densely villous, adaxially glabrous. Inflorescence unknown.

• Open fields on hills, riversides, forest margins. Hainan.

**53. *Bambusa mollis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 377. 1981.

拟黄竹 ni huang zhu

Culms 5–8 m, 2.5–3.5 cm in diam., apically drooping; internodes 35–40 cm, initially sparsely white hispid; wall thin; basal 2 nodes usually with rings of gray-white silky hairs above sheath scar; branching from 3rd to 5th node up. Culm sheaths

deciduous, glabrous, apically asymmetrically arched, one side slanted, other side arched; auricles obviously unequal, larger one slanted downward, lanceolate to oblong-lanceolate, ca. 1.5 × 0.5–0.7 cm, ca. 5 × size of smaller one, smaller one oblong with ends ascending; oral setae undulate; ligule ca. 1 mm, subentire; blade deciduous, erect, ovate-lanceolate, to 1/2 length of sheath, base slightly rounded and extending outward to join auricles for 2–3 mm, nearly 3/7 × as wide as sheath apex. Leaf blade linear-lanceolate, 11–16 × 1.5–2 cm, abaxially pubescent, adaxially glabrous. Inflorescence unknown.

- Open fields, hills, around villages. Guangxi (Beiliu).

**54. *Bambusa contracta*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 19: 376. 1981.

破篾黄竹 po mie huang zhu

Culms 5–6 m, 2–3 cm in diam., apically drooping; internodes 40–57 cm, initially thinly white powdery, sparsely long, white hispid; wall thin; nodes flat, glabrous, branching from 4th to 6th node up. Culm sheaths deciduous, thinly white powdery, usually glabrous or with appressed or erect, stiff, dull brown hairs near base, apex slanted and asymmetrically arched; auricles unequal, oblong to lanceolate, undulate, wrinkled, larger auricle slightly slanted downward, ca. 3 × 0.7–1 cm, ca. 2 × as large as smaller; oral setae undulate; ligule ca. 2 mm, sparsely dentate; blade erect, narrowly ovate, nearly 2/5 as long as sheath, base rounded and joined to auricles for 2–3 mm, ca. 1/4 × as wide as sheath apex, apex involute, apiculate. Leaf blade linear to linear-lanceolate, 10–15 × 1.3–1.5 cm, abaxially densely pubescent, adaxially glabrous. Inflorescence unknown.

- Bases of hills, around villages. Guangxi (Dongxin).

*Bambusa contracta* is similar to *B. textilis*, but the culm sheaths have larger auricles and a shorter, narrower, basally more cordate blade.

**55. *Bambusa textilis*** McClure, Lingnan Univ. Sci. Bull. 9: 14. 1940.

青皮竹 qing pi zhu

Culms 8–10 m, 3–5 cm in diam., apically slightly drooping; internodes green, 40–70 cm, initially thinly white powdery, ± stiffly pale brown hairy; wall 2–5 mm thick; nodes flat, glabrous; branching from 7th to 11th node upward. Culm sheaths deciduous, leathery, rigid, slightly glossy, basally stiffly dull brown strigose, apex slightly slanted and asymmetrical, broadly arched; auricles unequal, ends not decurrent, larger one narrowly oblong to lanceolate, slightly slanted, ca. 1.5 × 0.4–0.5 cm, smaller one oblong, not slanted, ca. 1/2 size of larger; oral setae slender, undulate; ligule ca. 2 mm, dentate or sometimes lacinate, ciliolate; blade deciduous, erect, narrowly ovate-triangular, ca. 2/3 as long as sheath, abaxially sometimes stiffly hairy between veins, basally sparsely dull brown hairy, adaxially scabrid, base slightly cordate, narrowed, nearly 2/3 as wide as sheath apex. Leaf blade linear-lanceolate to narrowly lanceolate, 9–17 × 1–2 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikelets solitary or several to many, clustered at each node of flowering branches, dull purple when fresh, bronze-colored when dry, linear-lanceolate, slightly curved, 3–

4.5 × 0.5–0.8 cm; prophylls ovate, ca. 3 mm, keels glabrous; gemmiferous bracts 2 or 3, ovate, 3–4.5 mm, glabrous, apex acute, mucronate; florets 5–8, apical one sterile; rachilla segments subterete or flat, ca. 4 mm, apex enlarged. Glumes 1, ovate, ca. 6 mm, ca. 20-veined, glabrous, apex acute, mucronate; lemma elliptic, 1.1–1.4 cm, glabrous, ca. 25-veined, apex acute, mucronate; palea lanceolate, 1.2–1.4 cm, slightly longer than lemma, keels glabrous, ca. 10-veined between and 4-veined on either side of keels; lodicules unequal; anterior 2 subspatulate, ca. 3 mm, margins long ciliate; posterior obovate-elliptic, ca. 2 mm. Filaments slender; anthers yellow, ca. 5 mm. Ovary broadly ovoid, ca. 2 mm in diam., base stalked, apex thickened and hispidulous; style ca. 0.7 mm, hispidulous; stigmas 3, 6–7 mm. Mature caryopsis unknown.

- Usually cultivated, riversides, around villages; low elevations. Anhui, Guangdong, Guangxi.

- 1a. Culm sheath blade ca. 2/3 as long as sheath proper or longer, base ± cordate; ligule ca. 2 mm ..... 55a. var. *textilis*
- 1b. Culm sheath blade less than 1/2 length of sheath proper, base slightly rounded; ligule 1–1.5 mm.
  - 2a. Culm sheaths glabrous ..... 55b. var. *glabra*
  - 2b. Culm sheath base and margins with sparse, stiff, dull brown hairs ..... 55c. var. *gracilis*

**55a. *Bambusa textilis* var. *textilis***

青皮竹(原变种) qing pi zhu (yuan bian zhong)

*Bambusa annulata* W. T. Lin & Z. J. Feng; *B. glaucescens* (Willdenow) Merrill var. *annulata* (W. T. Lin & Z. J. Feng) N. H. Xia; *B. minutiligulata* W. T. Lin & Z. M. Wu; *B. textilis* var. *maculata* McClure; *B. textilis* var. *persistens* B. M. Yang; *B. textilis* var. *pubescens* B. M. Yang; *B. textilis* var. *purpurascens* N. H. Xia; *B. varioaurita* W. T. Lin & Z. J. Feng.

Culms 3–5 cm in diam. Culm sheath blade ca. 2/3 as long as sheath proper or longer, base ± cordate; ligule ca. 2 mm.

- Usually cultivated, along rivers, around villages; low elevations. Anhui, Guangdong, Guangxi.

Two cultivars *Bambusa textilis* ‘Maculata’ and *B. textilis* ‘Purpurascens’ are found in gardens. The former is distinguished by several basal culm internodes and sheaths having purple-red spots and streaks, whereas the culm internodes of the latter have purple-red stripes.

**55b. *Bambusa textilis* var. *glabra*** McClure, Lingnan Univ. Sci. Bull. 9: 16. 1940.

光秆青皮竹 guang gan qing pi zhu

Culms 3–5 cm in diam.; internodes and sheaths glabrous. Culm sheath blade nearly 1/2 as long as sheath proper, base slightly rounded; ligule 1–1.5 mm.

- Usually cultivated in gardens. Guangdong, Guangxi.

**55c. *Bambusa textilis* var. *gracilis*** McClure, Lingnan Univ. Sci. Bull. 9: 16. 1940.

崖州竹 ya zhou zhu

Culms slender, less than 3 cm in diam. Culm sheath with sparse, stiff, dull brown hairs near both sides and base, blade to 1/2 as long as sheath proper, base slightly rounded; ligule ca. 1 mm.

- Cultivated in gardens. Guangdong, Guangxi.

**56. *Bambusa truncata*** B. M. Yang, Acta Sci. Nat. Univ. Norm. Hunan. 12: 337. 1989.

平箨竹 ping tuo zhu

Culms to 7 m, to 4.5 cm in diam.; internodes 22–35(–44) cm, initially thinly white powdery, glabrous. Branches usually arising from mid-culm, central branch longer and thicker. Culm sheaths deciduous, sparsely brown strigose, apex truncate; auricles inconspicuous; oral setae absent; ligule truncate, ca. 1.5 mm, margin dentate and ciliate; blade erect, narrowly triangular, base nearly as wide as or slightly narrower than sheath apex. Leaf blade oblong-lanceolate, 8–14 × 0.9–1.5 cm, both surfaces glabrous. Inflorescence unknown.

- Cultivated, river banks, around villages. Hunan (Lingling).

Further work is required on this species.

**57. *Bambusa multiplex*** (Loureiro) Raeuschel ex Schultes & J. H. Schultes in Roemer & Schultes, Syst. Veg. 7(2): 1350. 1830.

孝顺竹 xiao shun zhu

Culms suberect or apically slightly drooping, 1–7 m, (0.3–) 1.5–2.5 cm in diam.; internodes 30–50 cm, thinly white powdery, distally stiffly deciduously brown or dull brown hairy, especially densely so below nodes; wall usually rather thin, solid in var. *riviereorum*; nodes slightly prominent, glabrous; branching from 2nd or 3rd node up. Branches several to many, clustered, subequal or central slightly dominant. Culm sheaths deciduous, trapezoid, initially thinly white powdery, glabrous, asymmetrically arched, apex slanted along outer side; auricles very small to inconspicuous, oral setae few; ligule 1–1.5 mm, irregularly dentate; blade deciduous, erect, narrowly triangular, base nearly as wide as sheath apex, abaxially with scattered, stiff, dull brown hairs, adaxially scabrous, apex acuminate. Leaves 5–26 per ultimate branch; leaf blade abaxially pale glaucous, adaxially bright green, linear, 1.6–16 × 0.3–1.6 cm, abaxially densely pubescent, adaxially glabrous. Pseudospikes solitary or several clustered at nodes of flowering branches, linear to linear-lanceolate, 3–6 cm; prophylls ca. 3.5 mm, 2-keeled, keels ciliate; gemmiferous bracts usually 1 or 2, ovate to narrowly ovate, 4–7.5 mm, glabrous, 9–13-veined, apex obtuse or acute; florets (3–)5–13, middle ones fertile; rachilla segments flat, 4–4.5 mm, glabrous. Glumes absent; lemma asymmetrical, oblong-lanceolate, ca. 1.8 cm, glabrous, 19–21-veined, apex acute; palea linear, 1.4–1.6 cm, keels ciliate, 6-veined between and 4-veined on one side and 3-veined on other side of keels, apex subtruncate, ciliate, with a fine hairy tip on each side; lodicules 3, anterior 2 subovate, 2.5–3 mm, posterior narrowly lanceolate, 3–5 mm, margins glabrous. Filaments 0.8–1 cm; anthers purple, ca. 6 mm, apex penicillate. Ovary ovoid, ca. 1 mm, base with stalk ca. 1 mm, apex thickened and hispidulous; stigmas 3 or variable in number, ca. 5 mm, directly exerted from ovary apex. Mature caryopsis unknown.

Wild and cultivated, fields, mountains, low hills, riversides. Guangdong, Guangxi, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan [SE Asia].

Among the several names applied to these bamboos, *Bambusa multiplex* and *B. glaucescens* are most widely used. The application of the name *B. glaucescens* has been disputed and cannot be verified from type material or from the protologue.

Most taxa are beautiful ornamental bamboos, but their identification, classification, and nomenclature remain complex and controversial. Many varieties, forms, and cultivars have been published, given new status, and variously combined under the species recognized by different authorities. Therefore, a comprehensive synonymy is not possible in this abbreviated account.

- 1a. Culms 1–3 m, ultimate branches with 13–26 leaf blades; leaf blade 1.6–3.2 × 0.3–0.7 cm ..... 57c. var. *riviereorum*
- 1b. Culms 4–7 m, ultimate branches with 5–12 leaf blades; leaf blade 5–16 × 0.7–1.6 cm.
  - 2a. Culm sheaths nearly symmetrical, apex arched-convex ..... 57d. var. *shimadae*
  - 2b. Culm sheaths slanted along one side, apex asymmetrically arched-convex.
    - 3a. Culm sheaths abaxially glabrous ..... 57a. var. *multiplex*
    - 3b. Culm sheaths abaxially strigose ..... 57b. var. *incana*

**57a. *Bambusa multiplex* var. *multiplex***

孝顺竹(原变种) xiao shun zhu (yuan bian zhong)

*Arundo multiplex* Loureiro, Fl. Cochinch. 1: 58. 1790; *Arundinaria glaucescens* (Willdenow) P. Beauvois; *Bambusa albofolia* T. H. Wen & Hua; *B. alphonso-karrii* Mitford ex Satow [“*Alphonse Karri*”]; *B. caesia* Siebold & Zuccarini ex Munro; *B. dolichomerithalla* Hayata; *B. glauca* Loddiges ex Lindley; *B. glaucescens* (Willdenow) E. D. Merrill; *B. glaucescens* f. *alphonso-karrii* (Mitford ex Satow) Hatusima; *B. glaucescens* f. *solida* K. J. Mao & C. H. Zhao; *B. liukiensis* Hayata; *B. multiplex* var. *nana* (Roxburgh) P. C. Keng; *B. multiplex* var. *solida* B. M. Yang; *B. nana* Roxburgh; *B. nana* var. *alphonso-karrii* (Mitford ex Satow) Latour-Marliac ex E. G. Camus; *B. nana* var. *variegata* E. G. Camus; *B. sterilis* Kurz ex Miquel; *B. viridiglaucescens* Carrière; *Ischurochloa floribunda* Buse ex Miquel; *Leleba dolichomerithalla* (Hayata) Nakai; *L. elegans* Koidzumi; *L. liukiensis* (Hayata) Nakai; *Ludolfia glaucescens* Willdenow.

Culms 4–7 m, 1.5–2.5 cm in diam., internode walls rather thin. Culm sheaths abaxially glabrous, slanted along one side, apex asymmetrically arched, convex. Ultimate branches with 5–12 leaves; blade 5–16 × 0.7–1.6 cm.

Wild or cultivated. Guangdong, Guangxi, Hainan, Yunnan [SE Asia].

**57b. *Bambusa multiplex* var. *incana*** B. M. Yang, J. Hunan Teachers' Coll. (Nat. Sci. Ed.) 1983(1): 77. 1983.

毛凤凰竹 mao feng huang zhu

*Bambusa glaucescens* (Willdenow) Siebold ex Munro var. *pubivagina* (W. T. Lin & Z. J. Feng) N. H. Xia; *B. glaucescens* var. *strigosa* (T. H. Wen) L. C. Chia; *B. multiplex* var. *pubivagina* W. T. Lin & Z. J. Feng; *B. pubivaginata* W. T. Lin & Z. M. Wu; *B. strigosa* T. H. Wen.

Culms 4–7 m, 1.5–2.5 cm in diam., internode walls rather thin. Culm sheaths abaxially strigose, apex asymmetrically

arched, convex. Ultimate branches with 5–12 leaves; blade 5–16 × 0.7–1.6 cm.

- Open fields, riversides. Hunan, Jiangxi.

**57c. *Bambusa multiplex* var. *riviereorum*** Maire, Fl. Afrique N. 1: 355. 1952.

观音竹 *guan yin zhu*

*Bambusa glaucescens* (Willdenow) Siebold ex Munro var. *riviereorum* (Maire) L. C. Chia & H. L. Fung.

Culms 1–3 m, 3–5 mm in diam.; internodes solid. Branches usually bent downward, bow-shaped. Culm sheath slanted along one side, apex asymmetrically arched-convex. Ultimate branches with 13–23 leaves; blades small, 1.6–3.2 × 0.3–0.7 cm.

- Low hills, riversides, widely cultivated as potted plants. Guangdong.

**57d. *Bambusa multiplex* var. *shimadae*** (Hayata) Sasaki, Trans. Nat. Hist. Soc. Taiwan 21: 118. 1931 [*“shimadai”*].

石角竹 *shi jiao zhu*

*Bambusa shimadae* Hayata, Icon. Pl. Formosan. 6: 151. 1916 [*“shimadai”*]; *B. glaucescens* var. *shimadae* (Hayata) L. C. Chia & But; *Leleba shimadae* (Hayata) Nakai.

Culms 4–7 m, 1.5–2.5 cm in diam., internode walls rather thin. Culm sheaths nearly symmetrical, broadly arched. Ultimate branches with 5–12 leaves.

- Usually cultivated in fields or mountains. Guangdong, Taiwan.

**3. *Bambusa* subg. *Lingnania*** (McClure) L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 213. 1980.

箬竹亚属 *dan zhu ya shu*

Li Dezhu (李德铎); Chris Stapleton

*Lingnania* McClure, Lingnan Univ. Sci. Bull. 9: 34. 1940; *Neosinocalamus* P. C. Keng.

Culm internodes usually 30–110 cm; wall often less than 8 mm thick, but sometimes to 2 cm thick. Branchlets of lower branches never specialized into thorns. Branches usually absent on lower culm, usually subequal. Culm sheaths thickly papery; auricles small or absent, often narrowly oblong; blade deciduous, narrow, only ca. 1/3 width of sheath apex. Pseudospikelets purple-brown or bronze-colored.

About 14 species: S China, N Vietnam; 14 species (12 endemic) in China.

- 1a. Central branches dominant; culm wall usually more than (6–)8 mm thick.
  - 2a. Culm wall 15–20 mm thick.
    - 3a. Young culm internodes thinly white powdery, sparsely deciduously white hairy; culm sheath blade abaxially glabrous ..... 58. *B. intermedia*
    - 3b. Young culm internodes pubescent only; culm sheath blade both strigose and pubescent ..... 59. *B. wenchouensis*
  - 2b. Culm wall 6–10 mm thick.
    - 4a. Culm sheath blade abaxially hispid ..... 67. *B. emeiensis*
    - 4b. Culm sheath blade abaxially glabrous.
      - 5a. Young culm internodes with brown longitudinally arranged hairs; nodal sheath scars glabrous; culm sheath blade reflexed ..... 60. *B. remotiflora*
      - 5b. Young culm internodes sparsely glaucous hairy; nodal sheath scars hairy; culm sheath blade erect .... 61. *B. surrecta*
- 1b. Branches subequal; culm wall 2–5(–8) mm thick.
  - 6a. Culms scrambling ..... 68. *B. hainanensis*
  - 6b. Culms erect to pendulous, never scrambling.
    - 7a. Culms apically long pendulous ..... 67. *B. emeiensis*
    - 7b. Culms apically erect to nodding.

- 8a. Young culms glabrous.  
 9a. Culm sheath asymmetrical, one side smooth, the other rugate, apex with unequal rounded shoulders ..... 71. *B. rugata*  
 9b. Culm sheath symmetrical.  
 10a. Culm sheaths hispidulous; blade adaxially glabrous ..... 62. *B. cerosissima*  
 10b. Culm sheaths silky hairy; blade adaxially hispidulous ..... 63. *B. chungii*  
 8b. Young culms hairy.  
 11a. Young culms hispidulous, concavely tuberculate, white powdery ..... 64. *B. distegia*  
 11b. Young culms tuberculate-hairy, not white powdery or only in rings below nodes.  
 12a. Culm sheaths symmetrical, apex truncate or slightly concave.  
 13a. Leaf blade 0.8–1.6 cm wide; culm sheath, blade reflexed ..... 65. *B. guangxiensis*  
 13b. Leaf blade 2.4–2.8 cm wide; culm sheath blade erect; ligule margin dentate and long ciliate; leaf sheath glabrous or glabrescent ..... 69. *B. fimbriiligulata*  
 12b. Culm sheaths asymmetrical, apex concave.  
 14a. Culm sheath ligule margin serrulate; leaf blade glabrous adaxially ..... 66. *B. papillata*  
 14b. Culm sheath ligule margin long ciliate; leaf blade hispidulous between veins adaxially ..... 70. *B. papillatoides*

**58. *Bambusa intermedia*** Hsueh & T. P. Yi, J. Bamboo Res. 3(1): 43. 1984.

绵竹 mian zhu

Culms to 10(–15) m, to 10 cm in diam.; internodes deep green, 35–45(–55) cm, initially thinly white powdery, sparsely deciduously white hairy; wall to 2 cm thick; nodes flat, white tomentose; branching from basal nodes up. Branches many, main mid-culm branch to 2 cm in diam. Culm sheaths deciduous, ca. 1/2 as long as internodes, leathery, with yellow and brown hairs, apex truncate or slightly concave; auricles small; oral setae several; ligule 2–3 mm, fimbriate; blade reflexed or spreading, abaxially glabrous, base ca. 1/3 as wide as sheath apex. Leaf sheaths glabrous; ligule truncate; auricles narrowly ovate; oral setae deflexed; blade lanceolate, 7–18 × 1–2.5 cm. Pseudospikelets 2–4 cm; gemmiferous bracts progressively larger; florets 7–11. Glumes 1 or 2; lemma 0.7–1 cm; palea longer than lemma, narrow, apex obtuse; lodicules 3. Anthers 4–5 mm. Ovary pubescent at apex; stigmas 3. Caryopsis unknown.

• Widely cultivated in river valleys and hilly areas; 500–2300 m. Guizhou, Sichuan, C and S Yunnan.

This species is intermediate between *Bambusa* subg. *Leleba* and *B.* subg. *Lingnania*, with inflorescences typical of the former and culm sheaths typical of the latter.

**59. *Bambusa wenchouensis*** (T. H. Wen) P. C. Keng ex Y. M. Lin & Q. F. Zheng, Fl. Fujian. 6: 45. 1995.

温州箬竹 wen zhou dan zhu

*Lingnania wenchouensis* T. H. Wen, J. Bamboo Res. 1(1): 32. 1982.

Culms to 12(–16) m, 8–12 cm in diam.; internodes 37–50 cm, initially pubescent; wall 1.6–2 cm thick; nodes flat, tomentose; branching from base. Branches many, dominant ones to 1.8 cm in diam. Culm sheaths deciduous, ca. 1/2 as long as internodes, leathery, brown hairy, apex slightly concave; auricles small; oral setae several; ligule ca. 2 mm, serrulate; blade strongly reflexed, both strigose and pubescent, base ca. 1/3 as wide as sheath apex. Leaf sheaths initially pubescent; ligule slightly prominent; auricles ovate; oral setae recurved; blade

broadly lanceolate, 9–16 × 1.2–2 cm. Pseudospikelets to 3.3 cm; florets 9–13. Glumes 2–4; lemma ca. 0.8 cm; palea longer than lemma; lodicules ovate. Anthers ca. 6 mm. Ovary elliptical, ca. 1 mm, apically pubescent; stigmas 3, ca. 3 mm. Caryopsis unknown.

• River banks, around villages; 200–500 m. Fujian, Zhejiang.

The shoots are bitter but edible after treatment.

**60. *Bambusa remotiflora*** (Kuntze) L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 214. 1980.

甲竹 jia zhu

*Arundarbor remotiflora* Kuntze, Revis. Gen. Pl. 760. 1891; *Bambusa lingnanioides* W. T. Lin; *Lingnania fimbriiligulata* McClure; *L. parviflora* McClure; *L. remotiflora* (Kuntze) McClure.

Culms 8–12 m, 5–7.5 cm in diam.; internodes 30–40 cm, initially with brown, longitudinally arranged hairs; wall 6–9 mm thick; nodes flat, initially with a ring of yellow tomentum; sheath scars glabrous; branching from base. Branches many, central branches dominant. Culm sheaths deciduous, thickly leathery, dark brown hispid, apex truncate or slightly concave; auricles narrowly oblong, oral setae several; ligule convex, 2–3 mm, fimbriate; blade reflexed, base ca. 1/3 as wide as sheath apex, adaxially strigose. Leaf sheaths glabrous; ligule fimbriate, 2–3 mm; auricles deciduous, small; oral setae straight; blade lanceolate, 9–20 × 1–3 cm. Pseudospikelets 1–2.4 cm; florets 4–7. Glumes 1 or 2, 3.5–5.5 mm; lemma ca. 9 × 5–6 mm; palea about as long as lemma. Anthers ca. 4 mm. Stigmas 3. Caryopsis unknown.

Lowland river banks; 200–500 m. Guangdong, Guangxi, Hainan [Vietnam].

The culms are used for weaving.

**61. *Bambusa surrecta*** (Q. H. Dai) Q. H. Dai, Fl. Reipubl. Popularis Sin. 9(1): 119. 1996.

油竹 you zhu

*Lingnania surrecta* Q. H. Dai, Acta Phytotax. Sin. 20: 213. 1982.



Culms 6–10 m, 3–6 cm in diam.; internodes 40–50 cm, sparsely glaucous-hairy; wall 6–10 mm thick; nodes flat; sheath scars with a densely strigose ring; branching from base. Branches many, central branches slightly dominant. Culm sheaths deciduous, thickly leathery, densely hispid, apex slightly concave; auricles narrowly ovate; oral setae recurved; ligule ca. 3–5 mm, fimbriate; blade erect, base ca. 1/3 as wide as sheath apex, adaxially strigose. Leaf sheaths glabrous; ligule fimbriate, ca. 1 mm; auricles deciduous, small; oral setae absent; blade lanceolate, 12–18 × 1–3 cm. Inflorescence unknown.

- River banks, near villages; 100–300 m. Guangxi.

The culms are very good for weaving.

**62. *Bambusa cerosissima*** McClure, *Lingnan Sci. J.* 15: 637. 1936.

箬竹 dan zhu

*Lingnania cerosissima* (McClure) McClure, *Lingnan Univ. Sci. Bull.* 9: 35. 1940.

Culms 3–7(–15) m, 2–5 cm in diam.; internodes 30–60 cm or longer, densely white powdery; wall 2–4 mm thick; nodes flat; sheath scars corky; branching absent from lower nodes. Branches many, subequal. Culm sheaths late deciduous, thickly papery, much shorter than internodes; densely glaucous, hispidulous, apex slightly concave; auricles narrowly oblong, oral setae long, slender; ligule ca. 2 mm, slightly convex, fimbriate; blade strongly reflexed, base 1/4–1/3 as wide as sheath apex, adaxially glabrous. Leaf sheaths glabrous; ligule ca. 1 mm; auricles conspicuous, occasionally absent; oral setae straight; blade narrowly lanceolate, 16–20 × 1.5–3 cm. Glumes 1 or 2; lemma ca. 1 cm; palea about as long as lemma, apex obtuse or truncate. Style 1–2 mm; stigmas 3. Caryopsis triangular.

Farmlands, roadsides; 100–200 m. Guangdong, Guangxi [N Vietnam].

**63. *Bambusa chungii*** McClure, *Lingnan Sci. J.* 15: 639. 1936.

粉箬竹 fen dan zhu

*Lingnania chungii* (McClure) McClure; *L. chungii* var. *petilla* T. H. Wen.

Culms 5–10(–18) m, 3–5(–7) cm in diam.; internodes 30–45(–100) cm, initially white powdery, glabrous; wall 3–5 mm thick; nodes flat; sheath scars corky, initially with a ring of dense, brown hairs; branching from distal nodes only. Branches many, subequal. Culm sheaths deciduous, thinly leathery, initially white powdery, silky hairy, apex later glabrous, concave; auricles narrowly oblong, glossy; ligule ca. 1.5 mm, serrulate or long fimbriate; blade deciduous, strongly reflexed, base 1/5–1/3 as wide as sheath apex, adaxially hispidulous. Leaf sheaths glabrous; auricles usually developed; oral setae straight; blade lanceolate, 10–16(–20) × 1–2(–3.5) cm. Pseudospikelets ca. 2 cm; gemmiferous bracts 1 or 2; florets 4 or 5. Glumes 1 or 2; lemma 9–12 mm; palea about as long as lemma. Styles 1–2 mm; stigmas 3 or 2. Caryopsis triangular, 8–9 mm.

• Lowland hilly areas; 100–500 m. Fujian, Guangdong, Guangxi, S Hunan, SE Yunnan.

The culms are used for weaving and papermaking. The species is also planted as an ornamental because of the dense, persistent, white wax on the culms.

**64. *Bambusa distegia*** (Keng & P. C. Keng) L. C. Chia & H. L. Fung, *Acta Phytotax. Sin.* 18: 213. 1980.

料慈竹 liao ci zhu

*Sinocalamus distegius* Keng & P. C. Keng, *J. Wash. Acad. Sci.* 36: 76. 1946; *Bambusa yunnanensis* N. H. Xia; *Lingnania distegia* (Keng & P. C. Keng) Keng; *Schizostachyum annulatum* Hsueh & W. P. Zhang.

Culms 5–10 m, 3–5 cm in diam.; internodes 20–50 cm, initially white powdery, hairy, later concavely tuberculate; wall 5–8 mm thick; nodes flat; sheath scars corky, initially with a ring of dense, brown hairs. Branches many from distal nodes, subequal. Culm sheaths deciduous, ca. 1/2 as long as internodes or less, leathery, finely white powdery, initially minutely golden or brown hispid, apex truncate; auricles minute; oral setae 3–5 mm; ligule 1–2 mm, serrulate; blade reflexed or horizontal, base ca. 1/3 as wide as sheath apex, adaxially hispidulous. Leaf sheaths glabrous; auricles usually minute; oral setae minute; blade lanceolate, 5–16 × 0.8–1.6 cm. Pseudospikelets 1.3–1.8 cm; florets 4–6. Glumes 1 or 2; lemma 8–10 × 8–10 mm; palea about as long as lemma. Anthers 5–6 mm. Ovary ca. 2.5 mm, pubescent; styles 2–3 mm; stigmas 1–3, 5–9 mm. Caryopsis ca. 8 mm. New shoots Sep–Oct, fl. Sep–Oct.

- Hilly areas, streams; 300–500 m. Sichuan.

The culms are used for weaving.

**65. *Bambusa guangxiensis*** L. C. Chia & H. L. Fung, *Acta Phytotax. Sin.* 18: 214. 1980.

桂箬竹 gui dan zhu

*Lingnania funghomii* McClure, *Lingnan Univ. Sci. Bull.* 9: 36. 1940, not *Bambusa funghomii* McClure (1940).

Culms 2–5 m, 1.5–3 cm in diam., apically pendulous; internodes 40–60 cm, initially with bulbous-based hairs, papillate in age; wall 2–4 mm thick; nodes flat; sheath scar with a densely brown hirsute ring. Branches many, subequal. Culm sheaths deciduous, leathery, initially with dense, brown tuberculate hairs, apex truncate or slightly concave; auricles minute; oral setae 3–5 mm; ligule ca. 1 mm, serrulate; blade reflexed, base 1/4–1/3 as wide as sheath apex, both surfaces glabrous. Leaf sheaths silky hairy; auricles uniform; oral setae 6–8 mm; blade narrowly lanceolate, 8–16 × 1–1.5 cm. Inflorescence unknown.

- River valleys, lowland areas; 300–500 m. Guangxi.

The culms are split for weaving and tying.

**66. *Bambusa papillata*** (Q. H. Dai) K. M. Lan, *Fl. Guizhou.* 5: 281. 1988.

水箬竹 shui dan zhu

*Lingnania papillata* Q. H. Dai, *Acta Phytotax. Sin.* 20: 213. 1982.

Culms 3–6 m, 2–4 cm in diam., apically pendulous; internodes 30–60 cm, initially with bulbous-based hispid hairs, papillate in age; wall 2–3 mm thick; nodes flat; sheath scar with

a densely brown hirsute ring, distal to a white powdery ring. Branches many, subequal. Culm sheaths deciduous, asymmetrical, leathery, initially with brown tuberculate hairs, apex concave; auricles minute; oral setae 3–5 mm; ligule ca. 1 mm, serrulate; blade erect, base 1/4–1/3 as wide as sheath apex, both surfaces glabrous. Leaf sheaths weakly hispid; auricles minute; oral setae 8–12 mm; blade narrowly lanceolate, 8–19 × 1–1.5 cm. Inflorescence unknown.

- River valleys, hilly areas; 100–500 m. Guangxi.

**67. *Bambusa emeiensis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 214. 1980.

慈竹 ci zhu

*Dendrocalamus affinis* Rendle, J. Linn. Soc., Bot. 36: 447. 1904, not *Bambusa affinis* Munro (1868); *Lingnania affinis* (Rendle) P. C. Keng; *Neosinocalamus affinis* (Rendle) P. C. Keng; *Sinocalamus affinis* (Rendle) McClure.

Culms 5–10(–12) m, 5–8 cm in diam., apically long pendulous; internodes 15–30(–60) cm, initially stiffly pale brown strigose; wall 8–12 mm thick; nodes flat. Branches absent from lower nodes, many from mid-culm, central ones slightly prominent. Culm sheaths deciduous, leathery, both pale pubescent and dark brown spinous-hairy, apex concave; auricles minute or absent; ligule 2–5 mm, fimbriate; blade reflexed or horizontal, base 1/3–1/2 as wide as sheath apex, both surfaces hispid. Leaves variable in size; sheaths glabrous; ligule truncate, 1–1.5 mm; auricles and oral setae absent; blade narrowly lanceolate, 10–30 × 1–3 cm. Pseudospikelets 1.2–1.5 cm; prophylls 1-keeled; bracts 2 or 3; florets 3–5, with a terminal sterile floret. Rachilla internodes abbreviated, apical ones ca. 2 mm, falling together. Glumes absent or 1, 6–7 mm; lemma 0.8–1 cm; palea 7–9 mm; lodicules 3(or 4). Anthers 4–6 mm. Ovary ca. 1 mm; styles to 4 mm; stigmas 2–4, 3–5 mm. Caryopsis 7–8 mm. New shoots Jun–Sep, fl. Jul–Sep.  $2n = 76^*$ .

- River valleys, hilly areas; 800–2100 m. Guizhou, W Hunan, Sichuan, Yunnan.

This is the most common species of bamboo cultivated on the Yunnan Plateau and adjacent provinces. It has been used for various purposes, from household weaving to agricultural tools, and for ornamental and soil-protection purposes. It is also of great systematic interest, with vegetative parts typical of *Bambusa* subg. *Lingnania*, while the spikelet structure differs from the rest of the subgenus, having characteristics of *B.* subg. *Dendrocalamopsis*.

**68. *Bambusa hainanensis*** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 213. 1980.

籐箬竹 teng dan zhu

*Lingnania scandens* McClure, Lingnan Univ. Sci. Bull. 9: 38. 1940, not *Bambusa scandens* Blume ex Nees (1824).

Culms scrambling; internodes 20–30 cm, stiffly strigose; wall less than 8 mm thick. Branches many, subequal. Culm sheaths imperfectly known. Leaf sheaths glabrous; auricles and oral setae absent; blade lanceolate, 16–25 × 2–3 cm. Pseudospikelets few flowered. Lemma ca. 1 cm; palea longer than lemma; lodicules 3, brown, hirtellous. Ovary oblong, apex hirtellous; stigmas (2 or)3. Caryopsis unknown.

- Tropical forests. Hainan.

This imperfectly known species requires further investigation.

**69. *Bambusa fimbriiligulata*** McClure, Lingnan Univ. Sci. Bull. 9: 10. 1940.

流苏箬竹 liu su dan zhu

Culms usually ca. 6 m tall, ca. 3 cm in diam.; internodes upward strigose at first, later hairs deciduous; nodes slightly prominent. Culm sheaths deciduous, brown hispid abaxially; auricles narrow, glabrous, apex truncate; oral setae sparse, very weak; ligules ca. 1.5 mm tall in middle, margin dentate and long ciliate; blades erect, deciduous, lanceolate, apex long attenuate, nearly glabrous abaxially, slightly scabrous adaxially. Branches many, subequal. Leaf sheaths glabrous or glabrescent; auricles and oral setae weakly developed; ligules scarcely exerted, apex concave, petioles slightly scabrous on both sides; blades 13.5–17.5 × 2.4–2.8 cm, oblong-lanceolate, glabrous adaxially, puberulous abaxially, transverse veinlets inconspicuous. Inflorescence unknown.

- Riversides. Guangxi (Quaxian).

This imperfectly known species requires further investigation.

**70. *Bambusa papillatoides*** Q. H. Dai & D. Y. Huang, Acta Phytotax. Sin. 36: 279. 1998.

细箬竹 xi dan zhu

Culms erect or suberect, usually 3–6 m tall, 1–3 cm in diam.; internodes terete, 30–50 cm, densely white hispid, papillate after hairs falling, white powdery below nodes; wall 2–5 mm thick; basal intranodes grayish white lanuginous; sheath scars dense pale brown hairy. Branches many, main one longer than lateral ones. Culm sheaths deciduous, oblong, green when fresh, brittle, margin papery, apex very concave, asymmetrical; densely brown or grayish white hispidulous; auricles long ovate or elliptic, oral setae many, well developed, ca. 5 mm, white, erect; ligules ca. 1 mm, margin white ciliate, cilia ca. 5 mm; blades erect, ovate-lanceolate, base constricted, glabrous abaxially, hispidulous between veins adaxially. Leaves 7–10 on ultimate branches; leaf sheaths 3–4 cm, hispidulous at first, margin ciliate; ligules ca. 1 mm; auricles falcate or absent, oral setae 3–5, grayish white, 10–12 cm, radiate, deciduous; blades lanceolate, 10–15 × 1–2 cm, fine white hairy along veins abaxially, secondary veins 4–6 pairs. Inflorescence unknown.

- Cultivated. Guangxi (Nanning).

**71. *Bambusa rugata*** (W. T. Lin) Ohrmberger, Bamboos World Introd. 4: 19. 1997.

皱纹箬竹 zhou wen dan zhu

*Lingnania rugata* W. T. Lin, J. Bamboo Res. 12(3): 2. 1993.

Culms 3–4 m tall, 1.3–3 cm in diam.; internodes 25–38 cm, glabrous, with a ring of white powder below nodes; wall 2–3 mm thick; nodes not prominent; sheath scar slightly prominent, ± yellow hispid. Branches many, subequal. Culm sheath

deciduous, one side smooth and flat, the other side rugate, abaxially ± hispid at base, apex concave, unequal, 2 shoulders rotund; auricles narrow; oral setae present, erect; ligules ca. 1 mm, margin fimbriate; blades reflexed, lanceolate. Leaves 3 or 4 in ultimate branches; leaf sheaths glabrous, auricles falcate,

small, oral setae radiate; blades 3.5–15 × 0.8–2.5 cm, glabrous adaxially, white puberulous abaxially; secondary veins 4–6 pairs. Inflorescence unknown.

• Guangdong (Zhuhai).

**4. Bambusa subg. Dendrocalamopsis** L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 214. 1980.

绿竹亚属 lǜ zhū yǎ shǔ

Li Dezhu (李德铎); Chris Stapleton

*Dendrocalamopsis* Q. H. Dai & X. L. Tao.

Culm internodes usually 30–110 cm; wall usually thin, often less than 8 mm thick, but sometimes to 2 cm thick. Branches usually absent in lower culm, usually subequal. Branchlets of lower branches never specialized into thorns. Culm sheaths thickly papery; auricles absent or small, often narrowly oblong; blade deciduous, narrow, only ca. 1/3 width of sheath apex. Pseudospikelets purple-brown or bronze-colored.

Ten species: E and S China, Myanmar (*Bambusa copelandii* Brandis); nine species (all endemic) in China.

The genus *Dendrocalamopsis* was validly published when *D. grandis* was published, as its description satisfies the criteria for a *descriptio generico-specifica* (Stapleton & Xia, Taxon 53: 526–528. 2004).

- 1a. Culm sheaths apically narrow; blade recurved to reflexed; spikelets ovate, sometimes bilaterally compressed.
- 2a. Culms with abbreviated basal internodes; branching from basal nodes; stigma 1 ..... 79. *B. bicatricata*
- 2b. Culms without abbreviated basal internodes, not branching from basal nodes; stigmas 1–3.
  - 3a. Culm sheath blade base ca. 1/3 of sheath apex ..... 77. *B. stenoaurita*
  - 3b. Culm sheath blade base not much narrower than sheath apex.
    - 4a. Culms initially pubescent; culm sheaths with minute auricles; stigmas (1 or)2–4 ..... 76. *B. beecheyana*
    - 4b. Culms initially hispid; culm sheaths with small, reflexed auricles; stigma 1 ..... 78. *B. grandis*
- 1b. Culm sheaths apically broad; blade erect; spikelets slender, subulately terete or ovate, usually not bilaterally compressed.
  - 5a. Culm sheath auricles absent ..... 80. *B. xueana*
  - 5b. Culm sheath auricles slightly conspicuous, oblong, ovate or rounded.
    - 6a. Culm sheaths with unequal auricles, larger auricle ca. 2 × size of smaller one ..... 75. *B. basihirsuta*
    - 6b. Culm sheaths with similar-sized auricles.
      - 7a. Culm sheath ligule 3–9 mm; culms pubescent, initially with lilac stripes ..... 72. *B. variostrata*
      - 7b. Culm sheath ligule ca. 1 mm; culms glabrous, green.
        - 8a. Spikelets slender, 3–3.7 × ca. 0.5 cm, 8–13-flowered; culm sheath base outer margin usually with an arrowlike expansion below point of attachment ..... 73. *B. odashimae*
        - 8b. Spikelets ovate, 2.7–3 × 0.7–1 cm, 5–9-flowered; culm sheath base without expansion ..... 74. *B. oldhamii*

**72. Bambusa variostrata** (W. T. Lin) L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 215. 1980 [*vario-striata*].

吊丝箬竹 diao si dan zhu

*Sinocalamus variostratus* W. T. Lin, Acta Phytotax. Sin. 16(1): 66. 1978 [*vario-striatus*]; *Dendrocalamopsis variostrata* (W. T. Lin) P. C. Keng; *Neosinocalamus variostratus* (W. T. Lin) J. F. Zhuo.

Culms 5–12 m, 4–7 cm in diam., apically long pendulous; internodes initially with lilac stripes, 15–30 cm, initially pubescent; wall 8–10 mm thick; nodes flat; branching from culm base up. Branches many, main ones slightly dominant at mid-culm. Culm sheaths deciduous, leathery, with deciduous, yellow, spinous hairs; auricles slightly conspicuous, oblong; oral setae few, 4–6 mm; ligule 3–9 mm, entire or serrulate; blade erect, base ca. 1/2 as wide as sheath apex, adaxially hispid. Leaf sheaths subglabrous; ligule truncate, ca. 1 mm; auricles minute; oral setae few; blade narrowly lanceolate, 13–26 ×

1.6–3 cm. Pseudospikelets 3–5 cm; bracts 3–5; florets 5 or 6 plus terminal sterile floret; rachilla not disarticulating, internodes 2–3 mm. Glumes 1, ca. 1 cm; lemma ca. 1.5 cm; palea ca. 1.5 cm; lodicules 3, 4–5 mm. Anthers ca. 7 mm. Ovary ovoid, ca. 2.5 mm; styles ca. 5 mm; stigmas 3. Caryopsis unknown.

• Lowlands, hilly areas. Guangdong.

**73. Bambusa odashimae** Hatusima, Fl. Okinawa, rev. ed., 128. 1967.

乌脚绿竹 wu jiao lu zhu

*Leleba edulis* Odashima, J. Trop. Agric. 8: 59. 1936, not *Bambusa edulis* Carrière (1866); *B. taiwanensis* L. C. Chia & H. L. Fung; *Dendrocalamopsis edulis* (Odashima) P. C. Keng; *Sinocalamus edulis* (Odashima) P. C. Keng.

Culms to 20 m, 7.5–13 cm in diam.; internodes 20–35 cm; wall 1–1.8 cm thick; nodes flat. Branches many from basal

nodes, main ones slightly dominant at mid-culm. Culm sheaths deciduous, leathery, hispid, base of outer margin usually with an arrowlike expansion below point of attachment; auricles small; oral setae few; ligule ca. 1 mm, entire or ciliate; blade erect, base ca. 1/2 as wide as sheath apex, adaxially hispid. Leaf sheaths glabrous; auricles minute; oral setae few, 7–10 mm; ligule truncate, ca. 1 mm; blade oblong-lanceolate or narrowly lanceolate, 20–34 × 3–5 cm. Pseudospikelets slender, 3–3.7 × ca. 0.5 cm; florets 8–13, with 2 or 3 terminal florets sterile; rachilla not disarticulating, internodes 2–3 mm. Glume 1, 0.8–1 cm; lemma 0.8–1.3 cm; palea 0.6–1 cm; lodicules 2 or 3, 1.5–2 mm. Anthers 4–4.5 mm. Ovary oblong, 1.5–2 mm; styles ca. 2 mm; stigmas 3. Caryopsis unknown.

- Lowlands, hilly areas. Taiwan.

This species has delicious shoots and is widely cultivated in N Taiwan.

**74. *Bambusa oldhamii*** Munro, Trans. Linn. Soc. London 26: 109. 1868 [*“oldhami”*].

绿竹 lü zhu

*Bambusa atrovirens* T. H. Wen; *Dendrocalamopsis atrovirens* (T. H. Wen) P. C. Keng ex W. T. Lin; *D. oldhamii* (Munro) P. C. Keng; *Leleba oldhamii* (Munro) Nakai; *Sinocalamus oldhamii* (Munro) McClure.

Culms 6–12 m, 3–9 cm in diam.; internodes slightly flexuose, 20–35 cm, initially white powdery, glabrous; wall 4–12 mm thick; nodes flat. Branches many from mid-culm up, 3 dominant. Culm sheaths deciduous, leathery, dark brown spinous-hairy, soon glabrescent; auricles small, rounded, ciliate; ligule ca. 1 mm, subentire; blade erect, base ca. 1/2 as wide as sheath apex. Leaf sheaths initially hispid; ligule truncate, ca. 1 mm; auricles suborbicular; oral setae few; blade oblong-lanceolate, 15–30 × 3–6 cm. Pseudospikelets 2.7–3 × 0.7–1 cm; bracts 3–5; florets 5–9; rachilla not disarticulating, internodes 2–3 mm. Glumes 1, 0.9–1 × ca. 0.8 cm; lemma similar to glumes, ovate, ca. 1.7 × 1.3 cm; palea ca. 1.3 cm; lodicules 3, ca. 3.5 mm. Anthers ca. 8 mm. Ovary ovoid, ca. 2 mm; style ca. 5 mm; stigmas 3. Caryopsis unknown. New shoots May–Nov, fl. summer–autumn.

- Plains. Fujian, Guangdong, Guangxi, Hainan, Taiwan, S Zhejiang.

*Bambusa oldhamii* is commonly cultivated in Taiwan for its very high-quality shoots.

**75. *Bambusa basihirsuta*** McClure, Lingnan Univ. Sci. Bull. 9: 6. 1940.

扁竹 bian zhu

*Bambusa prasina* T. H. Wen; *Dendrocalamopsis basihirsuta* (McClure) P. C. Keng & W. T. Lin; *D. prasina* (T. H. Wen) P. C. Keng.

Culms 7–12 m, 4–9 cm in diam.; internodes 22–35 cm, initially thickly white powdery, sparsely hispid; nodes flat. Branches many from mid-culm up, 3 dominant. Culm sheaths deciduous, leathery, initially brown spinous-hairy, glabrescent;

auricles unequal, ciliate, larger one ca. 5 mm, smaller ca. 3 mm; ligule ca. 2 mm, ciliate; blade erect, triangular, glabrous, base ca. 1/2 as wide as sheath apex. Leaf sheaths initially hispid; ligule truncate, ca. 1 mm; auricles suborbicular; oral setae few; blade oblong-lanceolate, 13–25 × 2.5–5 cm. Pseudospikelets ca. 2.4 × 0.7 cm, subtended by a prophyll; florets 5–7; rachilla not disarticulating, internodes ca. 2 mm. Glumes 1 or 2; lemma ca. 1.6 × 1 cm; palea ca. 1.4 cm. Lodicules 3, ciliate. Anthers ca. 7 mm. Ovary ovoid, ca. 2 mm; styles ca. 5 mm; stigmas 3, 4–6 mm. Caryopsis unknown.

- Low-lying areas. Guangdong, Zhejiang.

The bitter shoots are not eaten.

**76. *Bambusa beecheyana*** Munro, Trans. Linn. Soc. London 26: 108. 1868.

吊丝球竹 diao si qiu zhu

Culms to 16 m, 9–10 cm in diam., apically pendulous or long pendulous; internodes 34–41 cm, initially thickly white powdery, sparsely pubescent; wall 1.5–2 cm thick; nodes flat. Branches several, 1–3 dominant. Culm sheaths deciduous, leathery, initially with uneven, dark brown, spinous hairs; auricles small at lower nodes, larger at distal nodes; oral setae present or absent; ligule 2–4 mm, ciliate; blade recurved, triangular, base 1/2–4/5 as wide as sheath apex, adaxially hirtellous. Leaf sheaths initially hirtellous; ligule truncate, 0.5–1 mm; auricles absent or minute; oral setae scarce or absent; blade oblong-lanceolate, 11–28 × 1.5–3.5 cm. Pseudospikelets 1.5–2 × 0.5–0.8 cm; florets 6–8; rachilla not disarticulating, internodes ca. 2 mm. Glumes 2, cordate, 4–5 mm, ciliate; lemma ca. 0.9 × 0.9 cm; palea 4–8 mm; lodicules 3, ciliate. Anthers ca. 5 mm. Ovary ovoid, ca. 1.5 mm; styles 3–4 mm; stigmas (1 or)2–4, ca. 6 mm. Caryopsis unknown. New shoots Jun–Jul, fl. Sep–Dec.

- Plains. Guangdong, Guangxi, Hainan, Taiwan.

*Bambusa beecheyana* is commonly cultivated in S Guangdong for its slightly bitter shoots.

- 1a. Culms apically long pendulous, without a brown pubescent ring below nodes; basal nodes without branches; stigmas 2–4 ..... 76a. var. *beecheyana*
- 1b. Culms apically pendulous, with a brown pubescent ring below nodes; basal nodes with branches; stigmas 2 ..... 76b. var. *pubescens*

**76a. *Bambusa beecheyana* var. *beecheyana***

吊丝球竹(原变种) diao si qiu zhu (yuan bian zhong)

*Dendrocalamopsis beecheyana* (Munro) P. C. Keng; *Neosinocalamus beecheyanus* (Munro) P. C. Keng & T. H. Wen; *Sinocalamus beecheyanus* (Munro) McClure.

Culms apically long pendulous; without a brown pubescent ring below nodes; basal nodes without branches. Palea abaxially hirtellous, apex acuminate or obtuse; stigmas 2–4.

- Guangdong, Guangxi, Hainan.

**76b. *Bambusa beecheyana* var. *pubescens*** (P. F. Li) W. C. Lin, Bull. Taiwan Forest. Res. Inst. 6: 1. 1964.

大头典竹 da tou dian zhu

*Sinocalamus beecheyanus* var. *pubescens* P. F. Li, Sunyatsenia 6: 205. 1946; *Dendrocalamopsis beecheyana* var. *pubescens* (P. F. Li) P. C. Keng; *Neosinocalamus beecheyanus* var. *pubescens* (P. F. Li) P. C. Keng & T. H. Wen; *Sinocalamus pubescens* (P. F. Li) P. C. Keng.

Culms apically recurved, with a brown pubescent ring below nodes; basal nodes with branches. Palea densely pubescent abaxially, apically 2-cleft; stigmas 2.

- Guangdong, Taiwan.

**77. *Bambusa stenoaurita*** (W. T. Lin) T. H. Wen, J. Bamboo Res. 10(1): 22. 1991.

黄麻竹 huang ma zhu

*Sinocalamus stenoauritus* W. T. Lin, Bull. Bot. Lab. N.-E. Forest. Inst., Harbin 1980(6): 89. 1980; *Dendrocalamopsis stenoaurita* (W. T. Lin) P. C. Keng ex W. T. Lin; *Neosinocalamus stenoauritus* (W. T. Lin) W. T. Lin.

Culms pendulous, to 10 m, ca. 7 cm in diam.; internodes 22–32 cm, glabrous; wall ca. 1 cm thick; nodes flat. Branches several from middle nodes of culms, central slightly dominant. Culm sheaths deciduous, leathery, initially brown spiny-strigose; auricles reflexed, linear, small; ligule ca. 3 mm, serrulate; blade recurved or reflexed, triangular, base ca. 1/3 as wide as sheath apex. Leaf sheaths subglabrous; auricles absent or minute, with or without few oral setae; ligule truncate, 0.5–1 mm; blade oblong-lanceolate, 13–25 × 2–2.5 cm. Pseudospikelets 2–2.5 cm; bracts 1 or 2; florets ca. 6; rachilla not disarticulating, internodes ca. 2 mm. Glumes 1 or 2, ciliate; lemma 1–1.2 cm; palea about as long as lemma; lodicules 3, ca. 3.5 mm, ciliate. Anthers 8–10 mm. Ovary ovoid; styles 3–4 mm; stigmas (1 or)2–4. Caryopsis unknown. New shoots Jul–Oct.

- River valleys. Guangdong.

*Bambusa stenoaurita* may be more appropriately placed in *Dendrocalamus*.

This species is cultivated in some areas of Guangdong for its shoots.

**78. *Bambusa grandis*** (Q. H. Dai & X. L. Tao) Ohrnberger, Bamboos World Introd. 4: 18. 1997.

大缘竹 da lü zhu

*Dendrocalamopsis grandis* Q. H. Dai & X. L. Tao, Acta Phytotax. Sin. 20: 210. 1982; *D. daii* P. C. Keng, nom. illeg. superfl.; *Neosinocalamus grandis* (Q. H. Dai & X. L. Tao) T. H. Wen.

Culms 10–15 m, 8–10 cm in diam., apically recurved; internodes 30–40 cm, basally slightly swollen, initially sparsely hispid; wall 2–2.5 cm thick; nodes flat. Branches several, central dominant. Culm sheaths deciduous, leathery, initially with dark brown, spiny hairs; auricles reflexed, linear, small; ligule 3–5 mm, serrulate; blade recurved, occasionally erect,

ovate to lanceolate, base ca. 4/5 as wide as sheath apex. Leaf sheaths hirtellous; ligule truncate, 1–1.5 mm; auricles and oral setae absent; blade lanceolate, 15–20 × 3–5 cm. Pseudospikelets 1.5–2 cm; 4–8-flowered, plus a sterile terminal floret; rachilla not disarticulating, internodes ca. 2 mm. Glumes 1, ciliate; lemma 1–1.2 cm, ciliate; palea 0.8–1 cm; lodicules 3. Anthers ca. 6 mm. Ovary obovoid; styles ca. 4 mm; stigma 1. Caryopsis unknown. New shoots Jul–Oct.

- River banks, near villages. Guangxi.

The name used in FRPS (9(1): 149. 1996), *Dendrocalamopsis daii*, was published in the belief that *D. grandis* was not validly published. However, the latter name is validly published as it fulfills the requirements for a *descriptio generico-specifica* (Stapleton & Xia, Taxon 53: 526–528. 2004).

This species is cultivated in Guangxi for its shoots and culms.

**79. *Bambusa bicatratricata*** (W. T. Lin) L. C. Chia & H. L. Fung, Acta Phytotax. Sin. 18: 214. 1980.

孟竹 meng zhu

*Sinocalamus bicatratricatus* W. T. Lin, Acta Phytotax. Sin. 16(1): 68. 1978; *Dendrocalamopsis bicatratricata* (W. T. Lin) P. C. Keng; *Neosinocalamus bicatratricatus* (W. T. Lin) W. T. Lin.

Culms ca. 10 m, 5.5–7.5 cm in diam., apically recurved; basal internodes normally 20–36 cm, on abnormal culms very short, ca. 1 cm; wall ca. 1.5 cm thick; nodes level; branching to base. Branches several, central dominant. Culm sheaths deciduous, leathery, initially with dark brown, spiny hairs; auricles reflexed, linear, small; ligule 4–5 mm, serrulate; blade recurved or reflexed, ovate-lanceolate, base 1/2–4/5 as wide as sheath apex. Leaf sheaths subglabrous; ligule truncate, 1.5–2 mm; auricles tiny; oral setae developed; blade lanceolate, 9–22 × 2–4 cm. Pseudospikelets 1.7–1.8 cm; florets 6–8, apical 2 sterile. Rachilla internodes ca. 2 mm. Glumes 2 or 3, subcordate, ca. 5 mm, glabrous; lemma 7–8 mm, ciliate; palea 7–8 mm; lodicules 3. Anthers ca. 3.5 mm. Ovary ca. 3.5 mm; stigmas 1. Caryopsis unknown. New shoots Jun–Oct, fl. winter.

- Roadsides, margins of villages, cultivated. Hainan.

**80. *Bambusa xueana*** Ohrnberger, Bamboos World Introd. 4: 19. 1997.

疙瘩竹 ge da zhu

*Neosinocalamus yunnanensis* Hsueh & J. R. Hsueh, Acta Phytotax. Sin. 29: 274. 1991; *Bambusa tengchongensis* D. Z. Li & N. H. Xia, nom. illeg. superfl.; *B. yunnanensis* (Hsueh & J. R. Hsueh) D. Z. Li (1994), not N. H. Xia (1993).

Culms 8–12 m, 4–7 cm in diam., apically pendulous; internodes 40–50 cm, initially gray-white or brown pubescent, with brown tomentose rings below nodes, wall ca. 15 mm thick; nodes flat; branches many, central dominant. Culm sheaths slowly deciduous, leathery, abaxially densely brown strigose; auricles absent; ligule ca. 2 mm, serrulate; blade erect, triangular or long-triangular, base as wide as sheath apex. Leaves 5–9 per ultimate branch; sheaths glabrous; ligule ca. 0.5 mm; auricles absent; blade 12–25 × 1–2.5 cm, base broadly cuneate,

lateral veins 5–9-paired. Pseudospikelets 1–3(to many) per node of inflorescence, yellow-green or slightly lilac, ca.  $2 \times 0.7$  cm, somewhat patent when mature; florets 5–8; rachilla disarticulating, joined to florets. Glumes 1 or 2, yellow, leathery; lemmas broadly ovate, ca.  $14 \times 1.1$  cm, 14–16-veined, apex

mucronate; palea narrow, keels pilose, 5–7-veined. Lodicules 2 or 3, transparent, ciliate. Filaments 1(–10) mm; anthers yellow, ca. 6 mm. Ovary pyriform, densely pilose; stigmas 2 or 3.

- 1700–1800 m. W Yunnan (Tengchong).

#### Taxa incertae sedis

*Bambusa basisolida* W. T. Lin (J. Bamboo Res. 16(3): 23. 1997) was described from sterile material from Guangdong (Yangchun). In the protologue it was compared with *B. subtruncata*.

*Bambusa concava* W. T. Lin (J. Bamboo Res. 16(3): 24. 1997) was described from sterile material from Hainan (Haikou). In the protologue it was compared with *B. duriuscula*.

*Bambusa multiplex* (Loureiro) Raeuschel ex Schultes & J. H. Schultes var. *lutea* T. H. Wen (J. Bamboo Res. 1(1): 31. 1982) was described from Zhejiang. The holotype (*X. Q. Hua et al. 81901*, ZJFI) has an abaxially pale green leaf blade, glabrous culm internodes, subfalcate culm sheath auricles, and abaxially glabrous culm sheath blades. Because these characters are so different from those of *B. multiplex*, it is not reasonable to recognize it as a variety of that species. According to field records, its culms are up to 3 m high and 1–2 cm in diam. As the holotype is fragmentary and very difficult to identify, further investigations are required to place this taxon effectively.

*Bambusa rongchengensis* (T. P. Yi & C. Y. Sia) D. Z. Li (Acta Bot. Yunnan. 16: 41. 1994; *Dendrocalamus rongchengensis* T. P. Yi & C. Y. Sia, J. Bamboo Res. 7(4): 20. 1988) was described from Sichuan.

*Bambusa sinospinosa* McClure var. *inermis* Keng & P. C. Keng (J. Wash. Acad. Sci. 36: 80. 1946; *Bambusa inermis* (Keng & P. C.

Keng) T. P. Yi; *Dendrocalamus inermis* (Keng & P. C. Keng) T. P. Yi) was described from Sichuan. The correct position of this taxon is not known.

*Bambusa valida* (Q. H. Dai) W. T. Lin (Guihaia 10: 15. 1990; *Dendrocalamopsis valida* Q. H. Dai, Acta Phytotax. Sin. 24: 393. 1986, “*validus*”) was described from material cultivated at the Guangxi Institute of Forestry, Nanning.

*Lingnania transvenula* W. T. Lin & Z. J. Feng (J. S. China Agric. Univ. 13(2): 82. 1992) was described from Guangdong.

*Neosinocalamus rectocuneatus* W. T. Lin (Acta Phytotax. Sin. 26: 228. 1988; *Sinocalamus rectocuneatus* (W. T. Lin) W. T. Lin) was described from Guangdong. This species is a member of *Bambusa* subg. *Dendrocalamopsis*.

*Sinocalamus concavus* W. T. Lin & Z. M. Wu (J. S. China Agric. Univ. 13(2): 82. 1992) was described from Guangdong.

*Sinocalamus suberosus* W. T. Lin & Z. M. Wu (J. S. China Agric. Univ. 13(2): 83. 1992) was described from Guangdong.

*Sinocalamus triramus* W. T. Lin & Z. M. Wu (J. S. China Agric. Univ. 15(2): 78. 1994) was described from Guangdong.

