Flora of China 22: 74–96. 2006.

14. FARGESIA Franchet, Bull. Mens. Soc. Linn. Paris 2: 1067. 1893.

箭竹属 jian zhu shu

Li Dezhu (李德铢), Guo Zhenhua (郭振华); Chris Stapleton

Borinda Stapleton; *Sinarundinaria* Nakai.

Small (ca. 1 m) to subarborescent (to 15 m) bamboos. Rhizomes pachymorph, short relative to culm height, 10–30(–50) cm, with short neck. Culms unicaespitose, basally erect, apically nodding to pendulous; internodes terete, smooth or finely ridged; nodes with level or weakly prominent supra-nodal ridge, usually narrower than sheath scar. Buds ovoid to lanceolate, branch sheathing reduced. Branches initially 7–15 per node in mid-culm, above promontory, initially erect, becoming deflexed, subequal. Culm sheaths linear, rounded, or triangular; blade usually reflexed. Leaves small to medium-sized; blades glossy and thickened, or matte and delicate, transverse veins prominent. Inflorescence racemose to paniculate, compressed or open, ebracteate or branches subtended by a series of persistent, small, delicate sheaths, unilateral or not. Spikelets several flowered. Glumes (1 or)2, unequal; lemma apically obtuse or acute, mucronate to awned; palea equal to or shorter than lemma, 2-keeled, apex bifid; lodicules 3. Stamens 3; filaments free, slender; anthers yellow or purple. Style 1 or 2; stigmas 2 or 3, plumose. Caryopsis oblong to ovoid. New shoots May–Sep.

About 90 species: China, E Himalayas, Vietnam; at least 78 species (77 endemic) in China.

Fargesia was originally described for a single species from central China with dense, spathed, unilateral racemes and short rhizomes. Some authors have suggested that on this basis, it should be referred to the earlier, Himalayan genus *Thamnocalamus*, which also has rather dense, initially spathed inflorescences. However, bud and branch morphology and molecular evidence suggest that the genera are not so closely related.

Many species in *Fargesia* lack dense, spathed, unilateral inflorescences. As their flowers have become known, several have been moved into a genus established specifically to accommodate such clump-forming species, *Borinda*. In order for all these species to be listed under the same genus, they are all temporarily maintained under *Fargesia*, as in FRPS (9(1), 1996). The relationships among *Fargesia*, *Thamnocalamus*, *Yushania*, and allies are under investigation (Guo and Li, Molec. Phylogen. Evol. 30: 1–12. 2004).

Fargesia brevipes, *F. cuspidata*, *F. ungulata*, and *F. vicina* (species nos. 75–78) could not be included in the following key because of lack of information on their culms and culm sheaths.

1a. Culm sheaths deciduous; culm nodes with supra-nodal ridge prominent to very prominent, usually more prominent than sheath scar.
2a. Branches obviously unequal, larger branches 1.5–6 mm in diam., smaller branches 1–1.5 mm in diam. ..... 1. *F. canaliculata*
2b. Branches ± subequal, all 1–1.5 mm in diam.
3a. Internodes 21–25(–30) cm, initially sparsely white powdery; branches 10–40 per node, secondary branching absent or only at basal 1 or 2 nodes of branches; leaves 1 or 2 per ultimate branch ..... 2. *F. stenoclada*
3b. Internodes 10–15 cm, initially densely white powdery; branches 4–8 per node, secondary branching well developed; leaves 2–4 per ultimate branch ..... 3. *F. brevissima*
1b. Culm sheaths late deciduous or persistent; culm nodes with supra-nodal ridge level, rarely prominent, usually less prominent than sheath scar.
4a. Culm sheaths oblong or narrowly elliptical, glabrous or sparsely setose, apically rounded, apex as wide as base or nearly so.
5a. Culm sheath blade reflexed.
6a. Culm sheaths sparsely gray-brown setose.
7a. Culm internodes densely white powdery when young, gray-white setose below node, conspicuously finely ridged in, nearly solid, wall 2.5–5.5 mm thick ..... 12. *F. frigidis*
7b. Culms internodes thinly white powdery only below each node, glabrous, obscurely finely ridged, hollow, wall 1.5–2 mm thick ..... 4. *F. zayuensis*
6b. Culm sheaths glabrous.
8a. Internodes to ca. 40 cm, to 2.5 cm in diam.; culms densely white powdery when young ..... 5. *F. orbiculata*
8b. Internodes shorter than 33 cm, not more than 2 cm in diam.; culms sparsely white powdery when young.
9a. Culm sheaths distally asymmetrically rounded; leaf sheath oral setae usually present ..... 6. *F. murielae*
9b. Culm sheaths distally oblong-ovate; leaf sheath oral setae absent ..... 7. *F. denudata*
5b. Culm sheath blades erect at least on lower nodes, sometimes on all nodes.
10a. Culm sheath blade base much narrower than culm sheath apex.
11a. Culm sheath apically broadly triangular or arcuate, shoulders not projecting, ligules truncate ..... 8. *F. similaris*
11b. Culm sheath shoulders projecting, ligules triangular or arcuate.
12a. Culm sheaths longer than internodes, to 26 cm, very sparsely yellow-brown setose, apex leathery and flat ..... 9. *F. utilis*
12b. Culm sheaths shorter than internodes, to 14 cm, glabrous, apex papery and undulate when dry ..... 10. *F. extensa*
10b. Culm sheath blade base widened and nearly as wide as, to as wide as culm sheath apex.

13a. Culm sheaths glabrous; leaf blade broadly lanceolate, base asymmetrically rounded ..... 11. *F. obliqua*
13b. Culm sheaths initially gray-white or gray-yellow setulose; leaf blade lanceolate, basally cuneate, nearly symmetrical.
14a. Culms to 3 cm in diam.; internodes 26–28(–40) cm, initially densely white powdery; culm sheath blade to 22 mm wide; leaf blade abaxially glabrous, secondary veins 3-paired ..... 13. *F. melanostachys*
14b. Culms to 1.5 cm in diam.; internodes 17–25 cm, initially thinly white powdery or lacking powder, culm sheath blade to 5 mm wide; leaf blade abaxially white pubescent, secondary veins 4-paired ..... 14. *F. scabrida*
4b. Culm sheaths narrowly triangular or narrowly orbicular-triangular, setose, rarely glabrous, apex triangular or linear, much narrower than base.
15a. Culm sheath longer than internode.
16a. Culm sheath apically leathery, broadly triangular, narrowed for distal ca. 1/5 of length.
17a. Leaf blade abaxially initially ± gray or gray-brown pubescent, especially proximally.
18a. Culm sheath red-brown ..... 15. *F. rufa*
18b. Culm sheath yellow-brown or purple-brown.
19a. Culm internodes solid or nearly so; leaf sheath auricles absent, oral setae erect or curved ..... 16. *F. dura*
19b. Culm internodes hollow; leaf sheath auricles triangular or subfalcate (rarely absent in *F. macclureana*), oral setae radiating.
20a. Culm internodes 18–28(–53) cm, thinly white powdery when young, fine longitudinal ridges prominent ..... 17. *F. macclureana*
20b. Culm internodes 11–17 cm, densely white powdery when young, fine longitudinal ridges obscure ..... 18. *F. sylvestris*
17b. Leaf blade abaxially glabrous.
21a. Culm internodes hollow.
22a. Culm internodes initially gray-white setose or gray-brown setose, either entirely or only below nodes.
23a. Culms slightly flexuose, internodes 22–25 cm; leaf sheath 5–6.6 cm, blade 12–16 × 2–3 cm, secondary veins 4- or 5-paired ..... 19. *F. subflexuosa*
23b. Culms straight, internodes 15–20 cm; leaf sheath 1.8–3.5 cm, blade 3.5–10.5 × 0.5–0.9(–1.2) cm, secondary veins 2- or 3-paired ..... 20. *F. mairei*
22b. Internodes glabrous.
24a. Culm internodes 20–25(–39) cm; leaf blade 1.3–2.3 cm wide ..... 21. *F. tenuilignea*
24b. Culm internodes to 20 cm; leaf blade less than 1.3 cm.
25a. Culm sheaths yellowish; leaf blades not conspicuously tessellate ..... 22. *F. spathacea*
25b. Culm sheaths purple or purple-brown; leaf blades conspicuously tessellate.
26a. Culm sheaths sparsely brown setose or rarely glabrous; culm sheath auricles falcate; leaf sheath auricles elliptic ..... 23. *F. qinlingensis*
26b. Culm sheaths glabrous or sparsely gray-white setose; culm sheaths and leaf sheaths without auricles ..... 24. *F. nitida*
21b. Culm internodes solid or nearly so.
27a. Culms to 6 cm in diam.; internodes blue-gray, distally gray-brown to yellow-brown setose when young; leaf blade 10–18 × 1.6–2.3 cm ..... 25. *F. papyrifera*
27b. Culms to 2 cm in diam.; internodes often light green, glabrous; leaf blade 3.2–9.5 × 0.4–1.2 cm.
28a. Culm sheath oral setae erect, ligule subtruncate, blade reflexed; leaf blade 0.5–1.2 cm wide ..... 26. *F. albocerea*
28b. Culm sheath oral setae absent, ligule ± arcuate, blade erect; leaf blade 0.4–0.7 cm wide.
29a. Culm sheaths uniformly leathery; culms 1–2 cm in diam.; branches deflexed ..... 27. *F. solida*
29b. Culm sheaths proximally thinly leathery or papery, distally membranous; culms 0.5–1 cm in diam.; branches ascending ..... 28. *F. elegans*
16b. Culm sheath apically thickly papery, linear or narrowly triangular, narrowed for distal 1/3–1/2 of length.
30a. Leaf blade abaxially proximally or uniformly gray-white or gray-brown pubescent (sometimes glabrous in *F. edulis*).
31a. Culm sheaths densely spotted.
32a. Culm internodes 35–41 cm, with prominent longitudinal ridge above branching; internode cavity hollow when young, not filled with pith; nodes level, intranode 4–6 mm; leaf blade 3.6–10 × 0.3–0.7 mm, secondary veins 2- or 3-paired ..... 29. *F. ferax*
32b. Culm internodes 20–23(–36) cm, without longitudinal ridge above branching; internode cavity filled with pith when young; nodes slightly to conspicuously prominent, intranode 2–4 mm; leaf blade (7–)10–16 × 1–1.7 cm, secondary veins 4-paired ..... 30. *F. fungosa*
31b. Culm sheaths not densely spotted.
33a. Culm internodes with conspicuous fine ridges.
34a. Leaf sheath glabrous; leaf blade thick, 8.5–12(–16) × 0.5–1(–1.4) cm, secondary veins 3-paired; leaf blade proximally glabrous; culm sheath oral setae yellow-brown ..... 31. *F. communis*

34b. Leaf sheath distally pubescent; leaf blade thin, 3.4–9.5 × 0.3–0.7 cm, secondary veins 2-paired; pseudopetiole gray-white pubescent when young; culm sheath oral setae white-gray ..... 32. *F. angustissima*

33b. Culm internodes smooth, without fine ridges.

35a. Culm sheaths yellow, densely brown setose.

36a. Culms 5–8 m tall, 2–4 cm in diam., internodes 28–40 cm; first branch ca. 4 mm in diam.; culm sheath ligule ca. 1 mm; leaf sheath oral setae present; leaf blade 10–14(–22) mm wide ..... 33. *F. edulis*

36b. Culms to 5 m tall, to 2 cm in diam., internodes ca. 30 cm; first branch ca. 2 mm in diam.; culm sheath ligule ca. 7 mm; leaf sheath oral setae absent; leaf blade 4–9 mm wide ..... 34. *F. jiulongensis*

35b. Culm sheaths purple-brown with lighter yellow-brown stripes, sparsely brown setose.

37a. Culm internodes hollow; leaf blade with transverse veins distinct; pseudopetiole glabrous ..... 35. *F. gongshanensis*

37b. Culm internodes solid or nearly so; leaf blade with transverse veins obscure; pseudopetiole gray-white pubescent when young ..... 36. *F. contracta*

30b. Leaf blade abaxially glabrous.

38a. Culm internodes hollow, wall much narrower than cavity.

39a. Culms 0.5–2 cm in diam.

40a. Culm internodes white powdery when young, glabrous; culm sheaths glabrous or apically sparsely brown setose, sometimes purple spotted; leaf sheaths to 5 cm ..... 37. *F. semicoriacea*

40b. Culm internodes densely white powdery when young, glabrous or gray-yellow setose below node; culm sheaths yellow-brown setose; leaf sheaths to 7 cm ..... 38. *F. hygrophila*

39b. Culms (1.2–)2–6 cm in diam.

41a. Culm sheath blade erect; leaf blade 3–6 mm wide ..... 39. *F. sagittatinea*

41b. Culm sheath blade reflexed; leaf blade 6–22 mm wide.

42a. Culm sheaths purple-brown, sometimes purple spotted ..... 40. *F. altior*

42b. Culm sheaths yellow or yellow-brown, not spotted.

43a. Culm internodes gray-green, initially gray or gray-yellow setose below nodes; culm sheath ligule 1–6 mm; leaf blade 1.3–2.2 cm wide ..... 41. *F. concinna*

43b. Culm internodes green, glabrous; culm sheath ligule to 1 mm; leaf blade 0.8–1.3 cm wide ..... 42. *F. praecipua*

38b. Culm internodes solid or nearly so, wall much thicker than any inner cavity.

44a. Culm internodes proximally white powdery when young; culm sheath blade erect ..... 43. *F. yuanjiangensis*

44b. Culm internodes not white powdery; culm sheath blade reflexed (unknown in *F. perlonga*).

45a. Culm sheath auricles small or absent; leaf sheath oral setae scarce; leaf blade thick, 10–19.5 × 1.3–1.7 cm, secondary veins 5- or 6-paired ..... 44. *F. perlonga*

45b. Culm sheath auricles formed by sheath shoulders rolled; leaf sheath oral setae conspicuous, erect; leaf blade thin, 5.5–14 × 0.8–1.5 cm, secondary veins 3–5-paired ..... 45. *F. circinata*

15b. Culm sheath shorter than or about as long as internodes.

46a. Culm sheath blade always reflexed.

47a. Culm internodes solid or thickly walled, wall thicker than cavity if hollow.

48a. Leaf blade abaxially glabrous.

49a. Culm internodes initially sparsely white-gray setose; culm sheath distal margins flat; leaf blades 4–8(–15) per twig ..... 46. *F. hsuehiana*

49b. Culm internodes glabrous; culm sheath distal margins wrinkled; leaf blades ca. 2 per twig ..... 47. *F. pleniculmis*

48b. Leaf blade abaxially densely pubescent at least proximally.

50a. Leaf blade 4–12 × 0.5–1.1 cm, secondary veins 2–4-paired; culms 0.5–1.5 cm in diam.

51a. Culms apically pendulous to scrambling; leaf sheath 3–5 cm; leaf blade abaxially glabrous, secondary veins 3- or 4-paired ..... 51. *F. declivis*

51b. Culms erect; leaf sheath 1.5–2.5 cm; leaf blade abaxially white pubescent, secondary veins 2- or 3-paired ..... 52. *F. farcta*

50b. Leaf blade 12–21 × 1.1–2.3 cm, secondary veins 4- or 5(or 6)-paired; culms (1–)1.6–5(–6) cm in diam.

52a. Shoots usually white powdery; nodal sheath scar glabrous; culm sheaths glabrous or setose in patches ..... 48. *F. yunnanensis*

52b. Shoots not white powdery; nodal sheath scar brown setose; culm sheaths densely brown setose.

53a. Culm internodes prominently finely ridged, initially black-green; culm sheath ligule ca. 1 mm, truncate or arcuate ..... 49. *F. acuticontracta*

53b. Culm internodes obscurely finely ridged, initially; culm sheath ligule ca. 3 mm, serrulate .... 50. *F. longiuscula*

47b. Culm internodes hollow, wall much thinner than central cavity.

54a. Leaf blade abaxially entirely or proximally pubescent.

55a. Older culm internodes scabrid after setae break off, wall 1–1.5 mm thick; culm sheaths papery ... 65. *F. plurisetosa*

55b. Older culm internodes usually smooth and glabrous, wall 2–5 mm thick; culm sheaths leathery.

56a. Culm internodes densely white powdery when young.
57a. Culm sheaths densely appressed brown setose; leaf sheath oral setae present, persistent ..... 53. *F. adpressa*
57b. Culm sheaths glabrous or sparsely yellow-brown setose; leaf sheath oral setae absent ..... 54. *F. pauciflora*
56b. Culm internodes not white powdery.
58a. Culm sheaths proximally glabrous or setose; culm sheath auricles minute, blade wrinkled ..... 55. *F. grossa*
58b. Culm sheath proximally densely brown setose; culm sheath auricles absent, blade flat.
59a. Culm internodes glabrous; leaf sheath 1.2–3 cm; leaf blade abaxially proximally pubescent ..... 56. *F. hainanensis*
59b. Culm internodes initially distally gray setose; leaf sheath 5.5–7.5 cm; leaf blade abaxially uniformly pubescent ..... 57. *F. porphyrea*
54b. Leaf blade abaxially glabrous.
60a. Culm internodes not white powdery; leaf blade 1.2–1.6 cm wide ..... 58. *F. lincangensis*
60b. Culm internodes initially white powdery; leaf blade 0.4–1.2 cm wide.
61a. Culm internodes initially gray-white setose above nodes, usually densely brown setose below node when young ..... 60. *F. strigosa*
61b. Culm internodes glabrous.
62a. Culm internodes grooved above branches; leaf blades 8–10 per ultimate branch; leaf sheath oral setae absent ..... 62. *F. dulcicula*
62b. Culm internodes terete; leaf blades 2–4 per ultimate twig; leaf sheath oral setae present.
63a. Culm internode nearly solid or wall 4–8 mm thick; culm sheath densely pale yellow setose; leaf blades 3 or 4 per ultimate branch; leaf sheath to 3.8 cm, pseudopetiole 1.5–2.5 mm; blade 8–12 mm wide; secondary veins 3- or 4-paired ..... 63. *F. wuliangshanensis*
63b. Culm internode wall 2–4 mm thick; culm sheath sparsely gray-white to gray-yellow setose; leaf blades 2(or 3) per ultimate branch; leaf sheath to 2.5 cm, pseudopetiole to 1 mm; blade 4–5 mm wide; secondary veins 2-paired ..... 64. *F. glabrifolia*
46b. Culm sheath blade erect at least on lower part of culm, sometimes reflexed on upper parts.
64a. Leaf sheath auricles present.
65a. Culm internodes initially densely gray setose; culm sheath ligule ciliate.
65b. Culm internodes glabrous when young.
66a. Culm sheath blade much narrower than apex of culm sheath; leaf sheath auricles narrowly elliptic, oral setae terminal ..... 66. *F. dracocephala*
66b. Culm sheath blade about as wide as culm sheath apex; leaf sheath auricles nearly circular, oral setae marginal ..... 67. *F. decurvata*
64b. Leaf sheath auricles absent.
67a. Leaf sheath oral setae present, erect.
68a. Culm internodes initially distally white-gray setose, not white powdery; culm sheaths persistent, densely adnately brown-black setose, ligule 2–6 mm ..... 68. *F. conferta*
68b. Culm internodes glabrous, white powdery; culm sheaths deciduous, ligule to 2 mm.
69a. Leaf sheath to 16 cm, apex broadly triangular; leaves 2–4 per ultimate branch; leaf sheath margins densely ciliate, blade with secondary veins 4–7-paired ..... 69. *F. robusta*
69b. Leaf sheath to 27.5 cm, apex narrowly triangular; leaves 7–9 per ultimate branch; leaf sheath margins glabrous, blade with secondary veins 3- or 4-paired ..... 70. *F. caduca*
67b. Leaf sheath oral setae absent.
70a. Culm internodes setose when young, at least near nodes, culm sheath brown setose.
71a. Culm internodes 35–45 cm; leaf blade with both margins spinescent-serrulate ..... 59. *F. yulongshanensis*
71b. Culm internodes 18–25 cm; leaf blade with one margin slightly serrulate, other margin smooth ..... 71. *F. emaculata*
70b. Culm internodes glabrous; culm sheath glabrous or sparsely setose.
72a. Culms 1.2–2(–2.5) m, internodes 8–12 cm; culm sheath persistent ..... 61. *F. funiushanensis*
72b. Culms 3–6 m, internodes 14–38 cm; culm sheath deciduous, sometimes gradually so.
73a. Culm internodes grooved above branches; culm sheath ligule truncate, lower culm sheath blades erect, upper blades reflexed ..... 72. *F. lushuiensis*
73b. Culm internodes terete; culm sheath blades always erect.
74a. Culm sheaths gradually deciduous, ligule not broader than base of sheath blades, arcuate ..... 73. *F. mali*
74b. Culm sheaths soon deciduous, ligule broader than base of sheath blade, truncate or concave ..... 74. *F. exposita*

1. Fargesia canaliculata T. P. Yi, J. Bamboo Res. 4(1): 19. 1985. 岩斑竹 yan ban zhu

Rhizome neck 5–15 cm, 1.4–3 cm in diam.; internodes 3–

8 mm. Culms 3–5 m, 1–2 cm in diam.; internodes terete, 20 (–25) cm, conspicuously grooved above branches, smooth, very rigid, initially white powdery, especially below nodes, solid or nearly so, cavity filled with lamellate or spongy pith; supra-nodal ridges prominent. Branches 5–7 per node, deflexed, unequal, thickly walled. Culm sheaths soon deciduous, gray-yellow, narrowly triangular, longer than internodes, basally leathery, distally papery, sparsely brown setose, margins densely ciliate; auricles and oral setae absent; ligule convex, irregularly fissured; blade reflexed, linear-lanceolate, glabrous. Leaves 2 or 3 per ultimate branch; sheath glabrous, margin glabrous or ciliolate; auricles and oral setae absent; ligule arcuate or convex, ca. 1 mm; blade linear-lanceolate, 2.8–5 × 0.25–0.5 cm, narrow, glabrous, secondary veins 2- or 3-paired, transverse veins distinct, one margin spinescent-serrulate, other margin obscure. Inflorescence unknown. New shoots Jun.

● W Sichuan.

The shoots are delicious, and the culms are used for making paper, chopsticks, and farm tools.

2. Fargesia stenoclada T. P. Yi, J. Bamboo Res. 8(1): 30. 1989.

细枝箭竹 xi zhi jian zhu

Rhizome neck 4–8 cm, 0.8–1.8 cm in diam. Culms 2.5–5.5 m, 1–1.7 cm in diam.; internodes terete, 21–25(–30) cm, smooth, initially sparsely white powdery; wall 3–5 mm thick; nodes and sheath scars weakly prominent. Branches 10–40 per node, subequal, slender, secondary branching only from lowermost branches. Culm sheaths deciduous, narrowly triangular-rounded, 1/2–3/5 as long as internodes, thinly leathery, radially white-gray setose, longitudinal ribs conspicuous, margins densely ciliate; auricles and oral setae absent; ligule arcuate or nearly truncate, 0.5–1 mm; blade erect, triangular to linear-triangular, width nearly equal to apex of culm sheath. Leaves 1 or 2 per ultimate branch; sheath margins ciliolate; auricles absent, oral setae few, 1–2 mm; ligule truncate, ca. 0.4 mm; blade linear-lanceolate, 4–9.4 × 0.5–0.9 cm, glabrous, secondary veins 2- or 3-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence unknown. New shoots Apr–May.

● 1600–1900 m. W Sichuan.

The multiple branches and short buds of this species are atypical for *Fargesia*.

The shoots are edible, and the culms provide weaving material and fishing rods. The species is a source of food for the giant panda.

3. Fargesia brevissima T. P. Yi, J. Bamboo Res. 5(4): 128. 1985.

窝竹 wo zhu

Rhizome neck 7–14 cm, 1.1–2.5 cm in diam., internodes 2–12 mm. Culms 3–5 m, 1–3 cm in diam.; internodes terete, 10–15 cm, rigid, initially glaucous and densely white powdery, longitudinal ribs obscure; wall 1–4 mm thick; supra-nodal ridge prominent, initially white powdery; sheath scar prominent, sometimes with persistent remains of sheath base. Branches 4–8 per node, deflexed, subequal, slender. Culm sheaths gradually deciduous, distally broadly rounded, cartilaginous, glabrous, white powdery at base, longitudinal ribs conspicuous marginally and distally; auricles and oral setae absent; ligule steeply arcuate, ca. 1 mm, glabrous; blade erect, triangular or linear-lanceolate, glabrous. Leaves 2–4 per ultimate branch; sheath margins yellow-brown ciliolate; auricles and oral setae absent; ligule truncate, ca. 1 mm, glabrous; blade lanceolate, 5–11 × 0.7–1.5 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base broadly cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence unknown. New shoots Jun.

● 2000–2400 m. E Sichuan.

The shoots are edible, and the culms are used for weaving.

4. Fargesia zayuensis T. P. Yi, J. Bamboo Res. 7(2): 20. 1988.

察隅箭竹 cha yu jian zhu

Rhizome neck 3–7 cm, 0.9–1.5 cm in diam., internodes 3–5 mm. Culms to 6 m, to 1.5 cm in diam.; internodes terete, 25–35 cm, initially sparsely white powdery; wall 1.5–2 mm thick; supra-nodal ridges level; sheath scar prominent. Branches 5–10 per node, deflexed, subequal. Culm sheaths gradually deciduous, narrowly rounded, shorter than internode, leathery, abaxially slightly gray-brown setulose, margins brown ciliolate or not, longitudinal ribs conspicuous; auricles absent; oral setae not persistent; ligule truncate, ca. 1 mm, glabrous, margin fissured; blade readily deciduous, reflexed, rarely erect, linear-lanceolate, articulate with apex of culm sheath. Leaves 1–3 per ultimate branch, readily deciduous; sheath glabrous; auricles and oral setae absent; ligule truncate, glabrous; blade lanceolate, 5–8.5 × 0.4–0.6 cm, glabrous, secondary veins 2-paired, transverse veins obscure, base cuneate, margins serrulate. Inflorescence unknown. New shoots Jul–Aug.

● 2500–3000 m. SE Xizang.

The shoots are edible, and the culms are used for weaving and for brooms.

5. Fargesia orbiculata T. P. Yi, J. Bamboo Res. 7(2): 22. 1988.

长圆鞘箭竹 chang yuan qiao jian zhu

Rhizome neck 5–10 cm, 1–2.5 cm in diam. Culms 4–6 m, 1–2.5 cm in diam.; internodes terete, 28–40 cm, initially densely white powdery, longitudinal ribs conspicuous; wall 2–3 mm thick; supra-nodal ridges level, initially white powdery; sheath scar prominent. Branches 5–18 per node, deflexed, slender, densely white powdery. Culm sheaths persistent, gray-yellow to yellow-brown, distally rounded, leathery, glabrous, longitudinal ribs conspicuous and curved at apex of culm sheath; auricles absent; oral setae usually absent; ligule ca. 1 mm, convex; blade readily deciduous, reflexed, linear-lanceolate, glabrous, usually revolute, articulate with sheath. Leaves 2 or 3 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule truncate or arcuate, ca. 1 mm; blade lanceolate, 5–8 × 0.8–1.3 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base nearly rounded, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Jul.

● About 3800 m. NW Yunnan.

The shoots are edible, and the culms are used for furniture.

6. Fargesia murielae (Gamble) T. P. Yi, J. Bamboo Res. 2(1): 39. 1983.

神农箭竹 shen nong jian zhu

Arundinaria murielae Gamble, Bull. Misc. Inform. Kew 1920: 344. 1920, nom. cons. prop.; *A. sparsiflora* Rendle (1904), nom. rej. prop.; *Fargesia parvifolia* T. P. Yi; *F. maluo* T. P. Yi; *F. sparsiflora* (Rendle) Ohrnberger; *Sinarundinaria murielae* (Gamble) Nakai; *S. sparsiflora* (Rendle) P. C. Keng; *Thamnocalamus murielae* (Gamble) Demoly; *T. sparsiflorus* (Rendle) P. C. Keng.

Culms 1–5 m, 0.5–1.4 cm in diam.; internodes terete, 15–23 cm, initially sparsely white powdery, longitudinal ribs weakly conspicuous; wall 1.5–2.5 mm thick, cavity filled with lamellate pith; supra-nodal ridges level or weakly prominent; sheath scar prominent. Branches 3–10 per node, deflexed, solid. Culm sheaths deciduous, distally asymmetrically rounded, leathery, glabrous or sometimes distally gray setose, margins initially yellow-brown ciliolate, longitudinal ribs conspicuous; auricles and oral setae absent; ligule arcuate or truncate, 0.5–1 mm, glabrous; blade reflexed, triangular, narrowly triangular, or linear, glabrous, margins level or rolled. Leaves 1 or 2(–6) per ultimate branch; sheath glabrous; auricles absent, oral setae present, yellow-brown; ligule truncate, ca. 1 mm, glabrous; blade lanceolate, 6–10 × 0.8–1.2 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base nearly rounded or broadly cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots May.

● 2800–3000 m. Hubei (Shennongjia), Sichuan.

This species is very important in Western horticulture as one of the hardiest bamboos introduced. It was widely cultivated as *Thamnocalamus spathaceus*, after being erroneously placed in synonymy of *Fargesia spathacea*, which was then transferred, also in error, into *Thamnocalamus* (Soderstrom, Brittonia 31: 495. 1979). The earlier name *Arundinaria sparsiflora* is frequently considered conspecific, and the conservation of *A. murielae* against that name has been proposed.

The shoots are edible.

7. Fargesia denudata T. P. Yi, J. Bamboo Res. 4(1): 20. 1985.

缺苞箭竹 que bao jian zhu

Rhizome neck 4–13 cm, 7–10 mm in diam., internodes 2–8 mm. Culms 3–5 m, 0.6–1.3 cm in diam.; internodes terete, 15–18 cm, smooth, initially slightly white powdery; wall 2–3 mm thick; nodes with level or prominent supra-nodal ridge on branching nodes; sheath scar prominent. Branches 4–15 per node, slender. Culm sheaths deciduous, light yellow, oblong-ovate, ca. 2/3 as long as internodes, leathery, glabrous, longitudinal ribs conspicuous; auricles and oral setae absent; ligule truncate, ca. 0.7 mm, glabrous; blade reflexed, linear or linear-triangular, glabrous. Leaves 2–5 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule truncate or arcuate, ca. 1 mm, glabrous; blade linear-lanceolate or lanceolate, 7–11 × 0.4–1 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate or broadly cuneate, margins smooth or spinescent-serrulate initially. Inflorescence racemose, subtended by 1–4 purple spathes; spikelets 5–10, 1.5–2.5 cm, unilateral, rachilla internodes 0.5–1 mm; florets 2–4. Glumes narrowly lanceolate, papery, abaxially puberulous at apex; lemma ovate-lanceolate, puberulous, apex mucronate to long mucronate; palea keels serrulate, apex bifid; lodicules ovate. Anthers yellow. Ovary ovoid, glabrous; style 1; stigmas 3. Caryopsis ovoid. New shoots May.

● 1900–3200 m. S Gansu, N Sichuan.

The shoots are fragrant and are eaten by the giant panda.

8. Fargesia similaris Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 25. 1988.

秃鞘箭竹 tu qiao jian zhu

Shrubby bamboo. Culms 0.8–1.2 cm in diam.; internodes light yellow, terete, 9.5–18.2 cm, white or black powdery below nodes, longitudinal ribs obscure; wall 2–3 mm thick, cavity filled with lamellate pith; supra-nodal ridges prominent; sheath scar weakly prominent. Branches 3–8(–15) per node, deflexed. Culm sheaths yellow, triangular to narrowly rounded, shorter than internodes, basally cartilaginous, distally leathery, glabrous, longitudinal ribs conspicuous on upper part; margins densely ciliolate, apex slightly white powdery; auricles absent; oral setae few; ligule truncate, ca. 1 mm, glabrous; blade erect, triangular-conical, glabrous. Leaves 2–4 per ultimate branch; sheath purple, glabrous or with white pubescent margins; auricles absent; oral setae few, erect, yellow-brown or gray, 2–4 mm, undulate; ligule truncate, ca. 1 mm, glabrous; blade narrowly lanceolate, 1.3–6.5 × 0.4–0.6 cm, glabrous or abaxially white-gray pubescent, secondary veins 2- or 3-paired, transverse veins distinct, base broadly cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown.

● Yunnan.

9. Fargesia utilis T. P. Yi, J. Bamboo Res. 7(2): 28. 1988.

伞把竹 san ba zhu

Rhizome neck 5–10 cm, 1.8–2.5 cm in diam. Culms to 4 m, 1.5–2.5 cm in diam.; internodes terete, 15–17(–20) cm, initially slightly white powdery, longitudinal ribs absent; wall 2.5–5 mm thick; nodes with level or prominent supra-nodal ridge at branching nodes, slightly white powdery initially; sheath scar prominent, glabrous or initially slightly setose. Branches (3–)7–18 per node, deflexed. Culm sheaths persistent, narrowly triangular to rounded, longer than internodes, leathery, sometimes slightly white powdery and sparsely yellow-brown setose, shoulders with steep triangular projections, longitudinal ribs conspicuous; auricles and oral setae absent; ligule irregular, steeply arcuate, glabrous; blade erect or reflexed, narrowly triangular to linear-lanceolate, glabrous, level. Leaves 1 or 2 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule truncate, glabrous; blade narrowly lanceolate, 4–10 × 0.5–1 cm, secondary veins 2- or 3-paired, transverse veins indistinct, base broadly cuneate, margins serrulate. Inflorescence unknown. New shoots Aug.

● 2700–3700 m. NE Yunnan.

The shoots are edible, and the culms are used for making furniture.

10. Fargesia extensa T. P. Yi, J. Bamboo Res. 2(2): 27. 1983.

喇叭箭竹 la ba jian zhu

Borinda extensa (T. P. Yi) Stapleton.

Rhizome neck 10–20 cm, 1–2 cm in diam. Culms 4–6.5 m, 1–2.8 cm in diam.; internodes terete, or slightly flattened above branching, 20–32 cm, initially sparsely white powdery, glabrous; wall 3–6 mm thick, cavity filled with lamellate pith; supra-nodal ridges prominent, glabrous. Branches 3–7 per node, deflexed. Culm sheaths rectangular, shorter than internodes, basally leathery, distally papery, undulate and fragile when dry, glabrous, longitudinal ribs greatly conspicuous, apex and 2 shoulders projecting steeply; auricles and oral setae absent; ligule steeply arcuate, ca. 1 mm, glabrous; blade erect, triangular-conical, glabrous. Leaves 3 or 4(–8) per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate, ca. 2 mm, glabrous; blade narrowly lanceolate, 5.5–16.5 × 0.7–1.4 cm, secondary veins 2–4-paired, transverse veins distinct, base broadly cuneate, margins serrulate. Inflorescence unknown. New shoots Aug.

● 2200–2500 m. SE Xizang.

11. Fargesia obliqua T. P. Yi, Acta Bot. Yunnan. 8: 48. 1986.

团竹 tuan zhu

Rhizome neck 2.5–5 cm, 6–10 mm in diam. Culms 2–4 m, 0.5–1.2 cm in diam.; internodes terete, 18–24 cm, initially slightly white powdery, glabrous; wall 1.5–3.5 mm thick, pith granular; supra-nodal ridges weakly prominent; sheath scar prominent. Branches (1–)3(–5) per node, deflexed. Culm sheaths persistent, narrowly rounded or triangularly narrowly rounded, ca. 1/2 as long as internodes, leathery, glabrous, longitudinal ribs prominent, margins densely gray ciliolate; auricles and oral setae absent; ligule arcuate, ca. 1 mm, glabrous; blade not readily deciduous, erect, triangular or triangular-lanceolate, glabrous, not articulate with sheath. Leaves 2 or 3(or 4) per ultimate branch; sheath glabrous; auricles and oral setae absent or obscure; ligule inclined-truncate, ca. 0.7 mm, glabrous; blade irregular, narrowly ovate-lanceolate, 6.5–9 × 1.2–1.8 cm, secondary veins 4-paired, transverse veins obscure, base rounded, margins spinescent-serrulate. Inflorescence unknown. New shoots Jul.

● 2400–3300(–3700) m. N Sichuan.

This species appears similar to *Fargesia frigidis* from Yunnan, but it is not known whether it is also deciduous.

The shoots are an important source of food for the giant panda.

12. Fargesia frigidis T. P. Yi, J. Bamboo Res. 7(2): 17. 1988.

凋叶箭竹 diao ye jian zhu

Borinda frigidis (T. P. Yi) Stapleton [*"frigidorum"*]; *Fargesia alpina* Hsueh & C. M. Hui.

Rhizome neck 3–7 cm, 1–1.8 cm in diam., internodes 2–5 mm, solid. Culms 1.5–3.5 m, 1–1.7 cm in diam.; internodes terete, 22–24 cm, conspicuously longitudinally ribbed, initially densely white waxy and white-gray setose below nodes, glabrescent, nearly solid; wall 2.5–5.5 mm thick; supra-nodal ridges level; sheath scar very prominent, woody. Branches 4–13 per node, deflexed. Culm sheaths gradually deciduous to persistent, narrowly rounded, 1/5–2/5 as long as internodes, leathery, very sparsely appressed light yellow setulose, upper margins yellow-brown ciliolate initially, longitudinal ribs conspicuous, apex asymmetrical; auricles absent, one shoulder rising to triangular point; oral setae absent; ligule inclined-truncate or truncate, 1–1.5 mm, glabrous, often rising in center; blade readily deciduous, reflexed, triangular to linear-lanceolate, articulating with apex of culm sheath. Leaves 1–4 per ultimate branch, mostly deciduous in winter; sheath glabrous; auricles absent, one shoulder rising to triangular point; oral setae absent or sometimes few; ligule inclined-truncate, ca. 0.4 mm; blade lanceolate, 2.3–5.2 × 0.45–0.7 cm, glabrous, secondary veins 2- or 3-paired, transverse veins distinct, base broadly cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence unknown. New shoots Aug.

● 3100–3700 m. W Yunnan.

The boundaries between this species and the earlier-named *Fargesia melanostachys*, *Arundinaria forrestii*, and *A. acutissima* require clarification. The types lack sufficient vegetative material for satisfactory comparison without revisiting type localities.

The epithet *frigidis* means "from cold places," whereas the epithet *frigida*, which is sometimes used, implies a subtly different and less appropriate meaning: "cold bamboo."

The culms are used for weaving and for brooms.

13. Fargesia melanostachys (Handel-Mazzetti) T. P. Yi, J. Bamboo Res. 2(1): 39. 1983.

黑穗箭竹 hei sui jian zhu

Arundinaria melanostachys Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 61: 23. 1925; *A. acutissima* Keng; *A. forrestii* Keng; *Sinarundinaria acutissima* (Keng) P. C. Keng; *S. forrestii* (Keng) P. C. Keng; *S. melanostachys* (Handel-Mazzetti) Keng ex P. C. Keng.

Culms 4–6 m, 1–3 cm in diam.; internodes terete or slightly flattened, 26–28(–40) cm, ridged, initially densely white powdery, glabrous; wall 2–5 mm thick; supra-nodal ridges obscure or level; sheath scar prominent. Branches 3–11 per node. Culm sheaths persistent, narrowly rounded to triangularly narrowly rounded, 1/2–3/5 as long as internodes, leathery, glabrous or sometimes white-gray setulose, initially white powdery, longitudinal ribs conspicuous, margins white-gray ciliate; auricles and oral setae absent; ligule ca. 1 mm, triangular, glabrous; blade erect, triangular or narrowly so, glabrous. Leaves 2 or 3 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate, ca. 1 mm, glabrous; blade lanceolate, 3.5–7.5 × 0.7–1.4 cm, glabrous, secondary veins 3-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence a raceme or simple panicle, with 1 lanceolate or triangular bract at base; spikelets 2–8, 1.8–5 cm, rachilla 4–5 mm; florets 3–8, apical floret sterile, apex densely puberulous. Glumes 2, unequal, glabrous; lemma ovate-lanceolate, abaxially slightly puberu-

lous, apex acuminate; palea keels serrulate, apex bifid; lodicules 3, margins apically ciliate. Anthers yellow. Ovary ovoid, glabrous; styles 2; stigmas 3, white, plumose. Caryopsis unknown. New shoots Jul–Aug.

● 3100–3800 m. W Yunnan.

The boundaries between this species, its synonyms, and the later-named *Fargesia frigidis* and its synonym require detailed investigation through gatherings of new material from type localities.

The culms are used for fishing rods.

14. Fargesia scabrida T. P. Yi, J. Bamboo Res. 4(2): 24. 1985.

糙花箭竹 cao hua jian zhu

Rhizome neck 4.5–26 cm, 6–16 mm in diam. Culms 1.8–3.5 m, 0.5–1 cm in diam.; internodes terete, 17–20 cm, initially slightly white powdery or not, glabrous; wall 2–4 mm thick; supra-nodal ridges level or weakly prominent; sheath scar greatly prominent, broad, thick, initially gray setulose. Branches 3–8 per node, erect or deflexed. Culm sheaths persistent, light red-brown, triangular to narrowly rounded, 1/3–1/2 as long as internodes, leathery, abaxially sparsely gray to gray-yellow setulose, longitudinal ribs prominent, margins densely gray-yellow setulose; auricles and oral setae absent or obscure; ligule arcuate, ca. 1 mm, margins densely gray ciliolate; blade erect, triangular or linear-triangular, margins usually sparsely setulose. Leaves 2 or 3 per ultimate branch; sheath margins gray-yellow ciliate; auricles and oral setae absent or obscure; ligule truncate, ca. 1 mm, ciliate; blade lanceolate, 12–18 × 1.1–1.8 cm, abaxially pubescent, secondary veins 4-paired, transverse veins obscure, base broadly cuneate, margins spinescent-serrulate. Inflorescence a panicle, initially terminal to a leafy shoot. Spikelets 6–12, 1.5–3 cm, rachilla internodes 1–2 mm; florets 5–7. Glumes 2, setulose, apex long mucronate; lemma lanceolate, setulose, apex long mucronate; palea keels serrulate; lodicule margins sparsely ciliolate. Anthers yellow. Ovary oblong, glabrous; styles 2 or 3; stigmas 3. Caryopsis unknown. New shoots late Apr–early May.

● 1500–2000 m. S Gansu, N Sichuan.

This species is somewhat intermediate between *Fargesia* and *Yushania* in having a less condensed inflorescence, suggesting that *Borinda* may be the appropriate genus.

The shoots are sweet and are an important source of food for the giant panda.

15. Fargesia rufa T. P. Yi, J. Bamboo Res. 4(2): 27. 1985.

青川箭竹 qing chuan jian zhu

Rhizome neck (6–)10–18 cm, 4–15 mm in diam. Culms 2.5–3.5 m, 0.8–1 cm in diam.; internodes terete, 15–17(–20) cm, smooth, initially slightly white powdery, later white waxy, glabrous; wall 1.5–3.2 mm thick, pith thin and closely adnate to inner wall; supra-nodal ridges weakly prominent; sheath scar greatly prominent as a thick broad ridge, initially brown setose. Branches 6–16 per node, deflexed. Culm sheaths gradually deciduous, red-brown, narrowly triangular, much longer than internodes, basally leathery, distally more papery, sparsely brown setose, longitudinal ribs prominent, margins apically densely gray ciliolate; auricles and oral setae absent; ligule truncate or convex, ca. 1 mm, margins usually ciliolate; blade readily deciduous, reflexed, linear-lanceolate, glabrous, margins dentate-serrulate. Leaves 2–4 per ultimate branch; sheath abaxially glabrous, ridged, margins gray ciliate; auricles absent; oral setae few, erect, yellow, 1–1.5 mm; ligule arcuate, ca. 1 mm, glabrous; blade linear-lanceolate, 6–10 × 0.6–0.8 cm, proximally often slightly pilose, secondary veins 2- or 3-paired, transverse veins weakly prominent, base cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown. New shoots Jun.

● 1600–2300 m. S Gansu, N Sichuan.

The bamboo cultivated in the West under the cultivar name *Fargesia* ‘Rufa’ is not this species.

Fargesia rufa is an important source of food for the giant panda.

16. Fargesia dura T. P. Yi, J. Bamboo Res. 7(2): 34. 1988.

马斯箭竹 ma si jian zhu

Rhizome neck 5–7 cm, 1.6–3 cm in diam. Culms 3–4 m, 1–2 cm in diam.; internodes terete, 20–27 cm, rigid, initially densely white powdery and gray to white setose, waxy when old, longitudinal ribs prominent, solid or nearly so; nodes initially white powdery and sparsely setulose, supra-nodal ridge level or weakly prominent; sheath scar prominent, initially densely brown setulose. Branches 3–7 per node, initially setose. Culm sheaths persistent, narrowly rounded, longer than internodes, leathery, densely brown setulose, longitudinal ribs greatly prominent, margins initially gray ciliate, apex broadly triangular; auricles and oral setae absent; ligule truncate or convex, 1–2 mm, glabrous; blade readily deciduous, reflexed, linear-lanceolate, glabrous or adaxially slightly pilose at base. Leaves 2–6 per ultimate branch; sheath margins initially densely yellow-brown ciliolate; auricles absent; oral setae few, erect or curved, 2–4 mm; ligule truncate, ca. 1 mm, initially slightly pilose; blade linear-lanceolate, 4.5–12 × 0.4–0.9 cm, abaxially slightly puberulous, secondary veins 2- or 3-paired, transverse veins distinct, base broadly cuneate, margins spinescent-serrulate, apex acuminate. Inflorescence unknown. New shoots Jul.

● About 3200 m. W Yunnan.

17. Fargesia macclureana (Bor) Stapleton, Bamboo Soc. Newslett. 17: 17. 1993.

西藏箭竹 xi zang jian zhu

Arundinaria macclureana Bor, Kew Bull. [12] 1957: 420. 1958; *Borinda macclureana* (Bor) Stapleton; *B. setosa* (T. P. Yi) Stapleton; *Fargesia setosa* T. P. Yi; *Sinarundinaria macclureana* (Bor) C. S. Chao & G. Y. Yang.

Rhizome neck 3–5 cm, 4–20 mm in diam. Culms 1–7 m, 0.5–3.5 cm in diam.; internodes terete, 18–28(–53) cm, initially sparsely white powdery, initially densely brown or gray-brown setose below each node, longitudinal ribs prominent; wall 2–8 mm thick; supra-nodal ridge weakly prominent; sheath scar prominent, initially brown setose. Branches 3–7 per node, deflexed, subequal. Culm sheaths persistent or gradually deciduous, narrowly triangular, slightly longer than internodes, leathery, densely brown-yellow to brown setose, longitudinal ribs prominent, margins brown ciliolate or not; auricles absent; oral

setae few, deciduous, erect, purple, 3–12 mm, undulate; ligule truncate or convex, 1–1.5 mm, margins usually serrulate, ciliolate; blade readily deciduous, reflexed, triangular-linear or linear-lanceolate, adaxially slightly pilose, one margin dentate-serrulate. Leaves 3–5 per ultimate branch; sheath purple-green, puberulous; auricles obscure or absent, purple; oral setae few, deciduous, curved, purple or yellow-brown, 1.5–3 mm; ligule arcuate or truncate, 0.5–1.5 mm; blade lanceolate, 4–17 × 0.4–1.8 cm, abaxially slightly puberulous, secondary veins 3- or 4-paired, transverse veins weakly prominent, base broadly cuneate, margins spinescent-serrulate. Inflorescences terminal on leafy branchlets, open panicles, 9–12 cm. Spikelets 2–3 cm, tinged with purple; glumes 2, florets 5–7 plus a terminal sterile floret; lemmas ca. 1.6 cm, awned, awns ca. 2 mm; palea ca. 11 mm; lodicules 3, ciliate, 2 lateral ones larger; stamens 3, anthers yellow; style 1, stigmas 2. Caryopses unknown. New shoots Jul.

● Dominant bamboo in understory of *Picea* or *Pinus densata* and *Quercus* forests; 2100–3800 m. SE Xizang.

This is the type species of the genus *Borinda*.

18. Fargesia sylvestris T. P. Yi, J. Bamboo Res. 7(2): 31. 1988.

德钦箭竹 de qin jian zhu

Culms 3–4 m, 0.6–1 cm in diam.; internodes initially gray-green, terete, 11–17 cm, densely white powdery, gray setose; wall 2–3 mm thick; supra-nodal ridges weakly prominent; sheath scar prominent. Branches 6–10 per node, deflexed. Culm sheaths persistent, narrowly rounded, leathery, yellow-brown setose, longitudinal ribs prominent, margins initially ciliolate, apex triangular; auricles and oral setae absent; ligule truncate, ca. 1 mm, margins initially densely yellow-brown ciliate; blade readily deciduous, reflexed, linear-lanceolate, glabrous, margins dentate-serrulate. Leaves 3–5 per ultimate branch; sheath margins gray-yellow ciliolate; auricles nearly falcate, small; oral setae few, radiating, ca. 1 mm; ligule purple, truncate, ca. 1 mm, margin initially ciliolate; blade narrowly lanceolate, 5–9.2 × 0.5–0.8 cm, abaxially densely pilose, secondary veins 3-paired, transverse veins weakly prominent, base cuneate or broadly cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence unknown. New shoots Jul.

● 3200–3300 m. W Yunnan.

19. Fargesia subflexuosa T. P. Yi, J. Bamboo Res. 7(2): 36. 1988.

曲秆箭竹 qu gan jian zhu

Rhizome neck 5–10 cm, 1.5–2 cm in diam. Culms slightly zigzag, 3–6 m, 1.5–3 cm in diam.; internodes gray-green, terete, 22–25 cm, initially white powdery and white-gray setose, initially densely yellow setose below node, longitudinal ribs prominent; wall 3–5 mm thick; supra-nodal ridges weakly prominent to prominent; sheath scar prominent. Branches 3–7 per node, erect or deflexed. Culm sheaths deciduous, triangularly narrowly rounded or narrowly triangular, longer than internodes, leathery, sparsely yellow adnate-setulose, setae erect and long, longitudinal ribs prominent, margins glabrous or yellow-brown ciliate, apex broadly triangular; auricles and oral setae absent; ligule truncate or convex, 1–2 mm, glabrous; blade readily deciduous, reflexed, triangular or linear-lanceolate, glabrous. Leaves 3–5 per ultimate branch; sheath 5–6.6 cm, margins glabrous; auricles absent or obscure; oral setae few, divergent, yellow-brown, 1.5–3 mm; blade lanceolate, 12–16 × 2–3 cm, thin, usually rugose when dry, glabrous, secondary veins 4- or 5-paired, transverse veins slightly distinct, base cuneate or broadly cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Sep.

● 2900–3300 m. W Yunnan.

The culms are used for weaving.

20. Fargesia mairei (Hackel ex Handel-Mazzetti) T. P. Yi, J. Bamboo Res. 7(2): 50. 1988.

大姚箭竹 da yao jian zhu

Arundinaria mairei Hackel ex Handel-Mazzetti, Symb. Sin. 7: 1273. 1936; *Indocalamus mairei* (Hackel ex Handel-Mazzetti) McClure; *Sinarundinaria mairei* (Hackel ex Handel-Mazzetti) Keng ex P. C. Keng; *Yushania mairei* (Hackel ex Handel-Mazzetti) J. J. N. Campbell.

Rhizome neck 2–10 cm, 1–1.8 cm in diam. Culms 2–4 m, 1–3 cm in diam.; internodes terete, 15–20 cm, initially densely white powdery, distally white or light yellow setulose; wall 1.5–2.5 mm thick; supra-nodal ridge level, initially white powdery; sheath scar prominent, with remains of sheath base. Branches 6–10 per node. Culm sheaths persistent, triangularly narrowly rounded, longer than internodes, leathery, sparsely brown setulose, longitudinal ribs prominent, margins densely brown ciliate apically; auricles and oral setae absent or obscure; ligule truncate or slightly arcuate, 1–2.7 mm; blade reflexed, linear-lanceolate, glabrous. Leaves 2 or 3 per ultimate branch; sheath 1.8–3.5 cm, glabrous; auricles and oral setae absent or obscure; ligule purple, truncate, 1–1.5 mm; blade narrowly lanceolate, 3.5–10.5 × 0.5–0.9(–1.2) cm, glabrous, secondary veins 2- or 3-paired, transverse veins distinct, base broadly cuneate or nearly rounded, one margin spinescent-serrulate, other margin obscure. Inflorescence paniculate, exserted from spathe. Spikelets ca. 8, rachilla 3–4 mm. Glumes 1 or 2, purple, scabrous, apex long mucronate; lemma setose on margins, apex acuminate; palea setose. Anthers yellow. Ovary oblong; styles 2. Caryopsis unknown. New shoots Jul.

● 2900–3600 m. N Yunnan.

The inflorescence of this species was described from *R. P. Maire 7534*, whereas vegetative details are from *T. P. Yi 84014*.

The shoots are edible, and the split culms are used for weaving.

21. Fargesia tenuilignea T. P. Yi, J. Bamboo Res. 7(2): 39. 1988.

薄壁箭竹 bao bi jian zhu

Fargesia aurita Hsueh & C. M. Hui (1998), not T. P. Yi (1985).

Rhizome neck 5.5–10.5 cm, 1.5–3 cm in diam. Culms 4–

8(–10) m, 1–3 cm in diam.; internodes terete, 20–25(–40) cm or longer, initially often slightly white powdery, glabrous; wall 2–3 mm thick; supra-nodal ridge level or weakly prominent; sheath scar prominent, narrow, initially brown setose. Branches 8–11 per node. Culm sheaths persistent, narrowly triangularly rounded, equal to or longer than internodes, leathery, densely yellow to yellow-brown setose, longitudinal ribs prominent, margins apically ciliate; auricles absent; oral setae few, erect or slightly curved, yellow-brown, 2–8 mm; ligule truncate, 2–5 mm, margins sometimes ciliate; blade readily deciduous, reflexed, linear-lanceolate, adaxially slightly pilose proximally. Leaves 2–5 per ultimate branch; sheath initially white powdery apically, margins initially ciliate; auricles absent; oral setae few, erect, gray-yellow, 3–11 mm, undulate; ligule light green, truncate, ca. 1 mm, glabrous; blade lanceolate, 13–18(–20) × 1.3–2.3(–2.5) cm, usually rugose when dry, glabrous, secondary veins 4- or 5(or 6)-paired, transverse veins distinct, base cuneate, one margin spinescent-serrulate, other margin obscure, apex acuminate. Inflorescence unknown. New shoots Aug.

● 2400–3100 m. SW Yunnan.

The shoots are edible, and the culms are used for papermaking and weaving.

22. Fargesia spathacea Franchet, Bull. Linn. Soc. Paris 2: 1067. 1893.

箭竹 jian zhu

Arundinaria spathacea (Franchet) D. McClintock; *Thamnocalamus spathaceus* (Franchet) Soderstrom.

Rhizome neck 7–13 cm, 7–20 mm in diam. Culms 1.5–4 m, 0.5–2 cm in diam.; internodes terete, 15–18 cm, initially with or without light white powder, glabrous; wall 1.5–2.5 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, initially white-gray setulose. Branches 9–17 per node, deflexed, slightly white powdery, solid or nearly so. Culm sheaths persistent or gradually deciduous, yellowish, narrowly rounded to triangular, longer, equal to, or shorter than internodes, leathery, brown setulose, longitudinal ribs prominent, margins initially brown ciliate; auricles and oral setae absent; ligule truncate, ca. 1 mm, margin densely gray ciliate; blade reflexed or erect, triangular or linear-lanceolate, adaxially proximally white-gray pilose. Leaves 2 or 3 per ultimate branch; sheath glabrous or margin initially yellow-brown ciliate; auricles obscure, purple; oral setae present; ligule truncate or slightly arcuate, ca. 1 mm, glabrous; blade linear-lanceolate, 6–10 × 0.5–1.3 cm, glabrous, secondary veins 3–5-paired, transverse veins distinct, base cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence a raceme, subtended by 3 or 4 spathes; spikelets 8–14, 1.3–2.5 cm, rachilla internodes 1.5–3 mm, white-gray pilose, apically swollen; florets 2 or 3. Glumes 1 or 2, leathery; lemma setulose, apex long mucronate. Palea slightly setose, keels serrulate; lodicule ciliate on margins. Anthers yellow. Ovary oblong, glabrous; style 1; stigmas 2. Caryopsis light purple, ovoid, glabrous. New shoots May.

● 1300–2400 m. W Hubei, E Sichuan.

This is the type species of *Fargesia*. It was described from flowers of uncertain origin, and correlation with living plants has been controversial. *Fargesia murielae* was included in this species after the initiation of flowering in *F. murielae* in Europe revealed that it also has tight unilateral inflorescences, which were initially considered (Soderstrom, Garden (New York, 1977+) 3(4): 22–27. 1979) to be a character specific to this species, within a broad *Thamnocalamus*, although they are now considered a characteristic of the genus *Fargesia* instead.

The shoots are edible, and the culms are used for weaving.

23. Fargesia qinlingensis T. P. Yi & J. X. Shao, J. Bamboo Res. 6(1): 42. 1987.

秦岭箭竹 qin ling jian zhu

Rhizome neck 3–9 cm, 0.4–1.2 cm in diam. Culms 1–3.3 m, 0.4–0.9 cm in diam.; internodes terete, 4–16 cm, initially densely white powdery, glabrous; wall 1–2 mm thick, pith membranous; supra-nodal ridges level or weakly prominent; sheath scar prominent. Branches 4–10 per node; buds oblong, densely gray-brown pubescent, margins light brown ciliate. Culm sheaths persistent, yellowish, narrowly triangularly rounded, much longer than internodes, thinly leathery, sparsely brown setose, rarely glabrous, longitudinal ribs prominent, margins deciduously ciliate; auricles readily deciduous, falcate; oral setae few, erect or slightly curved, light brown, 4–5 mm; ligule inclined, truncate, ca. 1.5 mm, apex fissured and with erect, light brown cilia 2–4 mm; blade reflexed, initially erect, linear or linear-lanceolate, glabrous or initially pilose proximally. Leaves 4 or 5 per ultimate branch; sheath glabrous; auricles purple or light purple-brown, ovate or elliptic; oral setae white-gray, short; ligule arcuate, ca. 1 mm, margins white-gray ciliolate; blade lanceolate or narrowly lanceolate, 2–9 × 0.4–1 cm, both surfaces glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots May–Jun.

● 1000–1200 m. S Shaanxi.

This species is an important source of food for the giant panda.

24. Fargesia nitida (Mitford) P. C. Keng ex T. P. Yi, J. Bamboo Res. 4(2): 30. 1985.

华西箭竹 hua xi jian zhu

Arundinaria nitida Mitford, Bull. Misc. Inform. Kew 1896: 20. 1896; *Fargesia demissa* T. P. Yi; *Sinarundinaria nitida* (Mitford) Nakai.

Rhizome neck 10–13 cm, 1–2 cm in diam. Culms 2–4 m, 1–2 cm in diam.; internodes terete, 11–20 cm, initially sparsely white powdery, glabrous; wall 2–3 mm thick; supra-nodal ridges weakly prominent; sheath scar prominent. Branches 15–18 per node, deflexed. Culm sheaths persistent, purple or purple-brown, triangular-elliptic, usually longer than internodes, leathery, glabrous or sparsely white-gray setose, longitudinal ribs prominent, margins glabrous, apex triangular; auricles and oral setae absent; ligule purple, arcuate, ca. 1 mm, margin densely ciliolate; blade reflexed or erect, triangular or linear-lanceolate. Leaves 2 or 3 per ultimate branch; sheath purple, margin densely gray-brown ciliate apically; auricles absent; oral setae absent or obscure; ligule truncate or arcuate, ca. 1 mm, margin initially white ciliolate; blade linear-lanceolate, 3.8–7.5 × 0.6–1

cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, one margin spinescent-serrulate, other margin obscure. Inflorescence a raceme, subtended by 1–3 spathes; spikelets 1.1–2.5 cm; rachilla 1.5–3 mm; florets 2 or 3. Glumes 1 or 2, leathery, apex acuminate or obtuse; lemma slightly setulose, apex obtuse; palea sparsely setose, keels serrulate, apex bifid; lodicules ciliate. Anthers yellow. Ovary ovoid, glabrous; style 1; stigmas 3. Caryopsis yellow-brown to dark brown, ovoid, glabrous. New shoots late Apr–May.

● 1900–3200 m. E and S Gansu, S Ningxia, E Qinghai, W Sichuan.

As the type species of *Sinarundinaria*, the close similarities between this and *Fargesia spathacea* show that *Sinarundinaria* is a synonym of *Fargesia*. *Fargesia demissa* is a short and beautiful variant, but it has not been given any new status within *F. nitida*.

This species is an important source of food for the giant panda.

25. Fargesia papyrifera T. P. Yi, J. Bamboo Res. 7(2): 42. 1988.

云龙箭竹 yun long jian zhu

Borinda papyrifera (T. P. Yi) Stapleton.

Rhizome neck 5–12 cm, 3–6 cm in diam. Culms 4–6(–8 m), 2–4(–6) cm in diam.; internodes blue-gray, terete, 22–28 cm, densely white powdery, distally gray-brown to yellow-brown setose, longitudinal ribs prominent, nearly solid; nodes initially white powdery, supra-nodal ridges weakly prominent; sheath scar very prominent, initially brown tomentose. Branches 3–7 per node, strong; buds yellow, ovoid, waxy, basally white powdery, marginally densely yellow-brown ciliate. Culm sheaths deciduous, slightly longer than internode, leathery to thickly so, rigid, triangularly narrowly rounded, sparsely yellow-brown setose, longitudinal ribs prominent, margins densely brown setose; auricles absent; oral setae few, erect or slightly curved, brown, 3–6 mm; ligule dark purple, level or convex, 2–3 mm, margins gray-brown ciliate; blade reflexed, linear-lanceolate, glabrous, margins serrulate, apex long acuminate. Leaves 3–5 per ultimate branch; sheath glabrous, longitudinal ribs prominent; auricles absent; oral setae sparse, yellow-brown, ca. 2 mm; ligule truncate or arcuate, glabrous, setulose; blade lanceolate, 10–18 × 1.6–2.3 cm, both surfaces glabrous, secondary veins 5- or 6-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Aug–Sep.

● 2700–3600 m. W Yunnan.

The shoots are edible, and the culms are used for weaving and making paper and farm tools.

26. Fargesia albocerea Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 45. 1988.

片马箭竹 pian ma jian zhu

Borinda albocerea (Hsueh & T. P. Yi) Stapleton; *Fargesia pachyclada* Hsueh & C. M. Hui.

Culms 3–4 m, 0.8–2 cm in diam.; internodes terete, 8–14 cm, rigid, densely white powdery, glabrous, nearly solid; nodes waxy, supra-nodal ridges prominent to greatly so; sheath scar prominent to very prominent. Branches 3–5 per node, deflexed; buds yellow-brown, ovoid, area near to margins puberulous. Culm sheaths gradually deciduous, triangularly narrowly rounded, leathery, brown setose, longitudinal ribs prominent, margins glabrous, apex triangular; auricles absent or obscure; oral setae few, erect, yellow-brown, 1.5–4 mm; ligule nearly truncate, 1–1.5 mm, glabrous; blade readily deciduous, reflexed, linear-lanceolate, proximally slightly pilose. Leaves 3 or 4 per ultimate branch; sheath glabrous; auricles absent or obscure; oral setae scarce, yellow-brown, short; ligule truncate, ca. 1 mm, glabrous; blade lanceolate, 3.5–8 × 0.5–1.2 cm, both surfaces glabrous, secondary veins 3–5-paired, transverse veins elongated-tessellate, dense, not very distinct, base nearly rounded or broadly cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown.

● About 2900 m. W Yunnan.

27. Fargesia solida T. P. Yi, J. Bamboo Res. 7(2): 47. 1988.

腾冲箭竹 teng chong jian zhu

Rhizome neck 2.5–12.5 cm, 0.6–1.8 cm in diam. Culms 3–5 m, 1–2 cm in diam.; internodes light green, terete, 13–16 cm, densely white powdery, glabrous, solid; supra-nodal ridges weakly prominent; sheath scar prominent, woody. Branches 4–9 per node, deflexed; buds oblong, basally white powdery, setulose, margins yellow-brown ciliate. Culm sheaths persistent, narrowly rounded-triangular, longer than internodes, leathery, appressed yellow setose, longitudinal ribs prominent, margins light yellow ciliate; auricles and oral setae absent; ligule arcuate, ca. 1 mm, glabrous; blade persistent, erect, green-purple, triangular or linear-triangular, glabrous. Leaves 3–5 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate, ca. 0.5 mm; blade narrowly lanceolate, 4–9.5 × 0.4–0.7 cm, glabrous, secondary veins 2–4-paired, transverse veins slightly distinct, base cuneate, one margin densely serrulate, other margin obscurely so, apex long acuminate. Inflorescence unknown. New shoots Jul.

● 2300–2500 m. W Yunnan.

28. Fargesia elegans T. P. Yi, Acta Bot. Yunnan. 14: 136. 1992.

雅容箭竹 ya rong jian zhu

Rhizome neck 2–4.5 cm, 0.8–1.5 cm in diam., solid. Culms 2–3.5 m, 0.5–1 cm in diam.; internodes light green, terete, (5–)10–12(–15) cm, initially white powdery, glabrous, solid; supra-nodal ridges level or prominent; sheath scar prominent. Branches 6–11 per node, ascending; bud 1, oblong-ovoid, appressed or adnate. Culm sheaths persistent, purple, narrowly oblong-triangular, longer than internodes, proximally thinly leathery or papery, distally membranous, sparsely yellowish white punctate, longitudinal ribs prominent; auricles and oral setae absent; ligule arcuate-truncate, 0.6–1 mm, glabrous; blade erect, linear-lanceolate. Leaves 3–5 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate, ca. 0.6 mm; blade linear-lanceolate, 3.2–6 × 0.4–0.6 cm, glabrous, secondary veins 2(or 3)-paired, transverse veins distinct, base cuneate, margin serrulate, apex acuminate. Inflorescence un-

known.

● 2700–2800 m. S Sichuan (Mianning).

29. Fargesia ferax (Keng) T. P. Yi, J. Bamboo Res. 2(1): 39. 1983.

丰实箭竹 feng shi jian zhu

Arundinaria ferax Keng, Sinensia 7: 408. 1936; *Sinarundinaria ferax* (Keng) P. C. Keng.

Rhizome neck 4–7 cm, 2.2–4 cm in diam. Culms to 5 m, 2–3.6 cm in diam.; internodes terete, 35–41 cm, longitudinal ribs prominent above branches, initially densely white powdery, glabrous or brown setose below nodes; wall 2–5 mm thick, pith initially spongy, becoming granular; supra-nodal ridges level; sheath scar prominent; intranode 4–6 mm. Branches 6–12 per node. Culm sheaths persistent, spotted, triangular to narrowly triangular, longer than internodes, leathery, brown setulose, longitudinal ribs prominent, margins initially densely brown ciliate, apex linear-triangular; auricles absent; oral setae erect, brown, slender; ligule convex, ca. 1 mm, glabrous; blade reflexed, linear-lanceolate, glabrous. Leaves 2–4 per ultimate branch; sheath margins yellow-brown ciliate or not ciliate; auricles absent; oral setae erect, yellow-brown, slender; ligule light green, convex, ca. 1 mm, glabrous; blade narrowly lanceolate, 3.6–10 × 0.3–0.6 cm, proximally white-gray pubescent, secondary veins 2- or 3-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence a racemose panicle; spikelets 3–6, 1.4–2.8 cm; rachilla internodes 2–3 mm; florets 2–7, terminal one sterile. Glumes 1 or 2, unequal, membranous, apex acuminate or obtuse; lemma puberulous, apex long acuminate. Palea keels ciliate, apex bifid; lodicules 3, apex ciliate. Anthers yellow-brown. Ovary red-brown; stigmas 2, plumose. Caryopsis unknown. New shoots Jul.

● 1700–2600 m. W Sichuan.

The culms are used for weaving and making furniture and farm tools.

30. Fargesia fungosa T. P. Yi, Bull. Bot. Res., Harbin 5(4): 121. 1985.

棉花竹 mian hua zhu

Rhizome neck 5–11 cm. Culms 4–6 m, 1.5–2.5 cm in diam.; internodes terete, 20–23 cm, longitudinal ribs absent, initially white powdery, glabrous; wall 3–6 mm thick, pith initially spongy; supra-nodal ridges weakly prominent; sheath scar prominent, yellow-brown setose, with persistent remains of sheath base; intranode 2–4 mm. Branches 9–25 per node. Culm sheaths persistent, yellow-brown, spotted purple-brown, narrowly triangular or narrowly rounded, proximally leathery, distally papery, brown to dark brown setulose, longitudinal ribs prominent, margins sometimes brown to dark brown setose; auricles absent; oral setae deciduous, brown; ligule yellow-brown, truncate, ca. 1 mm, glabrous; blade reflexed, linear-lanceolate, glabrous. Leaves 3 or 4 per ultimate branch; sheath margins initially ciliate; auricles purple, falcate, small; oral setae erect, gray-brown; ligule arcuate, margins initially ciliate; blade lanceolate, (7–)10–16 × 1–1.7 cm, proximally white-gray pubescent, secondary veins 4-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence a racemose panicle, initially terminal to leafy shoot; spikelets 3–7, 2.5–4.3 cm, rachilla internodes 3–4 mm, white-gray setose, apex densely white-gray ciliate; florets 3–7, terminal one sterile. Glumes 1 or 2, papery; lemma densely white-gray setose abaxially, margins ciliate; palea keels setose; lodicules ciliate. Anthers yellow. Ovary ovoid, glabrous; styles 2; stigma white. Caryopsis unknown. New shoots Jul–Aug.

● 1800–2700 m. W Guizhou, SW Sichuan, NE Yunnan.

The shoots are edible, and the split culms are used for weaving.

31. Fargesia communis T. P. Yi, J. Bamboo Res. 7(2): 50. 1988.

马亨箭竹 ma heng jian zhu

Rhizome neck 3–10 cm. Culms 4–8 m, 1–3 cm in diam.; internodes terete, 20–25 cm, white powdery, glabrous or initially yellow-brown setose; wall 2–4 mm thick; sheath scars weakly prominent. Branches 4–10 per node, subequal; buds oblong, margins densely gray ciliate. Culm sheaths persistent, red-brown, narrowly triangular, much longer than internodes, proximally leathery, distally papery, sparsely brown setulose, longitudinal ribs prominent, margins initially brown ciliate, apex linear and narrow; auricles absent; oral setae erect, yellow-brown; ligule truncate, ca. 1 mm, glabrous; blade readily deciduous, reflexed, linear-lanceolate, glabrous, margins usually serrulate. Leaves 4 or 5 per ultimate branch; sheath margins gray-yellow ciliate; auricles absent; oral setae erect, light yellow-brown; ligule truncate, glabrous; blade lanceolate, 8.5–12(–16) × 0.5–1(–1.4) cm, abaxially white-gray pubescent proximally, secondary veins 3-paired, transverse veins obscure, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Jul–Aug.

● 2600–3300 m. W Yunnan.

The culms are used for weaving and for making farm tools, furniture, and paper.

32. Fargesia angustissima T. P. Yi, J. Bamboo Res. 4(2): 21. 1985.

油竹子 you zhu zi

Rhizome neck 1–3 cm. Culms 4–7 m, 1–2 cm in diam.; internodes terete, 28–35 cm, initially white powdery, glabrous, longitudinal ribs very prominent; wall 1.5–2.5 mm thick; supra-nodal ridges weakly prominent or prominent; sheath scar prominent. Branches 5–10 per node, slender; buds oblong, margins ciliate. Culm sheaths persistent, much longer than internodes, proximally leathery, distally papery and sparsely brown setulose, longitudinal ribs greatly prominent, margins rolled, initially densely ciliate, apex linear and narrow; auricles absent; oral setae erect or curved, white-gray; ligule truncate or convex, ca. 1 mm, glabrous; blade readily deciduous, reflexed, linear, glabrous, margins usually serrulate. Leaves 3–5 per ultimate branch; sheath glabrous or distally sparsely pilose; auricles absent; oral setae few, erect or curved, yellow-brown, 2–3

mm; ligule convex; external ligule white-gray pubescent; blade narrowly lanceolate, 3.4–9.5 × 0.3–0.7 cm, abaxially proximally gray pubescent, secondary veins 2- or 3-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Jul–Aug.

● 800–1600 m. W Sichuan.

This species is sometimes considered a synonym of *Fargesia ferax*, but it would appear to be a somewhat smaller bamboo with some slightly different characters.

The culms are used for making furniture and farm tools. The shoots are a source of food for the giant panda.

33. Fargesia edulis Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 53. 1988.

空心箭竹 kong xin jian zhu

Borinda edulis (Hsueh & T. P. Yi) Stapleton.

Rhizome neck 6–10 cm. Culms 5–8 m, 2–4 cm in diam.; internodes terete, 28–40 cm, densely white powdery, glabrous or setose below node; wall 2–4 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, glabrous or initially erectly brown setose. Branches 4–7 per node. Culm sheaths gradually deciduous, yellow-brown, leathery, densely brown to dark brown setose, longitudinal ribs prominent, margins densely brown setose, apex sharply narrow; auricles absent; oral setae deciduous; ligule truncate, ca. 1 mm, glabrous, fissured; blade erect, lanceolate to linear-lanceolate, glabrous, margins serrulate. Leaves 5–7 per ultimate branch; sheath glabrous; auricles present; oral setae few; ligule truncate, glabrous; blade lanceolate, 10–15 × 1–1.4(–2.2) cm, abaxially pubescent or glabrous, secondary veins 4- or 5-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence a raceme, upper part extended from spathe; spikelets 4–7, 2.5–3.2 cm, rachilla 4–5 mm, glabrous or apically white puberulous; florets 3 or 4. Glumes 2, papery, glabrous; lemma glabrous or pilose, apex acuminate; palea keels ciliolate; lodicules ciliate. Anthers 7–9 mm. Ovary yellow-brown, ovoid, glabrous, apex swollen; styles 2; stigma linear. Caryopsis unknown. New shoots May.

● 1900–2800 m. W Yunnan.

The shoots are edible, and the culms are used for weaving and papermaking.

34. Fargesia jiulongensis T. P. Yi, J. Bamboo Res. 4(2): 22. 1985.

九龙箭竹 jiu long jian zhu

Rhizome neck 4–6.5 cm. Culms 3–5 m, 1–2 cm in diam.; internodes terete, 20–30 cm, initially white powdery, glabrous, longitudinal ribs absent; wall 2.5–3.5 mm thick, pith spongy, becoming granular; supra-nodal ridges level or weakly prominent; sheath scar prominent to greatly prominent. Branches 5–15 per node; buds subcircular or elliptic, pubescent, margins ciliate. Culm sheaths deciduous, narrowly triangular, longer than internodes, proximally leathery, distally papery, densely yellow-brown setulose, longitudinal ribs prominent, margins brown setose; auricles and oral setae absent; ligule truncate, 1.5–7 mm, sparsely ciliate; blade reflexed, linear-lanceolate, proximally sparsely pilose, articulate with sheath. Leaves 3–5 per ultimate branch; sheath initially gray-yellow pubescent on ventral ridge, margins yellow-brown ciliolate; auricles and oral setae absent; ligule purple, truncate, ca. 1 mm, ciliate; blade narrowly lanceolate, 5.5–13 × 0.4–0.9 cm, abaxially proximally gray or gray-yellow pubescent, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Jul.

● 2800–3400 m. W Sichuan.

The shoots are edible and are a source of food for the giant panda. The split culms are used for weaving.

35. Fargesia gongshanensis T. P. Yi, J. Bamboo Res. 7(2): 57. 1988.

贡山箭竹 gong shan jian zhu

Rhizome neck 2.5–9 cm. Culms 3–4 m, 1–2 cm in diam.; internodes terete, 22–32 cm, initially densely white powdery, glabrous, longitudinal ribs obscure; wall 3–5 mm thick; supra-nodal ridges prominent; sheath scar prominent to very prominent. Branches 5–15 per node; buds oblong, pubescent, margins light yellow ciliate. Culm sheaths persistent or gradually deciduous, purple-brown, narrowly triangular, shorter than internodes, proximally leathery, distally papery, glabrous or sparsely brown setulose, longitudinal ribs prominent, margins glabrous; auricles and oral setae absent; ligule truncate, ca. 1 mm, glabrous; blade reflexed, linear-lanceolate, articulate with sheath. Leaves 4–7 per ultimate branch; sheath glabrous; auricles absent; oral setae few, erect, yellow-brown; ligule truncate, ca. 1 mm; blade narrowly lanceolate, 10–12.5 × 0.7–0.9 cm, abaxially proximally white-gray pubescent, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Aug.

● 1400–1500 m. W Sichuan.

36. Fargesia contracta T. P. Yi, J. Bamboo Res. 7(2): 60. 1988.

带鞘箭竹 dai qiao jian zhu

Fargesia contracta f. *evacuata* T. P. Yi; *F. contracta* f. *fugonensis* Hsueh & J. K. Duan.

Rhizome neck 5–6 cm. Culms 3–5 m, 1–2.5 cm in diam.; internodes terete, 18–22 cm, initially densely white powdery, glabrous or initially yellow-brown setose below node, prominently ribbed, usually solid or nearly so, sometimes hollow (f. *evacuata*); supra-nodal ridges level or weakly prominent; sheath scar prominent, initially light yellow setulose. Branches 3–6 per node; buds broadly ovate to oblong, margins gray to gray-brown ciliate. Culm sheaths persistent, purple-brown, equal to or longer than internodes, proximally leathery, distally papery, proximally very sparsely yellow-brown setose, longitudinal ribs prominent, margins initially densely gray to yellow-brown ciliate, apex sharply narrow and linear; auricles absent; oral setae deciduous, erect, pale yellow to yellow-brown; ligule truncate, glabrous, uniformly fissured; blade erect, linear, glabrous. Leaves 5–7 per ultimate branch; sheath margins white-

gray ciliate; auricles absent; oral setae few, gray-yellow, curved; ligule obliquely truncate, ca. 1 mm, tomentose, initially gray ciliolate; blade narrowly lanceolate, 9–13 × 0.5–0.9 cm, abaxially initially sparsely white-gray pubescent, proximally more densely so, secondary veins 3-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Apr–May.

● 2000–3000 m. W Yunnan.

Gatherings from Lushui with hollow culm internodes have been described as *Fargesia contracta* f. *evacuata*.

37. Fargesia semicoriacea T. P. Yi, J. Bamboo Res. 7(2): 71. 1988.

白竹 bai zhu

Rhizome neck 4–8 cm. Culms 1–3.5 m, 0.5–1.2 cm in diam.; internodes terete, 20–28 cm, initially white powdery, glabrous; wall 2–3 mm thick; supra-nodal ridges level or weakly prominent; sheath scar weakly prominent. Branches 5–17 per node; buds oblong, margins densely gray ciliolate. Culm sheaths persistent, sometimes purple spotted, triangularly narrowly rounded, proximally leathery, distally papery, glabrous or distally sparsely brown setose, longitudinal ribs prominent, margins initially densely brown ciliate, apex triangular; auricles absent; oral setae absent or few initially; ligule truncate, ca. 1 mm, glabrous; blade reflexed, linear-lanceolate, glabrous, margins usually rolled. Leaves 3–5 per ultimate branch; sheath glabrous; auricles absent; oral setae few, erect, gray-yellow or gray-brown, truncate, 2–3 mm; ligule ca. 1 mm, glabrous; external ligule white-gray puberulous, sparsely white powdery; blade narrowly lanceolate, 5.5–11 × 0.6–1 cm, glabrous, secondary veins 3- or 4-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Aug.

● 2000–3000 m. NE Yunnan.

38. Fargesia hygrophila Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 74. 1988.

喜湿箭竹 xi shi jian zhu

Rhizome neck 3–11 cm. Culms 3–5 m, 1–2 cm in diam.; internodes terete or grooved above branches, 15–18 cm, initially densely white powdery, glabrous or gray-yellow setose below node; wall 2.5–6 mm thick; supra-nodal ridge level; sheath scar prominent. Branches 5–14 per node, deflexed; buds oblong, margins densely yellow-brown ciliate. Culm sheaths persistent, narrowly triangular, much longer than internodes, leathery, yellow-brown to brown setose, margins glabrous, longitudinal ribs prominent, apex narrowly triangular; auricles absent; oral setae absent or few; ligule truncate, ca. 1 mm, glabrous; blade reflexed, linear-lanceolate, glabrous, margins smooth, usually rolled. Leaves 3–5 per ultimate branch; sheath glabrous; auricles absent; oral setae few, deciduous, erect, yellow-brown, 1–2.5 mm; ligule arcuate, ca. 0.5 mm, glabrous; blade lanceolate, 6–14 × 0.6–1.35 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, apex long acuminate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Aug.

● 1600–3000 m. N Yunnan.

The culms are used for weaving and for making furniture and farm tools.

39. Fargesia sagittatinea T. P. Yi, J. Bamboo Res. 7(2): 63. 1988.

独龙箭竹 du long jian zhu

Rhizome neck 5–8 cm. Culms 7–9 m, 3–6 cm in diam.; internodes terete, 20–28 cm, initially white powdery, glabrous; wall 3–7 mm thick; supra-nodal ridge level; sheath scar weakly prominent, glabrous. Branches 7–10 per node; buds elliptic or oblong, margins densely light yellow ciliate. Culm sheaths persistent, narrowly triangular, much longer than internodes, leathery, sparsely brown setose, longitudinal ribs prominent, margins densely brown ciliate, apex triangular; auricles absent; oral setae few, erect, yellow-brown, 5–8 mm; ligule purple, truncate or convex, ca. 1 mm, glabrous; blade erect, linear-lanceolate, usually slightly rugose. Leaves 2 or 3 per ultimate branch; sheath glabrous; auricles absent; oral cilia few, erect, light yellow, 1–2 mm; ligule truncate, ca. 1 mm, margins glabrous; external ligule densely pubescent with long, erect, gray hairs; blade narrowly lanceolate, 5–10.5 × 0.3–0.6 cm, glabrous, secondary veins 2- or 3-paired, transverse veins distinct, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Aug.

● 2400–2900 m. NW Yunnan.

The culms are considered the best for making arrows.

40. Fargesia altior T. P. Yi, J. Bamboo Res. 7(2): 65. 1988.

船竹 chuan zhu

Rhizome neck 6–8.5 cm. Culms 4–10 m, 1.3–3.5 cm in diam.; internodes terete, 22–45 cm, initially white powdery, glabrous; wall 4.5–8 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent. Branches 5–15 per node, thin; buds oblong, margins yellow ciliolate. Culm sheaths deciduous, purple-brown, sometimes dark spotted, triangular, longer than internodes, leathery, sparsely appressed yellow-brown setose, longitudinal ribs prominent, margins glabrous, apex narrowly triangular; auricles absent; oral setae few, erect, yellow-brown, 2–5 mm; ligule convex, 1–1.5 mm, glabrous; blade reflexed, linear-lanceolate or linear, glabrous. Leaves 3–6 per ultimate branch; sheath glabrous; auricles absent; oral setae absent or few, erect, yellow-brown, 1–2 mm; ligule purple, truncate, ca. 0.5 mm, glabrous; blade narrowly lanceolate, 6–14 × 0.6–1.1 cm, glabrous, secondary veins 3- or 4-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence unknown. New shoots Aug.

● 2300–2500 m. W Yunnan.

The culms are used for weaving and for making furniture and farm tools.

41. Fargesia concinna T. P. Yi, Acta Bot. Yunnan. 10: 437. 1988.

美丽箭竹 mei li jian zhu

Rhizome neck 4–6 cm. Culms 6–10 m, 2–5 cm in diam.; internodes gray-green, terete, 28–33 cm, rigid, gray or gray-yellow setose below each node; wall 4–8 mm thick; nodes light yellow-green to purple, supra-nodal ridges weakly prominent; sheath scar weakly prominent, gray. Branches 6–13 per node; buds oblong to elliptic, margins gray-yellow ciliolate. Culm sheaths persistent, yellow-brown, narrowly triangular or narrowly rounded, much longer than internodes, leathery, sparsely appressed yellow or yellow-brown setose, longitudinal ribs very prominent, margins initially yellow ciliolate, apex triangular; auricles absent; oral setae absent or few, yellow-brown, curved; ligule truncate or convex, 1–6 mm; blade reflexed, curved, narrowly triangular or linear-lanceolate, margins rolled, serrulate. Leaves 3–6 per ultimate branch; sheath glabrous, sometimes distally white powdery; auricles absent; oral setae absent or few; ligule truncate or convex, ca. 1 mm; blade lanceolate, 6–12 × 1.3–2.2 cm, glabrous, secondary veins 4- or 5-paired, transverse veins distinct, base cuneate or broadly cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Aug.

● 2900–3100 m. C Yunnan.

The culms are used for papermaking.

42. Fargesia praecipua T. P. Yi, J. Bamboo Res. 7(2): 68. 1988.

弩箭竹 nu jian zhu

Rhizome neck 4–8 cm. Culms 4–8 m, 2–5 cm in diam.; internodes green, terete, 22–30 cm, white powdery in apical ring, glabrous; wall 2–4 mm thick; supra-nodal ridges level or weakly prominent; sheath scar weakly prominent to prominent. Branches 6–12 per node; buds elliptic or broadly elliptic, white powdery, margins light yellow ciliate. Culm sheaths persistent, yellow-brown, narrowly triangular or narrowly rounded, much longer than internodes, leathery, glabrous or apically sparsely brown setose, longitudinal ribs prominent, margins glabrous, apex triangular; auricles and oral setae absent; ligule truncate or convex, ca. 1 mm, glabrous; blade reflexed, linear-lanceolate or linear, articulate with sheath. Leaves 4–10 per ultimate branch; sheath glabrous; auricles absent; oral setae few, gray-yellow, curved; ligule arcuate or truncate, ca. 1 mm; blade lanceolate, 8.5–16.5 × 0.8–1.3 cm, glabrous, secondary veins 3–5-paired, transverse veins distinct, base cuneate, one margin spinescent-serrulate, other margin obscurely so, apex long acuminate. Inflorescence unknown. New shoots Aug.

● 1800–2600 m. NW Yunnan.

The culms are used for making arrows.

43. Fargesia yuanjiangensis Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 76. 1988.

秀叶箭竹 xiu ye jian zhu

Shrubby bamboo. Culms 0.8–1.3 cm in diam.; internodes terete, 8–20 cm, initially lower parts white powdery, powdery-black when old, glabrous; wall 2.5–4 mm thick; supra-nodal ridges level; sheath scar prominent, initially appressed brown setulose. Branches 15–18 per node, deflexed; buds elliptic, setose near ciliate margins. Culm sheaths persistent, narrowly triangular, longer than internodes, proximally leathery, distally papery, brown setose, margins glabrous, longitudinal ribs prominent, apex linear-triangular; auricles absent; oral setae few, erect, white-gray; ligule truncate, ca. 1 mm, glabrous; blade erect, linear-lanceolate, glabrous, margins usually rolled and smooth. Leaves 3–6 per ultimate branch; sheath glabrous; auricles absent; oral setae few, erect or curved; ligule purple, truncate, ca. 1 mm, glabrous; blade narrowly lanceolate, 5.5–10.6 × 0.4–0.9 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown.

● S Yunnan.

44. Fargesia perlonga Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 79. 1988.

超包箭竹 chao bao jian zhu

Borinda perlonga (Hsueh & T. P. Yi) Stapleton.

Culms to 5 m, to 2.2 cm in diam.; internodes terete, 18–20 cm, light yellow waxy below node, glabrous, nearly solid; nodes smooth, supra-nodal ridges weakly prominent; sheath scar prominent, glabrous. Branches many per node. Culm sheaths persistent, linear to narrowly triangular, much longer than internodes, proximally leathery, distally papery, brown to dark brown setose, longitudinal ribs prominent; auricles absent or small; oral setae erect, yellow, 3–4 mm; ligule truncate, ca. 1 mm, glabrous; blade unknown. Leaves 2–4 per ultimate branch; sheath glabrous; auricles absent; oral setae few, erect, yellow or gray-yellow; ligule purple, truncate, ca. 1 mm, glabrous; blade lanceolate, 10–19.5 × 1.3–1.7 cm, glabrous, secondary veins 5- or 6-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown. New shoots autumn.

● C Yunnan.

45. Fargesia circinata Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 81. 1988.

卷耳箭竹 juan er jian zhu

Shrubby bamboo. Culms to 1.5 cm in diam.; internodes terete, to 24 cm, glabrous, nearly solid; supra-nodal ridges level; sheath scar prominent, with persistent remains of sheath base. Branches 7–11 per node. Culm sheaths narrowly triangular, longer than internodes, leathery, waxy, purple spotted adaxially, brown setose, proximal setae curved, distal setae straight, longitudinal ribs prominent, margins usually densely brown setose, apex linear-triangular; auricles formed by rolled sheath shoulders; oral setae erect, yellow-brown, 4–15 mm; ligule truncate, 1–2 mm, margins initially ciliate, external ligule densely brown setose; blade readily deciduous, reflexed, linear-lanceolate, glabrous, usually rolled or rugose. Leaves 2–4 per ultimate branch; sheath margins initially densely ciliate; auricles absent; oral setae few, erect or curved, light yellow, 3–11 mm; ligule truncate, ca. 0.5 mm, glabrous; external ligule densely gray pubescent; blade lanceolate, thin, 5.5–14 × 0.8–1.6 cm, glabrous, secondary veins 3–5-paired, transverse veins dis-

tinct, base broadly cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown.

● Yunnan.

46. Fargesia hsuehiana T. P. Yi, J. Bamboo Res. 7(2): 104. 1988.

冬竹 dong zhu

Borinda hsuehiana (T. P. Yi) Stapleton.

Rhizome neck 3–6 cm. Culms 3–7 m, 1–3 cm in diam.; internodes terete, 18–25 cm, initially sparsely white-gray setose, longitudinal ribs prominent; wall 3–5 mm thick, pith spongy; supra-nodal ridges weakly prominent; sheath scar prominent, initially densely yellow-brown setose. Branches 6–9 per node. Culm sheaths persistent, triangularly narrowly rounded, shorter than internodes, leathery, proximally brown setose and woolly, margins glabrous, apex triangular; auricles and oral setae absent; ligule truncate, ca. 0.7 mm; blade deciduous, reflexed, linear-lanceolate. Leaves 4–8(–15) per ultimate branch; sheath becoming red-brown, glabrous; auricles absent; oral setae 3–10 mm; ligule arcuate, ca. 1 mm, glabrous; blade narrowly lanceolate, 6–14 × 0.7–1.2 cm, glabrous or abaxially sparsely pilose proximally, secondary veins 3- or 4-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence a raceme, exserted from spathe; spikelets 5–11, 2.5–4.2 cm, rachilla internodes 2.5–6 mm, white-gray setulose; florets 4 or 5, green. Glumes 2, glabrous, apex acuminate; lemma glabrous, apex acuminate; palea keels ciliate; lodicules apically ciliate. Anthers yellow. Ovary ovoid, light yellow, glabrous; style 1; stigmas 2. Caryopsis dark brown, oblong. New shoots Sep.

● About 2000 m. S Yunnan.

47. Fargesia pleniculmis (Handel-Mazzetti) T. P. Yi, J. Bamboo Res. 7(2): 113. 1988.

皱壳箭竹 zhou ke jian zhu

Arundinaria pleniculmis Handel-Mazzetti, Symb. Sin. 7: 1276. 1936.

Rhizome neck 4–10 cm. Culms 4–8 m, 1–3 cm in diam.; internodes terete, 24–30 cm, initially densely white powdery, glabrous, longitudinal ribs prominent; wall 4–5 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, initially gray-yellow setose. Branches 7–15 per node, initially white powdery; culm sheaths persistent, triangularly narrowly rounded, proximally papery, distally leathery, glabrous or sparsely yellow-brown setose, longitudinal ribs very prominent, margins densely yellow-brown setose; auricles absent; oral setae deciduous, yellow-brown, 1–2 mm; ligule truncate or arcuate, 1–2 mm, glabrous, initially densely yellow-brown ciliate; blade reflexed or erect, lanceolate or triangular-lanceolate, glabrous. Leaves 1–3 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule purple, truncate, glabrous; blade narrowly lanceolate, 4–8 × 0.5–0.8 cm, thin, both surfaces glabrous, secondary veins 2- or 3-paired, transverse veins distinct, base broadly cuneate, margins serrulate, apex acuminate. Inflorescence unknown. New shoots Aug.

● 2500–3000 m. NW Yunnan.

The shoots are edible.

48. Fargesia yunnanensis Hsueh & T. P. Yi, Bull. Bot. Res., Harbin 5(4): 125. 1985.

云南箭竹 yun nan jian zhu

Sinarundinaria yunnanensis (Hsueh & T. P. Yi) Hsueh & D. Z. Li; *Yushania yunnanensis* (Hsueh & T. P. Yi) P. C. Keng & T. H. Wen ex T. H. Wen.

Rhizome neck, 12–35 cm. Culms 4–7 m, 3–6 cm in diam.; internodes terete, 28–36 cm, glabrous or sparsely setose below node, basal internodes solid, upper internodes hollow; supra-nodal ridges level or weakly prominent; sheath scar prominent or very prominent, with persistent remains of sheath base, glabrous. Branches 6–25 per node. Culm sheaths persistent, longitudinally purple striped, triangularly narrowly rounded, slightly shorter than internode, leathery, glabrous or setose in patches, margins glabrous; auricles and oral setae absent; ligule purple, truncate, 1–2 mm, glabrous; blade reflexed, purple-green, linear-lanceolate, glabrous, margins smooth. Leaves 3–7 per ultimate branch; sheath glabrous, sometimes distally white powdery; auricles and oral setae absent; ligule truncate, ca. 1 mm, glabrous; blade lanceolate, 13–19 × 1.2–1.8 cm, abaxially proximally pubescent, secondary veins 4- or 5-paired, transverse veins obscure, base cuneate, margins spinescent-serrulate. Inflorescence an open panicle, terminal to leafy branch; spikelets 13–23, 1.6–2.5 cm, rachilla internodes ca. 4 mm, apically densely ciliate; florets 4 or 5, purple or green-purple. Glumes 2, glabrous; lemma glabrous, apex acuminate; palea keels white ciliate; lodicules ciliate. Anthers yellow. Ovary ovoid, light yellow, glabrous; stigmas 2. Caryopsis unknown. New shoots Jul–Sep.

● 1700–2500 m. SW Sichuan, Yunnan.

This species is often placed in *Yushania* because of its open panicles and the relatively long rhizome necks producing well-separated culms.

The shoots are delicious, and the culms are used for making farm tools.

49. Fargesia acuticontracta T. P. Yi, J. Bamboo Res. 7(2): 98. 1988.

尖鞘箭竹 jian qiao jian zhu

Rhizome neck 5–20 cm. Culms 3–7 m, 1–5 cm in diam.; internodes initially black-green, terete, 30–50 cm, very rigid, with a brown setose ring below each node, longitudinal ribs prominent, solid, supra-nodal ridge level or prominent; sheath scar prominent, initially brown setose. Branches 3–11 per node. Culm sheaths persistent, narrowly triangular, shorter than internode, leathery, rigid, densely brown to dark brown setose, longitudinal ribs prominent, margins densely brown setose; auricles absent; oral setae deciduous, erect, yellow, 5–8 mm; ligule purple, truncate or arcuate, ca. 1 mm, initially densely brown ciliate, becoming fissured; blade reflexed, linear-lanceolate, glabrous, usually rolled. Leaves 3–6 per ultimate branch; sheath glabrous; auricles absent; oral setae few, readily deciduous, erect, yellow; ligule truncate, initially sparsely pilose, uni-

formly fissured; blade lanceolate, 12–21 × 1.1–2.1 cm, initially pubescent, secondary veins 4–6-paired, transverse veins distinct, margins serrulate. Inflorescence unknown. New shoots Jul–Aug.

● 2000–3200 m. NW Yunnan.

50. Fargesia longiuscula (Hsueh & Y. Y. Dai) Ohrnberger, Bamboos World Introd. 3: 14. 1996.

长节箭竹 chang jie jian zhu

Sinarundinaria longiuscula Hsueh & Y. Y. Dai, J. Bamboo Res. 6(2): 19. 1987.

Culms 4.5–6 m, 1.6–2.4 cm in diam.; internodes terete, 45–52 cm, longitudinal ribs prominent, initially densely white powdery; wall ca. 3 mm thick; supra-nodal ridges level or slightly prominent; sheath scar prominent, with remains of sheath base, brown ciliate. Branches many per node. Culm sheaths gradually deciduous, triangularly narrowly rounded, shorter than internodes, thick papery to leathery, densely brown or black setose, longitudinal ribs prominent; auricles and oral setae absent or obscure; ligule ca. 3 mm, serrulate; blade revolute. Leaves 3 or 4 per ultimate branch; sheath glabrous; auricles absent; ligule purple, ca. 1 mm, fimbriate at top; blade lanceolate, 17–20 × 1.8–2.3 cm, proximally white ciliate, secondary veins 4-paired. Inflorescence unknown. New shoots Jul–Aug.

● 1400–1500 m. NE Yunnan (Yongshan).

The shoots are not edible, and the culms are used for weaving.

51. Fargesia declivis T. P. Yi, J. Bamboo Res. 7(2): 101. 1988.

斜倚箭竹 xie yi jian zhu

Rhizome neck 6–13 cm. Culms 3–4 m, 5–8 mm in diam., middle and upper part of culm pendulous or scrambling; internodes terete, 20–33 cm, white powdery, initially gray to gray-brown setose, longitudinal ribs greatly prominent, solid or nearly so, supra-nodal ridges prominent; sheath scar prominent to greatly prominent, initially setose. Branches 3–5 per node. Culm sheaths persistent, triangularly narrowly rounded, shorter than internodes, leathery, glabrous or sparsely yellow-brown setose, longitudinal ribs very prominent, margins densely yellow-brown setulose; auricles absent; oral setae present; ligule purple, truncate, 1–2 mm, glabrous, fissured; blade reflexed, linear, glabrous, margins initially serrulate, usually rolled when dry. Leaves 3–5 per ultimate branch; sheath margins initially ciliate; auricles absent; oral setae few, readily deciduous, erect, yellow; ligule truncate, glabrous; blade narrowly lanceolate, 8–12 × 0.7–1.1 cm, abaxially proximally pubescent, secondary veins 3- or 4-paired, transverse veins distinct, base broadly cuneate, margins serrulate, apex acuminate. Inflorescence unknown. New shoots Aug–Sep.

● 2400–2500 m. NW Yunnan.

52. Fargesia farcta T. P. Yi, J. Bamboo Res. 2(2): 29. 1983.

勒布箭竹 le bu jian zhu

Borinda farcta (T. P. Yi) Stapleton.

Rhizome neck 2.5–6 cm. Culms 2–3.5 m, 0.5–1.5 cm in diam.; internodes terete or slightly flattened, 22–28 cm, initially slightly white powdery, distally white-gray setose, longitudinal ribs greatly prominent, solid; supra-nodal ridges weakly prominent to prominent; sheath scar prominent, with persistent remains of sheath base. Branches (1–)3–10, solid, glabrous. Culm sheaths gradually deciduous, shorter than internodes, leathery, initially setose, longitudinal ribs prominent; auricles small; oral setae 3–5 mm; ligule ca. 1 mm; blade readily deciduous, reflexed. Leaves 2–5 per ultimate branch; sheath slightly white powdery, margins densely gray-brown ciliate; auricles absent; oral setae few, erect, yellow, 1–4 mm; ligule truncate, ca. 1 mm, glabrous; blade narrowly lanceolate, 4–7.5 × 0.5–0.8 cm, abaxially white pubescent, adaxially sparsely white-puberulous, secondary veins 2- or 3-paired, transverse veins distinct, base broadly cuneate, margins serrulate, apex acuminate. Inflorescence unknown.

● About 2300 m. S Xizang.

53. Fargesia adpressa T. P. Yi, J. Bamboo Res. 4(2): 26. 1985.

贴毛箭竹 tie mao jian zhu

Rhizome neck 5–9 cm. Culms 4–6 m, 2–3 cm in diam.; internodes terete, 35–40 cm, initially white powdery, glabrous or setose below node, gray waxy when old; wall 2–3 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent. Branches many per node. Culm sheaths persistent, triangularly narrowly rounded, shorter than internode, leathery, thinly white powdery, densely adnately brown setose, margins initially brown ciliate, apex triangular; auricles absent or present; oral setae present; ligule truncate or arcuate, 1–2 mm, glabrous, irregularly fissured; blade reflexed, linear-lanceolate, glabrous. Leaves 3–5 per ultimate branch; sheath thinly white powdery, glabrous; auricles absent; oral setae present; ligule brown-purple, arcuate, margins ciliate; blade linear-lanceolate, 10–15 × 0.9–1.4 cm, abaxially pubescent, secondary veins 3–5-paired, transverse veins obscure, base cuneate, one margin spinescent-serrulate, other margin obscurely so. Inflorescence a raceme, terminal to leafy shoot; spikelets 7–9, 1.7–2.7 cm, rachilla 3–4 mm, pilose; florets 3–7. Glumes 2, slightly pilose, papery; lemma glabrous, apex acuminate; palea keels and apices ciliolate; lodicules ciliate. Anthers yellow. Ovary ovoid, glabrous; style 1; stigmas 2. Caryopsis unknown. New shoots May.

● About 2000 m. W Sichuan.

The shoots are edible and are a source of food for the giant panda. The culms are used for weaving and papermaking.

54. Fargesia pauciflora (Keng) T. P. Yi, J. Bamboo Res. 4(2): 25. 1985.

少花箭竹 shao hua jian zhu

Arundinaria pauciflora Keng, J. Wash. Acad. Sci. 26: 397. 1936; *Fargesia pallens* Hsueh & C. M. Hui; *Sinarundinaria pauciflora* (Keng) P. C. Keng.

Rhizome neck 4–8 cm. Culms 2–4 m, 1–3 cm in diam.; internodes terete or slightly flattened, 35–40 cm, initially densely white powdery, glabrous; wall 2–3 mm thick; supra-

nodal ridge level or weakly prominent; sheath scar prominent, initially densely yellow-brown setose. Branches 6–10 per node. Culm sheaths persistent or gradually deciduous, triangularly narrowly rounded, shorter than internode, leathery, glabrous or sparsely yellow-brown setose, margins brown ciliate, longitudinal ribs prominent; auricles and oral setae absent; ligule truncate or arcuate, 1–2.5 mm, slightly fissured; blade reflexed, linear-lanceolate, glabrous, margins serrulate. Leaves 2 or 3 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate or truncate, glabrous; blade narrowly lanceolate, 9–14 × 0.7–1.2 cm, secondary veins 2–4-paired, transverse veins obscure, abaxially pubescent, base cuneate, margin spinescent-serrulate. Inflorescence a raceme, enclosed by spathe; spikelets ca. 3, 2–3 cm, rachilla internodes 2.5–4 mm, pilose; florets 4 or 5, purple. Glumes 2, glabrous or sparsely pilose; lemma acuminate at apex; palea keels ciliolate; lodicules ciliate. Anthers ca. 5 mm. Stigmas 2 or 3. Caryopsis unknown. New shoots late May–Jul.

● 2000–3200 m. SW Sichuan, NW Yunnan.

The shoots are edible and are a source of food for the giant panda. The culms are used for weaving and papermaking.

55. Fargesia grossa T. P. Yi, J. Bamboo Res. 2(2): 35. 1983.

错那箭竹 cuo na jian zhu

Borinda grossa (T. P. Yi) Stapleton.

Rhizome neck ca. 10 cm. Culms 8–12 m, 2–3.5 cm in diam.; internodes terete, 15–45 cm, glabrous; wall 3–5 mm thick; supra-nodal ridges level; sheath scar prominent, with persistent remains of sheath base. Branches many per node. Culm sheaths narrowly triangular, leathery, initially yellow-brown setose, longitudinal ribs distally prominent, margins yellow-brown setose, apex linear-triangular; auricles present or absent; oral setae yellow-brown, curved, 4–16 mm; ligule truncate or convex, 1–2 mm, margins densely yellow-brown ciliate, cilia 1–5 mm; blade reflexed, linear-lanceolate, slightly rugose, glabrous, margins usually rolled, serrulate. Leaves 3–5 per ultimate branch; sheath margins ciliate; auricles absent; oral setae few, erect, yellow, 3–5 mm; ligule truncate, ca. 1 mm, glabrous; external ligule white-gray pubescent; blade linear-lanceolate, 4.5–8 × 0.5–0.8 cm, thin, abaxially gray pubescent at base, secondary veins 2–4-paired, transverse veins obscure, base cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Jun.

About 2600 m. S Xizang [Bhutan].

The culms are used for weaving.

56. Fargesia hainanensis T. P. Yi, Bull. Bot. Res., Harbin 3(3): 151. 1983.

海南箭竹 hai nan jian zhu

Rhizome neck 5–7 cm. Culms 3–7 m, 2–3.5 cm in diam.; internodes terete, 24–28 cm, glabrous; wall 2–3.5 mm thick; supra-nodal ridges level or weakly prominent; sheath scar weakly prominent. Branches 3–7 per node. Culm sheaths persistent, orange-red or gray, triangularly narrowly rounded, nearly as long as internodes, leathery, densely setose, margins apically brown ciliate; auricles absent; oral setae deciduous, erect, light yellow; ligule arcuate, 1–1.5 mm, margins initially densely light yellow ciliate; blade reflexed, linear-lanceolate, glabrous, margins serrulate. Leaves 3–5 per ultimate branch; sheath glabrous; auricles absent; oral setae present; ligule arcuate or truncate, ca. 1 mm; blade linear-lanceolate, 4–12 × 0.5–0.9 cm, pubescent basally, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence a raceme, terminal to leafy shoot; spikelets 4–7, 2.3–3 cm, rachilla 2.5–5 mm; florets 3–5, light green to dark purple. Glumes 2, papery, glabrous; lemma pilose, apex acuminate; palea keels ciliolate; lodicules densely ciliate. Anthers yellow. Ovary light yellow, ovoid, glabrous; style 1; stigmas 2. Caryopsis unknown. New shoots Aug.

● 1500–1800 m. Hainan (Wuzhi Shan).

57. Fargesia porphyrea T. P. Yi, J. Bamboo Res. 7(2): 84. 1988.

红壳箭竹 hong ke jian zhu

Rhizome neck 2.5–4 cm. Culms 3–5 m, 1–2.5 cm in diam.; internodes terete, 28–35 cm, initially distally gray setose, glabrescent; wall 2–3 mm thick, pith initially spongy, becoming granular; supra-nodal ridges weakly prominent; sheath scar prominent. Branches 5–11 per node. Culm sheaths persistent, red-brown, narrowly rounded or triangularly narrowly rounded, shorter than internodes, leathery, brown setose, margins glabrous or apically very sparsely gray ciliate, apex triangular; auricles and oral setae absent; ligule purple-brown, truncate or convex, 1–1.5 mm, margins initially densely yellow-brown ciliate, cilia 2–4 mm; blade reflexed, linear-lanceolate, initially gray ciliolate, margins rolled, articulate with sheath. Leaves 3–10 per ultimate branch; sheath red-brown when dry, glabrous; auricles absent; oral setae initially present; ligule truncate, ca. 1 mm, glabrous; blade linear-lanceolate, 9–19 × 0.7–1.7 cm, thin, abaxially white-gray pubescent, secondary veins 3- or 4-paired, transverse veins obscure, base cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown. New shoots Aug–Sep.

● 1200–2500 m. S Yunnan.

The shoots are edible.

58. Fargesia lincangensis T. P. Yi, J. Bamboo Res. 7(2): 96. 1988.

雪山箭竹 xue shan jian zhu

Rhizome neck 5–9 cm. Culms 4–8 m, 2–5 cm in diam.; internodes terete, 25–45 cm, glabrous; wall 3.5–6 mm thick, pith granular; supra-nodal ridges prominent; sheath scar prominent, with persistent remains of sheath base. Branches 3–18 per node. Culm sheaths gradually deciduous to persistent, narrowly triangular, shorter than internodes, leathery, yellow to yellow-brown setose, setae especially dense and long at base, longitudinal ribs prominent, margins ciliate; auricles present or absent; oral setae erect or curved, yellow, 4–12 mm; ligule purple, truncate or convex, 1–1.5 mm, setulose, fimbriate, yellow ciliate; blade readily deciduous, reflexed, linear-lanceolate, adaxially puberulous proximally, glabrous. Leaves 2 or 3 per ultimate branch; sheath glabrous or margins initially slightly

ciliate; auricles absent or obscure; oral setae yellow, few, 3–6 mm; ligule purple, truncate, glabrous; blade narrowly rounded to lanceolate, 7–10 × 1.2–1.6 cm, glabrous, secondary veins 3–5-paired, transverse veins slightly distinct, base broadly cuneate, margins nearly smooth. Inflorescence unknown. New shoots Sep.

● 2900–3200 m. SW Yunnan.

The shoots are edible, and the culms are used for weaving.

59. Fargesia yulongshanensis T. P. Yi, J. Bamboo Res. 7(2): 87. 1988.

玉龙山箭竹 yu long shan jian zhu

Rhizome neck 6–12 cm. Culms 5–7 m, 1–2.5 cm in diam.; internodes terete, 35–45 cm, initially white powdery, brown setose immediately below node, white-gray setose above; wall 2–4 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, initially yellow-brown setose. Branches many per node. Culm sheaths gradually deciduous to persistent, triangularly narrowly rounded, leathery, longitudinal ribs obscure, densely yellow-brown setose, margins yellow-brown setose; auricles absent; oral setae few, yellow-brown, 1–5 mm, slender; ligule truncate or convex, 1–2 mm, initially ciliate; blade reflexed or erect, linear-lanceolate, glabrous, margins smooth. Leaves 2–5 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate, 1–1.5 mm; blade narrowly lanceolate, 5–8 × 0.4–0.9 cm, glabrous, secondary veins 2–4-paired, transverse veins distinct, base broadly cuneate, margins spinescent-serrulate. Inflorescence unknown. New shoots Jun–Jul.

● 3000–4200 m. NW Yunnan.

The shoots are edible, and the split culms are used for weaving.

60. Fargesia strigosa T. P. Yi, J. Bamboo Res. 7(2): 90. 1988.

粗毛箭竹 cu mao jian zhu

Rhizome neck 3–5 cm. Culms 2.5–6 m, 1–2.5 cm in diam.; internodes terete, 22–28 cm, densely and prominently longitudinally ribbed, initially densely white powdery, white-gray setulose below node; wall 3.5–6 mm thick; supra-nodal ridges weakly prominent; sheath scar prominent. Branches 5–10 per node, nearly solid. Culm sheaths persistent, narrowly triangular, shorter than internode, leathery, proximally densely gray setose, margins glabrous, apex triangular; auricles absent; oral setae absent or few, yellow, 2–6 mm; ligule truncate or arcuate, 1–2 mm, glabrous; blade reflexed, linear-lanceolate. Leaves 2–4 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule arcuate or truncate, ca. 0.5 mm, glabrous; blade narrowly lanceolate, 4–8.5 × 0.6–0.8 cm, glabrous, secondary veins 3- or 4-paired, transverse veins slightly distinct, base cuneate, margins nearly smooth, or one margin spinescent-serrulate and other margin smooth, apex long acuminate. Inflorescence unknown. New shoots late Aug–early Sep.

● About 2900 m. SW Yunnan.

61. Fargesia funiushanensis T. P. Yi, Acta Bot. Yunnan. 13: 375. 1991.

伏牛山箭竹 fu niu shan jian zhu

Rhizome neck (2.3–)6–12 cm, (0.5–)0.8–1.4 cm in diam. Culms 1.2–2(–2.5) m, (0.3–)0.5–0.8(–1.2) cm in diam.; internodes terete, 8–12 cm, initially sparsely white powdery, glabrous; wall 1.5–2(–3) mm thick; supra-nodal ridges weakly prominent; sheath scar prominent. Branches 2–5 per node. Culm sheaths persistent, triangular-elliptic, usually shorter than internode, leathery, glabrous, longitudinal ribs prominent, margins glabrous; auricles and oral setae usually absent; ligule arcuate, 5–7 mm; blade erect, linear-triangular or linear. Leaves 2–4(or 5) per ultimate branch; sheath purple, margin densely gray-brown ciliate distally; auricles absent; oral setae absent or obscure; ligule truncate or arcuate, 0.5–1 mm, margin initially white ciliolate; blade lanceolate, (4–)5–8 × (0.6–)0.9–1.2 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margin serrulate. Inflorescence unknown.

● 1400–2100 m. Henan (Laojun Shan, Luanchuan).

62. Fargesia dulcicula T. P. Yi, J. Bamboo Res. 11(2): 9. 1992.

清甜箭竹 qing tian jian zhu

Rhizome neck 8–10 cm, 1.8–2.5 cm in diam. Culms erect, 3–4 m, 1–1.8 cm in diam.; internodes terete but grooved above branches, 20–25(–30) cm, initially thinly white powdery below nodes; glabrous; wall 2.5–4.5 mm thick; supra-nodal ridges level or slightly prominent; sheath scar prominent, glabrous or initially stiffly white hairy. Branches 8–10 per node; culm bud 1, narrowly ovoid, appressed, margins white ciliate. Culm sheaths gradually deciduous, purple, triangular-ovate, ca. 1/3 as long as internodes, leathery, white or yellowish setose, longitudinal ribs prominent; auricles absent; oral setae deciduous, erect or curved, yellow; ligule purple, truncate or convex, 1–2 mm; blade reflexed, triangular linear or linear-lanceolate, glabrous. Leaves 4 or 5 per ultimate branch; sheath glabrous; auricles absent; oral setae few, yellow; ligule slightly green, convex, 1–1.5 mm, glabrous; blade lanceolate, 4.5–10.5 × 0.6–1.1 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins serrulate. Inflorescence unknown. New shoots Jul.

● About 3500 m. S Sichuan (Mianning).

The shoots are edible and are one of the favorite foods of the giant panda. The split culms are used for weaving.

63. Fargesia wuliangshanensis T. P. Yi, Acta Bot. Yunnan. 10: 438. 1988.

无量山箭竹 wu liang shan jian zhu

Rhizome neck 4–8 cm. Culms 3–7 m, 1.5–2.5 cm in diam.; internodes terete, 26–30 cm, initially white powdery; wall 4–8 mm thick or nearly solid; supra-nodal ridges level or weakly prominent; sheath scar prominent, initially pale yellow setose. Branches 4–23 per node. Culm sheaths triangularly narrowly rounded, shorter than internode, leathery, rigid, setose, proximally more densely so, longitudinal ribs prominent, margins densely ciliate, apex broadly triangular; auricles absent or small; oral setae few, 2–5 mm; ligule convex or concave, 1–3 mm; blade reflexed, narrowly triangular, margins apically rolled. Leaves 3 or 4 per ultimate branch; sheath glabrous;

auricles absent; oral setae few, 3–6 mm; ligule convex, ca. 0.5 mm; blade linear-lanceolate, 4–9.5 × 0.8–1.2 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate, apex long acuminate. Inflorescence unknown. New shoots Aug.

● 3000–3100 m. C Yunnan.

The culms are used for weaving.

64. Fargesia glabrifolia T. P. Yi, J. Bamboo Res. 2(2): 32. 1983.

光叶箭竹 guang ye jian zhu

Borinda glabrifolia (T. P. Yi) Stapleton.

Rhizome neck 2.5–4.5 cm. Culms 4–6 m, 0.8–2 cm in diam.; internodes terete, 30–35 cm, initially densely white powdery, glabrous; wall 2–4 mm thick; supra-nodal ridges level; sheath scar weakly prominent. Branches many per node, subequal, initially white powdery. Culm sheaths gradually deciduous, triangularly narrowly rounded, leathery, sparsely gray-white to gray-yellow setose, longitudinal ribs prominent, margins glabrous; auricles absent or small; oral setae few, readily deciduous, erect; ligule truncate, 1–4 mm, initially pubescent, uniformly fissured; blade reflexed, linear-lanceolate to triangular-lanceolate, glabrous, margins serrulate and rolled. Leaves 2 or 3 per ultimate branch; sheath glabrous; auricles absent; oral setae yellow-brown; ligule truncate or convex, short, fimbriate, ciliate; blade narrowly lanceolate, 5–8 × 0.4–0.5 cm, glabrous, secondary veins 2-paired, transverse veins obscure, base broadly cuneate, margins obscurely spinescent-serrulate. Inflorescence unknown. New shoots late Jun.

● 3100–3500 m. S Xizang.

65. Fargesia plurisetosa T. H. Wen, J. Bamboo Res. 3(2): 27. 1984.

密毛箭竹 mi mao jian zhu

Rhizome neck 1–2.5 cm. Culms ca. 2 m, to 1 cm in diam.; internodes terete, 16–18 cm, initially densely gray setose, scabrid after setae fall, longitudinal ribs dense and prominent; wall 1–1.5 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, densely gray setose. Branches 2–8 per node. Culm sheaths persistent, narrowly triangular, much shorter than internode, papery, appressed pale yellow setose, longitudinal ribs greatly prominent, margins light yellow ciliate, apex triangular; auricles absent; oral setae absent or scarce; ligule truncate, 0.8–1 mm, sparsely pilose, margins ciliate, cilia deciduous; blade deciduous, reflexed, linear-lanceolate or triangular-conical, slightly pilose. Leaves 2–10 per ultimate branch; sheath gray pubescent, margins gray ciliate; auricles erect, oblong, ca. 1.5 mm; oral setae few, yellow, 2–6 mm; ligule truncate, slightly pilose; blade lanceolate or linear-lanceolate, 5–10 × 0.7–1.4 cm, abaxially white pubescent with hairs 1–2 mm, secondary veins 3–5-paired, transverse veins obscure, base rounded or broadly cuneate, one margin serrulate, other margin nearly smooth. Inflorescence unknown.

● About 1500 m. S Yunnan.

66. Fargesia dracocephala T. P. Yi, Bull. Bot. Res., Harbin 5(4): 127. 1985.

龙头箭竹 long tou jian zhu

Rhizome neck 8–20 cm. Culms 3–5 m, 0.3–2 cm in diam.; internodes terete, 15–18 cm, initially white powdery; wall 4–5 mm thick; supra-nodal ridges weakly prominent; sheath scar very prominent, ridged. Branches 7–14 per node. Culm sheaths gradually deciduous, pale red-brown, narrowly rounded-triangular or narrowly rounded, shorter than internode, leathery, gray-yellow setose or nearly glabrous, margins initially yellow-brown setose, longitudinal ribs prominent; auricles small; oral setae absent or sparse, brown; ligule truncate, ca. 1 mm, initially ciliolate; blade erect, triangular or linear-lanceolate, glabrous. Leaves 3 or 4 per ultimate branch; sheath glabrous; auricles oblong, with oral setae; ligule purple, truncate, ca. 1 mm, glabrous; blade lanceolate, 5–12 × 0.6–1.3 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, one margin spinescent-serrulate, other margin obscurely serrulate. Inflorescence raceme or simple panicle, partially exserted from spathe; spikelets 1–1.5 cm; rachilla internodes 0.5–3 mm, glabrous; florets 1–3, green. Glumes 2, sparsely pilose, apex acuminate; lemma acuminate and long mucronate at apex; palea keels ciliate; lodicules ciliate. Anthers yellow or purple. Ovary ovoid, glabrous; style 1; stigmas 3, plumose. Caryopsis unknown. New shoots May–Oct.

● 1500–2200 m. S Gansu, W Hubei, S Shaanxi, N Sichuan.

Fargesia dracocephala is one of the main food species for the giant panda.

A bamboo cultivated under this name in the West differs substantially from this description.

67. Fargesia decurvata J. L. Lu, J. Henan Agric. Coll. 1981(1): 74. 1981.

毛龙头竹 mao long tou zhu

Fargesia aurita T. P. Yi.

Rhizome neck 10–15 cm. Culms 1.5–3.5 m, 0.5–1.5 cm in diam.; internodes terete, 15–20 cm, initially thinly white powdery, glabrous; wall 3–5 mm thick; supra-nodal ridges prominent; sheath scar greatly prominent, ridged. Branches 5–12 per node, deflexed. Culm sheaths deciduous, pale yellow-brown, narrowly triangular or narrowly rounded-triangular, shorter than internode, papery, pale yellow or yellow-brown setose, longitudinal ribs very prominent, margins glabrous, apex triangular; auricles and oral setae absent; ligule purple, arcuate, ca. 1 mm, initially white-gray ciliolate; blade erect, linear-triangular or triangular, glabrous, margins serrulate. Leaves 2–5 per ultimate branch; sheath margins yellow-brown ciliate; auricles purple, nearly circular; oral setae few, gray-yellow, 2–5 mm; ligule arcuate, glabrous; blade lanceolate, 7–14.5 × 0.6–1.6 cm, abaxially proximally white-gray pubescent, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margins serrulate. Inflorescence unknown. New shoots late Apr–early May.

● 1100–1700 m. W Hubei, NW Hunan, SW Shaanxi, E Sichuan.

This species is an important source of food for the giant panda in Fuping, Shaanxi Province.

68. Fargesia conferta T. P. Yi, Bull. Bot. Res., Harbin 5(4):

123. 1985.

笼笼竹 long long zhu

Rhizome neck 3–6 cm. Culms 3–5 m, 1–2 cm in diam.; internodes terete, 25–35 cm, initially distally white-gray setose; wall 2.5–5 mm thick; supra-nodal ridges weakly prominent; sheath scar prominent, with persistent remains of sheath base, glabrous or initially sparsely white-gray setose. Branches many per node, deflexed, subequal. Culm sheaths persistent, gray-red-brown, narrowly triangular, shorter than internode, thickly papery, densely appressed brown to dark brown setose, longitudinal ribs distally prominent, margins brown ciliate, apex triangular; auricles triangular or absent; oral setae several, gray, 2–5 mm; ligule arcuate, 2–6 mm, ciliate; blade erect, linear-lanceolate, glabrous, margins rolled. Leaves 2–6 per ultimate branch; sheath margins glabrous; auricles absent; oral setae few, gray, 3–5 mm; ligule brown, truncate or arcuate, glabrous; blade narrowly lanceolate, 9–13 × 0.5–1 cm, thin, abaxially gray-puberulous proximally, secondary veins 4-paired, transverse veins obscure, base cuneate, margins serrulate, apex acuminate. Inflorescence unknown. New shoots Jun.

● 1100–1700 m. W Guizhou, S Sichuan.

69. Fargesia robusta T. P. Yi, J. Bamboo Res. 4(2): 28. 1985.

拐棍竹 guai gun zhu

Rhizome neck 9–20 cm. Culms 2–7 m, 1–3 cm in diam.; internodes terete, 15–30 cm, initially white powdery; wall 3–5 mm thick; supra-nodal ridges weakly prominent; sheath scar very prominent, ridged. Branches 15–20 per node. Culm sheaths deciduous or gradually deciduous, triangular-elliptic, shorter than internode, leathery, light yellow or yellow-brown setulose, setulae especially dense proximally, longitudinal ribs prominent, margins glabrous; auricles absent or small; oral setae absent, or few and deciduous; ligule truncate, 1–2 mm, initially densely ciliate; blade erect or reflexed, triangular or linear-lanceolate, glabrous. Leaves 2–4 per ultimate branch; sheath to 16 cm, glabrous, margins apically densely ciliate, apex broadly triangular; auricles absent; oral setae present; ligule purple, truncate, ca. 1 mm, glabrous; blade lanceolate, 6–23 × 0.5–2.3 cm, glabrous or abaxially sparsely pilose proximally, secondary veins 4–7-paired, transverse veins distinct, base cuneate, margins spinescent-serrulate. Inflorescence a condensed raceme, partially exserted from spathe; spikelets 5–11, 1–1.5 cm, rachilla internodes 1–2 mm; florets 2–4, green. Glumes 2, sparsely pilose, apex acuminate or long mucronate; lemma long mucronate at apex; palea keels serrulate; lodicules purple, margins ciliate, apex pubescent. Anthers yellow. Ovary ovoid, glabrous; style 1; stigmas 3. Caryopsis unknown. New shoots Jun–Aug.

● 1700–2800 m. W Sichuan.

The shoots are edible and are an important source of food for the giant panda. The culms provide material for weaving.

70. Fargesia caduca T. P. Yi, J. Bamboo Res. 7(2): 108. 1988.

景谷箭竹 jing gu jian zhu

Rhizome neck 6–23 cm. Culms 3–5 m, 1–1.5 cm in diam.; internodes terete, 21–30 cm, initially white powdery, glabrous; wall 1.5–2.5 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, narrow, thin. Branches 10–18 per node, deflexed, subequal. Culm sheaths deciduous, narrowly triangular, shorter than internode, proximally leathery, distally papery, sparsely appressed gray-yellow or yellow setose, margins glabrous, apex narrowly triangular; auricles absent; oral setae absent or several, gray, 3–6 mm; ligule purple, triangular or truncate, ca. 0.5 mm, glabrous; blade erect, triangular or linear-lanceolate, glabrous. Leaves 7–9 per ultimate branch; sheath to 28 cm, margins glabrous, apex narrowly triangular; auricles absent; oral setae few, gray, 2–5 mm; ligule truncate, glabrous; blade narrowly lanceolate, 5–13 × 0.5–1.1 cm, abaxially gray puberulous proximally, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, one margin serrulate, other margin obscurely so, apex acuminate. Inflorescence unknown. New shoots Sep.

● 1800–1900 m. S Yunnan.

71. Fargesia emaculata T. P. Yi, J. Bamboo Res. 4(2): 29. 1985.

牛麻箭竹 niu ma jian zhu

Rhizome neck 7–14 cm. Culms 2.5–3.5 m, 0.8–1.2 cm in diam.; internodes terete, 18–25 cm, initially white powdery, yellow-brown setose below each node; wall 2–3 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent. Branches 10–17 per node, purple-red. Culm sheaths persistent, triangularly narrowly rounded, shorter than internode, leathery, brown setose, margins distally densely yellow-brown ciliate, apex triangular; auricles absent; oral setae absent or several, white-gray, 3–4 mm; ligule arcuate, ca. 1 mm, gray-yellow ciliolate; blade erect or reflexed, linear-lanceolate, margins white-gray ciliolate. Leaves 3 or 4 per ultimate branch; sheath margins glabrous; auricles and oral setae absent; ligule arcuate or truncate, glabrous; blade narrowly lanceolate, 1.5–7 × 0.3–0.75 cm, glabrous, secondary veins 2- or 3-paired, transverse veins obscure, base broadly cuneate, one margin slightly serrulate, other margin smooth, apex acuminate. Inflorescence unknown. New shoots Jul.

● 2800–3800 m. W Sichuan.

This species is a source of food for the giant panda.

72. Fargesia lushuiensis Hsueh & T. P. Yi, J. Bamboo Res. 7(2): 111. 1988.

泸水箭竹 lu shui jian zhu

Borinda lushuiensis (Hsueh & T. P. Yi) Stapleton.

Culms 3–5 m, 0.8–1 cm in diam.; internodes terete but grooved above branches, 14–32 cm, initially white powdery, glabrous; wall 1.5–3.2 mm thick; supra-nodal ridges prominent to very prominent; sheath scar prominent. Branches 2–9 per node. Culm sheaths deciduous, narrowly triangular, shorter than internodes, leathery, glabrous or sparsely setose, margins glabrous, apex narrowly triangular; auricles and oral setae absent; ligule purple, truncate, ca. 1 mm, glabrous; blade erect or reflexed, triangular or linear-triangular, glabrous, adaxially scabrous, margins rolled. Leaves 3–5 per ultimate branch; sheath

glabrous; auricles and oral setae absent; ligule purple, truncate, glabrous; blade narrowly lanceolate, 7–11 × 0.6–1 cm, glabrous, secondary veins 3- or 4-paired, transverse veins distinct, base cuneate, margin nearly smooth or slightly scabrous, apex long acuminate. Inflorescence unknown.

● 1700–1800 m. NW Yunnan.

This species is a source of food for the giant panda.

73. Fargesia mali T. P. Yi, Acta Bot. Yunnan. 11: 37. 1989.

马利箭竹 ma li jian zhu

Rhizome neck 3–8 cm. Culms 3–6 m, 1.2–2.5 cm in diam.; internodes green, terete, 25–38 cm, waxy; wall 3–4 mm thick; supra-nodal ridges level or weakly prominent; sheath scar prominent, initially yellow-brown setulose. Branches 10–15 per node. Culm sheaths gradually deciduous, gray to gray-brown, narrowly triangular, ca. 4/5 as long as internodes, leathery, sparsely yellow clavate-setose, margins initially yellow ciliate, apex broadly triangular; auricles and oral setae absent; ligule purple, arcuate, ca. 1 mm, margins slightly undulate; blade erect, narrowly triangular, margins smooth, rolled. Leaves 2–4 per ultimate branch; sheath margins glabrous; auricles and oral setae absent; ligule purple, truncate; blade linear-lanceolate, 5–7.5 × 0.4–0.7 cm, glabrous, secondary veins 2- or 3-paired, transverse veins distinct, base cuneate, one margin serrulate, other margin obscure. Inflorescence unknown. New shoots Aug.

● 3000–3200 m. SW Sichuan.

The culms are used for weaving.

74. Fargesia exposita T. P. Yi, J. Bamboo Res. 11(2): 12. 1992.

露舌箭竹 lu she jian zhu

Rhizome neck (1.5–)2–5.5 cm, (0.8–)1–2 cm in diam. Culms 3–4.5(–5) m, 0.8–1.6(–2.5) cm in diam.; internodes terete, 20–23 cm, initially white powdery, glabrous; wall 3–4 mm thick; supra-nodal ridges level or slightly prominent; sheath scar prominent. Branches 7–15 per node; culm bud 1, narrowly ovoid, appressed, margins white ciliate. Culm sheaths deciduous, oblong-triangular, ca. 3/5 as long as internodes, leathery, shoulders convex on sheaths of upper culm, grayish white or yellow setose, margins slightly yellow or gray ciliate; auricles and oral setae absent; ligule purple, truncate or concave, 0.5–1 mm, wider than base of sheath blade, glabrous; blade erect or reflexed, triangular or linear-triangular, glabrous, margins serrulate. Leaves 3–6 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule purple, truncate or arched, ca. 0.5 mm, glabrous; blade narrowly linear-lanceolate, 4–9.5 × 0.4–0.8 cm, glabrous, secondary veins (2 or)3-paired, transverse veins distinct, base cuneate, margins serrulate. Inflorescence unknown. New shoots Jul.

● 2700–2800 m. S Sichuan (Mianning).

The shoots are edible, and the culms are used for weaving.

75. Fargesia brevipes (McClure) T. P. Yi, J. Bamboo Res. 7(2): 113. 1988.

短柄箭竹 duan bing jian zhu

Arundinaria brevipes McClure, Sunyatsenia 6(1): 28. 1941; *Sinarundinaria brevipes* (McClure) Keng ex P. C. Keng.

Rhizome, culm, and culm sheath unknown. Leaf sheath purple or purple-brown, initially apically white-gray setose; auricles absent or small; oral setae several, curved, yellow-brown, 1–5 mm; ligule purple, truncate, ca. 1 mm, glabrous; blade narrowly lanceolate, 2.5–6 × 0.3–0.4 cm, glabrous or abaxially initially setulose proximally, secondary veins 2-paired, transverse veins obscure, base cuneate or rounded, one margin serrulate, other margin obscurely so, apex acuminate. Inflorescence a raceme, exserted from spathe; spikelets 3–6, 1.8–3 cm, rachilla 3–4 mm, gray-yellow setose, margins ciliate, apex swollen; florets 3–5, purple. Glumes 2, glabrous, apex long mucronate; lemma narrowly triangular, apex long mucronate; palea keels sparsely setulose; lodicules ciliate. Anthers yellow, glabrous. Ovary ovoid, glabrous; style 1; stigmas 3, white. Caryopsis unknown.

● Yunnan.

The type locality remains unknown.

76. Fargesia cuspidata (Keng) Z. P. Wang & G. H. Ye, J. Nanjing Univ., Nat. Sci. Ed. 1981(1): 95. 1981.

尖尾箭竹 jian wei jian zhu

Arundinaria cuspidata Keng, Sinensia 7(3): 410. 1936; *Sinarundinaria cuspidata* (Keng) P. C. Keng; *Thamnocalamus cuspidatus* (Keng) P. C. Keng.

Culms ca. 5 m, ca. 2 cm in diam.; internodes terete, 14–19 cm, initially white powdery. Branches many, to 60 cm, glabrous. Culm sheaths unknown. Leaf sheath 3–6 cm, glabrous; auricles absent; oral setae deciduous; ca. 3 mm; ligule truncate, ca. 1 mm, rigid; blade narrowly rectangular, 3.5–12 × 0.5–1 cm, glabrous or slightly pilose basally, secondary veins 3–5-paired, transverse veins present, base broadly cuneate, margins scabrous or nearly smooth, apex long acuminate. Inflorescence a raceme or contracted panicle, exserted from spathe; spikelets many, 2.5–3 cm, rachilla internodes 4–6 mm, slightly pilose apically; florets 3 or 4, light yellow. Glumes 2, sparsely hairy, apex obtuse; lemma hairy, apex obtuse; palea keels ciliate; lodicules ciliate, obtuse at apex. Ovary ca. 2 mm; styles 3; stigma unknown. Caryopsis red-brown.

● About 1600 m. N Guangxi.

77. Fargesia ungulata T. H. Wen, J. Bamboo Res. 8(1): 22. 1989.

鸡爪箭竹 ji zhua jian zhu

Culms ca. 1.5 m, 0.5–0.8 cm in diam.; internodes dark purple-brown, 7–12 cm, pubescent, nearly solid; supra-nodal ridges weakly prominent; sheath scar woody. Branches 6–8 per node, slender. Culm sheaths unknown. Leaves 3 or 4 per ultimate branch, deciduous; sheath 2.5–2.7 cm, initially densely setose; auricles deflexed, falcate; oral setae short; ligule arcuate, ca. 1 mm; blade narrowly lanceolate, 4–7 × 0.9–1.2 cm, abaxially setose, secondary veins 3- or 4-paired, transverse veins obscure, base broadly cuneate or nearly rounded, margins serrulate, apex acuminate and obtuse. Inflorescence a raceme; spike-

lets 2–4; florets 2 or 3. Glumes 2, glabrous; lemma glabrous, apex obtuse; palea glabrous, apex sharply obtuse; lodicules ciliate. Ovary cylindrical, ca. 2 mm; style 1, very short; stigmas 3, penicillate. Caryopsis unknown.

● NW Hunan.

78. Fargesia vicina (Keng) T. P. Yi, J. Bamboo Res. 7(2): 113. 1988.

紫序箭竹 zi xu jian zhu

Arundinaria vicina Keng, Sinensia 7: 410. 1936; *Pseudosasa vicina* (Keng) T. Q. Nguyen; *Sinarundinaria vicina* (Keng) P. C. Keng.

Rhizome, culm, and culm sheath unknown. Flowering branches 3 per node; ligule truncate or arcuate, ca. 1 mm, abaxially sparsely hairy. Leaves 1–3 per flowering branch; blade 2.5–8 × 0.4–0.7 cm, glabrous, secondary veins 3-paired, transverse veins distinct, one margin scabrous, other margin smooth. Inflorescence a raceme; spikelets 3–5, 2–3 cm, rachilla internodes 4–5 mm, slightly pilose; florets 4–6. Glumes 2, glabrous, apex acuminate; lemma sparsely hairy, apex obtuse or acuminate; palea keels setose; lodicules yellow-brown, margins apically ciliate. Stamens unknown. Stigmas 2. Caryopsis unknown.

● Yunnan.

The type locality remains unknown.

Taxa incertae sedis

Fargesia macrophylla Hsueh & C. M. Hui, Bull. Bot. Res., Harbin 18: 258. 1998.

阔叶箭竹 kuo ye jian zhu

Rhizome sympodial. Culms 2–3 m, 0.5–1 cm in diam.; internodes terete, 28–38 cm, initially thinly white powdery, glabrous, hollow; sheath scar prominent, glabrous. Branches very many per node, subequal. Culm sheaths persistent, shorter than internode, leathery, sometimes scattered setose, margins densely ciliate, longitudinal ribs only laterally conspicuous; auricles and oral setae absent; ligule truncate, 2–5 mm; blade reflexed, base narrower than mouth or sheath. Leaves 3–5 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule rounded or truncate, ca. 1 mm; blade 15–25 × 2–4 cm, proximally pilose, secondary veins 5–7-paired, transverse veins distinct. Inflorescence unknown.

● 1900–2000 m. Yunnan (Fugong).

This taxon appears to key out with *Fargesia pauciflora* (species no. 54); the authors compared it with *F. hsuehiana*, which could be distinguished by, e.g., the initially setose culm internodes and nodes, culm sheath ligules only ca. 0.7 mm, and smaller leaves, 6–14 × 0.7–1.2 cm.

Fargesia nujiangensis Hsueh & C. M. Hui, Bull. Bot. Res., Harbin 18: 261. 1998.

怒江箭竹 nu jiang jian zhu

Fargesia nujiangensis f. *lanpingensis* J. R. Hsueh & C. M. Hui; *F. nujiangensis* f. *striata* J. R. Hsueh & C. M. Hui.

Rhizome sympodial. Culms 3–5 m, 1–3 cm in diam.; internodes terete, 23–30 cm, prominently ridged, initially densely white powdery or waxy, filled with pith (hollow in f. *lanpingensis*); nodes glabrous. Branches 5 per node, equal. Culm sheaths soon or gradually deciduous, streaked with yellow in f. *striata*, shorter than internode, leathery, sparsely caducous-setose, margins distally ciliate, longitudinal ribs prominent, transverse veins not evident, apex truncate or sometimes retuse; auricles and oral setae absent; ligule 2–5 mm; blade reflexed (erect in f. *striata*), base narrower than mouth or sheath. Leaves 2 or 3 per ultimate branch; sheath glabrous; auricles and oral setae absent; ligule ca. 1 mm; blade lanceolate, 5–10 × 0.5–0.6 cm, glabrous, secondary veins 2- or 3-paired, transverse veins obscure. Inflorescence unknown.

● 2500–2900 m. Yunnan (Gaoligong Shan).

Fargesia nujiangensis was compared by its authors with *F. hsuehiana*, which differs most obviously by having initially setose culm internodes, 6–9 branches per culm node, and persistent culm sheaths.

Fargesia stricta Hsueh & C. M. Hui, Bull. Bot. Res., Harbin 18: 266. 1998.

马兹箭竹 ma zi jian zhu

Culms 5–8 m, 2–3 cm in diam.; internodes terete, 30–37 cm, obscurely ridged, glabrous, hollow or filled with pith toward culm apex; wall about as thick as cavity; supra-nodal ridge prominent, remains of sheath base persistent. Branches 3–5(–8) per node, unequal. Culm sheaths soon deciduous, oblong, leathery, brown setose, setae densest proximally, longitudinal ribs prominent, margins not ciliate; auricles and oral setae absent; ligule 1–3 mm, shortly ciliate; blade reflexed, linear-lanceolate, narrower than mouth of sheath. Leaves 3 or 4(or 5) per ultimate branch; auricles and oral setae absent; ligule ca. 1 mm; blade lanceolate, 5–10 × 0.5–0.8 cm, secondary veins 2- or 3-paired, transverse veins obscure. Inflorescence unknown.

● 2200–2300 m. Yunnan (Lushui).

The authors compared this species with what is now *Himalayacalamus collaris*.

In addition, the following species have been described from China:

Fargesia brevistipedis T. P. Yi (J. Bamboo Res. 19(1): 14. 2000) was described from sterile material from Sichuan (Tianquan). In the protologue it was compared with *F. pauciflora*.

Fargesia incrassata T. P. Yi (J. Bamboo Res. 19(1): 16. 2000) was described from sterile material from Sichuan (Tianquan). In the protologue it was compared with *F. fractiflexa* (*Drepanostachyum fractiflexum* in this account).

Fargesia ostrina T. P. Yi (Acta Bot. Yunnan. 22: 251. 2000) was described from Sichuan (Wanyuan). In the protologue it was compared with *F. murielae*.

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