

green, 6–11.5 × 1–2 cm, thick, abaxially white powdery. Inflorescence not known. New shoots early May.

- Anhui, Zhejiang.

49. *Phyllostachys atrovaginata* C. S. Chao & H. Y. Zhou, Acta Phytotax. Sin. 18: 191. 1980.

乌芽竹 wu ya zhu

Culms 7–8 m, 3–5 cm in diam.; internodes green, 29–31 cm, initially inconspicuously white powdery, glabrous; wall 3–5 mm thick; nodes with both ridge and sheath scar moderately prominent. Culm sheaths dark green, with purple-black stripes and pale yellow-brown margins, base sometimes purple-red, or deep green with purple veins in shade, unmarked, glabrous or rarely sparsely strigose; auricles absent; oral setae absent or occasionally sparse; ligule green-brown, truncate, short, broad, completely covered by base of blade, subglabrous or minutely ciliolate; blade erect, dark green, with purple-red margins, triangular to triangular-lanceolate, wavy to weakly crinkled. Leaves 2 or 3 per ultimate branch; auricles and oral setae inconspicuous; ligule short, scarcely exerted, densely puberulent, sometimes hirsute at base; blade 5.5–13 × 0.9–1.6 cm. Inflorescence not known. New shoots late Apr to early May.

- Cultivated. Jiangsu, Zhejiang.

The shoots are edible, and the culms are used split or unsplit for weaving bamboo articles.

50. *Phyllostachys rubicunda* T. H. Wen, Acta Phytotax. Sin. 16(4): 98. 1978.

红后竹 hong hou zhu

Phyllostachys concava Z. H. Yu & Z. P. Wang; *P. retusa* T. H. Wen.

Culms ca. 6 m, 3–4.5 cm in diam.; internodes initially deep purple-green, 26–30 cm, often thinly white powdery es-

pecially below nodes, glabrous; nodal ridge equal to or slightly more prominent than sheath scar. Culm sheaths pale green, with purple stripes, glabrous or sparsely strigose, margins with alternating white and red-tinged cilia; auricles absent or small on distal sheaths; oral setae absent or several, short on distal sheaths; ligule strongly concave in upper and mid-culm sheaths, green, 1–1.5 mm, margin with intermixed, irregular, white and faintly red cilia; blade pale green, apex pale purple, triangular to lanceolate. Leaves 3 or 4 per ultimate branch; auricles absent; oral setae developed; ligule not exerted; blade 6–12.5 × 1–2.2 cm. Inflorescence not known. New shoots mid to late May.

- Valley woods, cultivated. Fujian, Jiangsu, Zhejiang.

51. *Phyllostachys parvifolia* C. D. Chu & H. Y. Chou, Acta Phytotax. Sin. 18: 190. 1980.

安吉金竹 an ji jin zhu

Culms ca. 8 m, ca. 5 cm in diam.; internodes green, with purple streaks, becoming gray-green in age, to 24 cm, initially thickly white powdery; wall ca. 4 mm thick; nodal ridge slightly elevated, equaling or more prominent than sheath scar. Culm sheaths pale brown or pale purple-red, with pale yellow-brown or yellow-white streaks on upper portion, unmarked, thinly white powdery, glabrous, margins white ciliate; auricles absent or small, extending from base of blade in distal sheaths; oral setae absent or few; ligule dark green to purple-red, arcuate or acutely so, 2–2.5 mm, ciliolate; blade erect, triangular to triangular-lanceolate, wavy. Leaves (1 or)2 per ultimate branch; auricles inconspicuous; oral setae several; ligule exerted; blade 3.5–6.2 × 0.7–1.2 cm. Inflorescence not known. New shoots early May.

- Anhui; cultivated in Zhejiang.

This species is grown mainly for shoots. The culms have general uses.

2. Tribe PHAREAE

囊稈竹族 nang fu zhu zu

Liu Liang (刘亮); Sylvia M. Phillips

Perennials. Leaf blades broad, narrowly oblong to oblanceolate, veins slanting obliquely from midrib with transverse connecting veinlets, narrowed into a false petiole, this twisted to bring the abaxial surface uppermost; ligule scarious, margin usually ciliolate. Inflorescence monoecious, an open panicle, ultimate branchlets bearing 1 or 2 female spikelets and a terminal male spikelet. Spikelets unisexual, floret 1, rachilla extension absent. Female spikelet sessile or shortly pedicelled, terete to inflated, disarticulating below floret; glumes scarious, persistent or not, shorter than floret; lemma papery becoming leathery, involute or utriculate, 5- or more-veined, entire, covered in hooked adhesive hairs; palea long, narrow; lodicules absent; stigmas 3. Male spikelet pedicelled, smaller than the female, lanceolate, soon deciduous; lodicules minute or absent; stamens 6. Caryopsis oblong to linear, embryo very small, hilum as long as the caryopsis. Leaf anatomy: non-Kranz; microhairs absent; fusoid cells present. $x = 12$.

Two or three genera and 13 species: tropics of both hemispheres; one species in China.

This is a small tribe of grasses found in the understory of tropical forests. The broad, twisted leaf blades with slanting veins and transverse veinlets provide an easy means of identification.

35. LEPTASPIS R. Brown, Prodr. 211. 1810.

囊稈竹属 nang fu zhu shu

Culms erect or decumbent, solid. Leaf blades strikingly distichous. Panicle branches single or whorled, persistent on axis,

branchlets often subtended by a linear bract. Female spikelet: lemma inflated, shell- or urn-shaped, closed except for a tiny pore through which the 3 stigmas and palea apex protrude, prominently 5–9-ribbed, greatly enlarging after fertilization, coloring white, pink or purple; palea free or adnate to margins of lemma. Male spikelet: lemma conduplicate with free margins, 5–9-veined.

Four to six species: Old World tropics; one species in China.

1. *Leptaspis banksii* R. Brown, Prodr. 211. 1810.

囊稈竹 nang fu zhu

Leptaspis cumingii Steudel; *L. formosana* C. Hsu; *L. sessilis* Ohwi; *L. umbrosa* Balansa.

Perennial, caespitose from short rhizome. Culms erect, 40–60 cm tall. Leaf sheaths clustered at base, longer than internodes, strongly ribbed, laterally compressed, pubescent along keel upward; leaf blades lanceolate or linear-lanceolate, 15–30 × 1.5–3.5 cm, abaxial (upper) surface glabrous, adaxial (lower) surface pubescent, base attenuate into a 1–3 cm pseudopetiole,

apex acute; ligule 0.3–0.5 mm. Panicle very narrow, 15–35 cm, densely hairy with short hooked hairs; branches inserted singly, erect or ascending, lowest 2–7 cm. Female spikelet: glumes subequal, broadly ovate, 1.5–2.3 mm, cuspidate; mature lemma globose, 3.5–5 mm, pink or purplish, asymmetrical, densely pubescent, hairs weakly hooked, 7-ribbed, ribs white or green; palea ca. 1/2 lemma length, base flat, upper part sulcate, apex 2-lobed. Male spikelet: lemma ovate, 2–3 mm, pubescent along veins; anthers 1.8–2.5 mm.

Forests, in shade. S Taiwan [Indonesia, New Guinea, Philippines; NE Australia, New Caledonia, Solomon Islands].

3. Tribe EHRHARTEAE

皱稈草族 zhou fu cao zu

Chen Shouliang (陈守良); Sylvia M. Phillips

Annuals or perennials. Leaf blades linear; ligule usually membranous. Inflorescence a panicle, often contracted or reduced. Spikelets with 3 florets, 2 lower florets reduced to sterile lemmas, upper floret fertile, laterally compressed, disarticulating above the glumes but not between the florets; glumes shorter than or exceeding florets, membranous, persistent; sterile lemmas subequal, leathery, keeled, often transversely wrinkled, the upper hooked at the base, enclosing fertile floret, sometimes awned; fertile lemma cartilaginous to leathery, keeled, 5–7-veined, entire, awnless; palea hyaline, 2-veined and 2-keeled, or occasionally only 1-veined or 3–5-veined; lodicules 2, elliptic or 2-lobed; stamens 1–4 or 6; stigmas 2. Caryopsis with small embryo and linear hilum. Leaf anatomy: non-Kranz; microhairs slender or apical cell short and inflated; fusoid cells absent. $x = 12$.

One genus and 38 species: warm-temperate regions of the Old World, mainly in Australia and South Africa; one species (introduced) in China.

36. EHRHARTA Thunberg, Kongl. Vetensk. Acad. Handl. 40: 217. 1779, nom. cons.

皱稈草属 zhou fu cao shu

Trochera Richard, nom. rej.

Description and distribution as for tribe.

1. *Ehrharta erecta* Lamarck, Encycl. 2: 347. 1786.

皱稈草 zhou fu cao

Perennials. Culms tufted, slender, straggling, 30–100 cm tall. Leaf sheaths glabrous or shortly hairy; leaf blades flat, rather thin, 6–16 × 0.2–1 cm, margins scabrous-pubescent, apex acute; ligule 3.8–5 mm. Panicle narrow, 5–20 cm; branches ascending or suberect. Spikelets oblong, 3–7 mm, pale green; glumes unequal, 5-veined, subacute; lower glume ovate, shorter than upper; upper glume ovate-oblong, about 1/2 spikelet length; lemmas papery, 7-veined, subacute, awnless; sterile

lemmas narrowly elliptic-oblong, finely pubescent to almost glabrous; lower sterile lemma smooth or rarely transversely wrinkled near apex; upper sterile lemma transversely wrinkled, 2 frill-like appendages on basal hook, sometimes bearded at base; fertile lemma ovate, smooth, glabrous, obtuse; palea 2-veined. Stamens 6, anthers 0.7–1.2 mm.

Shady places along roadsides, introduced. Yunnan [native to Africa].

This native of Africa is adventive in both hemispheres and has recently become naturalized in Yunnan.

4. Tribe ORYZEAE

稻族 dao zu

Liu Liang (刘亮); Sylvia M. Phillips

Annuals or perennials. Leaf blades usually linear, rarely elliptic; ligule membranous. Inflorescence a panicle, occasionally with simple racemelike primary branches; spikelets all alike or the sexes separate. Spikelets with 1 floret, mostly laterally compressed, ra-