

184. GARNOTIA Brongniart in Duperrey, Voy. Monde, Phan. 2: 132. 1832.

耳稈草属 er fu cao shu

Wu Zhenlan (吴珍兰); Sylvia M. Phillips

Berghausia Endlicher; *Miquelia* Arnott & Nees (1843), not Meisner (1838).

Annual or perennial. Culms stiffly erect and unbranched, or weak, geniculate and branching; nodes usually pubescent. Leaf blades linear to lanceolate; ligule short, membranous, lacerate or ciliate. Panicle usually contracted, narrow with appressed branches, infrequently branches widely spreading; spikelets commonly paired, sometimes solitary or in threes; pedicels unequal. Spikelets with 1 floret, narrowly lanceolate, dorsally compressed, base often with a tuft of short stiff hairs, these sometimes sparse or absent, disarticulating below spikelet; glumes as long as spikelet, subequal, lower slightly longer, thinly herbaceous, 3-veined, glabrous or hispid, acute to acuminate, awned or awnless; lemma about as long as upper glume, membranous, 1–3-veined, apex entire or 2-toothed, awned or rarely awnless; awn slender, straight, flexuous, or geniculate from base or with a brown twisted column; palea subequal to lemma, margins ciliate, auriculate at base. $2n = 20$.

About 30 species: India and Nepal eastward through SE Asia to Polynesia, Hawaii, and Australia (Queensland), one species in the Seychelles; five species (two endemic) in China.

- 1a. Lemma with geniculate awn; annual.
 - 2a. Spikelets 4–6 mm, excluding awns; glumes often with tubercle-based hairs 1. *G. ciliata*
 - 2b. Spikelets 2–4 mm, excluding awns; glumes glabrous, scabrid.
 - 3a. Culm nodes hairy; leaf blades lanceolate, 5–15 mm wide 2. *G. tenella*
 - 3b. Culm nodes glabrous; leaf blades linear, 3–6 mm wide 3. *G. yunnanensis*
- 1b. Lemma awnless or with straight awn; perennial.
 - 4a. Panicle branches appressed or loosely ascending; culms 20–60 cm 4. *G. acutigluma*
 - 4b. Panicle at maturity with stiffly spreading branches; culms 60–130 cm 5. *G. patula*

1. *Garnotia ciliata* Merrill, Philipp. J. Sci. 13: 130. 1918.

纤毛耳稈草 xian mao er fu cao

Garnotia ciliata var. *conduplicata* Santos; *G. ciliata* var. *glabriuscula* Santos; *G. conduplicata* (Santos) Santos.

Annual, tufted. Culms delicate, usually decumbent at base, rooting at lower nodes, 20–70 cm tall, nodes hispid. Leaf sheaths loose, usually longer than internodes, hispid with tubercle-based hairs or nearly glabrous; leaf blades narrowly lanceolate, fairly thick, flat or folded, 3–12 cm × 2–8(–11) mm, hispid or villous, margins wavy; ligule ca. 0.5 mm. Panicle narrow, 5–15 cm; branches widely spaced, up to 5 cm, stout, appressed to rachis; pedicels scaberulous. Spikelets 4–6 mm, base glabrous or shortly bearded; glumes villous or sparsely pilose to glabrous, hairs tubercle-based, apex acuminate or short awned; glume awns 0.5–3 mm; lemma faintly 1–3-veined, glabrous, awned from between 2 delicate acuminate lobes; awn geniculate, column ca. 2 mm, bristle 7–10 mm. Fl. and fr. Aug–Oct.

- Near streams, roadsides, moist places on rocks; 900–1000 m. Guangdong.

2. *Garnotia tenella* (Arnott ex Miquel) Janowski, Repert. Spec. Nov. Regni Veg. 17: 86. 1921.

脆枝耳稈草 cui zhi er fu cao

Berghausia tenella Arnott ex Miquel, Anal. Bot. Ind. 2: 22. 1851; *Garnotia brevifolia* Ohwi; *G. fragilis* Santos; *G. nitens* Santos; *G. tenuis* Santos (1950), not Keng ex S. L. Chen (1990).

Annual, tufted. Culms ascending or decumbent at base, 15–60 cm tall, often branched, rooting at lower node, nodes hispid or villous. Leaf sheaths loose, lower longer than inter-

nodes, usually glabrous, occasionally margins villous; leaf blades narrowly lanceolate, flat, thin, 5–15 cm × 5–15 mm, hispid, villous with tubercle-based hairs or shortly hairy, margins wavy; ligule 0.3–1.5 mm. Panicle narrow, 6–18 cm; branches loosely ascending, 1.5–7 cm, fascicled at lower nodes, paired or solitary toward apex; spikelets in pairs or threes; pedicels scabrid, appressed. Spikelets 2–4 mm, base very shortly hairy or glabrous; glumes equal or lower glume slightly longer, glabrous, scabrid, apex acute, acuminate or awned; glume awns 1–2.5 mm; lemma faintly 1-veined, typically awned from emarginate apex, lower spikelets in panicle occasionally awnless or mucronate; awn geniculate, column 2–3 mm, bristle ca. 7 mm. Fl. and fr. Aug–Oct.

Moist stony places on mountain slopes, near streams, shady places, dense forests; ca. 1700 m. Guangdong, Yunnan [Bhutan, India, Indonesia, Malaysia, Myanmar, Nepal, Thailand, Vietnam].

3. *Garnotia yunnanensis* B. S. Sun, J. Yunnan Univ. 21: 96. 1999.

云南耳稈草 yun nan er fu cao

Annual, tufted. Culms erect, unbranched or branching from lower nodes, 20–60 cm tall, 1–1.5 mm in diam., purplish red, nodes glabrous. Leaf sheaths smooth, glabrous, lower shorter than internodes; leaf blades linear, flat, 5–13 cm × 3–6 mm, abaxial surface glabrous, adaxial surface glabrous or scattered pilose; ligule ca. 0.7 mm. Panicle linear, 6–23 cm; branches erect, up to 8 cm, 3–4 at lower nodes; spikelets in pairs. Spikelets 3–5 mm, base shortly hairy; glumes equal or lower glume slightly shorter, glabrous, scabrid on veins, apex narrowly obtuse, awned; glume awns 0.5–3 mm; lemma obscurely veined, awned from 2-toothed apex, some spikelets in panicle with short straight awn, others geniculately awned; awn column ca. 2 mm, brown, bristle 7–9 mm. Fr. Oct.

• Roadsides, among rocks, wet places; ca. 1400 m. Yunnan (Menglian).

4. *Garnotia acutigluma* (Steudel) Ohwi, Bot. Mag. (Tokyo) 55: 393. 1941.

三芒耳稈草 san mang er fu cao

Urachne acutigluma Steudel, Syn. Pl. Glumac. 1: 121. 1854; *Garnotia caespitosa* Santos; *G. himalayensis* Santos; *G. khasiana* Santos; *G. tenuis* Keng ex S. L. Chen (1990), not Santos (1950); *G. kengii* S. L. Chen; *G. mindanaensis* Santos; *G. trisetata* Hitchcock; *G. trisetata* var. *decumbens* Keng.

Perennial, tufted. Culms erect or ascending from decumbent base, 20–60 cm tall, usually unbranched, rooting at nodes, nodes pubescent. Leaf sheaths often hirsute along collar and margins, otherwise glabrous; leaf blades variable, linear to narrowly lanceolate, flat or folded, 5–20(–35) cm × 2–7 mm, adaxial surface hispid or scabrid, hairs tubercle-based or not, abaxial surface usually glabrous; ligule 0.2–0.5 mm. Panicle narrow, 8–25(–40) cm; branches appressed or loosely erect or ascending; spikelets in threes at lower nodes, paired or solitary toward apex. Spikelets 3–5 mm, base usually conspicuously pilose; glumes subequal with lower slightly longer, scabrid on veins, apex acute to awned; glume awns 0.5–7 mm with lower glume longer awned; lemma 1–3-veined, awned; awn 8–15 mm, straight or slightly flexuous, capillary, uniform throughout. Fl. and fr. Aug–Dec.

Moist mountain slopes, moist shady places along streams, mixed forests; 300–1700 m. Guangdong, Guangxi, Guizhou, Taiwan, Yunnan [Bangladesh, Bhutan, NE India, Indonesia, Malaysia, Myanmar, Philippines, N Vietnam; naturalized in Hawaii].

Garnotia kengii was published as a *nomen novum* for *G. tenuis* Keng ex S. L. Chen (1990), not Santos (1950).

5. *Garnotia patula* (Munro) Bentham, Fl. Hongk. 416. 1861.

耳稈草 er fu cao

Perennial, tussocky. Culms stiffly erect, (30–)60–130 cm tall, unbranched, nodes pubescent. Leaf sheaths keeled, longer than internodes, glabrous or thinly pilose; leaf blades linear, flat or folded, 15–60 cm × 4–12 mm, tapering to base and apex, glabrous to sparsely pilose, sometimes with tubercle-based hairs; ligule 2–5 mm. Panicle open, 15–40(–65) cm; branches stiffly divaricate, up to 12 cm, often rebranched, in threes near base, paired to solitary toward apex, varying from closely set and densely spiculate to widely spaced and sparsely spiculate.

Spikelets 3.7–6.3 mm, base shortly pubescent; glumes scaberulous on veins, apex acute, acuminate or awned, or only lower glume with a mucro; glume awns up to 7 mm, longer ones very fine; lemma 3-veined, apex acuminate, awned or awnless; awn to 15 mm, straight or undulate, very slender. Fl. and fr. Aug–Oct.

Valleys, forest margins, moist grassy slopes, moist field boundaries; 500–1000 m. Fujian, Guangdong, Guangxi, Hainan, Yunnan [E Myanmar, N Vietnam].

This species is quite different in habit from the others found in China. It is a much more robust plant, tussock forming, taller, and with a distinctive, open panicle of stiffly spreading branches.

- 1a. Glumes awned, awn of lower glume 2–8 mm; lemma awned, awn 7–15 mm 5a. var. *patula*
- 1b. Glumes acuminate or lower glume mucronate; lemma awnless or mucronate 5b. var. *mutica*

5a. *Garnotia patula* var. *patula*

耳稈草(原变种) er fu cao (yuan bian zhong)

Berghausia patula Munro, Proc. Amer. Acad. Arts 4: 362. 1860; *Garnotia drymeia* Hance; *G. maxima* Santos; *G. patula* var. *grandior* Santos; *G. patula* var. *hainanensis* Santos; *G. patula* var. *partitopilosa* Santos; *G. patula* var. *strictor* Santos; *G. poilanei* A. Camus.

Culms 60–130 cm tall. Glumes awned, awn of lower glume 2–8 mm. Lemma awned; awn 7–15 mm, slender, scaberulous, usually straight, rarely crinkled. Fl. and fr. Aug–Oct.

Valleys, woodland margins, moist grassy slopes, moist field boundaries; 500–1000 m. Fujian, Guangdong, Guangxi, Hainan [N Vietnam].

5b. *Garnotia patula* var. *mutica* (Munro) Rendle, J. Linn. Soc., Bot. 36: 387. 1904.

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Berghausia mutica Munro, Proc. Amer. Acad. Arts 4: 362. 1860; *Garnotia mutica* (Munro) Druce; *G. patula* var. *mucronata* L. C. Chia; *G. tectorum* J. D. Hooker.

Culms 30–100 cm tall. Glumes acuminate or lower glume with a mucro. Lemma acuminate, awnless or with a mucro to 1.5 mm. Fl. and fr. Sep–Oct.

Moist woodland margins, streams. Guangdong, Guangxi, Hainan, Yunnan [E Myanmar, N Vietnam].

