

Bambusa affinis Munro. *Trans. Linn. Soc.* 26: 93. (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Burma. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yoongalum: *Brandis 18*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. allied to. Closely allied to another species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 500–600 cm long, 25–35 mm diam., woody, without nodal roots. Culm-internodes terete, 30–60 cm long, light green or light green or white, concolorous or striped, striate, distally pubescent. Culm-nodes pubescent. Lateral branches dendroid. Culm-sheaths present, 10–15 cm long, 1 times as long as wide, yellow, glabrous or pubescent, hairy throughout, with tawny hairs, convex at apex, without auricles. Culm-sheath blade lanceolate, reflexed, 2.5–5 cm long, 7–12 mm wide, pubescent. Leaves cauline. Leaf-sheaths striately veined, pubescent, hairs tawny. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades lanceolate, 15–25 cm long, 25–35 mm wide, glandular. Leaf-blade midrib conspicuous. Leaf-blade venation with 12–16 secondary veins. Leaf-blade surface scabrous, rough abaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, pilose, hairy at tip.

Glumes. Glumes several, 2 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 6–7 mm long, without keel, 20 -veined, more than 3-veined. Lemma apex acuminate. Palea 17 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6. Stigmas 3. Ovary umbonate, with a few apical hairs. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa alamii C.M.A. Stapleton. *Edinburgh J. Bot.*, 51(1): 10 (1994).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Nepal,. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: *Zamak: Stapleton 907* (E holo).

Illustrations (Books): N.L.Bor, *Gramineae in Flora of Iraq* (1968), H.J.Noltie, *The Grasses of Bhutan* (2000) (482, Fig. 1 & 488, Fig. 2).

Derivation (Clifford & Bostock 2007): in honor of Alam (fl.1982) who wrote about the bamboos of Bangladesh.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 800–1200 cm long, 20–35 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 40 cm long, distally mealy or glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, persistent, 14 cm long, 1 times as long as wide, glabrous, auriculate, with unequal auricles, with 10–20 mm wide auricles or 20–50 mm wide auricles, setose on shoulders, shoulders with curved hairs, shoulders with 3–10 mm long hairs. Culm-sheath ligule 0.5–2 mm high, entire. Culm-sheath blade ovate, demarcated but persistent, erect, 12 cm long. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs setose, erect and deciduous, 3–10 mm long. Leaf-sheath auricles falcate, 1–3 mm long. Ligule an eciliate membrane, 1 mm long, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–25 cm long, 15–23 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indian Subcontinent. Nepal.
Bhutan.

Bambusa albofolia T.H. Wen & Hua. *J. Bamboo Res.*, 8(1): 20 (1989).

Regarded by K as a synonym (*B. multiplex*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Guangzhou: *Hua H 82704* (ZJFI holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

Guangdong.

Bambusa alboleata L.C. Chia, nom nov. *Guihaia*, 8(2): 121 (1988).

Not on *GrassBase*.

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. China Southeast. Taiwan.

TDWG4. Fujian, Guangdong, Jiangxi, Zhejiang.

Bambusa alemtemshii 'H.B.Naithani. *Indian Forester* 133(11): 1575 (2007).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Nagaland. Longsa: Naithani 4338 (DD holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1000 cm long, 70–80 mm diam., woody. Culm-internodes terete, thick-walled, 70 cm long, dark green, distally pruinose. Lateral branches dendroid. Culm-sheaths present, 18–35 cm long, 1 times as long as wide, coriaceous, brown, glabrous, auriculate, setose on shoulders. Culm-sheath ligule 0.5 mm high, dentate. Culm-sheath blade triangular, 7–30 cm long, 60–120 mm wide, acute. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–23 cm long, 10–26 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation prominent, with 12–14 secondary veins. Leaf-blade surface scabrous, rough abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

Nagaland.

Bambusa amplexicaulis W.T. Lin & Z.M. Wu. *Bull. Bot. Res. North-East. Forest. Inst.*, 12(4): 349 (1992).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Lianping: *Zhimin Wu 88009* (CANT holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. amplexatio*, embrace; *caulis*, stem. The connate leaf-sheath and ligule encircle the stem.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300 cm long, 25 mm diam., woody. Culm-internodes terete, 13–31 cm long,

distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, puberulous, hairy on margins, auriculate, with unequal auricles, setose on shoulders, shoulders with 6–8 mm long hairs. Culm-sheath ligule 0.6–1 mm high, entire. Culm-sheath blade ovate, constricted at base, deciduous, erect. Leaves cauline, 7 per branch. Leaf-sheaths puberulous, outer margin hairy. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–11 cm long, 4–12 mm wide. Leaf-blade venation with 8–10 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). **Continent.** Temperate Asia.

Country /Province /State. **China.** China Southeast.

TDWG4. Guangdong.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 800–1000 cm long, 30–60 mm diam., woody. Culm-internodes terete, thick-walled, distally pilose. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, hispid, with appressed hairs, truncate at apex, auriculate, with unequal auricles, ciliate on shoulders, shoulders with 3 mm long hairs. Culm-sheath ligule 3–4 mm high. Culm-sheath blade ovate, narrower than sheath, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–17 cm long, 10–20 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). **Continent.** Temperate Asia.

Country /Province /State. **China.** China Southeast.

TDWG4. Guangdong.

Bambusa angustissima L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 367 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. angustus*, narrow; *-issima*, most. Leaf-blades very narrow.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 900 cm long, 50 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thick-walled, 25 cm long, distally mealy. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, glabrous, triangular at apex, auriculate, with unequal auricles, with 3 mm wide auricles, setose on shoulders, shoulders with 3–4 mm long hairs. Culm-sheath ligule 1–2 mm high, dentate. Culm-sheath blade triangular, narrower than sheath, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–9 cm long, 11–15 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). **Continent.** Temperate Asia.

Country /Province /State. **China.** China Southeast.

TDWG4. Guangdong.

Bambusa arnhemica F. Muell. *Australasian J. Pharm.* 1: 447. 1886.

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M. Holtz s.n.*, Australia: on the Daly-River.

Illustrations (Books): A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (356, Fig. 48), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;

Derivation (Clifford & Bostock 2007): From Arnhem Land, Northern Australia.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 500–1500 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid, arising from lower culm. Culm-sheaths present, deciduous, 15–20 cm long, 2.5 times as long as wide, convex at apex, without auricles. Culm-sheath ligule 3 mm high, dentate. Culm-sheath blade narrowly ovate, 5 cm long. Leaves cauline, 3–6 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate or oblong, 8–20 cm long, 7–18 mm wide. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches, 60–80 cm long overall.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 15–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two. Lower glume ovate, 2–3 mm long. Lower glume apex acute. Upper glume ovate, 3–5 mm long. Upper glume apex acute.

Florets. Fertile lemma ovate, 6–8 mm long, without keel, 7 -veined, more than 3-veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6. Stigmas 2–3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory.

TDWG4. Darwin & Gulf.

Bambusa assamica Barooah & Borthakur. *Indian J. Forest*. 24(4): 503 (2002).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Assam, Amsoi: Barooah 2520 (ASSAM holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 500–1200 cm long, 15–30 mm diam., woody. Culm-internodes terete, thin-walled, 15–40 cm long, mid-green, distally pruinose. Lateral branches dendroid. Buds or branches present on lower part of culm. Culm-sheaths present, 8–16 cm long, 1.3 times as long as wide, green, glabrous, convex at apex, auriculate, with 10 mm high auricles. Culm-sheath ligule 0.5–1 mm high, entire. Culm-sheath blade triangular, 6–15 cm long, 50–80 mm wide, pubescent, acuminate. Leaf-sheaths pruinose, glabrous on surface or pubescent. Leaf-sheath oral hairs setose, 10–16 mm long, pale. Leaf-sheath auricles falcate. Ligule an eciliate membrane, erose. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades persistent or deciduous at the ligule, lanceolate, 10–24 cm long, 25–40 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 16–20 secondary veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

Bambusa atrovirens T.H. Wen. *J. Bamboo Res.*, 5(2): 15 (1986).

Regarded by K as a synonym (*B. oldhamii*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. ater*, dark; *virens*, green. Culms greenish-black.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE COLLECTION: W.T. Tsang 29447, Aug 1939, Vietnam (US-47419, US-2802921, US-2802917, US-2802916).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. auris*, ear; *nuda*, bare. Leaves lacking oral setae.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 800–1100 cm long, 40–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present, deciduous, coriaceous, glabrous, glabrous on margins, auriculate, with unequal auricles, setose on shoulders, shoulders with curved hairs, shoulders with 5–10 mm long hairs. Culm-sheath ligule 1–2 mm high. Culm-sheath blade narrowly ovate, cordate, erect, scabrid, acuminate. Leaves cauline, 6–11 per branch. Leaf-sheaths glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs setose, curly. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 10–20 cm long, 11–22 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface puberulous, sparsely hairy, hairy abaxially. Leaf-blade apex acute or acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, compressed slightly, 45–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, 2–3 mm long.

Glumes. Glumes several, comprising 2 gemmiferous bracts, 1 empty glume. Upper glume ovate, 5–6 mm long.

Florets. Fertile lemma lanceolate, 8–10 mm long, chartaceous, purple, without keel, more than 3-veined. Lemma apex acute. Palea 1 length of lemma. Palea keels ciliolate, adorned above. Palea surface glabrous or puberulous, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 4–4.5 mm long, yellow. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. China Southeast. **Indo-China.** Vietnam.

TDWG4. Guangxi.

Bambusa australis L.C. Chia & H.L. Fung, nom nov. *Acta Phytotax. Sin.*, 18(2): 214 (1980).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L.* of the south. From the south in general.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1100 cm long, woody. Culm-internodes terete, thin-walled, glaucous, distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, coriaceous, glaucous, hispid, hairy at the base, with reflexed hairs, with black hairs, convex at apex, without auricles, setose on shoulders. Culm-sheath ligule 1 mm high, fimbriate. Culm-sheath blade lanceolate, constricted at base, deciduous, erect, scabrid, acuminate. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 38 cm long, 24 mm wide. Leaf-blade venation with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

Bambusa balcooa Roxb. *Fl. Ind.*, 2: 196. 1832.

Accepted by: R.J. Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Roxb. Icones 1402*, (K). LT designated by Stapleton, *Edinb. J. Bot.* 51: 12 (1994).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (482, Fig. 1 & 488, Fig. 2), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995).

Derivation (Clifford & Bostock 2007): Beng. bhalbua or balku. The vernacular name for the species in Bengal.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1600–2000 cm long, 75–150 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 40–45 cm long, dark green. Culm-nodes swollen, pubescent. Lateral branches dendroid. Buds or branches present on lower part of culm. Culm-sheaths present, 25–35 cm long, 1.1 times as long as wide, hairy on margins, truncate at apex, without auricles, ciliate on shoulders. Culm-sheath blade triangular, 15–20 cm long, pubescent. Leaves cauline. Leaf-sheaths striately veined, pubescent, hairs white. Leaf-sheath oral hairs scanty or lacking, deciduous. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 15–30 cm long, 25–50 mm wide, glandular. Leaf-blade midrib conspicuous. Leaf-blade venation with 14–22 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex acuminate, retrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 7–15 mm long, 5–7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 0–2 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 6–7 mm long, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 1 length of lemma. Palea keels pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip with extended connective. Stigmas 3, plumose. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa, Tropical Asia, Australasia (*), Pacific, South America.

Country /Province /State. Southern Africa (*). Limpopo, Mpumalanga, Kwazulu-Natal, Eastern Cape. **Indian Subcontinent, Indo-China.** Assam, Bangladesh, Eastern Himalaya, India. Vietnam. **Australia.** Queensland (*), New South Wales (*). **North-central Pacific.** Hawaii (*). **Mesoamerica.** Panama.

TDWG4. Bhutan. Assam. West Bengal.

Bambusa barpatharica Borthakur & Barooah. *Indian J. Forest.* 24(4): 505 (2002).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Assam, Lakhimpur: *Barooah 2508A* (ASSAM holo).

Illustrations (Books): No illustration found (BKS).

Classification. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1500–2000 cm long, 80–100 mm diam., woody. Culm-internodes terete, thin-walled, 30–50 cm long, dark green, distally pruinose. Lateral branches dendroid. Buds or branches present on lower part of culm. Culm-sheaths present, deciduous, 12–22 cm long, 0.9 times as long as wide, glabrous, truncate at apex, auriculate, ciliate on shoulders. Culm-sheath ligule 2 mm high. Culm-sheath blade triangular, cordate, erect, acuminate. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose, deciduous. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5 mm long, erose. Collar with external ligule. Leaf-blade base symmetrical or asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4 cm long. Leaf-blades persistent or deciduous at the ligule, lanceolate, 16–22 cm long, 20–30 mm wide, mid-green and glaucous, discolorous with last colour beneath. Leaf-blade midrib evident. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

Bambusa bambos (L.) Voss. *Vilm. Blumengaert.* 1: 1189. 1895.

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. **Basionym or Replaced Name:** *Arundo bambos* L. *Sp. Pl.* 81 (1753), *Bambusa arundinacea* (Retz.) Willd., *Sp. Pl.* 2: 245. (1799). T:<Type of Basionym>: *fide* TROPICOS and Kew

Synonymy Database: LT: *Hermann fol. 15*, No locality: *Arundo Indica maxime cortice spinoso Tabaxir fundens*. Mambu & Bambu dicta *Arundo arbor* B. Pin. Unaghas (L). LT designated by Xia & Stapleton, *Kew Bull.* 52(3): 697 (1997). LT: *Rheede, Hort. Malab. 1: t. 16 (1678)*, LT designated by McClure, *Blumea, Suppl.* 3: 95 (1946).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (748, Pl. 1502 as *B. arundinacea*), K.M. Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (Pl. 721 & Pl. 7222 as *B. arundinacea*), W. Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (88, Fig. 25 as *B. arundinacea*), D. Farrelly, *The Book of Bamboo* (1984) (182 as *B. arundinacea*), S. Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995).

Images: H.B. Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *B. arundinacea*) (*Smith. Contr. Bot.* No. 72 : 33 (1988)).

Derivation (Clifford & Bostock 2007): Latinized version of the Indian bamboo in turn possibly derived from the Malay, mambu, which may be a contraction of rotan semambu, malacca cane.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 2000–3000 cm long, 100–150 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, glaucous, distally pruinose. Culm-nodes pubescent (brown). Lateral branches dendroid. Branch complement one or two or three, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, glabrous. Culm-sheath ligule 1–2 mm high, ciliolate. Culm-sheath blade triangular, erect, hispid, acute. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, 4–6 mm long, pale. Leaf-sheath auricles erect. Ligule an eciliate membrane. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades lanceolate, 7–18 cm long, 10–18 mm wide. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet.

Florets. Fertile lemma ovate, 8–9 mm long, without keel, 15 -veined, more than 3-veined. Lemma margins ciliolate. Lemma apex acute, mucronate. Palea oblong, 1 length of lemma. Palea keels wingless, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, obovate, membranous, veined, ciliate. Anthers 6, 4–5 mm long. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp, ellipsoid, sulcate on hilar side, 7–7.5 mm long. Embryo 0.2 length of caryopsis.

Distribution (TDWG). Continent. Africa, Tropical Asia, South America.

Country /Province /State. Western Indian ocean. Mauritius (+), Seychelles (+). **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Assam, Bangladesh, India, Pakistan, Sri Lanka, West Himalaya. Cambodia, Laos, Myanmar, Thailand, Vietnam. Borneo, Java, Malaya, Philippines. Hawaii (*, and as *B. arundinacea*). **Mesoamerica, Caribbean, Northern South America.** Costa Rica, Guatemala, Honduras, Nicaragua, Panama. Guyana, Surinam.

TDWG4. Assam, Meghalaya. Andhra Pradesh, Bihar. Maharashtra, Orissa, Tamilnadu, Uttah Pradesh, West Bengal. Jammu Kashmir.

Bambusa basihirsuta McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 6 (1940).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. basis*, base; *hirsutus*, hairy. Leaf-bases hairy.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–1200 cm long, 60–90 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 35 cm long. Culm-nodes glabrous. Lateral branches dendroid. Culm-sheaths present, deciduous, coriaceous, pilose, glabrous on margins, without auricles. Culm-sheath ligule 1.5 mm high, ciliolate. Culm-sheath blade triangular, erect, glabrous on surface and with ciliate margins. Leaves cauline, 6–8 per branch. Leaf-sheaths 8–9 cm long, glabrous on surface or hispid. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, scaberulous on abaxial surface, truncate. Collar with external

ligule. Leaf-blade base broadly rounded or cordate, with a brief petiole-like connection to sheath. Leaf-blades oblong, 18–25 cm long, 30–50 mm wide. Leaf-blade venation with 14–20 secondary veins, without cross veins. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 24 mm long, 7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes one the lower absent or obscure or two.

Florets. Fertile lemma ovate, 16 mm long, 10 mm wide, without keel, 27–31 -veined, more than 3-veined. Palea 14 mm long, 11 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 7 mm long. Stigmas 2–3.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

Bambusa beecheyana Munro. *Trans. Linn. Soc.* 26: 108 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Staunton s.n.*, China (BM).

ST: *E.H. Wilson 3410*, 11 April 1908, China: Sichuan: Kiating Fu, 450 m. (A).

ST: *Tate s.n.*, China: Quantung, Ookaia, in sylvis.

Recent Synonyms: *Dendrocalamopsis beecheyana* (Munro) Keng f., *J. Bamboo Res.* 2(1): 12 (1983).

Illustrations (Books): D.Farrelly, *The Book of Bamboo* (1984) (& as *Sinocalamus beecheyanus*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 29 & 31).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Frederick William Beechey (1796–1856) English Naval Officer.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present, 26–30 cm long, glabrous. Culm-sheath ligule 4 mm high, ciliate. Culm-sheath blade ovate, 6 cm long, 30 mm wide, acuminate. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades lanceolate or oblong, 15–25 cm long, 20–50 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in oblong clusters, 1.5–2 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 7–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, obscured by lemmas.

Glumes. Glumes two. Lower glume ovate, 5 mm long. Lower glume apex acute. Upper glume ovate, 5 mm long. Upper glume apex acute.

Florets. Fertile lemma ovate, 6–7 mm long, without keel, 18–20 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 4 -veined. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6. Stigmas 2 or 3. Ovary umbonate.

Distribution (TDWG). Continent. Temperate Asia, South America.

Country /Province /State. China, Eastern Asia. Hainan. Taiwan. Hawaii (*). **Brazil.**

Bambusa bicatricata (W.T. Lin) L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.* 18(2): 214 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Sinocalamus bicatricatus* W.T. Lin, *Acta Phytotax. Sin.* 16(1): 68–70, pl. 2 (1978). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 33).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 1000 cm long, 55–75 mm diam., woody. Culm-internodes terete, thick-walled, 20–36 cm long. Culm-nodes flush with internodes. Lateral branches dendroid, arising from lower culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, coriaceous, hispid, with dark brown hairs, auriculate. Culm-sheath ligule 4–5 mm high, dentate. Culm-sheath blade lanceolate or narrowly ovate, reflexed. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1.5–2 mm long, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–22 cm long, 20–40 mm wide.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 17–18 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2 mm long.

Glumes. Glumes two or several, 2–3 empty glumes, persistent, shorter than spikelet. Upper glume ovate, auriculate at base, 5 mm long. Upper glume surface glabrous.

Florets. Fertile lemma ovate, 7–8 mm long, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 7–8 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, 3.5 mm long. Stigmas 1.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa binghamii Gamble. *Ann. Bot. Gard. Calc.* 7: 45 (1896).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Major Bingham, British Army Officer and Conservator of Forests in Tinasserim, Myanmar.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, woody, without nodal roots. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, smooth, glabrous on surface. Leaf-sheath oral hairs scanty. Leaf-sheath auricles absent. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades lanceolate, 7–15 cm long, 10–15 mm wide. Leaf-blade midrib evident. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface smooth. Leaf-blade apex acuminate, smooth.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, eventually visible between lemmas.

Glumes. Glumes several, 1–2 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 5–6 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3, plumose. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, oblong, sulcate on hilar side, hairy at apex.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa blumeana Schult. f. *Syst.* 7, 2: 1343 (1830).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from Philippines. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: T: *E.D. Merrill* 148, Jul 1914, Philippines: Luzon, Rizal (L).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (763, Pl. 1509 as *B. stenostachya*), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 2).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Carl Ludwig Blume (1796–1862) German-born Dutch botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 50–100 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid, spreading. Buds or branches present on lower part of culm. Culm-sheaths present, 15–30 cm long, hispid, with dark brown hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 5 mm high, ciliate. Culm-sheath blade ovate, narrower than sheath, reflexed, pubescent, acute. Leaf-sheath oral hairs lacking or ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base cuneate or truncate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, zig-zag, 4 mm long, eventually visible between lemmas, pubescent.

Glumes. Glumes several.

Florets. Fertile lemma lanceolate, 6–8 mm long, without keel, more than 3-veined. Lemma apex acute. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3. Anthers 6, 4–5 mm long. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, Pacific.

Country /Province /State. **China, Eastern Asia.** China South Central, China Southeast. Nansei-Shoto, Taiwan. **Indo-China, Malesia.** Thailand, Vietnam. Java, Malaya, Philippines. **Northwestern Pacific.** Marianas (*).

TDWG4. Fujian, Guangxi. Yunnan.

Bambusa boniopsis McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 7 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 12).

Derivation (Clifford & Bostock 2007): Gk *opsis*, resemblance. Resembling *Bonia*.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200 cm long, 10 mm diam., woody. Culm-internodes terete, thick-walled, distally mealy. Culm-nodes flush with internodes, glabrous. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, coriaceous, glabrous, auriculate. Culm-sheath blade narrowly ovate, erect, glabrous on surface. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Flower and Fruit. $2n = 64$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China.** Hainan.

Bambusa brevispicula Holttum. *Kew Bull.* 21: 277 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from New Guinea. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Western New Guinea: Idenburg River, 6 km SW of Bernhard Camp, 1200 m., *Brass 12825* (HT: BM; IT: L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. brevis*, short; spica, thorn; -ula, diminutive. Spikelets one-floreted.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody, without nodal roots. Culm-internodes terete, thin-walled, 20 cm long, distally hispid, with reflexed hairs. Lateral branches dendroid. Branch complement three, with subequal branches. Culm-sheaths present. Leaves cauline. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate, 2.5 mm long. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–25 cm long, 28–50 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 0.5–1 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 3 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea 4 mm long. Palea keels approximate, ciliolate. Palea apex dentate, 2 -fid. Rhachilla extension 2 mm long, pilose. Apical sterile florets 1 in number, male, elliptic, 2 mm long.

Flower and Fruit. Lodicules 3, ciliate. Anthers 6, 3 mm long, anther tip apiculate. Stigmas 3. Ovary umbonate, glabrous.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuaasia. New Guinea West Papua (Irian Jaya). New Guinea.

Bambusa brunneoaciculia G.A. Fu. *Guihaia*, 13(2): 108 (1993).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 350–650 cm long, 5–25 mm diam., woody. Culm-internodes terete, thick-walled, 25–33 cm long, distally glabrous. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, hispid, with appressed hairs, with black hairs, auriculate, with equal auricles, ciliate on shoulders. Culm-sheath ligule 2 mm high, dentate. Culm-sheath blade triangular, deciduous, erect, glabrous on surface. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4.5–15.5 cm long, 10–14 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa burmanica Gamble. *Ann. Bot. Gard. Calc.* 7: 35 (1896).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 8).

Images: H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

Derivation (Clifford & Bostock 2007): *L. -ica*, belonging to. From Burma, now Myanmar.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, 100 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled or solid, 30 cm long, dark green. Culm-nodes pubescent. Lateral branches dendroid. Culm-sheaths present, 0.9 times as long as wide, green, hairy on margins, convex at apex, auriculate, ciliate on shoulders. Culm-sheath ligule entire. Culm-sheath blade triangular, cordate, acute. Leaves cauline. Leaf-sheaths striately veined, pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 25–30 cm long, 40–50 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, bracts 25 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, pubescent, hairy above.

Glumes. Glumes two. Upper glume ovate. Upper glume inner surface pubescent. Upper glume mucronate.

Florets. Fertile lemma ovate, 6–7 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea 5–7 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip apiculate. Stigmas 3, pubescent. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, South America.

Country /Province /State. China. China South Central. **Indo-China, Malesia.** Myanmar, Thailand. Malaya. **Mesoamerica.** Panama.

TDWG4. Yunnan.

Bambusa cacharensis R.B. Majumdar. *Bull. Bot. Surv. India*, 25:237 (1985).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cachar: *Majumder 74265* (CAL holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From the Cachar in the Brahmaputra Valley, India.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 2000–2100 cm long, 50–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 12–15 cm long, 0.5 times as long as wide, yellow, hispid, with tawny hairs, auriculate, ciliate on shoulders. Culm-sheath blade ovate, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 16–20 cm long, 15–25 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 30–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two. Lower glume ovate, 5 mm long. Upper glume ovate, 8 mm long.

Florets. Fertile lemma ovate, 10–14 mm long, without keel, more than 3-veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Assam.

Bambusa cerosissima McClure. *Lingnan Sc. Journ.* 1936, 15: 637 (1936).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE COLLECTION: *F.A. McClure 1489*, 21 Mar 1925, China: Kwangtung (US-2807458, US-2802851, US-2802850, US-2807459). The publication cites the lu herb..

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 22).

Derivation (Clifford & Bostock 2007): *L. cera*, wax; -issima, most. Culms and leaf-sheaths densely covered with wax when young.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000–1500 cm long, 40–50 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 40–60 cm long, glaucous. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, glaucous, pubescent, with erect hairs, auriculate, setose on shoulders. Culm-sheath blade narrowly ovate, reflexed, pubescent. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 15–20 cm long, 10–20 mm wide. Leaf-blade venation with 10–14 secondary veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several.

Florets. Fertile lemma ovate, 9 mm long, shiny, without keel, rounded except near apex, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma. Palea keels eciliate. Palea apex truncate or obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. China Southeast. **Indo-China.** Vietnam.

TDWG4. Guangdong, Guangxi.

Bambusa chungii McClure. *Lingnan Sc. Journ.* 1936, 15: 639 (1936).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE MATERIAL: *F.A. McClure LU 13413*, 28 Apr 1925, China: Kwangsi Chuang (US-2809291).

TYPE: *F.A. McClure 1589*, 28 Apr 1925, China: Kwangsi Chuang (US-2802856).

TYPE: *F.A. McClure 1589*, 28 Apr 1925, China: Kwangsi Chuang (US-2802853).

TYPE: *F.A. McClure 1589*, 28 Apr 1925, China: Kwangsi Chuang (US-2802852).

TYPE: *F.A. McClure 1589*, 28 Apr 1925, China: Kwangsi Chuang (US-2802854).

TYPE COLLECTION: *F.A. McClure LU 13413*, 28 Apr 1925, China: Kwangsi Chuang (US-13413).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 23).

Derivation (Clifford & Bostock 2007): in honor of W. K. Chung, Lingnan University President.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1200–1800 cm long, 30–50 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 40–100 cm long, glaucous. Culm-nodes pubescent. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, yellow, pubescent, with appressed hairs, auriculate, setose on shoulders. Culm-sheath ligule fimbriate or ciliolate or ciliate. Culm-sheath blade narrowly ovate, reflexed, pubescent. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 10–20 cm long, 20–35 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, comprising 1–2 gemmiferous bracts, 1–2 empty glumes.

Florets. Fertile lemma ovate, 9 mm long, without keel, 9–13 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma. Palea keels eciliate. Palea apex truncate or obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 2–3. Ovary umbonate, pubescent on apex.

$2n = 64$ (1 ref TROPICOS), or 72 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China Southeast.

TDWG4. Fujian, Guangdong, Guangxi, Hunan. Yunnan.

Bambusa chunii L.C. Chia & H.L. Fung. *Kew Bull.*, 37(4): 593 (1983).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 1).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1400 cm long, 45–65 mm diam., woody, with root thorns from the nodes. Culm-internodes terete. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous, hairy on margins, auriculate, setose on shoulders, shoulders with curved hairs, shoulders with 5–10 mm long hairs. Culm-sheath ligule 5–7 mm high, dentate. Culm-sheath blade lanceolate, erect. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, curly, 5–7 mm long. Leaf-sheath auricles absent. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9.5–19 cm long, 15–20 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Hong Kong.

Bambusa clavata C.M.A. Stapleton. *Edinburgh J. Bot.*, 51(1): 12 (1994).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Bhutan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Gaylegphug, 25.56N 90.31E, 17 Feb 1989, C.M.A. Stapleton 814 (HT: THIMPHU).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (482, Fig. 1 & 488, Fig. 2).

Derivation (Clifford & Bostock 2007): *L. clava*, club; *ata*, possessing. Possibly a reference to the obtuse lemma.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms drooping at the tip, 1000–2000 cm long, 45–90 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 20–40 cm long, distally pruinose. Lateral branches dendroid. Buds or branches absent from lower part of culm. Bud complement 1. Branch complement three or several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, 20 cm long, 0.6 times as long as wide, pubescent, with appressed hairs, with dark brown hairs, auriculate, with 5–10 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 3–5 mm long hairs. Culm-sheath ligule 2–15 mm high, fimbriate. Culm-sheath blade triangular, deciduous, 10 cm long, 200 mm wide. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, erect or spreading, 2–5 mm long. Ligule a ciliolate membrane, 0.5–1 mm long, pubescent on abaxial surface, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, with 1-keeled prophylls, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 32 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–2 mm long.

Glumes. Glumes several, comprising 3 gemmiferous bracts, 0–1 empty glumes.

Florets. Fertile lemma ovate, 5–19 mm long, purple, without keel, 11–13 -veined, more than 3-veined. Lemma apex acute. Palea 4–15 mm long. Palea keels wingless, ciliate, adorned all along, with hairs 0.5–1 mm long. Palea surface scaberulous (on flanks), pilose, hairy on margins, hairy above. Palea apex entire or dentate, 2-fid, acute. Apical sterile florets resembling fertile though underdeveloped or distinct from fertile, if distinct rudimentary.

Flower and Fruit. Lodicules 3, 3–7 mm long, membranous, ciliate. Anthers 6, 8–10 mm long, yellow, anther tip apiculate or penicillate. Filaments free. Stigmas 2–3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Eastern Himalaya.

TDWG4. Bhutan.

Bambusa contracta L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 376 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. contracta*. Inflorescence a narrow panicle.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 500–600 cm long, 20–30 mm diam., woody. Culm-internodes terete, thin-walled, 40–57 cm long, distally mealy. Culm-nodes flush with internodes, glabrous. Lateral branches dendroid. Branch complement several, with subequal branches. Culm-sheaths present, deciduous, glabrous or hispid, hairy at the base, with appressed hairs or erect hairs, with tawny hairs, convex at apex, auriculate, with unequal auricles, with 30 mm high auricles, with 7–10 mm wide auricles, setose on shoulders. Culm-sheath ligule 2 mm high, dentate. Culm-sheath blade ovate, narrower than sheath, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–15 cm long, 13–15 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa copelandii Gamble. *Brandis, Indian Trees*, 671 (1906).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Gamble 27166*, Sep 1898, India: Dehra Dun: cultivated, 700 m (2200 ft) (K). LT designated by Xia & Stapleton, *Kew Bull.* 52: 484 (1997).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Origin not given by author but probably in honor of a colleague, Ralph Copeland (1837–1905) whose collections from Trinidad are in the Royal Botanic Gardens, Kew.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, 16–19 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 25–45 cm long, distally pubescent. Culm-nodes flush with internodes. Lateral branches dendroid. Culm-sheaths present, 38 cm long, 0.9 times as long as wide, pubescent, with yellow hairs, convex at apex. Culm-sheath blade lanceolate. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 33–38 cm long, 45–80 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface scabrous, rough abaxially, pubescent, hairy abaxially.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1–4.5 cm between clusters, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25–38 mm long, 5–7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two, persistent, similar, shorter than spikelet. Lower glume ovate, 7 mm long, purple, 12 -veined. Lower glume lateral veins with cross-veins. Lower glume surface pubescent. Lower glume margins ciliate. Lower glume apex acute. Upper glume ovate, 12 mm long, purple, 22 -veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex acute.

Florets. Fertile lemma ovate, 12 mm long, without keel, 24 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface pubescent. Lemma margins ciliate. Lemma apex acute. Palea 13 mm long, 3–5 -veined. Palea keels ciliate. Palea surface pilose, hairy on margins. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, 8 mm long, yellow, anther tip apiculate. Filaments 15 mm long. Stigmas 1, plumose. Styles 15 mm long. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, 1.2–1.6 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa corniculata L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 368 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. cornu*, horn; *-ulus*, diminutive; *-ata*, resembling. Lemma apex surmounted by a short cone.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 800 cm long, 40–70 mm diam., woody, with aerial roots from the nodes or with root thorns from the nodes. Culm-internodes terete, thick-walled, 20–32 cm long, distally mealy. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, glabrous, truncate at apex, auriculate, with unequal auricles, with 8 mm wide auricles, setose on shoulders, shoulders with curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule 3 mm high, ciliolate. Culm-sheath blade narrowly ovate or triangular, narrower than sheath, erect, pubescent. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–20 cm long, 10–20 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa cornigera McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 7 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. cornu*, horn; *gigno*, bear. The young curved shoots resemble the horn of a buffalo (*Bos bubalus*).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 800–1300 cm long, 60–80 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, 24–28 cm long, distally pruinose. Culm-nodes pubescent. Lateral branches dendroid, arising from lower culm. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, deciduous, coriaceous, hispid, hairy above, with appressed hairs, with white hairs, truncate at apex, auriculate, with equal auricles, setose on shoulders. Culm-sheath ligule 3 mm high, ciliate. Culm-sheath blade triangular, erect. Leaves cauline. Ligule an eciliate membrane. Collar

with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 12–20 cm long, 20–30 mm wide. Leaf-blade surface pubescent. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa comillensis M.K. Alam. *Bangladesh J. Pl. Taxon.*, 3(2): 41 (1996).

TYPE from Bangladesh. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Comilla: Hai (DALB iso).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Bangladesh.

Bambusa crispiaurita W.T. Lin & Z.M. Wu. *J. South China Agr. Univ.* 13 (2): 81, f. 1 (1992).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. crispus*, curly.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip, 800 cm long, 20–60 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 15–25 cm long, mid-green and yellow, striped, distally pilose. Lateral branches dendroid, arising from lower culm. Buds or branches present on lower part of culm. Branch complement several or many, with 3 branches dominant, thinner than stem. Culm-sheaths present, deciduous, coriaceous, green and yellow, striped, hispid, with tawny hairs, hairy on margins, truncate at apex, auriculate, with equal auricles, with 35–40 mm high auricles, with 10 mm wide auricles, glabrous on shoulders or ciliate on shoulders. Culm-sheath ligule 4–5 mm high, dentate. Culm-sheath blade lanceolate or narrowly ovate, as wide as sheath at base, deciduous, erect. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 8–17 cm long, 8–18 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa diaoluoshanensis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 369 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 1000 cm long, 40–50 mm diam., woody, without nodal roots or with aerial roots from the nodes or with root thorns from the nodes. Culm-internodes terete, thick-walled, 26–29 cm long, distally hispid. Lateral branches dendroid, erect. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, hispid, with appressed hairs, with tawny hairs, convex at apex, auriculate, with unequal auricles, with 5 mm wide auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 3 mm high, ciliolate. Culm-sheath blade triangular, constricted at base, erect, scabrid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7.5–16 cm long, 13–18 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa dissimulator McClure. *Lingnan Sci. J.* 19(3): 413–415, t. 20. 1940.

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *H.L. Fung BG2348*, 20 Apr 1931, China: Kwangtung, Lingnan (L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. dissimulator*, concealer. Species readily confused with others.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip, 1000–1500 cm long, 50–75 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement three. Culm-sheaths present, deciduous, coriaceous, green, pubescent, auriculate, with unequal auricles, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule 5–7 mm high, fimbriate. Culm-sheath blade ovate, cordate, deciduous, hispid or with ciliate margins, acuminate. Leaves cauline, 5–14 per branch. Leaf-sheaths smooth or scaberulous, glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous or pubescent. Leaf-blades lanceolate, 7–17 cm long, 10–15 mm wide. Leaf-blade venation indistinct, with 6–12 secondary veins, without cross veins. Leaf-blade surface puberulous, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2–3 mm long, pubescent, hairy at tip.

Glumes. Glumes several, comprising 2 gemmiferous bracts, 0–1 empty glumes.

Florets. Fertile lemma lanceolate, 12 mm long, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma apex obtuse or acute. Palea 1 length of lemma. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex.

$2n = 64$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, South America.

Country /Province /State. China. China Southeast. Brazil. Brazil Southeast.

TDWG4. Guangdong.

Bambusa distegia (Keng & Keng f.) L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.* 18(2): 213 (1980).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Sinocalamus distegius* Keng & Keng f., *J. Wash. Acad. Sci.* 36: 76, f. 1 (1946). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Sichuan: hilly areas, streams, 300–500 m.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figs. 21 & 24).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip or inclined at the tip, 1000 cm long, 45 mm diam., woody. Culm-internodes terete, thick-walled, 20–50 cm long, distally pruinose and pubescent. Culm-nodes pubescent. Lateral branches dendroid, ascending or spreading. Branch complement many, in a clump. Culm-sheaths present, deciduous, 20–26 cm long, 0.5 length of internode, coriaceous, hispid, with tawny hairs, truncate at apex, without auricles, glabrous on shoulders or ciliate on shoulders, shoulders with 3–5 mm long hairs. Culm-sheath ligule 1–2 mm high, dentate or dentate and ciliate. Culm-sheath blade lanceolate or triangular, spreading, 1.3–13.5 cm long, 5–32 mm wide, glabrous on surface, acuminate. Leaf-sheaths 3.5–4.8 cm long, hispid, with reflexed hairs. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades lanceolate, 5–16 cm long, 8–14 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 13–18 mm long, 5–7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–2 mm long, glabrous.

Glumes. Glumes several, 1–2 empty glumes, persistent, similar, shorter than spikelet.

Florets. Fertile lemma ovate, 8–10 mm long, chartaceous, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acuminate. Palea chartaceous, 4 -veined, 2-keeled but the uppermost without keels. Palea keels ciliate. Palea surface pilose, hairy on margins.

Flower and Fruit. Lodicules 3, 2–4 mm long. Anthers 6, 5–6 mm long, anther tip penicillate. Filaments 8 mm long. Stigmas 1–2, pubescent. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, fusiform, 6 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central. Sichuan.

Bambusa dolichoclada Hayata. *Ic. Pl. Formos.* 6: 144 (1916).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (750, Pl. 1503), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 9).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–2000 cm long, 40–110 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 20–60 cm long, mid-green, distally glabrous. Lateral branches dendroid. Bud complement 1. Branch complement several, in a clump, thinner than stem. Culm-sheaths present, deciduous, coriaceous, pubescent, with dark brown hairs, truncate at apex, auriculate, ciliate on shoulders. Culm-sheath blade triangular, 2 cm long, glabrous on surface or pubescent. Leaves 5–13 per branch. Leaf-sheaths 4–6 cm long, puberulous. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades deciduous at the ligule, lanceolate, 9–18 cm long, 13–23 mm wide. Leaf-blade venation with 6–8 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 3–4 mm long.

Glumes. Glumes two, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 2–4.5 mm long, 9–13 -veined. Lower glume apex acute. Upper glume ovate, 2–4.5 mm long, 9–13 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 9 mm long, 6 mm wide, without keel, 18–20 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Palea 8.5 mm long, 13 -veined. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, obovate, 2 mm long, membranous, veined, ciliate. Anthers 6, 4.5 mm long. Stigmas 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China and Eastern Asia. China Southeast. Nansei-Shoto, Taiwan. TDWG4. Fujian.

Bambusa duriuscula W.T. Lin. *Bull.Bot. Lab. North-East. Forest. Inst.*, 1980(6): 87 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 15).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1200 cm long, 100 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, thick-walled, distally glabrous. Lateral branches dendroid. Branch

complement several, with 1 branch dominant. Culm-sheaths present, deciduous, glabrous or puberulous, with appressed hairs, with tawny hairs, truncate at apex or convex at apex, auriculate, with unequal auricles, setose on shoulders, shoulders with 8 mm long hairs. Culm-sheath ligule 3 mm high, dentate or ciliate. Culm-sheath blade triangular, narrower than sheath, erect, pubescent, acuminate. Leaves cauline, 8 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, 12 mm long. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4.5–18 cm long, 8–25 mm wide. Leaf-blade venation with 8–10 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1.5 mm long, pubescent.

Glumes. Glumes two, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 7 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 1 length of lemma. Palea keels eciliate. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3 mm long, membranous, veined, ciliate. Anthers 6, 4.5 mm long. Stigmas 2. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa emeiensis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 18(2): 214 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): D.Farrelly, *The Book of Bamboo* (1984) (as *Sinocalamus affinis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 19), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 26).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Ligule an eciliate membrane or a ciliolate membrane.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1.2–1.5 cm long, 2–3 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches, 50 cm long overall.

Fertile Spikelets. Spikelets comprising 4 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 4 empty glumes, persistent, shorter than spikelet. Lower glume ovate, 2 mm long, chartaceous. Lower glume margins ciliolate. Lower glume apex obtuse. Upper glume ovate, 4 mm long, chartaceous. Upper glume margins ciliolate. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 5 mm long, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex mucronate. Palea oblong, 3.5 mm long. Palea keels ciliolate, adorned above.

Flower and Fruit. Lodicules 3, 1 mm long, veined, ciliate. Anthers 3. Stigmas 3. Ovary pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China Southeast.

TDWG4. Guangxi, Hunan. Guizhou, Sichuan, Yunnan.

Bambusa eutuldoides McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 8 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 7, as var. *eutuldoides*).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1200 cm long, 63 mm diam., woody. Culm-internodes terete, distally mealy.

Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, deciduous, glabrous or hispid, with appressed hairs, auriculate, with unequal auricles, ciliate on shoulders. Culm-sheath ligule 7 mm high, ciliolate. Culm-sheath blade triangular, deciduous, erect, pubescent. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia, South America.

Country /Province /State. China. China Southeast. **Western South America.** Colombia.

TDWG4. Guangdong, Guangxi.

Bambusa farinacea K.M. Wong. *Sandakanian*, 3: 23 (1993).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kelantan: Wong & Saw FRI 34407 (KEP holo, A, K, KLU, L, SAN, SAR, SING).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. farina*, flour; -acea, resembling. Culms white with wax.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 800–1000 cm long, 35–70 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 20–35 cm long, distally pruinose or pubescent. Lateral branches dendroid. Bud complement 1. Culm-sheaths present, green, hispid, with dark brown hairs, auriculate, with 10–20 mm high auricles, setose on shoulders, shoulders with 8–20 mm long hairs. Culm-sheath ligule 4 mm high, ciliate. Culm-sheath blade triangular, erect. Leaves cauline. Leaf-sheath oral hairs setose, 2–5 mm long, pale. Leaf-sheath auricles erect, 2–4 mm long. Ligule an eciliate membrane, 0.5–1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–22 cm long, 10–25 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–42 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 5 mm long, glabrous or sparsely hairy.

Glumes. Glumes several, comprising 2–3 gemmiferous bracts, 1–3 empty glumes.

Florets. Fertile lemma ovate, 10–15 mm long, without keel, 18 -veined, more than 3-veined. Lemma inner surface pubescent (above). Lemma apex cuspidate. Palea 13–16 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3 mm long, membranous, ciliate. Anthers 6, 5 mm long, yellow, anther tip smooth. Filaments free. Stigmas 3. Styles 0 mm long. Ovary umbonate, pubescent on apex.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Bambusa fimbriligulata McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 10 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600 cm long, 30 mm diam., woody. Culm-internodes terete, thin-walled, distally hispid. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, hispid, with tawny hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 1.5 mm high, ciliolate. Culm-sheath blade lanceolate, deciduous, erect, scabrid. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty. Leaf-sheath auricles absent. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 13–17 cm long, 14–28 mm wide. Leaf-blade venation without cross veins or with obscure cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
TDWG4. Guangxi.

Bambusa flexuosa Munro. *Trans. Linn. Soc.* 26: 101 (1868).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Hance 10000*, China: circa Canton (?). ST: *G. Staunton s.n.*, China: Quantung (BM).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 2).

Derivation (Clifford & Bostock 2007): L. *flecto*, bend; -osa, abundance. Inflorescence branches lax and drooping or bent in a zigzag fashion.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–1000 cm long, woody, with root thorns from the nodes. Culm-internodes terete, thin-walled, 5.5–7.5 cm long, distally glabrous. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface or hirsute, outer margin glabrous. Leaf-sheath oral hairs ciliate, deciduous. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–10 cm long, 12–14 mm wide. Leaf-blade venation indistinct, with 6–8 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed slightly, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, eventually visible between lemmas, pubescent.

Glumes. Glumes two. Upper glume ovate. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6 mm long, without keel, 7–11 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma apex acuminate. Palea 5–6 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, anther tip apiculate. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp, oblong, 4–5 mm long, glabrous.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. Hainan, China Southeast. **Indo-China.** Cambodia, Vietnam.

TDWG4. Guangdong.

Bambusa fruticosa Holttum. *Kew Bull.* 21: 275 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C.E. Carr 12937*, 19 Aug 1935, Papua New Guinea: New Guinea, 335 m (L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *frutex*, shrub; -osa, abundance. Plant shrubby.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 100 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths pubescent. Leaf-sheath oral hairs ciliate, 10 mm long. Leaf-sheath auricles falcate. Ligule a ciliate membrane, 10 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–30 cm long, 15–30 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 11–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2 mm long.

Glumes. Glumes persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 9–11 mm long, without keel, more than 3-veined. Lemma apex apiculate. Palea 4-veined. Palea keels ciliolate. Apical sterile florets 1 in number, barren, rudimentary.

Flower and Fruit. Lodicules absent. Anthers 6, 4.5 mm long. Stigmas 3. Ovary umbonate.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuaia. New Guinea PNG. New Guinea.

Bambusa funghomii McClure. *Lingnan Sc. Journ.* 19: 535 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 3).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip or inclined at the tip, 1500 cm long, 65 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, solid. Culm-nodes swollen, glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, coriaceous, green, hispid, hairy at the base, glabrous on margins, convex at apex, auriculate, with unequal auricles, setose on shoulders, shoulders with curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule 5–7 mm high, dentate or ciliolate. Culm-sheath blade triangular, demarcated but persistent, erect, pubescent. Leaves cauline, 3–6 per branch. Leaf-sheaths 5–15 cm long, ribbed, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs scanty or setose, pale. Leaf-sheath auricles absent or falcate. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–15 cm long, 5–25 mm wide. Leaf-blade venation with 6–12 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong, Guangxi.

Bambusa garuchokua Barooah & Borthakur. *Indian J. Forest.* 24(4): 506 (2002).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Assam, Lakhimpur: *Barooah 2505* (ASSAM holo).

Illustrations (Books): No illustration found (BKS).

Classification. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms geniculately ascending, 1000–1500 cm long, 50–100 mm diam., woody, with aerial roots from the nodes. Culm-internodes terete, thin-walled, 15–46 cm long, grey, distally glabrous. Lateral branches dendroid. Buds or branches absent from lower part of culm. Culm-sheaths present, deciduous, 10–12 cm long, 0.66 times as long as wide, hispid, with appressed hairs, with black hairs, truncate at apex or convex at apex, auriculate, ciliate on shoulders. Culm-sheath ligule 2 mm high. Culm-sheath blade triangular, 4–5 cm long. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose, deciduous, 2 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades lanceolate, 10–25 cm long, 15–25 mm wide, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

Bambusa gibba McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 10 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Fung 20709*, 30 Sep 1933, China: Kwangsi Chuang (Lingnan University Herbarium; IT: US-2802944, US2802943, US-2802942, US-2804298, US-2804299, US-2804300). T: *F.A. McClure s.n.*, 18 Feb 1929, China: Kiangsi, Kanchow (L).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 4).

Derivation (Clifford & Bostock 2007): L. swelling. Nodes gibbous.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–1000 cm long, 50–60 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, distally mealy and hispid. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous or hispid, with appressed hairs, with tawny hairs, auriculate, with unequal auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 3 mm high, dentate and ciliolate. Culm-sheath blade triangular, deciduous, erect, scabrid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. Hainan, China Southeast. **Indo-China.** Vietnam.

TDWG4. Fujian, Guangdong, Guangxi, Jiangxi.

Bambusa gibboides W.T. Lin. *Acta Phytotax. Sin.* 16(1): 70–71, pl. 3 (1978).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 14).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 1000–1200 cm long, 50–70 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 40–47 cm long, distally pruinose and hispid. Lateral branches dendroid, arising from lower culm. Buds or branches present on lower part of culm. Branch complement several or many, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, coriaceous, pubescent, hairy below, with appressed hairs, with dark brown hairs, truncate at apex, auriculate, with unequal auricles, with 2.5–6 mm high auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 2–3 mm high, dentate and ciliolate. Culm-sheath blade narrowly ovate or triangular, narrower than sheath, erect. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 10–20 cm long, 13–20 mm wide. Leaf-blade venation with 12–18 secondary veins. Leaf-blade surface pubescent, densely hairy, hairy abaxially.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, flattened, 3–4 mm long, pilose.

Glumes. Glumes several, comprising 2 gemmiferous bracts, 1 empty glumes, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 6–8 mm long. Lower glume apex acute, mucronate.

Florets. Fertile lemma elliptic or ovate, 10–14 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea 11–15 mm long, 14–17 -veined. Palea keels pubescent, adorned above. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6. Stigmas 3. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa glabrovagina G.A. Fu. *Acta Phytotax. Sin.*, 20(4): 489 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–700 cm long, 15–40 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, distally glabrous. Lateral branches dendroid. Branch complement

several. Culm-sheaths present, deciduous, glabrous, truncate at apex, auriculate, with unequal auricles, setose on shoulders. Culm-sheath ligule 1 mm high, dentate. Culm-sheath blade triangular, constricted at base, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 3.8–13.2 cm long, 7–15 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 16–29 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1.5 mm long.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 7.5 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 1 length of lemma. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, 4–4.5 mm long. Stigmas 3. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa glaucescens (Willd.) Merrill. *Philipp. J. Sci.* 7(4): 230 1912.

Regarded by K as a synonym (*B. multiplex*).

Accepted by: N.Tsvelev, *Grasses of the Soviet Union* (1983).

Basionym or Replaced Name: *Ludolfia glaucescens* Willd., *Ges. Naturf. Fr. Berl. Mag.* 2: 320 (1808).

Illustrations (Books): N.L.Bor, *Gramineae in Flora of Iraq* (1968) (43, Pl. 12), D.Farrelly, *The Book of Bamboo* (1984) (183).

Derivation (Clifford & Bostock 2007): *L. glaucesco*, become glaucous. Foliage and/or other parts bluish-green.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Seychelles (+).

Bambusa glaucophylla Widjaja. *Reinwardtia* 11(2): 59 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Java, Bogor: *Widjaja* (BO holo, K, L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *Gk. glaukos*, bluish-green; *phyllon*, leaf. Leaf-blades glaucous.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, straight or zigzag, erect at the tip, 500 cm long, 15–25 mm diam., woody. Culm-internodes terete, thick-walled, 20–25 cm long, mid-green, distally glabrous or pilose. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement three or several. Culm-sheaths present, deciduous, 8–12 cm long, hispid, with dark brown hairs or black hairs, auriculate, with 2 mm high auricles, ciliate on shoulders, shoulders with 2–3 mm long hairs. Culm-sheath ligule 1–2 mm high, entire or lacerate. Culm-sheath blade triangular, constricted at base, erect, glabrous on surface. Leaves cauline. Leaf-sheaths glabrous on surface or pilose, hairs white or black. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate, 1–2 mm long. Ligule an eciliate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–12 cm long, 10–15 mm wide, mid-green, variegated (white stripe). Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Java.

Bambusa grandis (Q.H. Dai & X.L. Tao ex Keng f.) D.Ohrnberger. *Bamboos of the World Intro.* 4: 18 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Basionym or Replaced Name: *Dendrocalamopsis grandis* Q.H. Dai & X.L. Tao, *Acta Phytotax. Sin.* 20:210 (1982).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 1000–1500 cm long, 80–100 mm diam., woody. Culm-internodes terete, thick-walled, 30–40 cm long. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, convex at apex, auriculate. Culm-sheath ligule 3–5 mm high, dentate. Culm-sheath blade lanceolate, deciduous, reflexed. Leaves cauline, 6–8 per branch. Leaf-sheaths 8–12 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–1.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–20 cm long, 30–50 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate. Upper glume margins ciliate.

Florets. Fertile lemma ovate, 10–12 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma margins ciliate. Lemma apex acute. Palea keels ciliolate. Palea surface glabrous. Palea apex obtuse, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 6 mm long, anther tip apiculate. Stigmas 1. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast. Guangxi.

Bambusa griffithiana Munro. *Trans. Linn. Soc.* 26: 99 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India or Burma. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. in Ind. or. Burmah, Mogoung, *Griffith s.n.*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of William Griffith (1810–1845), English-born surgeon-botanist in India and southeast Asia.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths keeled, striately veined, glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate, 10–17 mm long. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5 cm long. Leaf-blades lanceolate, 25–38 cm long, 50–75 mm wide, glandular. Leaf-blade midrib conspicuous. Leaf-blade venation with 26–34 secondary veins. Leaf-blade surface smooth. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in stellate clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, subterete, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes two, persistent, shorter than spikelet. Upper glume ovate. Upper glume apex acute.

Florets. Fertile lemma ovate, 7 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea 1 length of lemma. Palea keels contiguous above a sulcus, eciliate. Apical sterile florets 1 in number, barren, linear, 5 mm long.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3, plumose. Ovary umbonate, glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa guangxiensis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 18(2): 214 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 25).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300 cm long, woody. Culm-internodes terete, thin-walled, distally hispid, with tubercle-based hairs. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, chartaceous, hispid, with appressed hairs, glabrous on margins, truncate at apex, auriculate, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule ciliolate. Culm-sheath blade lanceolate, constricted at base, deciduous, reflexed, glabrous on surface. Leaves cauline. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa hainanensis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 18(2): 213 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -ense*, denoting origin. From Hainan Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths keeled, striately veined, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule a ciliolate membrane, pubescent on abaxial surface. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 16–25 cm long, 19–32 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous or pilose, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rachilla internodes definite.

Glumes. Glumes one the lower absent or obscure or two.

Florets. Fertile lemma ovate, 10 mm long, purple, keeled, keeled above, more than 3-veined. Lemma surface glabrous. Lemma apex obtuse. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6. Stigmas 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa heterostachya (Munro) Holttum. *Journ. Arn. Arb.* 27: 341 (1946).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Malaysia. **Basionym or Replaced Name:** *Gigantochloa heterostachya* Munro, *Trans. Linn. Soc.* 26: 125. (1868). T:<Type of Basionym>; *vide* TROPICOS and Kew Synonymy Database: Hab. in Malacca, prope Ayer Punas, circa domum, *Griffith s.n.*.

Illustrations (Books): S. Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995).

Images: H.B. Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);

Derivation (Clifford & Bostock 2007): Gk. heteros, different; stachys, ear of corn. Inflorescence has spikelets of two kinds.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, culms solitary. Rhizomes short, pachymorph. Butt sheaths absent. Culms 600–1000 cm long, 30–60 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, light green or mid-green, striped. Lateral branches dendroid. Buds or branches absent from lower part of culm. Culm-sheaths present, 12 cm long, hispid, with black hairs, auriculate, with 10 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 15 mm long hairs. Culm-sheath ligule 6 mm high, ciliate. Culm-sheath blade triangular, cordate, erect, 7 cm long, 50 mm wide, with ciliate margins, acuminate. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1–2 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–20 cm long, 20–25 mm wide.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 8–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 40 mm long, 8–10 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2 mm long.

Glumes. Glumes several.

Florets. Fertile lemma lanceolate, 15–20 mm long, without keel, more than 3-veined. Lemma apex acute. Palea 10-veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3 mm long, ciliate. Anthers 6, 8 mm long, purple, anther tip penicillate. Filaments united in a tube. Stigmas 1–3. Ovary umbonate.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya, Singapore.

Bambusa horsfieldii Munro. *Trans. Linn. Soc.* 26: 115 (1868).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, 700–800 cm long, 8–10 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled. Culm-nodes swollen. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate, 7 mm long. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base cuneate or broadly rounded, asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 30–35 cm long, 50–90 mm wide. Leaf-blade venation with 18–23 secondary veins. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, open, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, on a separate leafless culm.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, curved, 1–2 mm long, glabrous.

Glumes. Glumes two. Upper glume ovate, 3–5 mm long. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 6–7 mm long, without keel, more than 3-veined. Lemma surface scabrous. Lemma apex acute, mucronate. Palea 1 length of lemma. Palea surface puberulous, hairy on back. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, glabrous. Anthers 6, 2–3 mm long. Stigmas 3. Ovary umbonate.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Java, Philippines.

Bambusa indigena L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.* 19(3): 370 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Guangzhou, in *S. China Bot. Gard.* 15 June 1976; originally from Guangzhou, Longyandong, *Nan-Zhu* 2304 (HT: SCBI).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 800–1300 cm long, 30–60 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thick-walled, mid-green and purple, mottled, distally glabrous. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous, convex at apex, auriculate, with unequal auricles, ciliate on shoulders. Culm-sheath ligule 2–3 mm high, dentate. Culm-sheath blade triangular, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–15 cm long, 8–12 mm wide. Leaf-blade surface pubescent, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 9–11 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 1 length of lemma. Palea keels eciliate. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3 mm long, membranous, ciliate. Anthers 6, 4 mm long. Stigmas 3. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa insularis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.* 19(3): 370 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Guangdong: Guangzhou, in Sunyatsen Univ. Bamboo Garden, 1955; originally from Guangdong, Hainan Dao, *S.H. Chun* 9152 (HT: SCBI).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig.6).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 800–1000 cm long, 40–50 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thin-walled, 30–33 cm long, distally glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement three or several. Culm-sheaths present, deciduous, hispid, with appressed hairs, with tawny hairs, truncate at apex, auriculate, with subequal auricles, with 10 mm wide auricles, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule 3 mm high, dentate and fimbriate. Culm-sheath blade narrowly ovate or triangular, erect, glabrous on surface or hispid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–10 cm long, 11–15 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chengjiang, *Xue Jiru 1123* (HT: YNFC) 06 Nov 1977.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 19).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip or inclined at the tip, 700–1500 cm long, 30–70(–110) mm diam., woody. Culm-internodes terete, thick-walled, 35–45(–55) cm long, distally mealy. Culm-nodes swollen. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous but leaving a persistent girdle, 20–30 cm long, 1 times as long as wide, hispid, with yellow hairs or tawny hairs, concave at apex, without auricles, setose on shoulders. Culm-sheath ligule 2–3 mm high, ciliate. Culm-sheath blade lanceolate, constricted at base, erect or reflexed, pubescent. Leaves cauline, 5–12 per branch. Leaf-sheaths 5–7 cm long, glabrous on surface. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base truncate or cordate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7–15 cm long, 10–25 mm wide. Leaf-blade venation with 10–14 secondary veins. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate, filiform.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 7–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, pubescent.

Glumes. Glumes several, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 7–10 mm long, without keel, 13 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex cuspidate. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, 4.5 mm long, anther tip smooth. Stigmas 3. Ovary with a few apical hairs. Caryopsis with adherent pericarp.

Distribution (TDWG), Continent. Temperate Asia.

Country /Province /State. China. China South Central.

TDWG4. Guizhou, Sichuan, Yunnan.

Bambusa jacobsii Widjaja. *Reinwardtia* 11(2): 60 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Java, Blambangan Nat. Park: *Widjaja 6707* (BO holo, K, L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): In honor of Marius Jacobs (1929-) Dutch botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, zigzag, erect at the tip, 1000–2500 cm long, 55–100 mm diam., woody. Culm-internodes terete, thin-walled, 28–33 cm long, distally glabrous or pilose. Lateral branches dendroid. Buds or branches absent from lower part of culm. Branch complement several. Culm-sheaths present, persistent, 22.6 cm long, 1 times as long as wide, hispid, with dark brown hairs or black hairs, convex at apex, auriculate, with 6–9 mm high auricles, setose on shoulders, shoulders with 14 mm long hairs. Culm-sheath ligule 5 mm high, dentate. Culm-sheath blade triangular, erect, 9.5 cm long, 5.9 mm wide, pubescent. Leaves cauline. Leaf-sheaths pilose, hairs white or tawny. Leaf-sheath oral hairs scanty, 6–8 mm long. Leaf-sheath auricles falcate, 2 mm long. Ligule an eciliate membrane, 2 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 21.6–34 cm long, 30–45 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG), Continent. Tropical Asia.

Country /Province /State. Malesia. Java.

Bambusa khasiana Munro. *Trans. Linn. Soc. London* 26(1): 97. 1896.

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Hooker 1097*, Hab. in India or. Khasia, 2000–4000 ft, Churra ST: *Hooker 496*, India: Jasper Hill, Mahadeb.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ana, indicating location. From the Khasia Hills, India.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, culms solitary. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms erect, 1000–1500 cm long, 25–30 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 13–38 cm long, dark green, distally glabrous or pubescent. Lateral branches dendroid. Culm-sheaths present, 13–15 cm long, 1.2 times as long as wide, pubescent, hairy throughout, with appressed hairs, with tawny hairs, truncate at apex, without auricles. Culm-sheath blade triangular, acuminate. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs setose, deciduous. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–2 mm long, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.5–0.7 cm long. Leaf-blades lanceolate, 10–23 cm long, 25–35 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 12–16 secondary veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate, hairy.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 1–4 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 6–7 mm long, without keel, 11–13 -veined, more than 3-veined. Lemma apex acute, mucronate. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG), Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

TDWG4. Manipur, Meghalaya.

Bambusa kingiana Gamble. *Ann. Roy. Bot. Gard. (Calcutta)* 7: 46. 1896.

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Burma. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Petsut: Oliver.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Philip Parker King (1791–1856) British Naval officer, born on Norfolk Island, died Sydney, Australia.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 2000–2500 cm long, 70–100 mm diam., woody, without nodal roots. Culm-internodes terete. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface, outer margin hairy. Leaf-sheath auricles absent. Ligule an eciliate membrane, erose. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5–0.7 cm long. Leaf-blades lanceolate, 25–30 cm long, 25–35 mm wide, glandular. Leaf-blade midrib conspicuous. Leaf-blade venation with 20–28 secondary veins. Leaf-blade surface smooth, puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 12 mm long, 5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, 2 mm long.

Glumes. Glumes two, persistent, shorter than spikelet. Upper glume ovate. Upper glume margins ciliate. Upper glume apex acute, mucronate.

Florets. Fertile lemma ovate, 5 mm long, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 4 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip penicillate. Stigmas 3, plumose. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa klossii Ridley. *Fl. Malay. Penin.* 5: 259. 1925.

More checking of status required.

TYPE from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Johore, Genuang; Ridley.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): In honor of Cecil Boden Kloss (1877–1949) English zoologist and museum administrator who collected in Malaysia.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 400 cm long, 25 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 20–40 cm long, distally pruinose or pubescent. Lateral branches dendroid. Culm-sheaths present, purple, pubescent, with white hairs, auriculate, with 1 mm high auricles, setose on shoulders, shoulders with 5–8 mm long hairs. Culm-sheath ligule 2–3 mm high, dentate or ciliolate. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long. Leaf-blades lanceolate, 20–30 cm long, 15–32 mm wide. Leaf-blade surface glabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 30 cm long, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 1–2 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–2 mm long.

Glumes. Glumes several.

Florets. Fertile lemma lanceolate, 6–7 mm long, without keel, more than 3-veined. Lemma apex apiculate. Palea 8 -veined. Palea keels ciliate. Rhachilla extension 1–2 mm long. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 2–2.5 mm long, ciliate. Anthers 6, 4 mm long, purple, anther tip smooth. Stigmas 3. Ovary umbonate, glabrous.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Bambusa lako Widjaja. *Reinwardtia* 11(2): 61 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from East Timor. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Viqueque: *Widjaja 6535* (BO holo, K, L, US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Vernacular name for the species in Tetun (Tetum) language of East Timor.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 1500 cm long, 30–80 mm diam., woody. Culm-internodes terete, thin-walled, 25–35 cm long, purple and yellow, striped. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, 10.4–11.5 cm long, 2 times as long as wide, hispid, with dark brown hairs or black hairs, auriculate, with 4–8 mm high auricles, setose on shoulders, shoulders with 7–11 mm long hairs. Culm-sheath ligule 2–3 mm high, dentate. Culm-sheath blade triangular, erect, 2.3–4.5 cm long, 15–40 mm wide, glabrous on surface. Leaves cauline. Leaf-sheath oral hairs ciliate, 4 mm long. Leaf-sheath auricles falcate, 0.5–1 mm long. Ligule an eciliate membrane, 2 mm long, entire or erose. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 14.5–24.7 cm long, 24–32 mm wide. Leaf-blade surface puberulous, sparsely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Lesser Sunda Is.

Bambusa lapidea McClure. *Lingnan Sci. J.* 19(4): 531–533, t. 35. 1940.

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Fung* 19555, 1 Oct 1931, China: Kwangsi Chuang (US-19555).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 5).

Derivation (Clifford & Bostock 2007): *L. lapis*, stone; -idea, resembling. Latin form of the vernacular name "Stone Bamboo" by which the species is known in Southern China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–1700 cm long, 65 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, coriaceous, green or purple, distinctly mottled with last colour, glabrous, convex at apex or truncate at apex, auriculate, with unequal auricles, ciliate on shoulders, shoulders with 4 mm long hairs. Culm-sheath blade triangular, demarcated but persistent, erect, with ciliate margins, acute. Leaves cauline, 3–12 per branch. Leaf-sheaths glabrous on surface or puberulous, outer margin hairy. Leaf-sheath oral hairs lacking or ciliate, curly, pale. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane or a ciliolate membrane, scaberulous on abaxial surface. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades linear or lanceolate, 6–29 cm long, 5–32 mm wide. Leaf-blade venation indistinct or distinct, with 8–20 secondary veins, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2–4 mm long.

Glumes. Glumes several, comprising 2–4 gemmiferous bracts, 0–1 empty glumes.

Florets. Fertile lemma lanceolate, 8.5 mm long, without keel, more than 3-veined. Lemma lateral veins obscure or distinct. Lemma apex obtuse or acute. Palea keels ciliate, adorned above. Palea surface scaberulous. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1.5 mm long, membranous, veined, ciliate. Anthers 6, 4 mm long, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex.

$2n = 52$ (1 ref TROPICOS), or 64 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong, Guangxi, Sichuan, Yunnan.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Foshan: Lin Wantao 31880 (CANT holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–800 cm long, 20–50 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, thick-walled, 25–30 cm long, distally glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, hispid, with tawny hairs, hairy on margins, convex at apex, auriculate, with subequal auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 2 mm high, dentate. Culm-sheath blade triangular, erect. Leaves cauline, 4–6 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles erect. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–18 cm long, 7–16 mm wide. Leaf-blade venation with 10–14 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
TDWG4. Guangdong.

Bambusa laxa K.M. Wong. *Sandakania*, 3: 29 (1993).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Malaysia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Masjid Tinggi: Wong FRI 32382 (KEP holo, K, L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): culms overarched and reaching the ground.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 500–600 cm long, 20–40 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 20–35 cm long, distally pruinose or pubescent. Lateral branches dendroid. Bud complement 1. Culm-sheaths present, green, hispid, with dark brown hairs, auriculate, with 8 mm high auricles, setose on shoulders, shoulders with 10–12 mm long hairs. Culm-sheath ligule 2 mm high, ciliate. Culm-sheath blade lanceolate or triangular, erect, pubescent. Leaves cauline. Leaf-sheath oral hairs ciliate, 2–3 mm long. Ligule an eciliate membrane or a ciliate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6–15 cm long, 10–15 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–26 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2–3 mm long, pubescent, hairy at tip.

Glumes. Glumes several, comprising 2–3 gemmiferous bracts, 0–1 empty glumes.

Florets. Fertile lemma ovate, 10–15 mm long, without keel, 28 -veined, more than 3-veined. Lemma inner surface pubescent (above). Lemma margins ciliate. Lemma apex acute. Palea 11–14 -veined. Palea keels ciliate, adorned above, with hairs 0.4–0.8 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 2 mm long, membranous, ciliate. Anthers 6, 5–6 mm long, purple, anther tip penicillate. Filaments united in a tube. Stigmas 1, pubescent. Ovary umbonate, pubescent on apex.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Malaya.

Bambusa lenta L.C. Chia. *Guihaia*, 8(2): 125 (1988).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nanjing: Nan-Zhu 2106 (IBSC holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. flexible*. Culms wiry.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 500–1000 cm long, 40–45 mm diam., woody. Culm-internodes terete, thin-walled, 35–50 cm long, distally mealy and hispid. Culm-nodes flush with internodes. Lateral branches dendroid. Buds or branches absent from lower part of culm. Branch complement several. Culm-sheaths present, deciduous, coriaceous, hispid, with tawny hairs, convex at apex, auriculate, with unequal auricles, with 8 mm high auricles, with 6 mm wide auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 2–3 mm high, dentate. Culm-sheath blade triangular, narrower than sheath, erect, scabrid. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, erose. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9–17 cm long, 12–20 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Fujian.

Bambusa lingnanoides W.T. Lin. *Acta Phytotax. Sin.* 26(2): 146 (1988).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: *F.A. McClure 20026*, 13 Apr 1932, China: Kwangtung (US-2802860, US-21009).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk *-oides*, resembling. Similar to *Lingnania*..

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
Guangdong.

Bambusa longipalea W.T. Lin. *Acta Phytotax. Sin.* 26(3): 224 (1988).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Guangzhou: Wan-tao Lin 31857 (SCAC holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. longus*, long. Palea longer than for related species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–800 cm long, 30–60 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, 25–34 cm long. Culm-nodes glabrous. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous, auriculate, with equal auricles, ciliate on shoulders. Culm-sheath ligule 8 mm high, dentate. Culm-sheath blade triangular. Leaves cauline. Leaf-sheath oral hairs setose, 5–10 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5–1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 6.5–20 cm long, 5–18 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 40–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 3.5–4 mm long, pubescent.

Glumes. Glumes both absent or obscure or one the lower absent or obscure, 0–1 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 10–11 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 1.1 length of lemma. Palea keels ciliate, adorned above. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3–3.5 mm long, membranous, ciliate. Anthers 6, 5 mm long. Stigmas 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
Guangdong.

Bambusa longispiculata Gamble. *Brandis, Indian Trees*, 668 (1906).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Chittagong hill tracts, Ruby mines district, 3500 ft.,

Illustrations (Books): D.Farrelly, *The Book of Bamboo* (1984).

Derivation (Clifford & Bostock 2007): *L. longus*, long; *spica*, a point; hence, in particular, an ear or spike of grain; *-ula*, diminutive; *-atum*, possessing. Spikelets long.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1200–1500 cm long, 40–80 mm diam., woody, without nodal roots. Culm-

internodes terete, thin-walled, 10–20 cm long, mid-green. Lateral branches dendroid. Branch complement three or several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, hispid, with black hairs, auriculate, ciliate on shoulders. Culm-sheath blade ovate, as wide as sheath at base. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–25 cm long, 20–30 mm wide. Leaf-blade surface pilose, hairy abaxially.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile Spikelets. Spikelets comprising 4–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 40–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 4–10 mm long, pilose, hairy at tip.

Glumes. Glumes several, persistent, similar, shorter than spikelet. Lower glume ovate, without keels. Upper glume ovate, without keels.

Florets. Fertile lemma lanceolate, 10–30 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 10–19 mm long. Palea keels wingless. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, 10 mm long. Ovary umbonate. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, South America.

Country /Province /State. China. China Southeast. **Indian Subcontinent, Indo-China.** Bangladesh. Myanmar. Hawaii (*). **Mesoamerica, Caribbean, Western South America.** El Salvador, Guatemala, Honduras, Panama. Colombia, Ecuador.

TDWG4. Guangdong.

Bambusa macrolemma Holttum. *Kew Bull.* 21: 274 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from New Guinea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Britain: Plant cultivated as ornamental bamboo, Nov. 1938, *Murray s.n.* (HT: K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk makros, large; lemma, husk. Lemmas large.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 20 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement one. Culm-sheaths present. Leaves cauline. Leaf-sheath oral hairs lacking or ciliate, 5 mm long. Leaf-sheath auricles falcate. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base truncate or broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 25–33 cm long, 40–50 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 2–4 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 15–23 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 4 mm long.

Glumes. Glumes persistent, shorter than spikelet. Lower glume margins ciliate. Upper glume margins ciliate.

Florets. Fertile lemma ovate, 12 mm long, without keel, more than 3-veined. Lemma margins ciliate, hairy above. Lemma apex attenuate. Palea keels eciliate.

Flower and Fruit. Lodicules absent. Anthers 6, 5.5 mm long. Stigmas 3. Ovary umbonate, pubescent on apex.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuaia. Bismark Archipelago.

Bambusa macrotis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 371 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk makros, large; ous, ear. Auricles large.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–700 cm long, 60 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete. Lateral branches dendroid. Branch complement several. Culm-sheaths present, tardily deciduous, glabrous, convex at apex, auriculate, with unequal auricles, with 10–15 mm wide auricles or 20–30 mm wide auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 6 mm high, ciliate. Culm-sheath blade narrowly ovate, narrower than sheath, erect, hispid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–10 cm long, 7–9 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa maculata Widjaja. *Reinwardtia* 11(2): 63 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Malaysia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Moluccas, South Ternate: *Widjaja 4881* (BO holo, K, L, US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. macula*, spot; *atum*, possessing. Culms become spotted when mature.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1500 cm long, 40–70 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 30–35 cm long, white and brown, mottled, distally glabrous. Lateral branches dendroid, arising from lower culm. Bud complement 1. Branch complement several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, 15–16 cm long, 1 times as long as wide, convex at apex, auriculate, with 4–4.5 mm high auricles, setose on shoulders, shoulders with 14–15 mm long hairs. Culm-sheath ligule 2 mm high, entire. Culm-sheath blade triangular, erect or spreading, 6.5–8.2 cm long, 35–45 mm wide. Ligule an eciliate membrane, 1 mm long, erose. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades deciduous at the ligule, lanceolate, 22.5–38 cm long, 10–45 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 19–28 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–3 mm long, glabrous.

Glumes. Glumes two, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 3–4 mm long. Lower glume apex acute. Upper glume ovate, 3–4 mm long. Upper glume apex acute.

Florets. Fertile lemma ovate, 6–14 mm long, without keel, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 4–11 mm long. Palea keels ciliolate. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 2–3 mm long, membranous, ciliate. Anthers 6, 8 mm long, yellow. Stigmas 3. Ovary glabrous or with a few apical hairs. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Moluccas.

Bambusa majumdarii P.Kumari & P.Singh. *Kew Bull.* 64: 565 (2009).

TYPE from India, Assam. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Meghalaya, : Garo Hills near Tura, 14 Sep 2005, P.Kumari & P.singh 34696 (holo CAL; iso CAL).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam. Meghalaya.

Bambusa malingensis McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 11 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Fung* 20986, 30 Oct 1936, China: Kwangtung: Hainan Island (Lingnan University Herbarium; IT: US-2801980, US-28002948).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. Name derived from Ma Ling Chuk, the Cantonese name for the species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1050 cm long, 59 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, thick-walled, distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous, truncate at apex, auriculate, with unequal auricles, setose on shoulders, shoulders with straight hairs. Culm-sheath ligule 3–4 mm high, dentate and ciliolate. Culm-sheath blade triangular, deciduous, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan, China Southeast.

TDWG4. Guangdong.

Bambusa marginata Munro. *Trans. Linn. Soc.* 26: 114 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *margo*, border; -ata, possessing. Leaf-blades or lemma with hairs in their margins or the margins otherwise conspicuous.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, woody. Culm-internodes terete, thick-walled, distally glabrous. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, 12 cm long, 4 times as long as wide, glabrous. Culm-sheath blade triangular, erect. Leaves cauline, 4–6 per branch. Leaf-sheaths keeled, striately veined, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 8–15 cm long, 25–35 mm wide. Leaf-blade venation with 8–14 secondary veins, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa merrillii Gamble. *Philipp. Journ. Sci.* 5: 269 (1910).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *E.D. Merrill* 229, 28 May 1902, Philippines: Luzon I., Nueva Vizcaya Prov. (US-731145, US-435212).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Elmer Drew Merrill (1876–1956) American botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1800 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled. Culm-nodes swollen. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–10 cm long, 12–15 mm wide. Leaf-blade surface scabrous, rough abaxially. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 2 cm long, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 2 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two. Upper glume ovate, 7–8 mm long. Upper glume lateral veins prominent. Upper glume surface scabrous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate, 10 mm long, without keel, more than 3-veined. Lemma surface scabrous. Lemma apex acute. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 4 mm long, membranous, ciliate. Anthers 6, 6 mm long, anther tip smooth. Stigmas 3. Ovary umbonate.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Philippines.

Bambusa mohanramii P.Kumari & P.Singh. *Kew Bull.* 64: 570 (2009).

TYPE from India, Assam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Maghalaya, Jaintia hills, Khleiriaht, 9 Apr 2004, .Kumari 34608 (holo:CAL; iso:CAL).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam. Meghalaya.

Bambusa mollis L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 377 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. soft.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 500–800 cm long, 25–35 mm diam., woody. Culm-internodes terete, 35–40 cm long, distally glabrous. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous, convex at apex, auriculate, with unequal auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 1 mm high, entire. Culm-sheath blade lanceolate or narrowly ovate, deciduous, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 11–16 cm long, 15–20 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa multiplex (Lour.) Raeusch. ex Schult. *Syst. Veg.* 7:1350 (1830).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from Vietnam. **Basionym or Replaced Name:** *Arundo multiplex* Lour. *Fl. Cochinch.* 58 (1790), *Bambusa glaucescens* (Willd.) Merrill, *Philippine J. Sci.*, C, 7:230 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Anon.*, Vietnam (P; IT: BM?).

Recent Synonyms: *Bambusa dolichomerithalla* Hayata, *Ik. Pl. Formos.* 6: 146 (1916).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (756, Pl. 1506), H.J.Noltie, *The Grasses of Bhutan* (2000) (482, Fig. 1 & 488, Fig. 2), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (p.23), D.Farrelly, *The Book of Bamboo* (1984) (as *Bambusa shimadai* & *B. glaucescens* var. *riviereorum*), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia* No. 7, Bamboos (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 18).

Derivation (Clifford & Bostock 2007): L. multus, many; plexus, network. Inflorescence much branched.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–400 cm long, 10–30 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, mid-green, distally glabrous. Lateral branches dendroid. Bud complement 1. Branch complement three or several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, auriculate, ciliate on shoulders. Culm-sheath ligule 1–1.5 mm high. Culm-sheath blade triangular, 1–2 cm long, acute. Leaves 7–13 per branch. Leaf-sheath oral hairs setose, 3–5 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.2 cm long. Leaf-blades deciduous at the ligule, lanceolate, 7–10 cm long, 10–13 mm wide, dark green or glaucous, discolorous with last colour beneath. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, lax, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Florets. Fertile lemma lanceolate, 15 mm long, without keel, 20 -veined, more than 3-veined. Lemma apex acute. Palea oblong, 1 length of lemma. Palea keels winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, 6 mm long. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

$2n = 72$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia, Australasia, Pacific, North America (+), South America.

Country /Province /State. Northern Africa, Western Indian ocean. Mauritius (+), Madagascar (*), Seychelles. **Caucasus, Western Asia, China, Eastern Asia.** Hainan, China Southeast. Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuaasia.** Assam, Bangladesh, Pakistan, Sri Lanka. Myanmar, Vietnam. Malaya, Singapore. **New Zealand.** New Zealand North I. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (*), Niue (*), Tonga (*). Cook Is (*), Society Is (*). Marianas (*). Hawaii (*). **Mexico.** Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Costa Rica, El Salvador, Guatemala, Panama. Windward Islands. Colombia, Peru. Brazil Southeast.

TDWG4. Guangdong, Guangxi, Hunan, Jiangxi. Sichuan, Yunnan. Bhutan. Chiapas.

Bambusa mutabilis McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 12 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H. Fung* 20248, 27 May 1932, China: Kwangtung (Lingnan University Herbarium; IT: US-21391 (fragm.)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): the juvenile and adult plants resemble two other species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–500 cm long, 31 mm diam., woody. Culm-internodes terete, distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, deciduous, glabrous, truncate at apex, auriculate, with subequal auricles, ciliate on shoulders. Culm-sheath ligule 3 mm high, dentate or lacerate. Culm-sheath blade lanceolate, deciduous, erect, pubescent. Leaves cauline. Leaf-sheaths hispid, with reflexed hairs. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade surface pilose, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa nagalandiana H.B.Naithani. *Indian Forester* 133(9): 1267 (2007).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Nagaland, Wanching: *Naithani 4344* (DD holo).

Illustrations (Books): No illustration found (BKS).

Classification. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1200 cm long, 100 mm diam., woody. Culm-internodes terete, 60 cm long, mid-green and yellow, striped. Lateral branches dendroid. Branch complement three or several, in a clump, with 1 branch dominant. Culm-sheaths present, 30 cm long, 1 times as long as wide, brown, antrorsely scabrous, glabrous or hispid, with appressed hairs, with dark brown hairs, truncate at apex, auriculate. Culm-sheath ligule 5 mm high, dentate. Culm-sheath blade triangular, 22 cm long, 120 mm wide, pubescent, acute. Leaf-sheaths striately veined, glabrous on surface. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–20 cm long, 15–20 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acute. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.
Nagaland.

Bambusa nepalensis C.M.A. Stapleton. *Edinburgh J. Bot.*, 51(1): 15 (1994).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Nepal. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Kathmandu Valley, Bansbari, 27.44N 85.21E, 20 Dec 1987, *C.M.A. Stapleton 719* (HT: E)

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Nepal.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect at the tip or drooping at the tip, 1000–2000 cm long, 50–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 20–40 cm long, distally pruinose. Lateral branches dendroid. Buds or branches absent from lower part of culm. Bud complement 1. Branch complement three or several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, persistent, 25 cm long, 0.5 times as long as wide, pubescent, with appressed hairs, with tawny hairs, auriculate, with obtuse auricles, with 2–7 mm high auricles, setose on shoulders, shoulders with curved hairs, shoulders with 3–5 mm long hairs. Culm-sheath ligule 3–5 mm high, dentate. Culm-sheath blade triangular, demarcated but persistent, 5–9 cm long, 60–120 mm wide, pubescent. Leaf-sheaths pubescent, outer margin hairy. Leaf-sheath oral hairs scanty or lacking, deciduous. Ligule an eciliate membrane, 2–3 mm long, erose, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades 15–30 cm long, 6 mm wide.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in oblong clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, with 1-keeled prophylls, leafless between clusters.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 8–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 0.5–1 mm long.

Glumes. Glumes several, comprising 1–3 gemmiferous bracts, 1 empty glumes.

Florets. Fertile lemma ovate, 6–7 mm long, mid-green or purple, tipped with last colour, without keel, 13–15 -veined, more than 3-veined. Lemma margins ciliate, hairy above. Lemma apex acute, pubescent. Palea 5–7 mm long. Palea keels wingless, ciliate, adorned above, with hairs 0.5 mm long. Palea surface pilose, hairy on margins, hairy above. Palea apex obtuse. Apical sterile florets distinct from fertile, rudimentary.

Flower and Fruit. Lodicules 3, ovate, 0.7–3 mm long, membranous, ciliate. Anthers 6, 5–6 mm long, yellow, anther tip apiculate or penicillate. Filaments free. Stigmas 3, plumose or pubescent. Styles 5 mm long. Ovary umbonate, glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Nepal.

Bambusa nutans Wall. ex Munro. *Trans. Linn. Soc.* 26: 92 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Wallich Cat.* 5031, 1821, Nepal: Kathmandu, Naga-Arjun [Nagarjun, 27.44N 85.71E] (K-W; ILT: E). LT designated by Stapleton, *Edin. J. Bot.* 51: 17 (1994).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (482, Fig. 1 & 488, Fig. 2 as ssp. *cupulata*).

Derivation (Clifford & Bostock 2007): *L. nuto*, nod. Inflorescence branches slender, bending under the weight of the spikelets.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–1200 cm long, 40–70 mm diam., woody, with aerial roots from the nodes. Culm-internodes terete, thick-walled, 35–45 cm long, mid-green. Culm-nodes glabrous or pubescent. Lateral branches dendroid. Culm-sheaths present, 15–23 cm long, pubescent, with appressed hairs, with black hairs, truncate at apex, auriculate, setose on shoulders. Culm-sheath ligule 2.5–5 mm high, dentate. Culm-sheath blade triangular, 15–23 cm long, pubescent, acute. Leaves cauline. Leaf-sheaths striately veined, pubescent. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long. Leaf-blades lanceolate, 15–30 cm long, 25–35 mm wide, glandular. Leaf-blade midrib conspicuous. Leaf-blade venation with 14–20 secondary veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 17–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, pilose, hairy at tip.

Glumes. Glumes several, 2–3 empty glumes.

Florets. Fertile lemma ovate, 10 mm long, without keel, more than 3-veined. Lemma inner surface pubescent. Lemma apex acute, mucronate. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6–7, anther tip apiculate. Stigmas 2–3, sparsely hairy. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, oblong, hairy at apex. $2n = 72$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. Assam, Bangladesh, Eastern Himalaya, India. Thailand, Vietnam.

TDWG4. Yunnan. Darjeeling, Bhutan, Sikkim.

Bambusa odashimae Hatusima. *Hat. & Amano, Fl. Okinawa, rev. ed.* :128 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (754, Pl. 1505 as *B. edulis*).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–2000 cm long, 40–120 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 15–50 cm long, mid-green, distally glabrous. Culm-nodes swollen, pubescent. Lateral branches dendroid. Bud complement 1. Branch complement several, in a clump, thinner than stem. Culm-sheaths present, deciduous, coriaceous, pubescent, hairy on margins. Culm-sheath ligule 1–5 mm high. Culm-sheath blade triangular, pubescent (at base). Leaves 9–13 per branch. Leaf-sheaths 4.5–15 cm long, glabrous on surface. Leaf-sheath oral hairs setose, dark. Ligule an eciliate membrane, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades deciduous at the ligule, lanceolate or oblong, 10–33 cm long, 25–45 mm wide. Leaf-blade venation with 12–20 secondary veins. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–37 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 6–10 mm long. Lower glume surface pubescent. Lower glume apex acute. Upper glume ovate, 6–10 mm long. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma ovate, 14 mm long, 10 mm wide, without keel, 25 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex acuminate. Palea oblong, 10 mm long, 10–12 -veined. Palea keels ciliate. Palea surface pubescent, hairy on margins. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 6 mm long. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. Nansei-Shoto.

Bambusa oldhamii Munro. *Trans. Linn. Soc.* 26: 109 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Taiwan: Tamsuy, *Oldham* 648 (HT: ?).

Recent Synonyms: *Dendrocalamopsis oldhamii* (Munro) Keng f., *J. Bamboo Res.* 2(1): 12 (1983).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (758, Pl. 1507), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (p.24), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 28), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 30).

Derivation (Clifford & Bostock 2007): In honor of Richard Oldham (1837–1864) English botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1600 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled, 17–20 cm long, light green. Lateral branches dendroid. Branch complement one or two or three. Culm-sheaths present, 7.5 cm long, glabrous. Culm-sheath blade triangular, erect or spreading, 0.6 cm long. Leaves cauline. Leaf-sheaths striately veined, hirsute. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5.5 cm long, 12 mm wide. Leaf-blade venation with 10–12 secondary veins, without cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in oblong clusters, 7–11 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 24–26 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, obscured by lemmas.

Glumes. Glumes several.

Florets. Fertile lemma ovate, 10–11 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea keels ciliate. Palea surface pubescent or hirsute. Palea apex obtuse. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous, ciliate. Anthers 6, anther tip with extended connective and pubescent. Stigmas 3. Ovary umbonate.

Distribution (TDWG). Continent. Temperate Asia, Australasia, Pacific, North America, South America.

Country /Province /State. China and Eastern Asia. Nansei-Shoto. **New Zealand** (*). New Zealand North I. **North-central Pacific.** Hawaii (*). **Mexico.** Southeast Mexico. **Western South America.** Colombia. Chiapas.

Bambusa oliveriana Gamble. *Ann. Bot. Gard. Calc.* 7: 130 (1896).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Guillaume Antoine Olivier (1756–1814) French biologist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1300–1500 cm long, 25–50 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 35 cm long, distally pruinose or glabrous. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 20–25 cm long, 2 times as long as wide, glabrous, convex at apex, auriculate. Culm-sheath blade lanceolate or triangular, cordate, 10–20 cm long, hispid. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Ligule an eciliate membrane, erose. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.4 cm long. Leaf-blades linear, 10–18 cm long, 10–15 mm wide. Leaf-blade venation indistinct, with 8–10 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, panicate, lax, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 1–2 empty glumes.

Florets. Fertile lemma lanceolate or ovate, 10 mm long, without keel, 9 -veined, more than 3-veined. Lemma apex acuminate. Palea 11 -veined. Palea apex pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, purple, anther tip smooth. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa ooh Widjaja & Astuti. *Reinwardtia* 12: 199 (2004).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Bali, Karangasem, *Ida Bagus K. Arinasa 4499* (BO - Holotype: K, Ekakarya Botanical Garden - Isotype).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Vernacular name for the species in Bali, Indonesia.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 100 mm diam., woody, without nodal roots. Culm-internodes terete, 25–75 cm long. Lateral branches dendroid. Culm-sheaths present, tardily deciduous, hispid, with dark brown hairs, auriculate, with 8 mm high auricles, with 25–37 mm wide auricles, setose on shoulders, shoulders with 20 mm long hairs. Culm-sheath ligule 3–4 mm high, lacerate. Culm-sheath blade triangular, erect, pubescent. Leaf-sheath oral hairs setose, 3–4 mm long. Leaf-sheath auricles falcate, 1 mm long, obtuse. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 12–30 cm long, 25–40 mm wide. Leaf-blade surface pubescent, sparsely hairy. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Lesser Sunda Is.

TDWG4.

Bambusa pachinensis Hayata. *Ic. Pl. Formos.* 6: 150 (1916).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (760, Pl. 1508), D.Farrelly, *The Book of Bamboo* (1984), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 16).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Pachin, Taiwan.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–1000 cm long, 10–60 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 10–70 cm long, mid-green, distally glabrous. Culm-nodes swollen. Lateral branches dendroid. Bud complement 1. Branch complement several, in a clump, thinner than stem. Culm-sheaths present,

deciduous, hispid, with dark brown hairs, auriculate, setose on shoulders. Culm-sheath blade triangular. Leaves 5–13 per branch. Leaf-sheaths 4–8 cm long, glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, truncate or obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades deciduous at the ligule, linear or lanceolate, 8–20 cm long, 15–25 mm wide. Leaf-blade venation with 10–16 secondary veins. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 6 mm long, 7 -veined. Lower glume apex acute. Upper glume ovate, 6 mm long, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong or ovate, 11–13 mm long, 9 mm wide, without keel, 17–19 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea ovate, 9–11 mm long, 15–18 -veined. Palea keels ciliolate. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 4–5 mm long, membranous, ciliate. Anthers 6, 6 mm long. Stigmas 3. Caryopsis with adherent pericarp, ovoid, 6–7 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. China Southeast. Taiwan.

TDWG4. Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang.

Bambusa pallida Munro. *Trans. Linn. Soc.* 26: 97 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from India. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *Hooker & Thompson 602*, India (K). ST: *Hooker & Thompson 607*, India (K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. pale-colored. Spikelets or grain pale-green.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, 25–35 mm diam., woody, without nodal roots. Culm-internodes terete, 45–75 cm long, dark green, distally pruinose. Lateral branches dendroid. Culm-sheaths present, 20–30 cm long, 1 times as long as wide, pubescent, hairy throughout, with appressed hairs, truncate at apex, without auricles or auriculate, setose on shoulders. Culm-sheath blade triangular, as wide as sheath at base, 20–35 cm long, pubescent, acuminate. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs setose, deciduous. Leaf-sheath auricles erect. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades lanceolate, 10–20 cm long, 12–20 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 8–12 secondary veins. Leaf-blade surface hirsute, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 3–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, straight or curved, subterete, 25–32 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, pilose, hairy at tip.

Glumes. Glumes several, 1–2 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 6–8 mm long, without keel, more than 3-veined. Lemma surface glabrous, inner surface pubescent. Lemma apex acute, mucronate. Palea 5–7 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip apiculate. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. China South Central. **Indian Subcontinent, Indo-China.** Assam, Eastern Himalaya. Laos, Myanmar, Thailand.

TDWG4. Yunnan. Arunachal Pradesh, Sikkim. Assam, Meghalaya, Nagaland, Tripura.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Basionym or Replaced Name: *Lingnania papillata* Q.H. Dai, *Acta Phytotax. Sin.*, 20(2): 213 (1982).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 25).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 300–600 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 30–60 cm long, distally hispid. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several, with subequal branches. Culm-sheaths present, deciduous, auriculate, ciliate on shoulders. Culm-sheath ligule 1 mm high, dentate. Culm-sheath blade lanceolate, constricted at base, erect, scabrid. Leaves cauline, 6–10 per branch. Leaf-sheaths hispid. Leaf-sheath oral hairs setose, 8–12 mm long. Leaf-sheath auricles falcate. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–19 cm long, 10–15 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa papillatoides Q.H. Dai & D.Y. Huang. *Acta Phytotax. Sin.* 36(3): 279–280, pl. 1. (1998).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk *-oides*, resembling. Similar to *Bambusa papillatae*.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 300–600 cm long, 10–30 mm diam., woody. Culm-internodes terete, thin-walled, 30–50 cm long, distally hispid. Culm-nodes pubescent. Lateral branches dendroid. Bud complement 1. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, coriaceous, hispid, with dark brown hairs, concave at apex and asymmetrical at apex, auriculate, setose on shoulders, shoulders with straight hairs, shoulders with 5 mm long hairs. Culm-sheath ligule 1 mm high, ciliolate. Culm-sheath blade lanceolate or narrowly ovate, erect or spreading. Leaves cauline, 7–10 per branch. Leaf-sheaths 3–4 cm long, antrorsely scabrous, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, deciduous, 10–12 mm long, pale. Leaf-sheath auricles absent or falcate. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–15 cm long, 10–20 mm wide. Leaf-blade venation with 8–12 secondary veins. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa pervariabilis McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 13 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *H. Fung BG 1226*, China: Kwangtung (US-195542 (fragm.)).

Illustrations (Books): D.Farrelly, *The Book of Bamboo* (1984), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 8).

Derivation (Clifford & Bostock 2007): L. *per*, very; *variabilis*, variable. Species variable.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–1000 cm long, 40–45 mm diam., woody, without nodal roots. Culm-internodes terete, 30 cm long, distally pruinose or pilose. Lateral branches dendroid, arising from lower culm. Buds or branches present on lower part of culm. Branch complement several or many, with 3 branches dominant, thinner

than stem. Culm-sheaths present, deciduous, glabrous or pubescent, convex at apex, auriculate, with unequal auricles, ciliate on shoulders. Culm-sheath ligule 3–4 mm high, dentate or lacerate or fimbriate. Culm-sheath blade ovate, narrower than sheath, deciduous, erect. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 10–15 cm long, 10–15 mm wide.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 4 mm long.

Glumes. Glumes several, comprising 2–3 gemmiferous bracts, 1 empty glumes, persistent, similar, shorter than spikelet. Lower glume oblong, 6 mm long, without keels, 9 -veined. Lower glume surface glabrous. Lower glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 12–14 mm long, without keel, 13–15 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute. Palea 1 length of lemma, 14 -veined, 2-keeled. Palea keels wingless. Palea apex ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 2.7–3 mm long, membranous, ciliate. Anthers 6, 5 mm long. Stigmas 3. Ovary pubescent on apex. Caryopsis with adherent pericarp, ovoid, 1.5 mm long, hairy at apex.

$2n = 56$ (1 ref TROPICOS), or 64 (1 ref TROPICOS), or 72 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong, Guangxi.

Bambusa pierreana E.G.Camus. Lecomte, *Not. Syst.* 2: 245 (1912).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. ana*, indicating connection. In honour of Pierre, who collected in Vietnam.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1200 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Branch complement one or two. Culm-sheaths present, deciduous, hispid, with black hairs, auriculate, setose on shoulders, shoulders with 8 mm long hairs. Culm-sheath ligule 1 mm high, entire. Culm-sheath blade triangular, erect. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Leaf-sheath auricles erect. Ligule a ciliolate membrane, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 29 cm long, 28 mm wide. Leaf-blade venation with 10–16 secondary veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Vietnam.

Bambusa piscatorum McClure. *Lingnan Univ. Sci. Bull.* 9:14 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Hainan: around villages, 20 Aug. 1932, *H. Fung* 20439 (HT: US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. piscis*, fish; *capiro*, capture. Culms used for making fishing rods.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1050 cm long, 30 mm diam., woody. Culm-internodes terete, distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous or hispid, with appressed hairs, convex at apex, auriculate, with equal auricles, setose on shoulders. Culm-sheath ligule 1 mm high, entire or dentate. Culm-sheath blade triangular, constricted at base, deciduous, erect, scabrid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade surface

pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bambusa polymorpha Munro. *Trans. Linn. Soc.* 26: 98 (1868).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Brandis 1*, Hab. in India or. Martaban, Pegu ST: *McClelland s.n.*, Rangoon.

Illustrations (Books): S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7*, Bamboos (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 10).

Derivation (Clifford & Bostock 2007): Gk. polys, many; morphe, shape. Producing spikelets of two kinds or otherwise variable.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2500 cm long, 75–150 mm diam., woody, with aerial roots from the nodes. Culm-internodes terete, 40–60 cm long, grey, distally pruinose. Culm-nodes swollen. Lateral branches dendroid. Culm-sheaths present, 15–18 cm long, 0.5 times as long as wide, pubescent, with appressed hairs, with white hairs, truncate at apex, auriculate, setose on shoulders. Culm-sheath blade triangular, cordate, 7.5 cm long, pubescent. Leaves cauline. Leaf-sheaths keeled, striately veined, pubescent. Leaf-sheath oral hairs scanty, deciduous. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.1 cm long. Leaf-blades persistent or deciduous at the ligule, lanceolate, 7–17 cm long, 7–12 mm wide. Leaf-blade venation with 8–12 secondary veins. Leaf-blade surface scaberulous, rough adaxially, pubescent, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, flattened, glabrous.

Glumes. Glumes several, 1–3 empty glumes. Upper glume ovate. Upper glume mucronate.

Florets. Fertile lemma ovate, 5–6 mm long, without keel, more than 3-veined. Lemma apex acute, mucronate. Palea keels eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, purple, anther tip smooth or apiculate. Stigmas 3, pubescent. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, ovoid, 5 mm long, hairy at apex.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, South America.

Country /Province /State. China. China South Central. **Indian Subcontinent, Indo-China, Malasia.** Assam, Bangladesh, Sri Lanka. Myanmar, Thailand. Java. Hawaii (*). **Mesoamerica, Caribbean, Western South America.** Panama. Ecuador.

TDWG4. Yunnan. Meghalaya.

Bambusa procera A. Cheval. & A. Camus. *Bull. Mus. Hist. Nat. Paris*, 28: 379 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. tall. Culms tall.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms erect, 800–1200 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled, brown. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 21–25 cm long, 40–50 mm wide. Leaf-blade venation with 24 secondary veins, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 50–150 cm long, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, straight or curved, laterally compressed, compressed slightly, 15–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 2–3 empty glumes, shiny. Upper glume ovate, 5 mm long. Upper glume margins ciliate.

Florets. Fertile lemma ovate, 9–10 mm long, without keel, more than 3-veined. Lemma margins ciliate. Palea obovate, 9 mm long, 16 -veined. Palea keels eciliate or ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 8 mm long, yellow. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, obovoid, 6 mm long, glabrous or hairy at apex.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Vietnam.

Bambusa prominens H.L. Fung & C.Y. Sia. *Acta Phytotax. Sin.*, 19(3): 372 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig.6).

Derivation (Clifford & Bostock 2007): *L. promineo*, jut out. Nodes conspicuous.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000–1500 cm long, 50–70 mm diam., woody, with aerial roots from the nodes or with root thorns from the nodes. Culm-internodes terete, thick-walled, 40–50 cm long, distally mealy. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, tardily deciduous, hispid, hairy below, with appressed hairs, with tawny hairs, convex at apex, auriculate, with unequal auricles. Culm-sheath ligule 3–4 mm high, ciliate. Culm-sheath blade triangular, constricted at base, demarcated but persistent, erect, hispid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central.

TDWG4. Sichuan.

Bambusa ramispinosa L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 373 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 800 cm long, 38 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, 30 cm long, smooth, distally mealy. Culm-nodes swollen. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, glabrous, truncate at apex, auriculate, with subequal auricles, with 5 mm wide auricles, setose on shoulders, shoulders with 5 mm long hairs. Culm-sheath ligule 3 mm high, dentate or ciliate. Culm-sheath blade triangular, erect, hispid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 9.5–13 cm long, 11–16 mm wide. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa rangaensis Borthakur & Barooah. *Indian J. Forest.* 24(4): 508 (2002).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India, Assam, Lakhimpur: *Barooah 2512A* (ASSAM holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms geniculately ascending, 500–1000 cm long, 20–35 mm diam., woody. Culm-internodes terete, thin-walled, 15–35 cm long, yellow to light green, distally glabrous. Lateral branches dendroid. Culm-sheaths present, deciduous, 10–18 cm long, 1.3 times as long as wide, glabrous, convex at apex, auriculate, with 10 mm high auricles, ciliate on shoulders. Culm-sheath ligule 1 mm high. Culm-sheath blade triangular, erect, 10–18 cm long, 35–50 mm wide, pubescent. Leaf-sheath oral hairs setose, 15 mm long, pale. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5 mm long, erose. Collar with external ligule. Leaf-blade base symmetrical, with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 10–16 cm long, 15–25 mm wide, mid-green and grey-green, discolourous with last colour beneath. Leaf-blade midrib conspicuous. Leaf-blade margins scabrous. Leaf-blade apex attenuate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam.

Bambusa remotiflora (Kuntze) L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 18(2): 214 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Basionym or Replaced Name: *Arundarbor remotiflora* Kuntze, gen superfl, *Rev. Gen.* 760 (1891).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 20).

Derivation (Clifford & Bostock 2007): *L. remotus*, distant; *flos*, flower. Spikelets with widely separated florets.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 1200 cm long, 72 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or pubescent. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, deciduous, coriaceous, hispid, with appressed hairs, with black hairs, without auricles, ciliate on shoulders, shoulders with curved hairs. Culm-sheath ligule fimbriate. Culm-sheath blade triangular, erect. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles absent. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 19 cm long, 28 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan, China Southeast. Guangdong, Guangxi.

Bambusa riauensis Widjaja. *Reinwardtia* 11(2): 65 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Riau, Kerumputan Nature Reserve: Widjaja 4006 (BO holo, K, L, US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. ensis*, denoting origin. From Riau Province, Sumatra, Indonesia.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 800–1000 cm long, 20–30 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 45–55 cm long, mid-green and yellow, striped, distally glabrous or hispid. Lateral branches dendroid, arising from mid culm. Bud complement 1. Branch complement several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, persistent or deciduous, 12.6–13.5 cm long, 2 times as long as wide, hispid, with white hairs or black hairs, truncate at apex, auriculate, setose on shoulders, shoulders with 7 mm long hairs. Culm-sheath ligule 3–4 mm high, entire or ciliolate. Culm-sheath blade triangular, narrower than sheath, erect, 7–12.4 cm long, 2.5–3 mm wide, glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles erect, 0.3–0.5 mm long. Ligule an eciliate membrane, 3 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades deciduous at the

ligule, lanceolate, 15–26 cm long, 16–30 mm wide. Leaf-blade surface glabrous. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–3 mm long, glabrous.

Glumes. Glumes several, 3 empty glumes, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 4 mm long. Lower glume apex acute. Upper glume ovate, 6 mm long. Upper glume apex acute.

Florets. Fertile lemma ovate, 8–9 mm long, without keel, more than 3-veined. Lemma apex acute. Palea 8–9 mm long. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 5–6 mm long, yellow. Stigmas 3. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). **Continent.** Tropical Asia.

Country /Province /State. **Malesia.** Sumatra.

Bambusa rigida Keng & P. C. Keng. *Journ. Wash. Acad. Sci.* 6: 81 (1946).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figs. 10 & 11).

Derivation (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 500–1000 cm long, 20–50 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 23–35 cm long, distally pruinose. Lateral branches dendroid, ascending or spreading. Branch complement several or many. Culm-sheaths present, deciduous, 0.5 length of internode, chartaceous, brown, pubescent, with dark brown hairs, truncate at apex or convex at apex, auriculate, with unequal auricles, with 5–15 mm high auricles, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule 2–4 mm high, dentate. Culm-sheath blade lanceolate or triangular, deciduous, erect or reflexed, glabrous on surface. Leaves 2–12 per branch. Leaf-sheaths 2.5–7 cm long. Leaf-sheath oral hairs scanty, deciduous, 3–9 mm long. Leaf-sheath auricles absent or erect. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.5 cm long. Leaf-blades lanceolate or oblong, 8–24 cm long, 8–27 mm wide. Leaf-blade venation with 8–18 secondary veins, without cross veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, compressed, 2–4 mm long, sparsely hairy, hairy at tip.

Glumes. Glumes several. Upper glume ovate, 6 mm long, without keels or 1-keeled.

Florets. Fertile lemma lanceolate, 10–15 mm long, 4–8 mm wide, mid-green or purple, tipped with last colour, keeled, more than 3-veined. Lemma apex acute. Palea 7 -veined. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3 mm long, ciliate. Anthers 6, 4–6 mm long, yellow or purple, anther tip penicillate. Filaments 8 mm long. Stigmas 3. Ovary umbonate, pubescent on apex.

Distribution (TDWG). **Continent.** Temperate Asia.

Country /Province /State. **China.** China South Central.

TDWG4. Sichuan.

Bambusa riparia Holttum. *Kew Bull.* 21: 275 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from New New. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: TYPE MATERIAL: *L.J. Brass 1105*, 4 Mar 1926, Papua New Guinea: Ihu, Vailala River (US-2876803).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. ripa*, river bank; -aria, pertaining to. Growing on river banks.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheath oral hairs ciliate, 6 mm long. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–35 cm long, 25–50 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes definite, 1–2.5 mm long.

Glumes. Glumes persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 8–9 mm long, without keel, more than 3-veined. Lemma margins ciliate, hairy above. Lemma apex apiculate. Palea 1 length of lemma, 8 -veined. Palea keels ciliate. Apical sterile florets 1 in number, barren, rudimentary.

Flower and Fruit. Lodicules absent. Anthers 6. Filaments free or united in groups. Stigmas 3. Ovary umbonate, glabrous.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuaasia. New Guinea.

Bambusa rongchengensis T.P. Yi & C.Y. Sia. *Acta Botanica Yunnanica* 16(1): 41 (1994).

Not on *GrassBase*.

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

TYPE from China. **Basionym or Replaced Name:** *Dendrocalamus rongchengensis* T.P. Yi & C.Y. Sia, *J. Bamboo Res.*, 7(4): 20 (1988). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China, Chengdu: Yi Tong-pei 87497.

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central. Sichuan.

Bambusa rugata (W.T. Lin) D. Ohrnberger. *Bamboos of the World Intro.* 4: 19 (1997).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

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

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–400 cm long, 13–30 mm diam., woody. Culm-internodes terete, thick-walled, 25–38 cm long, distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous or hispid, hairy at the base, concave at apex, auriculate, setose on shoulders, shoulders with straight hairs. Culm-sheath ligule 1 mm high, fimbriate. Culm-sheath blade lanceolate, reflexed. Leaves cauline, 3–4 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, spreading. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 3.5–15 cm long, 8–25 mm wide. Leaf-blade venation with 8–12 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa rutila McClure. *Lingnan Sc. Journ.* 19: 533 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.L. Fung 20706 (BG 1476)*, 10 Sep 1933, China: Kwangtung (US-2802952; IT: US-1815841 (fragm.)). T: *P.F. Li 76*, 22 Aug 1940, China: Kwangtung, K'uh Kiang, Shiu Kwaan (L).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 4).

Derivation (Clifford & Bostock 2007): L. red. Spikelets purplish-red.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1200 cm long, 60 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thin-walled. Lateral branches dendroid, reflexed. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, deciduous, glabrous, concave at apex or convex at apex or truncate at apex, auriculate, with unequal auricles, setose on shoulders, shoulders with curved hairs, shoulders with 4–10 mm long hairs. Culm-sheath ligule 4–5 mm high, dentate or fimbriate. Culm-sheath blade triangular, demarcated but persistent, erect, scabrid or with ciliate margins. Leaves cauline, 6–10 per branch. Leaf-sheaths glabrous on surface or puberulous, outer margin glabrous. Leaf-sheath oral hairs lacking or ciliate. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane or a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long, petiole glabrous. Leaf-blades linear or lanceolate, 15–30 cm long, 25–45 mm wide. Leaf-blade venation with 10–16 secondary veins, without cross veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or lanceolate, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rachilla internodes definite, 2–3 mm long.

Glumes. Glumes several, comprising 3–8 gemmiferous bracts, 0 empty glumes.

Florets. Fertile lemma lanceolate, 7–8 mm long, shiny, without keel, more than 3-veined. Lemma margins ciliolate, hairy above. Lemma apex obtuse or acute, scabrous. Palea keels ciliolate, adorned above. Palea apex acute, pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex.

$2n = 64$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Fujian, Guangdong, Guangxi, Sichuan.

Bambusa salarkhanii M.K. Alam. *Bangladesh J. Pl. Taxon.*, 3(2): 44 (1996).

TYPE from Bangladesh. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Dotara: Boa DO/1 (DALB iso).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Bangladesh.

Bambusa sanzaoensis W.T. Lin. *J. Bamboo Res.*, 12(3): 1 (1993).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa (Pseudobambusa) schizostachyoides (Kurz) Kurz ex Gamble. *Ann. Bot. Gard. Calc.* 7: 48 (1896).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Andaman Is. **Basionym or Replaced Name:** *Melocanna kurzii* Munro, *Trans. Linn. Soc.* 26: 134. (1868). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Kurz.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Schizostachyum*.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–1000 cm long, 80–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 45–60 cm long. Lateral branches dendroid. Branch complement one or two or three or several. Culm-sheaths present. Leaves cauline. Leaf-sheaths striately veined, hispid, outer margin hairy. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades lanceolate, 10–18 cm long, 12–23 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 2–3 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, 1–2 empty glumes, persistent, shorter than spikelet. Upper glume ovate. Upper glume apex acute, mucronate.

Florets. Fertile lemma ovate, 10 mm long, without keel, more than 3-veined. Lemma surface scabrous, rough above. Lemma apex acute, mucronate. Palea 12 mm long, 5 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules absent or 3, membranous, veined, ciliate. Anthers 6, 5–7.5 mm long, purple, anther tip apiculate. Stigmas 3, sparsely hairy. Ovary pubescent all over. Caryopsis with adherent pericarp, oblong, 7 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Indo-China. Andaman Is, Vietnam.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–300 cm long, 10–15 mm diam., woody, without nodal roots. Culm-internodes terete, 20–30 cm long. Lateral branches dendroid. Branch complement several, in a clump. Culm-sheaths present, deciduous, hispid, with dark brown hairs, glabrous on margins, convex at apex, auriculate, with unequal auricles. Culm-sheath ligule 1.5 mm high, dentate and ciliolate. Culm-sheath blade triangular, narrower than sheath, deciduous, erect. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades linear or lanceolate, 5.5–21 cm long, 8–18 mm wide. Leaf-blade surface pubescent, hairy abaxially. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa sesquiflora (McClure) L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 18(2): 214 (1980).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Lingnania sesquiflora* McClure, *Journ. Arn. Arb.* 23: 99 (1942). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: IT: *W.T. Tsang 30102*, 18 May-5 Jul 1940, Indochina: Tonkin: Sai Wong Mo Shan, Lung Wan vill. Dam-ha (L, LE, -SYN-, US-1815723).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. sesqui*, one and a half; *flos*, flower. Spikelets with one fertile floret and a second sterile or male floret.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 600 cm long, 40–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present, deciduous. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or setose, 5–10 mm long. Leaf-sheath auricles absent or falcate. Ligule a ciliolate membrane, 1.5 mm long. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades oblong, 12–28 cm long, 25–54 mm wide. Leaf-blade venation without cross veins or with obscure cross veins. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes several, comprising 2–3 gemmiferous bracts, 3–4 empty glumes, shiny. Upper glume ovate, 7.5 mm long. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 9–10 mm long, chartaceous, without keel, more than 3-veined. Lemma apex apiculate. Palea 1 length of lemma. Palea keels ciliolate. Palea surface scaberulous. Palea apex obtuse. Apical sterile florets 1 in number, barren.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 5 mm long, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, ovoid, sulcate on hilar side, 8 mm long, hairy at apex.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Thailand.

Bambusa sinospinosa McClure. *Lingnan Sc. Journ.* 19: 411 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *H.L. Fung* 20773 (*BG 1149-A22*), 11 Apr 1934, China: Kwangtung, Meu-Ming Dist. (US-33419, US-2802954).

Recent Synonyms: *Dendrocalamus inermis* (Keng & Keng f.) T.P. Yi, *J. Bamboo Res.*, 12(2): 54 (1993).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 1).

Derivation (Clifford & Bostock 2007): *L. Sina*, China; *spina*, spine; *-osa*, abundance. A spiny species from China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 1500–2000 cm long, 40–80 mm diam., woody, with root thorns from the nodes. Culm-internodes terete, thin-walled. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement one or two. Culm-sheaths present, deciduous, coriaceous, truncate at apex, auriculate, with equal auricles, setose on shoulders, shoulders with curved hairs, shoulders with 10 mm long hairs. Culm-sheath ligule 3–6 mm high, fimbriate. Culm-sheath blade narrowly ovate, demarcated but persistent, reflexed, hispid. Leaves cauline, 8 per branch. Leaf-sheaths glabrous on surface or pubescent, outer margin hairy. Leaf-sheath oral hairs lacking or ciliate, pale. Leaf-sheath auricles absent or falcate. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades linear or lanceolate, 6.5–14.5 cm long, 6–12 mm wide. Leaf-blade venation indistinct, with 8–10 secondary veins, without cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 2–4 mm long.

Glumes. Glumes several, comprising 3–5 gemmiferous bracts, 0 empty glumes.

Florets. Fertile lemma lanceolate or ovate, 5–9.5 mm long, dark green, without keel, more than 3-veined. Lemma apex acute. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1.4 mm long, membranous, veined, ciliate. Anthers 6, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex.

$2n = 64$ (1 ref TROPICOS).

Distribution (TDWG), Continent. Temperate Asia.

Country /Province /State. China. Hainan, China Southeast.

TDWG4. Guangdong, Guangxi.

Bambusa solomonensis Holttum. *Kew Bull.* 21: 274 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Solomon Islands. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Bougainville: Siwai Tonu, small bamboo, vernacular name Kutopaku, *Waterhouse 756* (HT: K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Solomon Islands, in Pacific Ocean.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Culm-sheaths present. Leaves cauline. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate, 3–4 mm long. Ligule a ciliate membrane, 2.5 mm long. Collar with external ligule. Leaf-blade base truncate or cordate, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–40 cm long, 30–80 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 0.5–1 cm between clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 4 fertile florets, with a barren rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 4 mm long.

Glumes. Glumes persistent, shorter than spikelet. Lower glume margins ciliate. Upper glume margins ciliate.

Florets. Fertile lemma ovate, 15–16 mm long, without keel, more than 3-veined. Lemma margins ciliate, hairy above. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2.5 mm long overall. Palea 10 -veined. Palea keels ciliate.

Flower and Fruit. Lodicules absent. Anthers 6, 6–7 mm long, anther tip penicillate. Stigmas 3. Ovary umbonate, pubescent on apex.

Distribution (TDWG), Continent. Tropical Asia, Pacific.

Country /Province /State. Papuaasia. Solomon Is. **Southwestern Pacific, Northwestern Pacific.** Caroline Is.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Basionym or Replaced Name: *Sinocalamus stenoauritus* W.T. Lin, *Bull. Bot. Lab. North-East. Forest. Inst.*, 1980(6): 89 (1980).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 32).

Derivation (Clifford & Bostock 2007): Gk. *stenos*, narrow; L. *auritis*, long-eared. Auricles linear.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 1000 cm long, 70 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, distally glabrous. Lateral branches dendroid. Culm-sheaths present, deciduous, glabrous or pubescent, with appressed hairs, with tawny hairs, truncate at apex, auriculate. Culm-sheath ligule 3 mm high, dentate. Culm-sheath blade lanceolate, deciduous, erect or reflexed, acuminate. Leaves cauline, 7–14 per branch. Leaf-sheaths 6–8 cm long. Leaf-sheath oral hairs lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–25 cm long, 15–30 mm wide. Leaf-blade venation with 10–14 secondary veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes several, comprising 1–2 gemmiferous bracts, 1–2 empty glumes. Lower glume ovate. Lower glume margins ciliate. Lower glume apex acute. Upper glume ovate. Upper glume margins ciliate. Upper glume apex acute.

Florets. Fertile lemma ovate, 10–12.5 mm long, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute. Palea 1 length of lemma. Palea keels ciliolate. Palea surface puberulous, hairy on back and on margins. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 3.5 mm long, membranous, veined, ciliate. Anthers 6, 8–10 mm long, purple, anther tip penicillate. Stigmas 3. Ovary pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
Guangdong.

Bambusa subaequalis H.L. Fung & C.Y. Sia. *Acta Phytotax. Sin.*, 19(3): 374 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 800–1200 cm long, 40–60 mm diam., woody, without nodal roots or with root thorns from the nodes. Culm-internodes terete, thick-walled, 40–50 cm long, distally mealy. Culm-nodes glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several. Culm-sheaths present, deciduous, glabrous, hairy on margins, convex at apex or triangular at apex, auriculate, ciliate on shoulders. Culm-sheath ligule 3 mm high, ciliolate. Culm-sheath blade triangular, as wide as sheath at base, demarcated but persistent, erect, hispid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1–0.15 cm long. Leaf-blades lanceolate, 3–16 cm long, 10–13 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
TDWG4. Guangdong. Sichuan.

Bambusa subtruncata L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 19(3): 378 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 15).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 400–500 cm long, 20–25 mm diam., woody. Culm-internodes terete, 25–30 cm long, mid-green and yellow, striped, distally glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, green and yellow, striped, glabrous, truncate at apex, auriculate, with unequal auricles, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 1.5–2 mm high, ciliate. Culm-sheath blade triangular, narrower than sheath, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 8–15 cm long, 9–13 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
TDWG4. Guangdong.

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

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Basionym or Replaced Name: *Lingnania surrecta* Q.H. Dai, *Acta Phytotax. Sin.*, 20(2): 213 (1982).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 20).

Derivation (Clifford & Bostock 2007): *L. surgo*, raise aloft. Stems initially procumbent.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 600–1000 cm long, 30–60 mm diam., woody. Culm-internodes terete, thin-walled, 40–50 cm long. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, coriaceous, hispid, truncate at apex, without auricles, setose on shoulders. Culm-sheath ligule 3–5 mm high, fimbriate. Culm-sheath blade lanceolate or narrowly ovate, erect, scabrid. Leaves cauline, 10–12 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 12–18 cm long, 15–23 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bambusa teres Munro. *Trans. Linn. Soc.* 26:95 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Hamilton 881*, India or. Bengal, Gongachora ST: *Griffith s.n.*, India ST: *Jenkins s.n.*, India: Assam.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 14).

Derivation (Clifford & Bostock 2007): *L. teres*, cylindrical.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 2000 cm long, 75 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 50 cm long, dark green. Lateral branches dendroid. Culm-sheaths present, 20–25 cm long, 1 times as long as wide, glabrous, convex at apex, auriculate, setose on shoulders. Culm-sheath ligule 2.5 mm high. Culm-sheath blade triangular, 10–15 cm long, pubescent, acute. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface or puberulous. Leaf-sheath auricles falcate. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades lanceolate or oblong, 30–35 cm long, 30–45 mm wide, glandular. Leaf-blade midrib conspicuous. Leaf-blade venation with 20–32 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, pubescent, hairy at tip.

Glumes. Glumes several, 1–2 empty glumes. Upper glume ovate. Upper glume mucronate.

Florets. Fertile lemma lanceolate or ovate, 8 mm long, without keel, more than 3-veined. Lemma apex acute. Palea 7–8 -veined. Palea keels scabrous, ciliate. Palea apex undifferentiated or ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, anther tip penicillate. Stigmas 3, pubescent. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Assam, India.

TDWG4. West Bengal.

Bambusa textilis McClure. *Lingnan Univ. Sci. Bull.*, No. 9, 14 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kwangsi Ts'ang-wu Distr.: near Wuchow, 18 Dec 1928, *Tang & Fung [LU-19162]* (HT: Lingnan University Herbarium).

Recent Synonyms: *Bambusa minutiligulata* W.T. Lin & Z.M. Wu, *J. Bamboo Res.*, 11(1): 27 (1992).

Illustrations (Books): D.Farrelly, *The Book of Bamboo* (1984), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 17).

Derivation (Clifford & Bostock 2007): *L. textilis*, intertwined. Used for weaving or thatching.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip or drooping at the tip, 900–1000 cm long, 50–60 mm diam., woody. Culm-internodes terete, thin-walled, distally glabrous or hispid. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, coriaceous, hispid, with appressed hairs, auriculate, with equal auricles, ciliate on shoulders. Culm-sheath ligule 2 mm high, dentate and ciliate. Culm-sheath blade triangular, deciduous, erect, scabrid. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Flower and Fruit. $2n = 56$ (1 ref TROPICOS), or 64 (1 ref TROPICOS), or 72 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, South America.

Country /Province /State. China, Eastern Asia. China Southeast. Taiwan. Mesoamerica, Caribbean, Western South America. Costa Rica, El Salvador, Guatemala. Colombia.

TDWG4. Anhui, Guangdong, Guangxi, Jiangxi, Zhejiang.

Bambusa truncata B. M. Yang. *J. Hunan Normal Univ. (Nat. Sci. Ed.)* 12: 337 (1989).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. truncata*, shorten by cutting off. Truncate with respect to....

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700 cm long, 45 mm diam., woody. Culm-internodes terete, 26–35(–44) cm long, distally pruinose. Lateral branches dendroid, arising from mid culm. Buds or branches absent from lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, pilose, with tawny hairs, truncate at apex, without auricles, glabrous on shoulders. Culm-sheath ligule 1.5 mm high, dentate and ciliolate. Culm-sheath blade triangular, as wide as sheath at base, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 8–14 cm long, 9–15 mm wide. Leaf-blade surface glabrous. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Hunan.

Bambusa tsangii McClure. *Journ. Arn. Arb.* 23: 97 (1942).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tonkin: near Chan Uk Village, Ha Coi, at foot of Taai Wong Mo Shan, 7 May 1939, *W.T. Tsang 28988* (HT: A).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Tsiang Ying (1898–1982) Chinese botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300 cm long, 40–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled. Culm-nodes glabrous. Lateral branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present, deciduous. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 5–10.5 cm long, 7–14 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous or puberulous, sparsely hairy, hairy abaxially. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters or leafless between clusters.

Fertile Spikelets. Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, curved, subterete, 30–50 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, 2–5 mm long, pubescent, hairy at tip.

Glumes. Glumes several, comprising 2 gemmiferous bracts, 0 empty glumes.

Florets. Fertile lemma lanceolate, 10–15 mm long, chartaceous, dark green or purple, tipped with last colour, without keel, more than 3-veined. Lemma apex apiculate. Palea 11–13 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Vietnam.

Bambusa tulda Roxb. *Fl. Ind. ed. Carey* 2:193 (1832).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Roxb. Icones* 1403, (K; ILT: E). LT designated by Stapleton, *Edin. J. Bot.* 51: 19 (1994).

Illustrations (Books): N.L.Bor, *Gramineae in Flora of Iraq* (1968) (45, Pl. 13), H.J.Noltie, *The Grasses of Bhutan* (2000) (233, Fig. 1), D.Farrelly, *The Book of Bamboo* (1984), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 7).

Derivation (Clifford & Bostock 2007): Bengali, tulda. The vernacular name for the species in Bengal.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–2000 cm long, 50–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 36–60 cm long, mid-green or grey. Lateral branches dendroid, spreading. Branch complement many. Culm-sheaths present, 15–23 cm long, 1 times as long as wide, pubescent, with appressed hairs, with tawny hairs, truncate at apex or convex at apex, auriculate, ciliate on shoulders. Culm-sheath blade triangular, cordate, erect. Leaves cauline. Leaf-sheaths striately veined, glabrous on surface. Leaf-sheath oral hairs setose, pale. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long, petiole pubescent. Leaf-blades linear or oblong, 15–25 cm long, 17–37 mm wide. Leaf-blade midrib evident. Leaf-blade venation with 12–20 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, lax, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, subterete, 25–75 mm long, 5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, clavate, eventually visible between lemmas, pilose, hairy at tip.

Glumes. Glumes several, 2–4 empty glumes.

Florets. Fertile lemma ovate, 12–25 mm long, 7–8 mm wide, without keel, more than 3-veined. Lemma margins eciliate or ciliate. Lemma apex acute or acuminate, mucronate. Palea 7–9 -veined. Palea keels ciliate. Palea apex pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6, 7.5–10 mm long, purple, anther tip smooth. Stigmas 3. Ovary umbonate, pubescent on apex. Caryopsis with adherent pericarp, oblong, sulcate on hilar side, 7.5 mm long, hairy at apex.

$N = 36$ (1 ref TROPICOS). $2n = 70$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, South America.

Country /Province /State. **Western Asia, China.** China South Central. **Indian Subcontinent, Indo-China.** Assam, Bangladesh, Eastern Himalaya. Myanmar, Thailand, Vietnam. **Mesoamerica, Caribbean, Western South America, Brazil.** Costa Rica, Guatemala. Colombia, Ecuador. Brazil Southeast.

TDWG4. Yunnan. Bhutan. Meghalaya. Madhya Pradesh.

Bambusa tuldoides Munro. *Trans. Linn. Soc.* 26: 93 (1868).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Bambusa ventricosa* McClure, *Lingnan Sc. Journ.* 17: 57. (1938). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Hance 3657*, Hong Kong (BM). ST: *Hance 7486*, Hongkong ST: *Millett s.n.*, China: Canton ST: *Oldham 652*, Formosa.

Recent Synonyms: *Bambusa parvifolia* W.T.Lin, *Bamboo Res.*, 1986(2): 22 (1986).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (40, Fig. 7), D.Farrelly, *The Book of Bamboo* (1984), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 9).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Bambusa tulda*.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 700–1500 cm long, 50 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 30–50 cm long, distally glabrous. Culm-nodes glabrous. Lateral branches dendroid, erect or ascending. Culm-sheaths present, glabrous, auriculate, ciliate on shoulders. Culm-sheath blade triangular, erect, pubescent (at base). Leaves cauline. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles erect. Ligule an eciliate membrane, truncate. Collar with external ligule. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades oblong, 12–20 cm long, 10–20 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, lax, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, subterete, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two, persistent, similar, shorter than spikelet. Upper glume ovate, 6 mm long.

Florets. Fertile lemma 10–14 mm long, coriaceous, without keel, more than 3-veined. Lemma apex acute. Palea keels wingless. Palea apex pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6. Stigmas 3. Ovary umbonate. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia, Pacific, North America, South America.

Country /Province /State. China, Eastern Asia. China Southeast. Nansei-Shoto. **Indo-China, Malasia.** Vietnam. Malaya, Singapore. **North-central Pacific.** Hawaii (*, and as *B.angulata*). **Mexico.** Southeast Mexico. **Brazil, Southern South America.** Argentina Northeast.

TDWG4. Guangdong, Guangxi. Entre Rios. Chiapas.

Bambusa ventricosa McClure. *Lingnan Sc. Journ.* 17: 57 (1938).

Regarded by K as a synonym (*B. tuldoides*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *F.A. McClure 20667*, 15 Nov 1937, China: Kwangtung (US-45608).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (765, Pl. 1511), D.Farrelly, *The Book of Bamboo* (1984) (186), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 5).

Derivation (Clifford & Bostock 2007): L. venter, belly; -osa, abundance. Internodes swollen.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Flower and Fruit. $2n = 72$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, South America.

Country /Province /State. China. China Southeast. Hawaii (*). **Mesoamerica, Caribbean, Brazil.** El Salvador, Guatemala, Honduras. Brazil Southeast.

TDWG4. Guangdong.

Bambusa utilis W.C. Lin. *Bull. Taiwan Forest Res. Inst.* 98: 2, f. 1, 2. (1964).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (763, Pl. 1510).

Derivation (Clifford & Bostock 2007): L. useful.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–1400 cm long, 20–70 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 15–40 cm long, mid-green, distally glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Bud complement 1. Branch complement several, in a clump, thinner than stem. Culm-sheaths present, deciduous, coriaceous, pubescent, with dark brown hairs, hairy on margins, auriculate. Culm-sheath ligule 5 mm high, dentate. Culm-sheath blade triangular, glabrous on surface or pubescent. Leaves 5–11 per branch. Leaf-sheaths 4–6 cm long, puberulous. Leaf-sheath oral hairs setose, dark. Leaf-sheath auricles falcate. Ligule an eciliate membrane, erose, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.4 cm long. Leaf-blades deciduous at the ligule, lanceolate, 10–25 cm long, 12–25 mm wide. Leaf-blade venation with 12–18 secondary veins. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes two, persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 5 mm long, 9–11 -veined. Lower glume apex acute. Upper glume ovate, 5 mm long, 9–11 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 13 mm long, without keel, 17–20 -veined, more than 3-veined. Lemma apex acute. Palea lanceolate, 10 mm long, 13 -veined. Palea keels ciliolate, adorned above. Palea apex truncate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1.8 mm long, membranous, ciliate. Anthers 6, 6 mm long. Stigmas 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Eastern Asia. Taiwan.

Bambusa valida (Q.H. Dai) W.T. Lin. *Guihaia*, 10(1): 15 (1990).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Dendrocalamopsis validus* Q.H. Dai, *Acta Phytotax. Sin.*, 24(5): 393 (1986).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. robust. Culms erect, stout.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 1200–1600 cm long, 80–120 mm diam., woody. Culm-internodes terete, thin-walled, 20–25 cm long, distally glabrous or pubescent. Culm-nodes swollen, pubescent. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, 18–22 cm long, 1.5 times as long as wide, coriaceous, hispid, with appressed hairs, with dark brown hairs, convex at apex, auriculate, setose on shoulders. Culm-sheath ligule 4–5 mm high, ciliate. Culm-sheath blade lanceolate or narrowly ovate, erect, pubescent. Leaves cauline, 5–8 per branch. Leaf-sheaths pubescent, hairs tawny. Leaf-sheath oral hairs lacking. Leaf-sheath auricles absent. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 8–30 cm long, 20–65 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast. Guangxi.

Bambusa variostriata (W.T. Lin) L.C. Chia & H.L. Fung. *Acta Phytotax. Sin.*, 18(2): 215 (1980).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Basionym or Replaced Name: *Sinocalamus variostriatus* W.T.Lin, *Acta Phytotax. Sin.*, 16(1): 66 (1978).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 27).

Derivation (Clifford & Bostock 2007): *L. varius*, variable; *striatus*, striped. The internodes are variously striped.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 500–1200 cm long, 40–70 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled, 15–20 cm long, mid-green and purple, striped, distally pubescent. Culm-nodes flush with internodes. Lateral branches dendroid, arising from lower culm. Branch complement many. Culm-sheaths present, deciduous, coriaceous, hispid, with yellow hairs, auriculate, setose on shoulders, shoulders with 4–6 mm long hairs. Culm-sheath ligule 3–9 mm high, entire or dentate. Culm-sheath blade triangular, erect, hispid. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–26 cm long, 16–30 mm wide.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in oblong clusters, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 30–50 mm long, breaking up at maturity, rachilla persistent, shedding paleas. Rachilla internodes definite, 2–3 mm long.

Glumes. Glumes one the lower absent or obscure, comprising 3–5 gemmiferous bracts. Upper glume lanceolate, 10 mm long.

Florets. Fertile lemma ovate, 15 mm long, without keel, more than 3-veined. Lemma apex acute. Palea 15 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 4–5 mm long, membranous. Anthers 6, 7 mm long. Stigmas 3.

$2n = 84$ (1 ref TROPICOS), or 96 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bambusa villosula Kurz. *For. Fl. Brit. Burma*, 2: 553 (1877).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. villi*, long weak hairs; *-osa*, abundance; *-ula*, diminutive. Sparsely hairy.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, culms solitary or caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 75 mm diam., woody. Culm-internodes terete, 30–40 cm long. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, glabrous, hairy on margins, truncate at apex. Culm-sheath blade inconspicuous. Leaves cauline. Leaf-sheaths keeled, puberulous, outer margin hairy. Leaf-sheath oral hairs scanty. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades filiform, 12–20 cm long, 12–18 mm wide, glaucous. Leaf-blade venation indistinct, with 10–12 secondary veins, with obscure cross veins. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Myanmar.

Bambusa vinhphuensis Nguyen to Quyen. *Bot. Zhurn.*, 72(6): 828 (1987).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Vinhphu, Vietnam.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500 cm long, 90 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, mid-green. Lateral branches dendroid. Branch complement several, in a clump. Culm-sheaths present, deciduous, 21 cm long, 1 times as long as wide, coriaceous, yellow, pubescent, hairy below, auriculate, setose on shoulders. Culm-sheath ligule ciliolate. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.15 cm long. Leaf-blades deciduous at the ligule, lanceolate, 5.5–14 cm long, 10–15 mm wide. Leaf-blade venation with 8–12 secondary veins, without cross veins. Leaf-blade surface glabrous or pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 2–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 30–70 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, glabrous. Floret callus glabrous.

Glumes. Glumes two or several, 2–3 empty glumes, persistent, similar. Upper glume lanceolate, 6–9 mm long, 11–13 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 11–12 mm long, without keel, 17–19 -veined, more than 3-veined. Lemma apex acute. Palea oblong, 1 length of lemma, 12 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Vietnam.

Bambusa viridis Widjaja. *Reinwardtia* 11(2): 67 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: New Guinea, Waropi: *Widjaja 6638* (BO holo, K, L, US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. green*. Widely applied but especially to species with green spikelets.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, straight or zigzag, 2000 cm long, 30–50 mm diam., woody. Culm-internodes terete, thin-walled, 40–50 cm long, mid-green, distally glabrous or pilose. Lateral branches dendroid. Buds or branches absent from lower part of culm. Branch complement several. Culm-sheaths present, deciduous, 7–11 cm long, 0.5 times as long as wide, hispid, with tawny hairs, convex at apex, auriculate, with 3–5 mm high auricles, setose on shoulders, shoulders with 3–4 mm long hairs. Culm-sheath ligule 2 mm high, entire. Culm-sheath blade triangular, erect, 1.5–4.8 cm long, 10–20 mm wide, glabrous on surface. Leaves cauline. Leaf-sheaths pubescent. Leaf-sheath oral hairs setose, 9 mm long. Leaf-sheath auricles falcate, 2 mm long. Ligule an eciliate membrane, 1–2 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 8.4–29.7 cm long, 12–40 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Papuasias. New Guinea.

Bambusa vulgaris Schrad. *Wendl. Coll. Pl.* 2: 26. t. 47. (1810).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Anon.*, India: cultivated (BM (possible)).

Illustrations (Books): C-C Hsu, *Taiwan Grasses* (1975) (767, Pl. 1512), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (40, Fig. 7 as for *vulgaris*), W. Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (92, Fig. 22), E. Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (115–116, Fig. 15–16), D. Farrelly, *The Book of Bamboo* (1984) (186), S. Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No. 7, Bamboos* (1995), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 13).

Images: *Smith. Contr. Bot.* No. 72 : 42 (1988).

Derivation (Clifford & Bostock 2007): *L. vulgus*, public; -are, pertaining to. Common in the wild or in cultivation.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms geniculately ascending, 1500–2000 cm long, 40–100 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled. Lateral branches dendroid. Bud complement 1. Branch complement three or several, in a clump, with 1 branch dominant, thinner than stem. Culm-sheaths present, deciduous, hispid, with dark brown hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 5–8 mm high. Culm-sheath blade ovate, 5–15 cm long, pubescent, acute. Leaves 8–9 per branch. Leaf-sheaths pubescent. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–30 cm long, 18–45 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acuminate, hardened.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1–3 cm long, dense, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile Spikelets. Spikelets comprising 4–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 0.7–0.8 length of upper glume, coriaceous, without keels. Upper glume ovate, 0.5 length of adjacent fertile lemma, coriaceous, without keels.

Florets. Fertile lemma ovate, 9–11 mm long, without keel, 11–15 -veined, more than 3-veined. Lemma margins ciliate, hairy above. Lemma apex acute. Palea oblong, 1 length of lemma, 6 -veined. Palea keels wingless, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, ciliate. Anthers 6, 5 mm long. Stigmas 2–3. Ovary umbonate. Caryopsis with adherent pericarp.

$2n = 64$ (1 ref TROPICOS).

Distribution (TDWG). **Continent.** Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

Country /Province /State. **Northern Africa, Macaronesia, West tropical Africa, West-central tropical Africa, Northeast tropical Africa, Western Indian ocean.** Cape Verde. Burkina, Ivory Coast, Liberia, Nigeria, Sierre Leone. Annobon, Principe & Sao Tome, Rwanda, DRC. Aldabra (*), Mauritius (*), Madagascar (*), Rodrigues (*), Seychelles (*). **China, Eastern Asia.** China South Central. Nansei-Shoto. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Assam, Bangladesh, Eastern Himalaya, India, Sri Lanka. Andaman Is, Myanmar, Thailand, Vietnam. Java, Malaya, Singapore. New Guinea, Solomon Is. **Australia.** Queensland (*), New South Wales (*). **Southwestern Pacific, Northwestern Pacific, North-central Pacific.** Fiji (*), Niue (*), New Caledonia (*), Samoa (*), Tonga (*), Wallis-Futuna Is (*). Cook Is (*), Marquesas. Caroline Is (*), Marianas (*). Hawaii (*). **Mexico.** Central Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Colombia, Ecuador, Peru. Brazil North.

TDWG4. Yunnan. Sikkim. Madhya Pradesh, Uttah Pradesh, West Bengal. Distrito Federal, Mexico State, Morelos. Chiapas, Yucatan.

Bambusa wenchouensis (T.H.Wen) Keng f. ex Q.F.Zheng, Y.M.Lin. *Fl. Fujianica* 6: 45 (1995).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

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

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 20).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Wenchou, Zhejiang Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1600 cm long, 80–100 mm diam., woody, without nodal roots. Culm-internodes terete, 37–50 cm long, distally pubescent. Culm-nodes flush with internodes, pubescent. Lateral branches dendroid. Culm-sheaths present, deciduous, 20–25 cm long, 1 times as long as wide, coriaceous, glaucous, pubescent, with appressed hairs, with black hairs, concave at apex, without auricles, ciliate on shoulders. Culm-sheath blade lanceolate, reflexed, pubescent. Leaves cauline, 7–12 per branch. Leaf-sheaths 4–4.5 cm long, glabrous on surface or pubescent. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long, petiole glabrous. Leaf-blades lanceolate or oblong, 9–16 cm long, 12–20 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 9–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 33 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, glabrous.

Glumes. Glumes several, 2–4 empty glumes, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 8 mm long, without keel, 13–15 -veined, more than 3-veined. Lemma apex acute. Palea 11 -veined. Palea keels pubescent. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous, veined, ciliate. Anthers 6. Stigmas 3, plumose. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
Fujian, Zhejiang.

Bambusa xiashanensis L.C. Chia & H.L. Fung, *Acta Phytotax. Sin.*, 19(3): 374 (1981).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, nodding at the tip, 1200–1300 cm long, 45–55 mm diam., woody, with aerial roots from the nodes or with root thorns from the nodes. Culm-internodes terete, thick-walled, 35–44 cm long, distally glabrous. Lateral branches dendroid. Buds or branches present on lower part of culm. Branch complement several, with 1 branch dominant. Culm-sheaths present, deciduous, hispid, hairy at the base, with appressed hairs, with tawny hairs, convex at apex, auriculate, with unequal auricles, with 15 mm wide auricles, setose on shoulders. Culm-sheath ligule 7 mm high, dentate or ciliolate. Culm-sheath blade ovate or triangular, erect. Leaves cauline. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–20 cm long, 15–20 mm wide. Leaf-blade surface pubescent, densely hairy, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.
Guangdong.

Bambusa xueana D.Ohrnberger, *Bamboos of the World Intro.* 4: 19 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 800–1200 cm long, 40–70 mm diam., woody. Culm-internodes terete, thick-walled, 40–50 cm long, distally pubescent. Culm-nodes flush with internodes. Lateral

branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present, tardily deciduous, coriaceous, pubescent, with tawny hairs, without auricles. Culm-sheath ligule 2 mm high, dentate. Culm-sheath blade triangular, as wide as sheath at base, erect. Leaves cauline, 5–9 per branch. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base cuneate, with a brief petiole-like connection to sheath, petiole 0.1 cm long. Leaf-blades lanceolate, 12–25 cm long, 10–28 mm wide. Leaf-blade venation with 10–14 secondary veins, with obscure cross veins. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20 mm long, 7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes one the lower absent or obscure or two, persistent, shorter than spikelet.

Florets. Fertile lemma ovate, 14 mm long, 11 mm wide, without keel, 24–32 -veined, more than 3-veined. Lemma apex acute, mucronate. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2 or 3, membranous, ciliate. Anthers 6, 6 mm long, yellow. Stigmas 2–3. Ovary pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central.

TDWG4. Yunnan.

Bambusa yunnanensis N.H. Xia. *J. Trop. Subtrop. Bot.*, 1(1): 8 (1993).

Regarded by K as a synonym (*B. distegia*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Yunnan: Luoping, alt. 1000 m, 25 Feb 1958, *C.J. Hsueh et al.* 840266 (HT: SWFC).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Yunnan Province, China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, inclined at the tip, 1200 cm long, 30–50 mm diam., woody. Culm-internodes terete, thin-walled, 60–80 cm long, dark green, striate, antrorsely scabrous. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, deciduous, 25–30 cm long, 0.6–1 times as long as wide, coriaceous, pilose, with yellow hairs, convex at apex, without auricles, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule 2 mm high. Culm-sheath blade lanceolate, erect or reflexed. Leaves cauline, 10–13 per branch. Leaf-sheaths 6–7.5 cm long, striately veined, glabrous on surface. Leaf-sheath oral hairs setose. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1–1.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–18 cm long, 20–25 mm wide. Leaf-blade venation with 10–12 secondary veins, without cross veins. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central.

TDWG4. Sichuan.

Baptorhachis foliacea (Clayton) W.D. Clayton. *Kew Bull.* 42(2): 401 (1987).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mozambique. **Basionym or Replaced Name:** *Stereochlaena foliacea* Clayton, *Kew Bull.*, 33(2): 296 (1978). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Ribaue, on the slope of a little stony hill, 16 Feb 1962, *Fidalgo de Carvalho* 508 (HT: K).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):131, t. 36).

Derivation (Clifford & Bostock 2007): *L. folium*, leaf; *-acea*, indicating resemblance. The racemes have a leaf-like winged rachis.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe PASPALINAE.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 50 cm long. Ligule a ciliate membrane. Leaf-blades 2–5 cm long, 2–4 mm wide. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–4.5 cm long. Rhachis broadly winged, foliaceous, with rounded midrib, 3–4 mm wide, ciliate on margins. Spikelets appressed, in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3 mm long, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume lanceolate, 3 mm long, 1.5 length of adjacent fertile lemma, membranous, 2-keeled, 3 -veined. Upper glume surface with transverse tufts of hair (2 tufts). Upper glume apex lobed, 2 -fid, obtuse or acute, awned, 1 -awned, awn 1.5 mm long.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 2-keeled, 3 -veined, with dorsal tufts of hair, 2 hair tufts in all, lobed, 2–5 -fid, acute, awned. Awn of lower sterile floret 1.5 mm long. Fertile lemma lanceolate, 2 mm long, chartaceous, pallid, shiny, without keel, 3 -veined, more than 3-veined. Lemma margins flat, covering most of palea. Lemma apex acute. Palea chartaceous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa. Mozambique.

Bashania fansipanensis Nguyen To Quyen. *Bot. Zhurn.*, 76(6) : 876 (1991).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Arundinaria*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Mt Fansipan, Vietnam.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Vietnam.

Beckmannia eruciformis (L.) Host. *Gram. Austr.* 3: 5. t. 6 (1805).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

Basionym or Replaced Name: *Phalaris erucaeformis* L., *Sp. Pl.* 55 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (LINN-78.9 [right-hand specimen]). LT designated by Ferakova in Cafferty et al., *Taxon* 49(2): 253 (2000).

Illustrations (Books): N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (523 (351), Pl.6), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 283).

Derivation (Clifford & Bostock 2007): *L. eruca*, caterpillar; forma, shape. Racemes bear a fanciful resemblance to caterpillars.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 50–150 cm long, swollen at the base, forming an ovoid corm. Leaf-sheaths ribbed. Ligule an eciliate membrane, 5–8 mm long, acute. Leaf-blades 10–30 cm long, 4–10 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 4–15, borne along a central axis, ascending or erect, unilateral, 1–3 cm long. Central inflorescence axis 18–25 cm long. Rhachis angular. Spikelet packing crowded, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.2 mm long, tip cupuliform.

Fertile Spikelets. Spikelets comprising 2 fertile florets, without rhachilla extension. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets obovate or orbicular, laterally compressed, 2.5–3.7 mm long, falling entire. Rhachilla internodes suppressed between florets. Floret callus pubescent.

Glumes. Glumes similar, reaching apex of florets or shorter than spikelet, thinner than fertile lemma. Lower glume obovate, gibbous, 2–3.7 mm long, 1 length of upper glume, chartaceous, much thinner on margins, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume margins ciliolate. Lower glume apex obtuse. Upper glume obovate, gibbous, 2–3.7 mm long, 0.8–1.2 length of adjacent fertile lemma, chartaceous, with hyaline margins, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume margins ciliolate. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 2.5–3 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma midvein ciliate. Lemma apex apiculate. Palea oblong, 2 -veined.

Flower and Fruit. Anthers 3, 1.8 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Europe, Temperate Asia.

Region. Northern Europe (*), Middle Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Czechoslovakia, Germany, Hungary. : Albania, Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia, Caucasus, Western Asia.** Altay, Irkutsk, Krasnoyarsk, Tuva. Kazakhstan, Uzbekistan.

TDWG4.

Beckmannia syzigachne (Steud.) Fernald. *Rhodora*, 27 (1928).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. **Basionym or Replaced Name:** *Panicum syzigachne* Steud., *Flora*, 29: 19. (1846). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "die japanischen Grdser... der Gvring'schen Sammlung.", *Goering*.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (206, Fig 73), K.F.Best, et al, *Prairie Grasses* (1971) (65), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (485), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 505).

Derivation (Clifford & Bostock 2007): Gk syzigos, paired; achne, scale. The spikelets fall entire so the pair of conspicuously compressed subtending glumes appear to be fused at their bases.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 20–90 cm long, 1.8–2.4 mm diam., 2–4 -noded. Ligule an eciliate membrane, 3–6 mm long. Leaf-blades 7–20 cm long, 4–10 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 4–15, borne along a central axis, ascending or erect, unilateral, 1.7–2.5 cm long, simple or secondarily branched, secondary branches racemulose. Central inflorescence axis 15–35 cm long. Rhachis angular. Spikelet packing crowded. Spikelets solitary. Fertile spikelets pedicel. Pedicels present, oblong, 0.2 mm long, tip cupuliform.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets orbicular, laterally compressed, 3–3.5 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, firmer than fertile lemma. Lower glume ovate, gibbous, 3–3.5 mm long, 1 length of upper glume, herbaceous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume ovate, gibbous, 3–3.5 mm long, herbaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–3.5 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma apex apiculate. Palea oblong, 0.66 length of lemma, 2 -veined. Apical sterile florets distinct from fertile, 0–1 in number, male, orbicular.

Flower and Fruit. Anthers 3, 0.5–0.8 mm long. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 14$ (9 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia, North America.

Region. Northern Europe (*), Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). Central European Russia, East European Russia, Northwest European Russia. Siberia, Russian far east, **Middle Asia, China, Mongolia, Eastern Asia, Russia.** Altay, Buryatiya, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin. Kazakhstan, Kirgizistan. China South Central, Inner Mongolia, Manchuria, China Southeast, Tibet. Mongolia. Japan, Korea. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA.** Alaska, Yukon, Northwest Territories, Greenland. Manitoba. Labrador, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Montana, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota. Arizona, Utah. New Mexico, Texas.

TDWG4. Gansu, Hebei, Shandong. Anhui, Fujian, Jiangsu, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Bewisia biflora (Hackel) Goossens. *S. Afr. Journ. Sci.* 37: 184 (1941).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from South Africa. **Basionym or Replaced Name:** *Diplachne biflora* Hack. ex Schinz, *Bull. Herb. Boiss.* 3:387. (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Rehmann 5386*, South Africa: Transvaal: Makapansberge, Streydpoort (W; IT:K, US-865880 (fragm.)).

Illustrations (Books): R.M.Pohill, F.T.E.A., *Gramineae* (2(1974):285, Fig.78), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):37, t. 16), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (121, Fig 92 as *Diplachne*), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (61, Fig 27), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (42, Fig. 7).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. bis, twice; flos, flower. Florets two per spikelet.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 40–90 cm long. Leaves mostly basal. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades 10–40 cm long, 1–5 mm wide. Leaf-blade surface scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 6–15, borne along a central axis, unilateral, 3–9 cm long. Central inflorescence axis 4–12 cm long. Rhachis subterete. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.5–1 mm long.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 5.5–9 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Floret callus evident, pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.9–1 length of upper glume, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1–1.2 length of adjacent fertile lemma, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 4–6 mm long, membranous, dark brown to red, keeled, lightly keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex emarginate or obtuse, awned, 1 -awned. Principal lemma awn dorsal, arising 0.5–0.8 way up back of lemma, 1–8 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, linear or oblong, isodiametric, biconvex, 2 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. Benin, Ivory Coast, Nigeria. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho (?).

Bhidea borii U.R. Deshpande V. Prakash & N.P. Singh. *Current Sci.*, 58(19): 1094 (1989).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Jog-Siddapur: *McCann A51a* (K holotype).

Illustrations (Books): G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990).

Derivation (Clifford & Bostock 2007): In honor of Norman Loftus Bor (1893–1972) Irish born Indian forest botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms erect, slender, 16 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 2.5–6 cm long, 2.5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole. Spatheole linear, membranous. Racemes 2, paired, 5 cm long, bearing few fertile spikelets, bearing 3–4 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes linear, 2 mm long. Rhachis internode tip oblique, cupuliform. Raceme-bases filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, 2.5 mm long, ciliate, hairy on one margin.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number (lower raceme), 4 in upper racemes, barren, smaller than fertile. Basal sterile spikelet lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, asymmetrical, as long as fertile, persistent. Companion sterile spikelet callus square, truncate. Companion sterile spikelet glumes coriaceous, 2 mm long, winged on keels, awned, both glumes awned, with 7–9 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 2 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 2.5 mm long, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, asymmetrical, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged broadly, winged above. Lower glume apex acute, awned, 1 -awned, awn 12 mm long. Upper glume oblong, 2 mm long, membranous, 1-keeled. Upper glume apex lobed, 3 -fid, awned, 1 -awned.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1 mm long, hyaline. Fertile lemma oblong, 2 mm long, membranous, keeled. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 35 mm long overall, with twisted column. Column of lemma awn glabrous.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Karnataka.

Bhidea burnsiiana Bor. *Kew Bull.* 1948, 445 (1948).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R.K. Bhide s.n.*, 8 1918, India: Bombay (US-1984447 (fragm. ex K)).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (104, Fig 2), S.W.L.Jacobs & J.Everett (2000) (371, Fig. 1).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of William Burns (1884-) Scots-born Indian botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Annual. Culms erect, 8–13 cm long. Lateral branches ample. Ligule an eciliate membrane, 1 mm long. Leaf-blades 2.5–4 cm long, 3–4 mm wide. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole. Spatheole linear, 3–5 cm long, membranous. Racemes 2, paired, 1.5–2 cm long, bearing few fertile spikelets, bearing 3–4 fertile spikelets on each. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear. Rhachis internode tip oblique, cupuliform, with lobed rim. Raceme-bases filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 3.5 mm long, ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number (lower raceme), 4 in upper racemes, barren, 4–5.5 mm long, smaller than fertile. Basal sterile spikelet lower glume muticous.

Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, asymmetrical, as long as fertile, persistent. Companion sterile spikelet callus square, truncate. Companion sterile spikelet glumes coriaceous, winged on keels, entire or lobed, muticous or awned, one glume awned, with 0.5–1.5 mm long awn.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 6.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, 1 mm long, pilose, base obtuse, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, asymmetrical, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged broadly, winged above, 2 -veined. Lower glume intercarinal veins absent. Lower glume apex acute. Upper glume oblong, 4 mm long, membranous, 1-keeled, 3 -veined. Upper glume apex lobed, 3 -fid, awned, 1 -awned, awn 4–5 mm long (winged).

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4 mm long, hyaline, 2 -veined. Fertile lemma oblong, 3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, incised 0.15 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea hyaline, 2 -veined.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indian Subcontinent. India.
TDWG4. Kerala. Maharashtra.

Bhidea fischeri P.V. Sreekumar & B.V. Shetty. *Kew Bull.*, 42(3): 683 (1987).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mukkarikandam: Sreekumar 71754 (CAL holo, K, MH).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): In honor of Cecil Ernest Claude Fischer (1874–1950) Indian botanist born of European parents.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Annual. Culms erect, 20–40 cm long. Culm-nodes bearded. Lateral branches ample. Leaf-sheaths keeled. Ligule an eciliate membrane, truncate. Leaf-blades lanceolate, 1–8 cm long, 1–3 mm wide.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole. Spatheole linear, membranous. Racemes 1–2, single or paired, 1–4 cm long, bearing few fertile spikelets. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip oblique, cupuliform, with lobed rim. Raceme-bases filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 3–4 mm long, villous, hairy on one margin.

Sterile Spikelets. Basal sterile spikelets well-developed, 4 in number (lower raceme), 4 in upper racemes, barren, smaller than fertile. Basal sterile spikelet lower glume muticous.

Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, asymmetrical, 10–12 mm long, as long as fertile, persistent. Companion sterile spikelet callus square, truncate. Companion sterile spikelet glumes coriaceous, winged on keels, 7–9 -veined, awned, one glume awned.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, laterally compressed, 10–12 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 2–3 mm long, bearded, base acute, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, asymmetrical, 7–8 mm long, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, 3–5 -veined. Lower glume intercarinal veins absent. Lower glume apex acuminate. Upper glume oblong, 5–6 mm long, membranous, with hyaline margins, 1-keeled, 5–7 -veined. Upper glume apex lobed, 3 -fid, awned, 1 -awned, awn 6–8 mm long (winged).

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline, 2 -veined. Fertile lemma oblong, 4–5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 35–45 mm long overall, with twisted column. Column of lemma awn 14–16 mm long, glabrous. Palea hyaline, 2 -veined.

Flower and Fruit. Anthers 3, 1.5–2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Kerala.

Blepharidachne benthamiana (Hack.) Hitchcock. *U. S. Dept. Agric. Bull. No. 772*, 78 (1920).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Argentina. **Basionym or Replaced Name:** *Munroa benthamiana* Hack. ex Kuntze, *Rev. Gen.* 3 (2) 357. (1893). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Hieronimus 435*, 21 Feb 1876, Argentina: Cordoba: Dept. Minas (K; IT: CORD, US (fragm.)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of George Bentham (1800–1884) English botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 4–10 cm long. Lateral branches ample. Leaves without demarcation between sheath and blade. Leaf-sheaths longer than adjacent culm

internode. Ligule absent. Leaf-blades straight, triangular, tapering towards tip, flat, 1–1.5 cm long, 2–3 mm wide, coriaceous, stiff. Leaf-blade surface smooth, glabrous. Leaf-blade margins cartilaginous. Leaf-blade apex acute, pungent.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle capitate, oblong, 1 cm long, bearing few spikelets. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile floret, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–7 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 5–7 mm long, 1.5–2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate.

Florets. Basal sterile florets 2 or more, similar, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 3 mm long, 1 length of fertile lemma, chartaceous, 3 -veined, pubescent, hairy at base, lobed, 3 -fid, obtuse, awned (1 awn). Awn of lower sterile floret 2 mm long. Fertile lemma ovate, gibbous, 3 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, acute, awned, 3 -awned. Principal lemma awn from a sinus, 2 mm long overall, limb ciliate. Lateral lemma awns present, arising on outer edge of lobes, 0.5 mm long, shorter than principal. Palea ovate, 1 length of lemma, 2 -veined. Palea keels approximate, ciliolate, adorned above. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 1–1.5 mm long, ciliate.

Flower and Fruit. Lodicules absent. Anthers 3. Caryopsis with adherent pericarp. Embryo projecting below grain.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina Northeast, Argentina Northwest.

TDWG4. Catamarca, La Rioja, Mendoza, San Juan, San Luis. Cordoba.

Blepharidachne bigelovii (Wats.) Hack. *DC. Monog. Phan.* 6: 261 (1889).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name:** *Eremochloe bigelovii* S. Watson, *Bot. King's Exped.* 382 (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *C. Wright 2028*, 4 May 1852, USA: Texas: Grassy rocky hills near Frontera, in small compact bushes (GH; IST:K, US-81934 (fragm.)). field number 277. LT designated by Buitenhuis & Veldvank, *Blumea* 46: 416 (2001). ST: *Parry, Bigelow, Wright & Schott s.n.*, 4 May 1852 (or 4 July 1852), USA: Texas: Mex. Boundary Surv. chiefly in the valley of the Rio Grande, below Doqana, rocky hills Frontera (GH; IST:K). ST: *Bigelow s.n.*, 4 May 1852, USA: Texas: Frontera, Mex. Boundary Surv. (GH; IST: US-81934 (fragm. ex GH)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (50), F.W.Gould, *The Grasses of Texas* (1975) (243, Fig. 129).

Derivation (Clifford & Bostock 2007): in honor of John Milton Bigelow (1804–1878) United States surgeon and botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 6–20 cm long. Lateral branches ample. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades curled, deciduous at the ligule, involute, 1–2 cm long, 1–2 mm wide, coriaceous, stiff. Leaf-blade surface ribbed, pubescent. Leaf-blade margins cartilaginous. Leaf-blade apex acute, hardened.

Inflorescence. Inflorescence a panicle, comprising 5–10 fertile spikelets, shorter than basal leaves, embraced at base by subtending leaf. Panicle capitate, oblong, 1–3 cm long, bearing few spikelets. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile floret, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 0.9 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 4.5–6 mm long, 0.8 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Basal sterile florets 2 or more, similar, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 5–7 mm long, 1 length of fertile lemma, chartaceous, 3 -veined, pilose, hairy below, ciliate on margins, lobed, 2 -fid, awned (1 awn). Awn of lower sterile floret 2–3 mm long. Fertile lemma oblong, 5–7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.2 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 4–5 mm long overall, limb ciliate. Lateral lemma awns present, arising on outer edge of lobes, 3–4 mm long, shorter than principal, ciliate. Palea 1.1 length of lemma, 2 -veined. Palea keels approximate, scabrous. Apical sterile florets 1 in number, male, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 4–5 mm long, ciliate.

Flower and Fruit. Lodicules absent. Caryopsis with adherent pericarp. Embryo projecting below grain.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Mexico. New Mexico, Texas. Northeast Mexico. Coahuila, Neuvo Leon.

Blepharidachne hitchcockii Lahitte. *Physis*, 15: 305 (1939).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A. *Giacomelli 1638*, 31 Mar 1901, Argentina: La Rioja: cerca del Pozo de Avila (BAB; IT: BAF, US-3168447 (fragm.)).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (365, Fig. 125).

Derivation (Clifford & Bostock 2007): in honor of Albert Spear Hitchcock (1865–1935), United States agrostologist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 4–10 cm long. Lateral branches ample. Leaves without demarcation between sheath and blade. Leaf-sheaths longer than adjacent culm internode. Ligule absent. Leaf-blades straight, triangular, tapering towards tip, flat, 1–1.5 cm long, 2–3 mm wide, coriaceous, stiff. Leaf-blade surface smooth, pilose (1–1.5mm). Leaf-blade margins cartilaginous. Leaf-blade apex acute, pungent.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle capitate, oblong, 1 cm long, bearing few spikelets. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–7 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 5–7 mm long, 1.5–2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate.

Florets. Basal sterile florets 2 or more, similar, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 3 mm long, 1 length of fertile lemma, chartaceous, 3 -veined, pubescent, hairy at base, lobed, 3 -fid, obtuse, awned (1 awn). Awn of lower sterile floret 2 mm long. Fertile lemma ovate, not gibbous, 3 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma lateral veins close to margins. Lemma surface glabrous. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, acute, awned, 3 -awned. Principal lemma awn from a sinus, 2 mm long overall, limb ciliate. Lateral lemma awns present, arising on outer edge of lobes, 0.5 mm long, shorter than principal. Palea ovate, 1 length of lemma, 2 -veined. Palea keels approximate, ciliate, adorned above. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 1–1.5 mm long, ciliate.

Flower and Fruit. Lodicules absent. Anthers 3. Caryopsis with adherent pericarp. Embryo projecting below grain.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina Northwest.
TDWG4. Catamarca, La Rioja, Mendoza, San Luis.

Blepharidachne kingii (Wats.) Hack. *DC. Monog. Phan.* 6: 261 (1889).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name:** *Eremochloe kingii* S. Watson, *Bot. King's Exped.* 382. t. 40. (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Watson 1300*, May 1868, USA: Nevada: Trinity Mts. (GH; IT: US-81943 (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (50), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (37, Fig. 6).

Derivation (Clifford & Bostock 2007): in honor of Clarence King (1842–1901) United States geologist and explorer.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 3–10 cm long. Lateral branches sparse. Leaf-sheaths longer than adjacent culm internode. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs. Leaf-blades curved, aciculate, involute, 1–2 cm long, 0.5 mm wide, coriaceous, stiff. Leaf-blade surface ribbed, scaberulous. Leaf-blade apex acute, pungent.

Inflorescence. Inflorescence a panicle, shorter than basal leaves, embraced at base by subtending leaf. Panicle capitate, oblong, 1–2 cm long, bearing few spikelets. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6.5–8.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate or elliptic, 6.5–8.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate or elliptic, 6.5–8.5 mm long, 1.1–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Basal sterile florets 2 or more, similar, barren, with palea, attached to and deciduous with the fertile. Lemma of lower sterile floret oblong, 6 mm long, 1 length of fertile lemma, chartaceous, 3 -veined, pubescent, hairy below, ciliate on margins, lobed, 2 -fid, obtuse, awned (1 awn). Awn of lower sterile floret 3 mm long. Fertile lemma oblong, not gibbous, 6 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins close to margins. Lemma surface pubescent, hairy below. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, obtuse, awned, 3 -awned. Principal lemma awn from a sinus, 2–4 mm long overall, limb ciliate. Lateral lemma awns present, arising on outer edge of lobes, 0.5 mm long, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea keels approximate, ciliolate. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 2.5–3 mm long, ciliate.

Flower and Fruit. Lodicules absent. Anthers 2. Caryopsis with adherent pericarp. Embryo projecting below grain.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA. Nevada, Utah.

Boissiera squarrosa (Soland.) Nevski. *Acta Univ. As. Med. Ser.* 8b, *Bot. Fasc.* 17, 30 (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Syria. **Basionym or Replaced Name:** *Pappophorum squarrosum* Banks & Sol., *Russ. Aleppo*, ed. 2(2) 244 (1794). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Russel s.n.*, Syria (BM).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 245), L.Boulos, *Flora of Egypt* 4 (2005) (198, Pl. 57), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 16), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (129, Pl. 44), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (584, Fig 65).

Images: L.Boulos, *Flora of Egypt* 4 (2005);.

Derivation (Clifford & Bostock 2007): L. spreading at right angles from a common axis. Inflorescence arms held at right angles to common axis.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or decumbent, 5–15 cm long. Leaf-sheaths tubular for much of their length, pilose. Ligule an eciliate membrane. Leaf-blades 2–10 cm long, 3–5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, ovate, 2–7 cm long, 2–3.5 cm wide. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 2–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–17 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–6 mm long, 0.75 length of upper glume, without keels, 1–3 -veined. Lower glume apex acute. Upper glume lanceolate, 5–8 mm long, 0.5–0.75 length of adjacent fertile lemma, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 9–12 mm long, chartaceous, much thinner above, without keel, 9 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface glabrous or pilose. Lemma apex erose, obtuse, awned, 5–9 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, curved, spreading, 6–14 mm long overall. Lateral lemma awns present, arising dorsally, spreading as much as principal, shorter than principal. Apical sterile florets 3–6 in number, barren, in a clump, oblong, 1–5 mm long. Apical sterile lemmas awned, 5–9 -awned. Apical sterile lemma awns 6–14 mm long.

Flower and Fruit. Anthers 3, 0.2–0.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, hairy at apex. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), Africa, Temperate Asia, Tropical Asia.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Northern Africa.** Egypt. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula.** Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. **Indian Subcontinent.** Pakistan.

TDWG4.

Bonia amplexicaulis (L.C. Chia, H.L. Fung & Y.L. Yang) N.H. Xia. *Kew Bull.*, 51(3): 568 (1996).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Monocladus amplexicaulis* L.C. Chia, H.L. Fung & Y.L. Yang, *Acta Phytotax. Sin.*, 26(3): 215 (1988). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Longzhou, in calcareis saxosis collium et montium, 300–500 m, *S.H. Chun & Nanzhu* 2256 (HT: SCBI).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 51).

Derivation (Clifford & Bostock 2007): L. *amplexatio*, embrace; *caulis*, stem. The connate leaf-sheath and ligule encircle the stem.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–500 cm long, 5–15 mm diam., woody. Culm-internodes terete, thin-walled, 30–50 cm long, distally mealy and hispid. Lateral branches dendroid. Culm-sheaths present, hispid, with appressed hairs or erect hairs, with tawny hairs, auriculate, setose on shoulders, shoulders with 1.5–2 mm long hairs. Culm-sheath ligule entire. Culm-sheath blade ovate, constricted at base. Leaves cauline. Leaf-sheaths puberulous. Leaf-sheath oral hairs setose, 6 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 25–40 cm long, 45–80 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangxi.

Bonia levigata (L.C. Chia, H.L. Fung & Y.L. Yang) N.H. Xia. *Kew Bull.*, 51(3): 568 (1996).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Monocladus levigatus* L.C. Chia, H.L. Fung & Y.L. Yang, *Acta Phytotax. Sin.*, 26(3): 216 (1988). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Hainan: Yan Xian, in sparsis sylvis montium, 270–700 m, *Nanzhu 1670* (HT: SCBI).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 51).

Derivation (Clifford & Bostock 2007): L. smooth. Culms smooth with polished internodes.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 100–150 cm long, 6–10 mm diam., woody. Culm-internodes terete, thin-walled, 25–35 cm long, distally glabrous. Lateral branches suffrutescent. Culm-sheaths present, hispid, with appressed hairs, with tawny hairs, auriculate, ciliate on shoulders, shoulders with 2 mm long hairs. Culm-sheath ligule entire. Culm-sheath blade narrowly ovate. Leaves cauline. Leaf-sheaths hispid, hairs tawny. Leaf-sheath oral hairs setose, 5–7 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–35 cm long, 40–60 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. Hainan.

Bonia parvifloscula (W.T. Lin) N.H. Xia. *Novon* 15(4): 601 (2005).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Monocladus parviflosculus* W.T. Lin, *J. Bamboo Res.*, 12(3): 3 (1993). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangdong: Zhaoqing, Qixingyan, *Z.K. Li 84126* (HT: CANT).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 100–120 cm long, 4–6 mm diam., woody. Culm-internodes terete, solid, 16–39 cm long, distally glabrous or pubescent. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement one, as thick as stem. Culm-sheaths present, tardily deciduous, hispid, without auricles, glabrous on shoulders. Culm-sheath ligule 0.8 mm high, dentate. Culm-sheath blade linear or lanceolate, narrower than sheath, erect or reflexed. Leaves cauline, 5–7 per branch. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 11–22 cm long, 15–32 mm wide, mid-green and glaucous, discolourous with last colour beneath. Leaf-blade venation without cross veins. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 17–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 3–5 mm long.

Glumes. Glumes several, comprising 2–3 gemmiferous bracts, 0 empty glumes.

Florets. Fertile lemma lanceolate, 6–8 mm long, without keel, more than 3-veined. Lemma surface hispidulous. Palea 0.9 length of lemma, 7–8 -veined. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1.5–2.5 mm long, membranous, glabrous, emarginate. Anthers 6. Stigmas 3. Ovary glabrous.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong.

Bonia saxatilis (L.C. Chia, H.L. Fung & Y.L. Yang) N.H. Xia. *Kew Bull.*, 51(3): 567 (1996).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006).

TYPE from China. **Basionym or Replaced Name:** *Monocladus saxatilis* L.C. Chia, H.L. Fung & Y.L. Yang, *Acta Phytotax. Sin.*, 26(3): 213 (1988). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Guangxi: Donglan, in calcareis saxosis montium, 400–750 m, *Exped. Geob. SCBI5533* (HT: SCBI).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 50 as *B. saxatilis* var. *saxatilis*).

Derivation (Clifford & Bostock 2007): *L. saxum*, rock; *-atile*, place of growth. Dwelling among rocks.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 100–400 cm long, 4–8 mm diam., woody. Culm-internodes terete, thin-walled, 25–40 cm long, distally glabrous. Lateral branches dendroid. Culm-sheaths present, pubescent, with appressed hairs, with tawny hairs, auriculate, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule ciliate. Culm-sheath blade lanceolate, erect or reflexed. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose, 10 mm long. Leaf-sheath auricles falcate. Ligule a ciliate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 20–35 cm long, 35–60 mm wide. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with spathaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 7–10 mm long.

Glumes. Glumes two. Lower glume lanceolate, 10 mm long, chartaceous, 11 -veined. Lower glume apex mucronate. Upper glume lanceolate, 12 mm long, chartaceous, 11 -veined. Upper glume mucronate.

Florets. Fertile lemma lanceolate, 13 mm long, without keel, 9–11 -veined, more than 3-veined. Lemma apex apiculate. Palea 10 -veined. Palea surface pilose, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 1 mm long, membranous. Anthers 6, 2–3 mm long. Stigmas 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China Southeast.

TDWG4. Guangdong, Guangxi.

Bonia tonkinensis Balansa. *Morot, Journ. de Bot.* 9: 29 (1890).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.F. Bon 2064*, 17 Apr 1883, Vietnam (P; IT: L, US-2809350).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -ense*, denoting origin. From Tonkin, Indo-China.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 2000 cm long, 10–12 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, brown. Lateral branches dendroid. Branch complement many. Culm-sheaths present. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Collar with external ligule. Leaf-blade base truncate, without a false petiole. Leaf-blades lanceolate, 15–18 cm long, 12–16 mm wide. Leaf-blade venation indistinct, with obscure cross veins. Leaf-blade surface glabrous. Leaf-blade margins undulate, smooth. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafy between clusters.

Fertile Spikelets. Spikelets comprising 3–4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 1 mm long. Rhachilla internodes definite.

Glumes. Glumes two. Upper glume oblong or ovate. Upper glume lateral veins obscure.

Florets. Fertile lemma oblong, 6–8 mm long, without keel, 7 -veined, more than 3-veined. Lemma apex apiculate. Palea oblong, 1 length of lemma, 6 -veined. Palea keels ciliate. Palea apex acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, membranous. Anthers 6, anther tip apiculate. Stigmas 3. Ovary umbonate, glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indo-China. Vietnam.

Borinda emeryi C.M.A. Stapleton. *Edinburgh J. Bot.*, 51(2): 286 (1994).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Fargesia*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nepal: Sankhuwasabha Distr.: Younglay, 27.44N 87.12E, 10 Jul 1974, *Emery 54* (HT: K; IT: E).

Recent Synonyms: *Yushania emeryi* (Stapleton) Demoly, *Bambou Bull. Liais. A. E. B.* 29: 13 (1998).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Emery (fl.1974) who collected in Nepal.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped moderately. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, erect at the tip, 200–400 cm long, woody, without nodal roots. Culm-internodes terete, thin-walled, ridged, distally pruinose. Culm-nodes flush with internodes, glabrous. Lateral branches dendroid. Bud prophyll 1-keeled. Branch complement three, subtended by a bare patch above the node, with subequal branches, thinner than stem. Culm-sheaths present, glabrous or pubescent, hairy above, auriculate, with obtuse auricles, with 1 mm high auricles, glabrous on shoulders. Culm-sheath ligule 1–2 mm high, ciliate. Culm-sheath blade lanceolate, demarcated but persistent, erect or reflexed, 2–10 cm long, 3–5 mm wide, pubescent. Leaf-sheaths glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 1.5 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 7–9 cm long, 6–8 mm wide. Leaf-blade venation with distinct cross veins.

Inflorescence. Inflorescence a panicle. Panicle branches bearded in axils, with insignificant pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–20 mm long.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes flattened, 5–6 mm long, pubescent or pilose, hairy all along but hairs longer above.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6–11 mm long, chartaceous, without keels. Lower glume apex acute, awned. Upper glume elliptic, 8–14 mm long, 0.6–0.8 length of adjacent fertile lemma, chartaceous, without keels. Upper glume apex acute, awned.

Florets. Fertile lemma 13–17 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Palea 10–12 mm long, 2 -veined. Palea keels ciliate, adorned above, with 0.5 of their length adorned, with hairs 0.3 mm long. Palea surface scabrous. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, ciliate. Anthers 3, yellow. Stigmas 2–3. Caryopsis with adherent pericarp, apex unappendaged.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. Eastern Himalaya.

Borinda grossa (T.P. Yi) C.M.A. Stapleton. *Edinburgh J. Bot.*, 51(2): 288 (1994).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Fargesia*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from China. **Basionym or Replaced Name:** *Fargesia grossa* T.P. Yi, *J. Bamboo Res.*, 2(2): 35 (1983). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Xizang: Cona Xian, 2600 m, 24 Sept. 1978, *C.G. Jiang 2* (HT: SFS).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (498, Fig. 4 & 508, Fig. 6).

Derivation (Clifford & Bostock 2007): L. large. Culms tall.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, drooping at the tip, 500–1000 cm long, 20–45 mm diam.,

woody, without nodal roots. Culm-internodes terete, thin-walled, 25–50 cm long, ridged, distally pruinose or glabrous. Culm-nodes flush with internodes. Lateral branches dendroid. Bud prophyll 1-keeled. Branch complement three, subtended by a bare patch above the node, with subequal branches, thinner than stem. Culm-sheaths present, persistent, 26 cm long, 2 times as long as wide, hispid, with dark brown hairs, without auricles, setose on shoulders, shoulders with straight hairs, shoulders with 3–8 mm long hairs. Culm-sheath ligule 1–2 mm high, ciliolate. Culm-sheath blade lanceolate, deciduous, erect, 3.5–7 cm long, 20 mm wide, hispid. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs setose, 3–5 mm long. Ligule an eciliate membrane, 15–25 mm long, truncate. Collar pilose. Leaf-blade base with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades lanceolate, 4.5–18 cm long, 5–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle branches bearded in axils, with insignificant pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 20–30 mm long.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 30–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–6 mm long, pubescent or pilose, hairy all along but hairs longer above.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 9–15 mm long, chartaceous, without keels. Lower glume apex acute, awned. Upper glume elliptic, 13–17 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, without keels. Upper glume apex acute, awned.

Florets. Fertile lemma 15–20 mm long, chartaceous, without keel, more than 3-veined. Lemma surface scabrous, rough above, puberulous. Lemma margins ciliolate. Palea 10–12 mm long, 2 -veined. Palea keels ciliate, adorned above, with 0.5 of their length adorned, with hairs 3 mm long. Palea apex entire or dentate, 2 -fid, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, ciliate. Anthers 3, 9 mm long, yellow, anther tip smooth or penicillate. Stigmas 2–3. Caryopsis with adherent pericarp, apex unappendaged.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. Tibet. **Indian Subcontinent.** Eastern Himalaya.

TDWG4. Bhutan.

Bothriochloa alta (Hitchcock) Henrard. *Blumea* 4(3): 520. 1941.

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Andropogon altus* Hitchc., *Contrib. US. Nat. Herb.* 17: 208 (1913). T:<Type of Basionym>; *fide* TROPICOS and Kew Synonymy Database: HT: A.S. Hitchcock 5868, 24–25 Jul 1910, Mexico: Queritaro, irrigation ditch, near Queritaro (US-691232).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (643), R.McVaugh, *Flora Nova-Galicyana* Vol.14 *Gramineae* (1983).

Illustrations (Journals): *Darwiniana* (38: 139, Fig.5 (2000)), *Ruizia* (13:435 Fig 58a (1993)).

Derivation (Clifford & Bostock 2007): L. tall. Culms tall, relative to those of other members of the genus.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 75–150 cm long. Culm-internodes distally glabrous. Culm-nodes bearded. Lateral branches lacking or sparse. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 2–4 mm long. Leaf-blades 20–40 cm long, 5–10 mm wide. Leaf-blade surface glabrous, hairless except near base.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending, 2–4 cm long. Central inflorescence axis 5–14 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 4–6 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous, with 4–6 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, lanceolate, 3–3.6 mm long. Companion sterile spikelet glumes 5 -veined.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume lateral veins obscure. Lower glume surface flat, pitted, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2 mm long, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

$2n = 120$.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. South-central USA, Mexico. New Mexico, Texas. Northeast Mexico, Southwest Mexico. Mesoamerica, Western South America, Brazil, Southern South America. El Salvador, Guatemala. Bolivia, Ecuador, Peru. Argentina Northeast, Argentina Northwest.

TDWG4. Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero, San Luis. Buenos Aires, Chaco, Cordoba, Distrito Federal, La Pampa, Santa Fe. Coahuila, Durango, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Bothriochloa barbinodis (Lag.) Herter. *Rev. Sudamer. Bot.* 6: 135 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

Basionym or Replaced Name: *Andropogon barbinodis* Lag., *Gen. et Sp. Nov.* 3 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Anonymous s.n.*, Sep. 1843, Cultivated ex hort. Matr. (MA-507589; IT: F-843031, US-75633 (fragm. ex hort. Matr.)). LT: *Anonymous s.n.*, Herb. Bot. Madritensis (MA-22; ILT: US-75633 (fragm. ex MA)). LT designated by Marchi & Lonhi-Wagner, *Bol. Inst. Bioci. Univ. Fed. Rio Grande do Sul* 57: 20 (1998).

Recent Synonyms: *Bothriochloa palmeri* (Hack.) Pilger, *Engl. & Prantl, Nat. Pflanzenfam. Aufl.* 2, 14e. 160 (1940). *Bothriochloa perforata* (Trin. ex Fourn.) Herter, *Rev. Sudamer. Bot.* 6: 135 (1940).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (643), F.W.Gould, *The Grasses of Texas* (1975) (601, Fig. 318 as var. *barbinodis*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (583, Fig. 136), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (483, Fig. 204), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (557, Fig. 375).

Illustrations (Journals): *Darwiniana* (38: 143, Fig.7 (2000)).

Images: R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

Derivation (Clifford & Bostock 2007): L. barba, beard; nodus, knot. Nodes bearded.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 60–120 cm long. Culm-nodes bearded. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 1–2 mm long, erose or lacerate. Leaf-blades 25–30 cm long, 2–7 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes numerous, digitate or borne along a central axis, erect or ascending, 4–9 cm long, with branchlets at base of longer racemes. Central inflorescence axis 5–9 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, linear or lanceolate, 2–5 mm long, shorter than fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4.5–7.3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, without pits or pitted, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–30 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Pacific, North America, South America.

Country /Province /State. North-central Pacific. Marquesas (*). Hawaii (*). North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Oklahoma. Arizona, California, Nevada, Utah. New Mexico, Texas. Florida, Louisiana, Mississippi. Central Mexico, Northeast Mexico, Gulf (Mexico), Pacific Is (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica, Western South America, Brazil, Southern South America. El Salvador, Guatemala. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil South. Argentina Northeast, Argentina South, Argentina Northwest, Uruguay.

TDWG4. Sao Paulo Parana. Jujuy. Buenos Aires, Entre Rios. Río Negro. Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Zacatecas. Guadalupe Is, Roscas Alijos, Revillagigedo Is. Baja California, Baja California Sur, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Bothriochloa biloba S. T. Blake. *Univ. Queensl. Papers, Dept. Biol.*, 2 No. 3, 27 (1944).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Australia, Warialda: Hadley.

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (167), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (128(2)), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. bis, twice; lobus, lobe. Lemmas notched.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 50–100 cm long, 3–7 -noded. Culm-internodes channelled. Culm-nodes glabrous. Ligule a ciliate membrane, 1–2 mm long. Leaf-blades flat or revolute, 7–20 cm long, 3–5 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–6, digitate, 4–10 cm long. Rhachis fragile at the nodes, flattened, glabrous on surface, ciliate on margins. Rhachis hairs 4.5–6 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Raceme-bases brief, pilose, hairy in axils. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear or lanceolate, 4.2–5.7 mm long, shorter than fertile. Companion sterile spikelet glumes glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, acute, 6.5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 2 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels, keel-less except near apex, 13–15 -veined. Lower glume primary vein scabrous. Lower glume surface concave, asperulous, pilose, hairy below. Lower glume apex acute. Upper glume lanceolate, 1-keeled. Upper glume surface asperulous, rough above. Upper glume mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate or ovate, 0.66–0.75 length of spikelet, hyaline. Fertile lemma oblong, 3–4.3 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, with filiform lobes, incised 0.25–0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea lanceolate, 0.25–0.33 length of lemma.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland, New South Wales.

TDWG4. South East. Coast, Tablelands, Western Slopes, Western Plains.

Bothriochloa bladhii (Retz.) S. T. Blake. *Proc. Roy. Soc. Queensl.* 50: 62 (1969).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of

Burma, Ceylon, India and Pakistan (1960) (as *B. intermedia*, *B. odorata*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *B. intermedia*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from China. **Basionym or Replaced Name:** *Andropogon bladhii* Retz., *Observ. Bot.* 2: 27 (1781). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: ?; *Bladh s.n.* (HT: LD; IT: SI (photo)).

Recent Synonyms: *Bothriochloa caucasica* (Trin.) C.E.Hubb., *Kew Bull.* 1939, 101 (1939). *Bothriochloa modesta* (Backer) Backer & Henrard, *Blumea* 3: 456 (1940).

Bothriochloa odorata (Lisboa) A.Camus, *Ann. Soc. Linn. Lyon*, n. s. 66: 165 (1931).

Bothriochloa intermedia (R. Br.) A.Camus, *Ann. Soc. Linn. Lyon*, n. s. 66: 164 (1931).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (4(2002):46, t. 17), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (440, Fig 173 as *B. intermedia*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (644 as *B. intermedia* var *intermedia*), C-C Hsu, *Taiwan Grasses* (1975) (as *B. intermedia* var. *intermedia*), H.J.Noltie, *The Grasses of Bhutan* (2000) (795, Fig. 56), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (35, Fig. 22), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (37, Pl. 8 as *B. intermedia*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (168, as subsp. *bladhii*), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (126 & 128(4)), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia*. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (647), F.W.Gould, *The Grasses of Texas* (1975) (603, Fig. 319), S.A.Renvoize, *Gramineas de Bolivia* (1998) (583, Fig 136), E.Judziwicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (119, Fig 17), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 850).

Images: D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia*. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): in honor of Per Johann Bladh who collected in China and South Africa before 1781.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 50–150 cm long. Ligule an ciliate membrane. Leaf-blades 10–55 cm long, 2–12 mm wide.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme or composed of racemes. Racemes numerous, borne along a central axis, 2–5 cm long. Central inflorescence axis 4–20 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas, linear, 2.5–3 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes without depressions or pitted (1–3 pits), glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels, keel-less except near apex. Lower glume surface flat, without pits or pitted, pilose, hairy below. Upper glume lanceolate, 1-keeled. Upper glume margins ciliate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret 2.5 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins. Fertile lemma linear, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn geniculate, 10–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). **Continent.** Africa, Temperate Asia, Tropical Asia, Australasia, Pacific, North America, South America.

Country /Province /State. **Macaronesia, West tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa.** Cape Verde. Burkina, Ghana, Nigeria, Senegal. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Northern Cape, Eastern Cape. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia.** Turkmenistan. North Caucasus, Transcaucasus. Afghanistan, Iran. Oman. China South Central, China North-Central, China Southeast. Nansei-Shoto, Ogasawara-shoto, Taiwan. **Indian Subcontinent, Indo-China, Malesia, Papuasias.** Assam, Bangladesh, Eastern Himalaya, India, Nepal, Pakistan, Sri Lanka, West Himalaya. Laos, Myanmar, Thailand, Vietnam. Cocos (Keeling) Is, Lesser Sunda Is, Malaya, Singapore, Christmas I. New Guinea West

Papua (Irian Jaya). New Guinea. **Australia, New Zealand.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales. Kermadec Is. **Southwestern Pacific, South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (*), Nauru (*), Niue (*), New Caledonia (*), Samoa (*), Tonga (*), Wallis-Futuna Is (*). Marquesas (*), Society Is (*). Caroline Is (*), Marianas (*), Marshall Is (*). Hawaii (*). **Mexico.** Northeast Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America.** Leeward Is, Windward Islands (as *Andropogon intermedius* var. *acidulus*). Bolivia, Colombia.

TDWG4. Shaanxi. Anhui, Fujian, Guangdong, Guangxi, Hunan. Guizhou, Sichuan, Yunnan. Bhutan, Sikkim. Uttah Pradesh. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. La Pampa. Tamaulipas. Yucatan.

Bothriochloa brasiliensis (Hackel) Henrard. *Gedenkboek J. Valckenier Suringar*, 187 (1942).

Regarded by K as a synonym (*B. saccharoides*).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Paraguay. **Basionym or Replaced Name:** *Andropogon saccharoides* subsp. *brasiliensis* Hack., DC., *Monogr. Phan.* 6:496 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Sello s.n.*, Brasilia australis ST: *Balansa 281*, Paraguay (US (fragm.)).

Illustrations (Books): B.Rosengurt, *Gramineas Uruguayas I* (1970) (170, Fig. 67).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Brazil.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil, Southern South America. Uruguay.

Bothriochloa bunyensis B.K. Simon. *Austrobaileya*, 1(5): 455 (1983).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *B.K. Simon 3530*, 26 Jan 1980, Australia: Queensland: Darling Downs, Bunya Mts., 3630 m, -26.53 S, 151.36 E (BRI-256874; IT: AD, B, BRI, K, L, MEL, MO, NSW, NT, PERTH, PRE).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (128(3)), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (259, Fig. 39).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Bunya Mountains, Queensland, Australia.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, 30–60 cm long, wiry, 2–4 -noded. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths keeled, pilose, with tubercle-based hairs, outer margin hairy. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades 6–12 cm long, 2–4 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2–4, digitate, spreading, 5–10 cm long, bearing 5–12 fertile spikelets on each. Rhachis fragile at the nodes, flattened, glabrous on surface, ciliate on margins. Rhachis internodes linear, 7–8 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 7–8 mm long, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, linear or lanceolate, 12–13 mm long, longer than fertile. Companion sterile spikelet glumes 7 -veined, glabrous, scabrous on margins.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 8–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 2–3 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, much thinner on margins, without keels, keel-less except near apex, 13 -veined. Lower glume primary vein scabrous. Lower glume surface flat, scabrous, rough above. Lower glume apex acute. Upper glume lanceolate, 1-keeled, 3 -veined. Upper glume primary vein scabrous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4 mm long, 0.5 length of spikelet, hyaline. Fertile lemma oblong, 4 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea lanceolate, 1 mm long, hyaline. Palea apex erose.

Flower and Fruit. Anthers 3, 1.5–2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland.

TDWG4. South East.

Bothriochloa campii (Swallen) de Wet. *Amer. J. Bot.* 55:1249 (1968).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Ecuador. **Basionym or Replaced Name:** *Andropogon campii* Swallen, *Mem. N. Y. Bot. Gard.* 9: 143 (1955). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Camp E-3470*, 29–31 May 1945, Ecuador: Chimborazo: Caqon of the Rmo Chanchan, 5000–7000 ft, on open deforested slope with small patches of scrub in the draws, directly above the village of Huigra (US-2011207).

Illustrations (Books): G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 185, Fig. 22 (2006)).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, 60–80 cm long. Culm-internodes glandular (below nodes), distally glabrous. Culm-nodes bearded. Leaf-sheaths longer than adjacent culm internode, keeled, glabrous on surface or pubescent. Ligule an eciliate membrane, 2 mm long. Collar bearded. Leaf-blades 10–22 cm long, 3–10 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle nodding, 8–12 cm long. Panicle axis glandular, glabrous. Racemes 2–5 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis hairs 1–4 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate, hairy all along but hairs longer above, with 1–4 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 5 mm long. Companion sterile spikelet glumes pitted (1–2 pits). Companion sterile spikelet lemmas muticous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, scabrous, rough at apex, pitted, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Ecuador.

Bothriochloa caucasica (Trin.) C.E. Hubbard. *Bull. Misc. Inform. Kew* 1939: 101 (1939).

Regarded by K as a synonym (*B. bladhii*).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. **Basionym or Replaced Name:** *Andropogon caucasicus* Trin., *Mem. Acad. Imp. Sci. St.-Petersbourg, Ser. 6, Sci. Math.* 2(3): 286 (1832)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "V. spp. Cauc. orient.",.

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Flower and Fruit. $2n = 40$ (1 ref TROPICOS).

Bothriochloa compressa (Hook.f.) Henrard. *Blumea*, 3: 456 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

TYPE from India. **Basionym or Replaced Name:** *Andropogon compressus* Hook. f., *Fl. Brit. Ind.* 7: 172. (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: The Deccan, Lisboa (No 6. A. *odoratus*), *Woodrow* 6.

Illustrations (Books): K.M.Matthew, *Flora Palni Hills* (1996) (788, Pl 788).

Derivation (Clifford & Bostock 2007): *L. comprimio*, squeeze together. Culms flattened.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 90–120 cm long. Culm-nodes glabrous. Lateral branches sparse. Leaf-sheaths longer than adjacent culm internode, keeled. Ligule an eciliate membrane, 4.5 mm long. Leaf-blades linear or lanceolate, 30–45 cm long, 6–10 mm wide, aromatic. Leaf-blade surface scaberulous, rough on both sides, glabrous, hairless except near base. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, digitate, 2.5–5 cm long. Central inflorescence axis 1–3 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear, 2.5 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 3 mm long, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, elliptic, 5 mm long, as long as fertile. Companion sterile spikelet glumes 9–11 -veined.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 5–7 -veined. Lower glume surface flat, villous, hairy below. Lower glume apex emarginate or truncate. Upper glume lanceolate, 1 length of spikelet, 1-keeled. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4 mm long, hyaline, 0 -veined, without midvein, without lateral veins, obtuse. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 14–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

Bothriochloa decipiens (Hackel) C. E. Hubbard. *Kew Bull.* 1934, 444 (1934).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia, Queensland. **Basionym or Replaced Name:** *Andropogon pertusus* var. *decipiens* Hack., *Monogr. Phan.* 6: 483 (1889). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Australia, Queensland, pr. Rockhampton, *O'Shannon s.n.*.

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (168), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (128(7) & 130 as var. *cloncurrrensensis*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. decipio*, deceive. Resembling another species, or in some other way deceptive.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 30–100 cm long, 5–9 -noded. Culm-internodes smooth or papillose. Culm-nodes purple, glabrous. Lateral branches lacking or sparse. Leaves mostly basal. Leaf-sheaths loose, keeled, glabrous on surface or pilose, with tubercle-based hairs. Ligule a ciliolate membrane, 0.75–1.5 mm long, truncate. Leaf-blades flat or revolute, 6–25 cm long, 2–5 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, digitate, 4–7 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs lengthening towards internode tip, 3–5 mm long. Rhachis

internodes linear, 2.5–3.5 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 2.5–3.5 mm long, with a translucent median line (also present in internodes), villous, hairy all along but hairs longer above, with 3–5 mm long hairs.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, linear, 2.5–3.75 mm long, shorter than fertile. Companion sterile spikelet glumes 5–7 -veined, without depressions, glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 4.75–5.25 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely. Spikelet callus hairs 0.5–1 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 7–9 -veined. Lower glume primary vein scaberulous. Lower glume surface flat, pitted, pilose, hairy below. Upper glume lanceolate, 1-keeled, 3 -veined. Upper glume surface asperulous, rough at apex.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.6 length of spikelet, hyaline, ciliolate on margins. Fertile lemma linear, 1.75–2 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–24 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 1, 1.5 mm long.

Distribution (TDWG). Continent. Europe (*), Australasia.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Australia.** Northern Territory, Queensland, New South Wales. New Caledonia.

TDWG4. Victoria R & Barkly Tableland. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains.

Bothriochloa edwardsiana (Gould) L. Parodi. *Gram. Bonaer.*, ed. 5, 116, 120 (1958).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name:** *Andropogon edwardsianus* Gould, *Field & Lab.* 19: 184 (1951). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *F.W. Gould & E.D. Merrill 6097*, 19 Sep 1951, USA: Texas: Edwards Co.: Experimental garden at College Station, Texas; clump transplanted from Substation 14, 20 miles south of Sonora, Edwards Co., Texas (TAES; IT: MO, TEX, US-2044607).

Illustrations (Books): J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (128(5)), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (645), F.W.Gould, *The Grasses of Texas* (1975) (597, Fig. 315), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (480, Fig. 203), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (560, Fig. 377), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (172, Fig. 68).

Illustrations (Journals): *Darwiniana* (38: 149, Fig.10 (2000)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. From Edwards County, Texas, USA.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, slender, 35–65 cm long. Culm-nodes glabrous or pubescent. Leaves mostly basal. Ligule a ciliolate membrane, 1–1.5 mm long. Leaf-blades filiform, 10–25 cm long, 1–2 mm wide, pruinose. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–6, digitate, 6–10 cm long. Central inflorescence axis 0.5–1.8 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 4.7–5 mm long, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, 3 mm long, shorter than fertile. Companion sterile spikelet glumes smooth or scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, pitted. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–28 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **South-central USA, Mexico.** Texas. Central Mexico, Northeast Mexico, Southwest Mexico. **Southern South America.** Argentina Northeast.

TDWG4. Mendoza, Salta, Tucuman. Buenos Aires, Cordoba, Entre Rios, La Pampa, Santa Fe. Puebla. Guanajuato, Neuvo Leon, Queretaro. Michoacan, Oaxaca.

Bothriochloa ensiformis (Hook. f.) Henrard. *Blumea*, 3: 457 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

Basionym or Replaced Name: *Andropogon ensiformis* Hook. f., *Fl. Brit. Ind.* 7: 175. (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: "The Concan? Dalzell.", *Dalzell s.n.*

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. ensis*, sword; forma, appearance. Leaf-blades sword-like.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 30–80 cm long. Culm-internodes elliptical in section. Culm-nodes glabrous. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, smooth. Ligule an eciliate membrane. Leaf-blades lanceolate, 20–25 cm long, 8–13 mm wide. Leaf-blade venation distinct. Leaf-blade surface scaberulous, rough on both sides, glabrous or puberulous. Leaf-blade apex acuminate, hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 8–15, digitate, 3–5 cm long. Central inflorescence axis 2–4 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear, 2.5 mm long. Rhachis internode tip transverse. Raceme-bases filiform, 4–6 mm long. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 2.5 mm long, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, elliptic, 2.5–5 mm long, as long as fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 2.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 1.5–2 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 5–7 -veined. Lower glume surface flat. Lower glume apex emarginate or truncate. Upper glume lanceolate, 1 length of spikelet, 1-keeled. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–4 mm long, hyaline, acute. Fertile lemma linear, 1.5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 22 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

N = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent.** India.

TDWG4. Maharashtra.

Bothriochloa erianthoides (F. Muell.) C. E. Hubbard. *Kew Bull.* 1934, 444 (1934).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. **Basionym or Replaced Name:** *Andropogon erianthoides* F. Muell., *Fragm.* 10: 75 (1876). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Dr. Wuth s.n.*, no date, Australia: Springsure (W; IST: US-76245 (fragm. ex W)). ST: *Dr. Woolls s.n.*, Australia: In tractibus Maneroo ST: *Dr. Leichhardt s.n.*, Australia: Darling's Downs

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (168), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (128(1)), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Erianthus* with respect to the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 80–150 cm long. Culm-internodes channelled. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane, 1.5–4 mm long, obtuse. Leaf-blades 7–30 cm long, 5–8 mm wide, stiff. Leaf-blade surface smooth, glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, digitate, 6–10 cm long. Rhachis fragile at the nodes, flattened, villous on surface, villous on margins. Rhachis internodes oblong. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, linear, 3–4 mm long, shorter than fertile. Companion sterile spikelet glumes 7 -veined, without depressions, villous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 7–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 7–8 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels, keel-less except near apex, 9–18 -veined. Lower glume surface flat, without pits, villous. Lower glume margins ciliate. Lower glume apex truncate. Upper glume lanceolate, 1-keeled. Upper glume primary vein scabrous. Upper glume margins ciliate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, pubescent, ciliolate on margins. Fertile lemma linear, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma margins eciliate or ciliolate, hairy above. Lemma apex lobed, 2 -fid, with linear lobes, awned, 1 -awned. Principal lemma awn from a sinus, straight, 16–18 mm long overall, without a column. Palea present, obovate, 2 mm long.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Queensland, New South Wales.

TDWG4. North, Central, South East, Inland. Western Slopes, Western Plains.

Bothriochloa eurylemma M.M. Marchi & H.M. Longhi-Wagner. *Candollea*, 50(2): 432 (1995).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Matto Grosso do Sul: Porto Esperança, Rio Paraguay, 28 Feb-1 Mar 1930, *Chase 11089* (HT: US; IT: F, NY).

Illustrations (Journals): *Darwiniana* (38: 151, Fig.11 (2000)).

Derivation (Clifford & Bostock 2007): Gk *eurys*, broad; lemma, scale. Lemma of lower spikelet broad.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 90–165 cm long, 5–9 -noded. Culm-internodes distally glabrous. Culm-nodes bearded. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 1.6–4 mm long, glabrous on abaxial surface. Leaf-blades 5–18 cm long, 2–8 mm wide. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Peduncle 20–34 cm long, glabrous. Racemes numerous, borne along a central axis, closely spaced, 2.5–6 cm long. Central inflorescence axis 7–14 cm long. Rhachis fragile at the nodes, flattened, plumose on margins. Rhachis hairs 3–6 mm long. Rhachis internodes linear, 1.9–3.3 mm long. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the

cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 2.2–2.4 mm long, with a translucent median line (also present in internodes), plumose, with 3.7–7 mm long hairs.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, linear, 2.7–4.8 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.7–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 1.6–2.8 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 6 -veined. Lower glume primary vein scaberulous (above). Lower glume surface flat, glabrous or puberulous. Lower glume apex entire or dentate, 2 -fid. Upper glume elliptic, 1 length of spikelet, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acute or acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2.2–2.4 mm long, hyaline, acute. Fertile lemma linear, 1.2–2.8 mm long, hyaline, without keel. Lemma apex entire, muticous or awned, 1 -awned. Principal lemma awn apical, straight, 1.2–7 mm long overall, without a column. Palea lanceolate, 0.9–1.9 mm long, membranous.

Flower and Fruit. Anthers 3, 0.6–0.9 mm long. Caryopsis with adherent pericarp, ovoid, 2.3 mm long, dark brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil, Southern South America. Brazil West Central, Brazil South. Argentina Northeast, Argentina Northwest.

TDWG4. Salta, Tucuman. Chaco, Entre Rios, Formosa.

Bothriochloa ewartiana (Domin) C. E. Hubbard. *Kew Bull.* 1934, 444 (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia, Queensland. **Basionym or Replaced Name:** *Andropogon ewartianus* Domin, *Biblioth. Bot.* 85: 269 (1915). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: "West-Queensland: Grastriften bei Hughenden ...", *Domin, II. 1910*.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (511, Fig 437), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (329, Pl. 96, as *Dichanthium*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1125, Fig. 324), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (169), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Albert James Ewart (1872–1937) English-born Australian botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous or pilose. Culms erect or geniculately ascending, 30–60 cm long, 6–9 -noded. Culm-internodes channelled. Lateral branches lacking or sparse or ample. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, truncate. Leaf-blades flat or conduplicate or revolute, 7–15 cm long, 3–6 mm wide, glaucous. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 4–11, digitate, 3.5–7 cm long. Central inflorescence axis 1–2.5 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 3.5 mm long. Rhachis internodes linear, 2–2.5 mm long, 0.5 length of fertile spikelet. Rhachis internode tip transverse. Raceme-bases linear, 2–7 mm long. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 2–2.5 mm long, 0.5 length of fertile spikelet, with a translucent median line (also present in internodes), villous, with 3.5 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 3.5–4.5 mm long, as long as fertile. Companion sterile spikelet glumes without depressions, glabrous. Companion sterile spikelet lemmas enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic or oblong, dorsally compressed, subacute, 3.5–4.5 mm long,

falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels, keel-less except near apex, 9–11 -veined. Lower glume surface flat, without pits or pitted, pilose, hairy below. Lower glume apex obtuse or acute. Upper glume lanceolate, 1-keeled. Upper glume margins ciliate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.66 length of spikelet, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 17–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis oblanceolate, 2.5 mm long.

Distribution (TDWG). Continent. Tropical Asia, Australasia.

Country /Province /State. Malesia. Lesser Sunda Is, Philippines. **Australia.** Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Kimberley, Ereman. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. NW & Lake Eyre, Southern. North, Central, South East, Inland. Western Slopes, Western Plains.

Bothriochloa exaristata (Nash) Henrard. *Blumea*, 4: 520 (1941).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name:** *Amphilophis exaristatus* Nash, Small, *Fl. S. E. U.S.* 65 (1903). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Nealley s.n.*, USA: Texas: without specific locality (W).

Recent Synonyms: *Bothriochloa hassleri* (Hack.) Henrard, *Gedenkboek J. Valckenier Suringar*, 184 (1942).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (643), F.W.Gould, *The Grasses of Texas* (1975) (597, Fig. 314), S.A.Renvoize, *Gramineas de Bolivia* (1998) (583, Fig 136), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1260, Fig. 249 as *B. hassleri*), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (485, Fig 205as *B. hassleri*).

Illustrations (Journals): *Darwiniana* (38: 154, Fig.13 (2000)), *Ruizia* (13:435 Fig 58c (1993) as *Bothriochloa hassleri*).

Derivation (Clifford & Bostock 2007): L. ex, without; arista, bristle; -ata, possessing. Lemmas awnless or almost so.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 7–130 cm long. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades flat or conduplicate, 5–15 cm long, 3–8 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, 1–4 cm long. Central inflorescence axis 9–15 cm long. Rhachis fragile at the nodes, flattened, plumose on margins. Rhachis hairs 5–6 mm long. Rhachis internodes linear. Rhachis internode tip transverse, cupuliform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), plumose, hairy above, with white hairs, with 5–6 mm long hairs.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, linear, 2–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or elliptic, dorsally compressed, acute, 3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, pilose. Upper glume elliptic, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, hyaline, without keel. Lemma apex entire, muticous or awned, 1 -awned. Principal lemma awn apical, straight, 1–4 mm long overall, without a column. Palea absent or minute.

Flower and Fruit. *N* = 30 (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil, Southern South America. Bolivia. Brazil West Central, Brazil Southeast, Brazil South. Argentina Northeast.

TDWG4. Catarina, Rio Grande do Sul. Chaco, Corrientes, Distrito Federal, Entre Rios, Formosa, Misiones, Santa Fe.

Bothriochloa glabra (Roxb.) A. Camus. *Ann. Soc. Linn. Lyon*, n. s. 76: 164 (1931).

Regarded by K as a synonym (*B. bladhii*).

Accepted by: N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from Inda. **Basionym or Replaced Name:** *Andropogon glaber* Roxb., *Fl. Ind.* 1:271 (1820). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India: Bengal: elevated spots, *Roxburgh s.n.* (HT: BM (photo BRI, K); IT: K (photo BRI)).

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (36 & 219, Figs. 9 & 78), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (642), C-C Hsu, *Taiwan Grasses* (1975) (622, Pl. 1455).

Derivation (Clifford & Bostock 2007): L. smooth. Leaf-blades lacking hairs.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Flower and Fruit. $2n = 40$ (4 refs TROPICOS).

Distribution (TDWG). **Continent.** Africa, Temperate Asia.

Country /Province /State. **Western Indian ocean.** Mauritius, Madagascar, Rodrigues. **China, Eastern Asia.** China Southeast. Taiwan. New Caledonia (*).

TDWG4. Guangdong. Yunnan. Bihar, Kerala, Karnataka. Madhya Pradesh, Maharashtra, Tamilnadu, Uttah Pradesh. North, Central, South East.

Bothriochloa grahamii (Haines) Bor. *Grasses Burma, Ceyl., Ind. & Pakist.* 107 (1960).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from India. **Basionym or Replaced Name:** *Andropogon grahamii* Haines, *Kew Bull.* 1914:189 (1914). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: India, Amakantak Hills: Haines 3646 (K holotype).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of R. J. Graham, economic botanist who worked in India.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending. Culm-internodes terete. Lateral branches ample. Leaf-sheaths inflated, keeled, striately veined, smooth, glabrous on surface. Ligule an eciliate membrane, truncate. Leaf-blades 6–12 cm long, 3–4 mm wide, glaucous. Leaf-blade surface glabrous, hairless throughout or except near base. Leaf-blade margins scaberulous. Leaf-blade apex attenuate, filiform, smooth.

Inflorescence. Inflorescence composed of racemes. Racemes 3–7, digitate, flexuous, 3.5–5 cm long. Central inflorescence axis 1–2 cm long. Rhachis ciliate on margins. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, 3–5 mm long, as long as fertile. Companion sterile spikelet callus 3–5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets oblong, dorsally compressed, 3–5 mm long, falling entire. Spikelet callus pilose. Spikelet callus hairs 1 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets. Lower glume oblong, light green, without keels, keel-less except near apex, 5 -veined. Lower glume surface flat, pilose. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, 3 -veined. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2–3 mm long, hyaline, 1–3 -veined, ciliolate on margins. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex awned, 1 -awned. Principal lemma awn apical, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. $2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). **Continent.** Tropical Asia.

Country /Province /State. **Indian Subcontinent.** India.

TDWG4. Madhya Pradesh.

Bothriochloa hirtifolia (Presl) Henrard. *Gedenkboek J. Valckenier Suringar*, 183, (1942).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon hirtifolius* J. Presl, *Rel. Haenk.* 1: 338. (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T. Haenke s.n.*, no date, Mexico (PR; IT: US-75635 (fragm.)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. hirtus*, hairy; folium, leaf. Leaf-blades hairy.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 60–130 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths hirsute, with tubercle-based hairs. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades 20–40 cm long, 3–7 mm wide. Leaf-blade surface hirsute, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 2–7, paired or digitate, 4–9 cm long. Central inflorescence axis 2–3 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis hairs 1–2 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate, with 1–2 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, 6–7.5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 5.5–8 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 9 -veined. Lower glume surface flat, without pits or pitted, glabrous or puberulous. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–4.4 mm long, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–30 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** Guatemala.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla. Coahuila, Guanajuato, Queretaro, Zacatecas. Veracruz. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Bothriochloa hybrida (Gould) Gould. *Southwest. Nat.* 3: 212 (1959).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon hybridus* Gould, *Madrono*, 14: 21 (1957). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W. Gould 6978*, 10 Nov 1955, USA: Texas: La Salle Co.: 2 mi E of Cotula on Hwy. 97 (TAES; IT: ARIZ, MICH, MO, SMU, TEX, UC, US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (645), F.W.Gould, *The Grasses of Texas* (1975) (599, Fig. 316).

Derivation (Clifford & Bostock 2007): *L.* of mixed parentage. Sharing the characters of two or more species and not necessarily genetic hybrids.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–80 cm long. Culm-nodes glabrous or pubescent. Lateral branches sparse. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 2–5 mm wide. Leaf-blade surface glabrous, hairless except near base.

Inflorescence. Inflorescence composed of racemes. Racemes digitate, 6–11 cm long, with branchlets at base of longer racemes. Central inflorescence axis 0.6–5.5 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 5–7 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous, hairy all along but hairs longer above, with 5–7 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, linear or lanceolate, 2.2–3.6 mm long, shorter than fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4.5–6.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 5 -veined. Lower glume surface flat, pitted, pubescent, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 18–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Southeastern USA, and Mexico. Texas. Louisiana.

Puebla. Coahuila, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Michoacan, Nayarit. Campeche.

Bothriochloa imperatoides (Hack.) Herter. *Rev. Sudamer. Bot.* 6: 135 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon saccharoides* var. *imperatoides* Hack., *Mart., Fl. Bras.* 2,3:293 (1883). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Sello s.n.*, Brazil (B).

Illustrations (Books): B.Rosengurtt, *Gramineas Uruguayas I* (1970) (170, Fig. 67).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Similar to *Imperata*.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial. Culms 60–120 cm long. Culm-nodes bearded. Ligule a ciliate membrane. Leaf-blades 10–20 cm long, 2–6 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, 2–4 cm long. Central inflorescence axis 6–9 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 3–4 mm long. Rhachis internodes filiform, 3 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, flattened, 3 mm long, with a translucent median line (also present in internodes), villous, with 3–4 mm long hairs.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, linear, 2.5–3 mm long, shorter than fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.2–4.8(–5.5) mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 8–12 -veined. Lower glume surface flat, villous, hairy below. Lower glume hairs 2–2.5 mm long. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 12–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil, Southern South America. Brazil South. Argentina Northeast, Argentina Northwest, Uruguay.

TDWG4. Tucuman. Buenos Aires, Corrientes, Santa Fe.

Bothriochloa insculpta (A.Rich.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.* 76: 165 (1931).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Dichanthium*).

TYPE from Ethiopia. **Basionym or Replaced Name:** *Andropogon insculptus* Hochst. ex A. Rich. *Tent. Fl. Abyss.* 2: 458 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Schimper, pl. Schimp. Abyss., sect. I, 80, 22 Sep 1837, Ethiopia: Tigray, Scholoda* (US-76201 (fragm.); ILT: K, US-925384, US-1093899 (ex BM), WAG). LT designated (as holotype) by Marchi & Longhi-Wagner, *Bol. Inst. Bioci.* 57: 38 (1998). ST: *Quartin-Dillon s.n.*, Crescit in montosis provinciae Chiri.

Recent Synonyms: *Dichanthium insculptum* (A. Rich.) Clayton, *Kew Bull.*, 32(1): 3 (1977).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 15), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (62, Fig 28), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (307, Fig 123), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (256, Fig 150), K.M.Matthew, *Flora Palni Hills* (1996) (790, Pl 790), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (169), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (128(6)), S.A.Renvoize, *The Grasses of Bahia*, 1984 (271, Fig. 102).

Images: D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. engraved. Glumes ridged or with a round depression.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons absent or present. Culms decumbent or rambling, 25–200 cm long. Ligule an eciliate membrane. Leaf-blades 4–30 cm long, 2–8 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3–20, digitate, 2–8 cm long. Central inflorescence axis 0–3 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear. Rhachis internode tip transverse. Raceme-bases linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas or male, lanceolate or oblong, 3.5–5 mm long, as long as fertile. Companion sterile spikelet glumes without depressions or pitted (1–3 pits), glabrous. Companion sterile spikelet lemmas 0–1, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume lanceolate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, pitted (1 pit), glabrous or pubescent, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, hyaline, without keel. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. $2n = 60$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), Africa, Temperate Asia, Tropical Asia, Australasia, South America.

Region. Northern Europe (*), Southeastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Sicily. **Macaronesia, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean.** Canary Is. Rwanda, DRC. Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Madagascar. **Arabian Peninsula.** Yemen. **Indian Subcontinent, Papuasia.** India. New Guinea. **Australia.** Queensland (*). New Caledonia. **Brazil.** Brazil Northeast.

TDWG4. Kerala. Tamilnadu. South East.

Bothriochloa ischaemum (L.) Keng. *Contrib. Biol. Lab. Sc. Soc. China, Bot. Ser.*, 10: 201 (1936).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Dichanthium*), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

Basionym or Replaced Name: *Andropogon ischaemum* L., *Sp. Pl.* 147. (1753). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Hb. Burser 1: 101*, (UPS). LT designated by Scholz in Cafferty et al., *Taxon* 49(2): 245 (2000).

Recent Synonyms: *Dichanthium ischaemum* (L.) Roberty, *Monogr. Syst. Andropog. du Globe* :160 (1960).

Illustrations (Books): N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (1039 (689), Pl.16), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (513, Pl. 195), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (646), C-C Hsu, *Taiwan Grasses* (1975) (625, Pl. 1456), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (288, Fig. 31), H.J.Noltie, *The Grasses of Bhutan* (2000) (795, Fig. 56), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (647), F.W.Gould, *The Grasses of Texas* (1975) (603, Fig. 320 as var. *songaricus*), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (160, Fig. 85), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 851), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:11(1980)).

Images: R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): as for *Ischaemum*. Spikelets hairy.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect or geniculately ascending, 40–80 cm long. Leaves mostly basal. Ligule a ciliolate membrane. Leaf-blades 3–15 cm long, 2–4 mm wide, glaucous. Leaf-blade surface scaberulous. Leaf-blade margins tuberculate-ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes. Racemes 5–15, digitate, 4–6 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 3.5–5 mm long, as long as fertile. Companion sterile spikelet glumes without depressions, glabrous. Companion sterile spikelet lemmas enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate or oblong, dorsally compressed, 3.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels, keel-less except near apex. Lower glume surface flat, without pits, pilose, hairy below. Lower glume apex acute. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 12–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

$N = 20$ (2 refs TROPICOS). $2n = 36$ (1 ref TROPICOS), or 40 (2 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Pacific, North America (*), South America.

Region. Northern Europe (*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Austria, Czechoslovakia, Germany, Hungary, Switzerland. : Corsica, France, Portugal, Spain. : Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Krym, East European Russia, South European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia.** Morocco, Tunisia. Madeira. Siberia, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia, Russia.** Altay. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iraq. China South Central, Hainan, Inner Mongolia, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Mongolia. Korea, Ogosawara-shoto, Taiwan. **Indian Subcontinent, Malesia, Papuasia.** Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Lesser Sunda Is, Philippines. New Guinea. **South-central Pacific.** Easter Is (*). **North-central USA, South-central USA, Southeastern USA, Mexico.** Kansas. Texas. Tennessee. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America.** Cuba, Jamaica (& as *Andropogon ischaemum*), Leeward Is, Puerto Rico, Venezuelan and Netherlands Antilles. Bolivia, Colombia.

TDWG4. Hebei, Shaanxi, Shandong. Anhui, Fujian, Guangdong, Henan, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Bhutan. Uttah Pradesh. Jammu Kashmir. Puebla. Coahuila, Neuvo Leon, Tamaulipas, Zacatecas. Sonora. Nayarit. Campeche, Quintana Roo, Yucatan.

Bothriochloa kuntzeana (Hackel) Henrard. *Blumea*, 3: 456 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Basionym or Replaced Name: *Andropogon kuntzeanus* Hack., *DC. Monog. Phan.*6: 478. (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C.E.O. Kuntze s.n.*, no date, India: Assirgar (US-76231 (ex hb. Henrard)).

Illustrations (Books): K.M.Matthew, *Flora Palni Hills Supplement* (1998).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Carl Ernst Otto Kuntze (1843–1907) German botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 90–150 cm long. Culm-nodes bearded. Lateral branches sparse. Ligule an eciliate membrane. Leaf-blades 15–30 cm long, 3–4 mm wide, glaucous. Leaf-blade surface glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 12–15, digitate, 3–8 cm long. Central inflorescence axis 1–5 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear, 2.5 mm long. Rhachis internode tip transverse. Raceme-bases filiform, 4–8 mm long. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 2.5 mm long, with a translucent median line (also present in internodes), ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, 5 mm long, as long as fertile. Companion sterile spikelet glumes 9–11 -veined, pitted.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels, keel-less except near apex, 7–9 -veined. Lower glume surface flat, pitted. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, 1-keeled. Upper glume margins ciliate. Upper glume apex acuminate, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4 mm long, hyaline. Fertile lemma linear, 2.5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 14–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

N = 20 (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India, Nepal.

TDWG4. Bihar, Kerala. Madhya Pradesh, Tamilnadu, Uttah Pradesh.

Bothriochloa laguroides (DC.) Herter. *Rev. Sudamer. Bot.* 6: 135 (1940).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Mexico. **Basionym or Replaced Name:** *Andropogon laguroides* DC., *Cat. Hort. Monsp.* 78 (1813). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Anon.*, Cultivated in the botanical garden in Madrid from seed collected in Mexico (MO-2523197 (probable), US-729766 (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (641), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (485, Fig. 205), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (598, Fig. 160), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (557, Fig. 374), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (172, Fig. 68).

Illustrations (Journals): *Darwiniana* (38: 162, Fig.17 (2000) as var. *laguroides*).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Lagurus* in respect of the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 33–110 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Ligule a ciliate membrane, 1.8–2.6 mm long. Leaf-blades 10–25 cm long, 2–6 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, 1–4 cm long. Central inflorescence axis 4–7 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 4–8 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous, with 4–8 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, 1–4.3 mm long. Companion sterile spikelet glumes 3–7 -veined.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 2.5–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 7–9 -veined. Lower glume surface flat, without pits, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, 1.5–2 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

N = 30 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Hawaii (*). **Mexico.** Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America, Brazil, Southern South America.** Brazil Southeast, Brazil North. Argentina Northwest, Argentina Northeast, Argentina South, Chile Central.

TDWG4. Santiago del Estero, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Río Negro. Maule, Biobio, La Araucania. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Guanajuato, Hidalgo, Zacatecas. Veracruz. Oaxaca. Chiapas, Tabasco.

Bothriochloa longifolia (Hackel) Bor. *Grasses Burma, Ceyl., Ind. & Pakist.* 108 (1960).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Basionym or Replaced Name: *Andropogon pertusus* var. *longifolius* Hack., *DC., Monogr. Phan.* 6:482 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: India or., *Wall List.* 8803.

Illustrations (Books): G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990).

Derivation (Clifford & Bostock 2007): *L. longus*, long; folium, leaf. With long leaf-blades.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE.**

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 30–60 cm long. Culm-nodes glabrous. Ligule a ciliolate membrane. Leaf-blades 5–30 cm long, 2.5–5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3–8, digitate, 2.5–5 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic, 3.8 mm long, as long as fertile. Companion sterile spikelet glumes without depressions, glabrous. Companion sterile spikelet lemmas enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.5–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex. Lower glume surface flat, pitted, glabrous. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, 1.8 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Indian Subcontinent. India.
TDWG4. Tamilnadu.

Bothriochloa longipaniculata (F.W. Gould) K.W. Allred & F.W. Gould. *Syst. Bot.*, 8(2): 180 (1983).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon saccharoides* var. *longipaniculatus* Gould, *Field & Lab.* 23:18 (1955). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W. Gould 6670*, 24 Aug 1954, USA: Texas: Brazos Co.: southwestern limits of Cllege Station, near Consolidated School, n=60 (TAES; IT: GH, MO, SMU, TEX, UC, US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (641).

Illustrations (Journals): *Darwiniana* (38: 166, Fig.19 (2000)).

Derivation (Clifford & Bostock 2007): *L. longus*, long; *panicula*, panicle; *-ata*, possessing. Panicle longer than with related species.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 60–200 cm long. Culm-internodes distally glabrous. Culm-nodes bearded. Leaf-sheaths glabrous on surface. Ligule a ciliate membrane, 2–4 mm long. Leaf-blades 10–21 cm long, 3–7 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, 3–5 cm long. Central inflorescence axis 7–15 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 5–8 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous, with 5–8 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, lanceolate.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 3.5–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 7 -veined. Lower glume surface flat, without pits, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

N = 60 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. South-central USA, Southeastern USA, Mexico. Texas. Louisiana. Northeast Mexico. **Mesoamerica.** Guatemala.

TDWG4. Chaco, Corrientes, Formosa, Misiones. Coahuila, Chihuahua, Neuvo Leon, Tamaulipas.

Bothriochloa macra (Steud.) S. T. Blake. *Proc. Roy. Soc. Queensl.* 50: 64 (1969).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *B. ambigua*), W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

TYPE from Australia. **Basionym or Replaced Name:** *Andropogon macer* Steud., *Syn. Pl. Glumac.* 1: 371 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Urville*, Australia: Montagnes bleues (Montes coerulei.) (S-G399). Kew negative 7190.

Illustrations (Books): J.P.Jessop, G.R.M. Dasher & F.M.James, *Grasses of South Australia* (2006) (510, Fig 438), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (622, Fig 125), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (169), J.C.Tothill, & J.B.Hacker. *The grasses of*

southern Queensland (1983) (128(8)), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;

Derivation (Clifford & Bostock 2007): L. thin. Leaf-blades narrow.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 30–100 cm long, 2–8-noded. Culm-internodes channelled. Culm-nodes glabrous or pubescent. Lateral branches ample. Leaf-sheaths loose, keeled, glabrous on surface. Ligule a ciliolate membrane, 1.5–2.5 mm long, truncate. Leaf-blades flat or revolute, 5–30 cm long, 2.5–5.5 mm wide. Leaf-blade surface scaberulous, rough adaxially, pilose, sparsely hairy. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–6, digitate, 5–10 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 4.5 mm long. Rhachis internodes linear, 4–4.5 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 4–4.5 mm long, with a translucent median line (also present in internodes), villous, with 4.5 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas, lanceolate, 4.5–6 mm long, shorter than fertile. Companion sterile spikelet glumes without depressions, glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets linear or lanceolate, dorsally compressed, obtuse, 5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely. Spikelet callus hairs 0.5–1 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, keel-less except near apex. Lower glume primary vein scaberulous. Lower glume surface flat, without pits or pitted, glabrous or pilose, hairy below. Upper glume lanceolate, 1-keeled. Upper glume primary vein scabrous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.75 length of spikelet, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–23 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Europe (*), Australasia.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Australia, New Zealand.** South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania, Lord Howe-Norfolk Is. New Zealand North I, New Zealand South I.

TDWG4. Central, South East. Coast, Tablelands, Western Slopes, Western Plains.

Bothriochloa meridionalis M.M. Marchi & H.M. Longhi-Wagner. *Candollea*, 50(2): 433 (1995).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. meridiēs, meridian; -ale, pertaining to. Occurring on the same meridian that is from North and South Carolina.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 35–125 cm long, 4–10-noded. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule an eciliate membrane, 1.4–5 mm long, glabrous on abaxial surface, truncate or obtuse or acute. Leaf-blades 6.5–16.5 cm long, 2–6.8 mm wide. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle 7–36 cm long, glabrous. Racemes numerous, borne along a central axis, 2.5–7.5 cm long. Central inflorescence axis 2–4 cm long. Rhachis fragile at the nodes, flattened, plumose on margins. Rhachis hairs 6–8.2 mm long. Rhachis internodes linear, 2.6–3.6 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), plumose.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, elliptic, 3.8–5.2 mm long, as long as fertile. Companion sterile spikelet glumes chartaceous, puberulous (on keels), ciliolate on margins, dentate, 2 -fid. Companion sterile spikelet lemmas 1, enclosed by glumes, 2.1–3 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4.6–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 2.3–3.9 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 8–10 -veined. Lower glume primary vein scaberulous (above). Lower glume surface flat. Lower glume apex dentate, 2 -fid. Upper glume elliptic, 1 length of spikelet, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2.6–3.1 mm long, hyaline, erose. Fertile lemma linear, 2.1–3 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 14.3–20 mm long overall, with twisted column. Column of lemma awn 2.7–5.8 mm long, glabrous. Palea elliptic, 1–1.6 mm long, hyaline.

Flower and Fruit. Lodicules 2, 0.6–0.8 mm long. Anthers 3, 0.9–1 mm long. Caryopsis with adherent pericarp, obovoid, 2.1–2.7 mm long, light brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America, Brazil. Venezuela. Colombia, Ecuador. Brazil South.

Bothriochloa pertusa (L.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.* 76: 164 (1931).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

Basionym or Replaced Name: *Holcus pertusus* L. *Mant. Pl.* 2: 301–302 (1771). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: India orientalis (LINN-1212.16). LT designated by Clayton, *Kew Bull.* 32: 4 (1977).

Recent Synonyms: *Bothriochloa nana* W.Z.Fang, *Bull. Bot. Res. North-East. Forest. Inst.*, 6(1): 102 (1986)

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (294, Fig. 231), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (221, Fig. 79), K.M.Matthew, *Illustrations on the Flora of Tamilnadu Carnatic* (1982) (Pl. 816), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1501, Pl. 220), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (647), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (94, Fig. 28), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 852).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. with a pit. The lower glume has a deep pit in its abaxial surface.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms erect or geniculately ascending, 30–60 cm long, rooting from lower nodes. Culm-nodes glabrous or bearded. Ligule a ciliolate membrane. Leaf-blades 5–30 cm long, 2.5–5 mm wide. Leaf-blade surface glabrous or hirsute.

Inflorescence. Inflorescence composed of racemes. Racemes 3–8(–13), digitate, 2.5–5(–7.5) cm long. Central inflorescence axis 1–3 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic, 3.8 mm long, as long as fertile. Companion sterile spikelet glumes pitted (1–2 pits), glabrous, ciliate on margins. Companion sterile spikelet lemmas enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.5–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 5–7 -veined. Lower glume surface flat, pitted, pilose, hairy at base. Lower glume margins ciliate. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, 1.8 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2.2 mm long.

$N = 18$ (2 refs TROPICOS), or 20 (3 refs TROPICOS). $2n = 40$ (3 refs TROPICOS).

Distribution (TDWG). **Continent.** Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

Country /Province /State. **Northern Africa, Northeast tropical Africa, Western Indian ocean.** Mauritius, Madagascar, Reunion, Rodrigues, Seychelles. **Western Asia, China, Mongolia.** China Southeast. Mongolia. **Indian Subcontinent, Indo-China, Malesia.** Assam, Bangladesh, India, Nepal, Pakistan, Sri Lanka, West Himalaya. Andaman Is, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya. **Australia.** Western Australia (*), Northern Territory (*), Queensland (*). **South-central Pacific, Northwestern Pacific, North-central Pacific.** Fiji (*), New Caledonia (*), Samoa (*), Tonga (*), Wallis-Futuna Is (*). Cook Is (*), Marquesas. Marianas (*). Hawaii (*). **Southeastern USA, Mexico.** Mississippi. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Western South America.** Cayman Is (& as *Andropogon pertusus*), Cuba, Dominican Republic, Jamaica (& as *Andropogon pertusus*), Leeward Is, Windward Islands, Trinidad-Tobago, Venezuelan and Netherlands Antilles. Colombia.

TDWG4. Guangdong. Sichuan, Yunnan. Tamilnadu. Kimberley, Eremean. Darwin & Gulf. North, Central, South East, Inland. Puebla. Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Sonora. Michoacan, Oaxaca. Campeche, Chiapas, Yucatan.

Bothriochloa pseudoischaemum (Nees ex Steud.) Henrard. *Blumea*, 3: 457 (1940).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *B. oryzetorum*).

Basionym or Replaced Name: *Andropogon pseudoischaemum* Nees ex Steud. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Coromandel. India, based on *A. ischaemum* Roxb. [err. det.] Fl. Ind. I. 264.

Illustrations (Books): K.M.Matthew, *Further Illustrations on the Flora of Tamilnadu Carnatic* (1988) (pl.723).

Derivation (Clifford & Bostock 2007): Gk. *pseudos*, false. Resembling *Ischaemum*.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–60 cm long. Ligule a ciliate membrane. Leaf-blades 15–25 cm long, 1–2.5 mm wide, dark green.

Inflorescence. Inflorescence composed of racemes. Racemes 4–6, digitate, 10–15 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, 3.5–4 mm long, as long as fertile. Companion sterile spikelet glumes without depressions, glabrous. Companion sterile spikelet lemmas enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 3.5–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, without pits, pilose, hairy generally. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 15–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

$N = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent, Papuasia. India, Sri Lanka.

Bothriochloa radicans (Lehm.) A. Camus. *Ann. Soc. Linn. Lyon*, n. s. 76: 164 (1931).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from South Africa. **Basionym or Replaced Name:** *Andropogon radicans* Lehm., *Ind. Sem. Hort. Hamb.* 4, 16 (1827). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Cult. in Hamburg, seed from South Africa (?not HBG)).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (483, Fig 395), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. radico, take root. Putting forth aerial roots from lower nodes.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, cushion forming. Culms geniculately ascending, 25–100 cm long. Culm-nodes pubescent or bearded. Lateral branches ample or fastigiate. Ligule an eciliate membrane. Leaf-blades 6–20 cm long, 2–6 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 5–16, digitate, 3–7 cm long. Central inflorescence axis 0–5 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Raceme-bases brief or linear. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas or male, linear, 2.5–4 mm long, as long as fertile. Companion sterile spikelet glumes without depressions, glabrous. Companion sterile spikelet lemmas 0–1, enclosed by glumes.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets lanceolate, dorsally compressed, 2.5–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, dull. Lower glume elliptic, 1 length of spikelet, membranous, without keels, keel-less except near apex. Lower glume surface flat, without pits, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma linear, hyaline, without keel. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10–25 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Distribution (TDWG). Continent. Africa, Temperate Asia.

Country /Province /State. West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Middle Atlantic ocean. DRC. Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Eastern Cape. St Helena. **Arabian Peninsula.** Oman.

Bothriochloa saccharoides (Sw.) Rydb. *Brittonia*, 1: 81 (1931).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon saccharoides* Sw., *Prod. Veg. Ind. Occ.* 26. (1788). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Swartz *s.n.*, 1783–1787, Jamaica: without locality (S; IT: LE-TRIN-0292.01, (fragm.), M, US-75642 (fragm.)).

Recent Synonyms: *Bothriochloa reevesii* (Gould) Gould, *Southwest. Nat.* 3: 212 (1959).

Illustrations (Books): F.W.Gould, *The Grasses of Texas* (1975) (594, Fig. 312 & 595, Fig. 313 as var. *torreyana* & var. *longipaniculata*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (401, Fig. 356 as *Bothriochloa*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (583, Fig 136), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1260, 7 1261 Fig. 249 7 250), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (483, Fig. 204), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14e (1940) (159, Fig. 84), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (1:12(1980)).

Illustrations (Journals): *Darwiniana* (38: 174, Fig.21 (2000) as subsp. *saccharoides*), *Ruizia* (13:430 Fig 57g-i (1993)).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Saccharum* in its production of sugar.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 60–130 cm long. Culm-nodes glabrous or pubescent. Ligule an eciliate membrane, 1–3 mm long, erose. Leaf-blades flat or conduplicate, 3–6 mm wide, mid-green or glaucous. Leaf-blade surface glabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, erect, 2–4 cm long. Central inflorescence axis 4–8 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous.

Sterile Spikelets. Companion sterile spikelets well-developed, linear, 2–3 mm long, shorter than fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets ovate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 8–18 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

N = 60 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Colorado. Kansas, Missouri, Oklahoma. Arizona. Texas. Alabama, Arkansas, Louisiana. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba (& as *Andropogon*), Dominican Republic (& as *Andropogon*), Haiti (& as *Andropogon*), Jamaica (& as *Andropogon*), Leeward Is (& as *Andropogon*), Windward Islands (& as *Andropogon*), Puerto Rico (& as *Andropogon*). Venezuela. Bolivia, Colombia, Peru. Brazil South. Argentina Northeast, Argentina Northwest, Chile North, Paraguay, Uruguay.

TDWG4. Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Jujuy, Salta, Santiago del Estero, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Entre Rios, La Pampa, Santa Fe. Río Negro. Rest of Chile- Biobio, La Araucania, Maule, O'Higgins, Santado, Valpariso. Valparaiso, Maule, Biobio, La Araucania. Durango. Veracruz. Oaxaca. Chiapas, Quintana Roo.

Bothriochloa springfieldii (Gould) L. Parodi. *Gram. Bonaer.*, ed. 5, 120 (1958).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon springfieldii* Gould, *Madrono*, 14: 19 (1957). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: From plant grown in nursery of Texas Agricultural Experiment Station, College Station, Texas, 16 May 1954. Original seed from near Sholle, Socorro Co., New Mexico (Wayne Springfield, 20 Aug 1950), *F.W. Gould 6642* (HT: TAES; IT: ARIZ, SMU, TEX, UC, US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (645), F.W.Gould, *The Grasses of Texas* (1975) (599, Fig. 317), S.A.Renvoize, *Gramineas de Bolivia* (1998) (586, Fig 137), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (508, Fig. 181), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (560, Fig 378).

Illustrations (Journals): *Darwiniana* (38: 178, Fig.23 (2000)).

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–80 cm long. Culm-nodes bearded (3–7mm hairs). Ligule a ciliolate membrane, 1–2 mm long. Leaf-blades 2–3 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 2–9, digitate, 4–7 cm long. Rhachis fragile at the nodes, flattened, plumose on margins. Rhachis hairs 5–10 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), plumose, with 5–10 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, linear, 4–5 mm long, shorter than fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 5.5–7.3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface flat, pilose, hairy below. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 20–26 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado. Arizona, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. Western South America, Southern South America. Bolivia. Argentina Northeast, Argentina South, Uruguay.

TDWG4. Catamarca, La Rioja, Mendoza, Santiago del Estero, San Juan, San Luis. Buenos Aires, Cordoba, La Pampa. Río Negro. Puebla. Coahuila, Chihuahua, Durango, Zacatecas. Nayarit.

Bothriochloa velutina M.M. Marchi & H.M. Longhi-Wagner. *Candollea*, 50(2): 435 (1995).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Brazil. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Paraná: Guarapuava, 17.6 km del acceso a Guarapuava, a lo largo de la BR-277 en dirección a Irati, 28 Nov 1987.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. velvety. Plant in whole or in part covered with dense short hairs.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe ANDROPOGONINAE.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 80–120 cm long, 5–8 -noded. Culm-internodes distally glabrous. Culm-nodes bearded. Leaf-sheaths mostly shorter than adjacent culm internode, pubescent, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 2–5 mm long, pubescent on abaxial surface, obtuse. Leaf-blades 10–29 cm long, 3–13 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle 21–36 cm long, glabrous. Racemes numerous, borne along a central axis, 5–10 cm long. Central inflorescence axis 7 cm long. Rhachis fragile at the nodes, flattened, plumose on margins. Rhachis hairs 7–9 mm long. Rhachis internodes linear, 2.1–3.3 mm long. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, 2.4–3.8 mm long, with a translucent median line (also present in internodes), plumose, with 7.3–10.9 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, linear, 3.1–3.8 mm long, as long as fertile. Companion sterile spikelet glumes chartaceous, puberulous (on keels), dentate, 2 -fid. Companion sterile spikelet lemmas 1, enclosed by glumes, 1.5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 3.4–3.9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 2–3 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex, 5–8 -veined. Lower glume primary vein scaberulous (above). Lower glume surface flat, pubescent. Lower glume apex dentate, 2 -fid. Upper glume elliptic, 1 length of spikelet, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2.1–2.5 mm long, hyaline, entire or dentate. Fertile lemma linear, 1.9–2.4 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 12.3–18 mm long overall, with twisted column. Column of lemma awn 0.9–3 mm long, glabrous. Palea present or absent or minute, elliptic, 0–0.8 mm long, hyaline.

Flower and Fruit. Lodicules 2, 0.6 mm long. Anthers 3, 0.6–0.9 mm long. Caryopsis with adherent pericarp, ellipsoid, 2 mm long, light brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil West Central, Brazil Southeast, Brazil South.

Bothriochloa woodrovii (Hook.f.) A.Camus. *Ann. Soc. Linn. Lyon*, n. s. 76:165 (1931).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Basionym or Replaced Name: *Andropogon woodrovii* Hook. f., *Fl. Brit. Ind.* 7: 173. (1896). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Bombay; Mawal., *Woodrow* 27.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of George Marshall Woodrow (1846–1911) Scots-born Indian teacher and plant collector.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect, 90–120 cm long. Culm-internodes elliptical in section, solid. Culm-nodes glabrous. Lateral branches sparse. Leaves cauline. Leaf-sheaths loose, keeled, smooth. Ligule a ciliolate membrane, 2.5 mm long, truncate. Leaf-blades 30–60 cm long, 3–4 mm wide, stiff, aromatic (scent of camphor). Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, digitate, 1.3–2.5 cm long. Rhachis fragile at the nodes, flattened, villous on margins. Rhachis hairs 2 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Raceme-bases filiform, 3–13 mm long. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), villous, with 2 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, 4 mm long, as long as fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus 0.8 mm long, bearded, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, much thinner above, without keels, keel-less except near apex, 8–12 -veined. Lower glume surface flat, pilose, hairy below. Lower glume margins ciliolate. Lower glume apex truncate. Upper glume lanceolate, 1 length of spikelet, 1-keeled, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma linear, 2.5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Indian Subcontinent. India.

TDWG4. Maharashtra.

Bothriochloa wrightii (Hackel) Henrard. *Blumea*, 4: 520 (1941).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Andropogon wrightii* Hack., *Flora*, 68: 139. (1885). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *C. Wright 2104*, 1851–1852, USA: New Mexico: Grant Co.: Silver City (US-75655; IT: MO-2873304, MO-2873305, MO-2873306).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (641).

Derivation (Clifford & Bostock 2007): in honor of Charles Wright (1811–1885) United States botanist.

Classification. Subfamily Panicoideae. Tribe: Andropogoneae. Subtribe **ANDROPOGONINAE**.

Habit, Vegetative Morphology. Perennial. Culms 50–100 cm long. Culm-nodes bearded. Lateral branches lacking. Ligule a ciliolate membrane. Leaf-blades 15–20 cm long, 3–5 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–7, digitate, 3–6 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis hairs 0.5–1.5 mm long. Rhachis internodes linear. Rhachis internode tip transverse. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, flattened, with a translucent median line (also present in internodes), ciliate, with 0.5–1.5 mm long hairs.

Sterile Spikelets. Companion sterile spikelets well-developed, lanceolate, 6 mm long, as long as fertile.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets two-flowered - the lower floret male or barren, the upper fertile. Spikelets elliptic, dorsally compressed, 6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, cartilaginous, without keels, keel-less except near apex. Lower glume surface convex, without pits or pitted. Lower glume margins ciliate. Upper glume lanceolate, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma linear, hyaline, without keel, 0–3 -veined. Lemma apex entire, awned, 1 -awned. Principal lemma awn apical, geniculate, 10–15 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico).

Mexico State, Morelos, Puebla. Chihuahua, Durango, Guanajuato, Neuvo Leon, San Luis Potosi, Zacatecas. Veracruz. Oaxaca.

Bouteloua alamosana Vasey ex Rose. *Contrib. U. S. Nat. Herb.* 1: 115 (1891).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (97, Fig 29).

Derivation (Clifford & Bostock 2007): L. -ana, indicating location. As for *alamosae*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 15–40 cm long. Leaf-sheaths hispid. Ligule a fringe of hairs. Leaf-blades 1–3 mm wide. Leaf-blade surface hispid, hairy on both sides, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes (3–)4–8, borne along a central axis, cuneate, unilateral, 1–1.5 cm long, bearing few fertile spikelets, bearing 3–8 fertile spikelets on each. Central inflorescence axis 3–10 cm long, tip subulate. Rhachis deciduous from axis, angular, ciliate on margins, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pilose.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 6–9 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent, hairy on veins. Lower glume apex acuminate to setaceously acuminate. Upper glume lanceolate, 6–9 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent, hairy on veins. Upper glume apex acuminate to setaceously acuminate.

Florets. Fertile lemma elliptic, 6–9 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn 1–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, 1–3 mm long, subequal to principal. Palea apex awned. Rhachilla extension glabrous. Apical sterile florets 1 in number, male, lanceolate, 3–4 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns equal, (8–)11–14 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 4–4.5 mm long. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Southeast Mexico. **Mesoamerica.** Costa Rica, El Salvador, Guatemala, Honduras.
Mexico State, Puebla. Chiapas, Yucatan.

Bouteloua americana (L.) Scribn. *Proc. Acad. Philad.* 1891: 306 (1891).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Aristida americana* L., *Pl. Jam. Pugill.* 7 (1759). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *P. Browne s.n.*, Jamaica (LINN-98.2; IT: US-2947074 (fragm.)). LT designated by Hitchcock, *Contr. U.S. Natl. Herb.* 12: 123 (1908), but specific sheet not indicated; specific sheet indicated by Davidge in Cafferty et al., *Taxon* 49(2): 247 (2000).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (139, Fig. 87), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (63, Fig. 38), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (98, Fig. 30), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 115, Fig. 17 (2001)), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (46, Fig. 4).

Derivation (Clifford & Bostock 2007): L. -ana, indicating location. From North or South America.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, persisting or short-lived. Culms decumbent or rambling, weak, 8–100 cm long. Ligule a fringe of hairs. Leaf-blades involute, 2–4 mm wide. Leaf-blade surface glabrous or hirsute, sparsely hairy, hairy on both sides. Leaf-blade margins glabrous or tuberculate-ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes 5–12, borne along a central axis, unilateral, 1–5 cm long, bearing 5–10 fertile spikelets on each. Central inflorescence axis 5–20 cm long, tip filiform. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis, lax. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 4.5–7 mm long, falling entire, deciduous with accessory branch structures, readily shedding fertile florets. Floret callus bearded.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–4.5 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface hispidulous. Lower glume apex acute or acuminate, muticous or mucronate. Upper glume lanceolate, 3.5–5 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface hispidulous. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Fertile lemma ovate, 4.5–7 mm long, cartilaginous, shiny, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or puberulous, hairy in lines. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 2.5–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0.5–1 mm long, shorter than principal. Palea apex awned. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns equal, 9 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, ovoid, 3–3.5 mm long.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico, Trinidad-Tobago. Guyana, Venezuela. Colombia, Ecuador. Brazil Northeast, Brazil North.

Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe. Campeche, Chiapas, Yucatan.

Bouteloua annua Swallen. *Journ. Wash. Acad. Sc.* 25: 414 (1935).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Pentarrhaphis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (471, Fig 177 as *Pentarrhaphis*).

Derivation (Clifford & Bostock 2007): L. annual. Annuals.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, slender, 10–25 cm long. Lateral branches ample, arising from lower culm or mid culm. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades 2–4 cm long, 1.5–3 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade margins ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes. Racemes 3–7, borne along a central axis, unilateral, 2.5–3 cm long, bearing few fertile spikelets, bearing 4–7 fertile spikelets on each. Central inflorescence axis tip subulate. Rhachis deciduous from axis, angular, glabrous on margins, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis, lax. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 7–9 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3.5–4 mm long, 0.5–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 6–8 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein smooth or scaberulous. Upper glume lateral veins absent. Upper glume apex acute to setaceously acuminate.

Florets. Fertile lemma ovate, 7–9 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above, pubescent, hairy at base. Lemma apex dentate, 3 -fid, mucronate, 3 -awned (mucros). Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns equal, 5–8 mm long, ciliate (below).

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northwest Mexico.

TDWG4. Baja California Sur, Sonora.

Bouteloua aristidoides (HBK) Griseb. *Fl. Brit. W. Ind.* 537 (1864).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Basionym or Replaced Name: *Dinebra aristidoides* Kunth, *Nov. Gen. et Sp.* 1: 171 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland 67*, Sep, Mexico: near Nevada Toluca (P; IT: US (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (as var. *aristidoides*, *arizonica*), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae*, part 2 (2003) (258 as var.*aristidoides* & *arizonica*), F.W.Gould, *The Grasses of Texas* (1975) (342, Fig. 179), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 115, Fig. 17 (2001)), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:27(1980)).

Illustrations (Journals): *Systematic Botany* (23:471, Fig.17(1999)).

Derivation (Clifford & Bostock 2007): Gk. -oides resembling. With spikelets or inflorescences resembling those of *Aristida*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, slender, 6–50 cm long. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 2–7 cm long, 1–2 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 4–15, borne along a central axis, spreading or deflexed, unilateral, 1.5–3.5 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Central inflorescence axis 2.5–10 cm long, tip subulate. Rhachis deciduous from axis, flattened, pubescent on surface, terminating in a barren extension, extension bristle-like, extension 5–10 mm long. Spikelet packing broadside to rhachis. Raceme-bases linear, 1 mm long, shed with the raceme, acute or pungent. Spikelets appressed, solitary. Fertile spikelets sessile.

Sterile Spikelets. Basal sterile spikelets rudimentary, 1 in number.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 1.5–2 mm long, 0.3–0.4 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 5–6 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 6–8 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex dentate, 3 -fid, mucronate, 3 -awned (mucros). Palea apex with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns equal, 2–6 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, 2.5–3 mm long, light brown. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona, California, Nevada, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Western South America, Brazil, Southern South America.** Bolivia, Colombia, Ecuador, Peru. Brazil Northeast. Argentina Northwest, Paraguay.

TDWG4. Maranhao, Piaui. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Cordoba, Corrientes, Formosa. Mexico State, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Zacatecas. Baja California, Baja California Sur, Sinaloa, Sonora. Colima, Jalisco, Oaxaca. Chiapas.

Bouteloua barbata Lag. *Varied. Cienc.* 2, 4: 141 (1805).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosom*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosom barbatum* (Lag.) Clayton, *Kew Bull.*, 37(3): 417 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Nee*, Philippinis Insulis [error for Mexico] (MA; IT: US-A865567 (fragm. ex MA & photo)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (as var.*rothrockii*, *barbata*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (266 as var.*barbata* & *rothrockii*), F.W.Gould, *The Grasses of Texas* (1975) (347, Fig. 182), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (405, Fig. 143).

Derivation (Clifford & Bostock 2007): L. bearded, barbed. With hairs on the callus, glumes or lemma.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, caespitose. Culms geniculately ascending or decumbent, 5–30 cm long. Leaves mostly basal. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades 1.5–7 cm long, 1–3(–4) mm wide. Leaf-blade surface smooth or scaberulous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes (2–)4–8(–9), borne along a central axis, unilateral, 1–3 cm long, bearing 25–40 fertile spikelets on each. Central inflorescence axis 2–12 cm long. Rhachis semiterete, smooth on surface or scabrous on surface. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2 mm long, 0.6–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, acuminate, mucronate. Upper glume lanceolate, 2.5–3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, acuminate, mucronate.

Florets. Fertile lemma oblong, 2.5–3 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex lobed, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn 0.5–3 mm long overall. Lateral lemma awns present, arising on inner edge of lobes or on margin of lemma, 0.5–3 mm long, subequal to principal. Palea 2 -veined. Palea surface pubescent, hairy on flanks. Palea apex dentate, 4 -fid. Rhachilla extension pilose, hairy at tip. Apical sterile florets 2 in number, barren, cuneate, 0.5–1 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 0.5–3 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1 mm long.

$2n = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Colorado, Wyoming. Kansas. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico, Southwest Mexico. **Southern South America.** Argentina Northwest.

TDWG4. Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, San Luis, Tucuman. La Pampa. Zacatecas. Baja California, Baja California Sur, Sinaloa, Sonora. Guerrero, Jalisco, Oaxaca.

Bouteloua bracteata (McVaugh) J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Opizia*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Opizia bracteata* McVaugh, *Fl. Novo-Galiciana*, 14: 269 (1983). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico: Michoacan: wooded hills, roadsides, grassy openings in tropical deciduous forest, along the road from Apatzingan to Aguililla, ca. 16 mi S of the steel bridge over the Rmo Tepalcatepec, elev. 1450 m, flowering, 14 Sep 1958, *McVaugh 17818* (HT: MICH).

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983) (as *Opizia*).

Derivation (Clifford & Bostock 2007): L. bractus, bract; -ata, possessing. Panicle or inflorescence branches subtended by leafy bracts.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Culms slender, 4–15 cm long. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades linear or triangular, 1–4(–7) cm long, 1–2(–3) mm wide. Leaf-blade surface glabrous, hairless except near base. Monoecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes, bracteate at pedicel base (2 linear bracts, 3–4mm), embraced at base by subtending leaf. Racemes 1–3, single or borne along a central axis, unilateral, 1–2 cm long, bearing 1–4 fertile spikelets on each. Rhachis of lateral racemes deciduous from axis, angular, 0.5 mm wide, terminating in a barren extension, extension subulate, extension 2–4 mm long. Spikelet packing lax. Spikelets solitary. Fertile spikelets sessile. Male spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–3.5 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1.8 mm long, 0.5 length of upper glume, hyaline. Lower glume apex acute. Upper glume oblong, 3–3.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile florets female. Fertile lemma ovate, 3–3.5 mm long, coriaceous, much thinner above, pallid, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma surface pilose, hairy below. Lemma apex entire, obtuse, muticous. Palea fused below to rhachilla internode, 3.5–4 mm long, cartilaginous, 2 -veined. Rhachilla extension 1 mm long. Apical sterile florets 1 in number, lanceolate, 1–2 mm long. Apical sterile lemmas awned, 3 -awned (the central winged at base). Apical sterile lemma awns 5 mm long, 3 per spikelet in number.

Flower and Fruit. Anthers 2 mm long, yellow or orange. Stigmas terminally exerted.

Male inflorescence terminal, unlike female, of racemes along a central axis, with pectinate racemes. Male spikelets distinct from female, 1 flowered, lanceolate, 4 mm long, glabrous. Male spikelet glumes 2, linear, 1–3 mm long. Male spikelet lemma 3.5 mm long, 3 -veined, muticous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico.

TDWG4. Michoacan.

Bouteloua breviseta Vasey ex Coult. *Contrib. U.S. Nat. Herb.* 1: 58 (1890).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum brevisetum* (Vasey) Clayton, *Kew Bull.*, 37(3): 418 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Neally 669*, 1889, USA: Texas: Presidio Co.: Screw Bean (US-80198 (fragm. ex F)). Reeder & Reeder, *Syst. Bot.* 5: 318 (1980) point out that Presidio of Vasey County actually is the modern Reeves Co..

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003).

Derivation (Clifford & Bostock 2007): *L. brevis*, short; seta, bristle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms geniculately ascending, 25–70 cm long, wiry, 4–5 -noded. Culm-nodes glabrous or pubescent. Ligule a fringe of hairs. Leaf-blades flat or involute, 1–5(–7) cm long, 0.5–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1–4, single or borne along a central axis, linear or oblong, straight or arcuate, unilateral, 1–3.5 cm long, bearing 25–45(–60) fertile spikelets on each. Central inflorescence axis 0–3 cm long. Rhachis semiterete, terminating in a spikelet or sterile spikelet. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–2.5 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume apex acuminate. Upper glume lanceolate, 3–3.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface glabrous or pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 3–5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, awned, 3 -awned. Principal lemma awn 1 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 0.5–2 mm long, subequal to principal. Palea 2 -veined. Rhachilla extension pilose, hairy at tip. Apical sterile florets 1–2 in number, barren, in a clump, cuneate, 1 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 3–5 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1–1.2 mm long.

$N = 10$ (1 ref TROPICOS). $2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona. New Mexico, Texas. Northeast Mexico.

Coahuila, Chihuahua, Durango.

Bouteloua chasei Swallen. *Proc. Biol. Soc. Wash.* 56: 81 (1943).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum chasei* (Swallen) Clayton, *Kew Bull.*, 37(3): 418 (1982). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *V.H. Chase 7673-1/2*, 30 Jul 1939, Mexico: Nuevo Lesn: Galeana Mun. (US-1763078).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Virginius Heber Chase (1876–1966) United States naturalist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, slender, 20–30(–50) cm long. Leaf-sheaths puberulous. Leaf-sheath oral hairs ciliate, 3 mm long. Ligule a fringe of hairs. Leaf-blades flexuous, involute, 3–15 cm long, 1 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, borne along a central axis, erect or ascending, unilateral, 1.2–2.5 cm long. Central inflorescence axis 3–8 cm long. Rhachis semiterete. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3.5–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 1.5–2 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 3–3.5 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 3.5–4.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface woolly. Lemma apex lobed, 2 -fid, mucronate. Palea 2 -veined. Rhachilla extension pilose, hairy at tip, with 1–2 mm long hairs. Apical sterile florets 1 in number, barren, cuneate, 1 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 1.5 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid, 0.6–0.9 mm long.

$2n = 60$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Coahuila, Neuvo Leon, San Luis Potosi, Zacatecas.

Bouteloua chihuahuana (M.C. Johnst.) J.T. Columbus. *Aliso*, 14(3): 227 (1996).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bouteloua rigidiseta* var. *chihuahuana* M.C. Johnst., *Southwest. Nat.*, 27(1): 29 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F. Chiang et al. 8811*, 24 Jul 1972, Mexico: Chihuahua (LL; IT: CAS, MEXU, NY).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): From Chihuahua, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms slender, 40–50 cm long. Leaf-sheaths scaberulous, glabrous on surface. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades involute, 6–17 cm long, 1–2 mm wide. Leaf-blade surface smooth or scaberulous, glabrous or pubescent, sparsely hairy, hairy adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2–8, borne along a central axis, ascending, cuneate, unilateral, 0.8–1.6 cm long, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Central inflorescence axis 3–6 cm long. Rhachis deciduous from axis, angular, pilose on surface, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3–4 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent, hairy at base. Lower glume apex acuminate. Upper glume lanceolate, 6–8 mm long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 4–6 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous, hairy on veins. Lemma apex dentate, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 2 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 1 mm long, shorter than principal. Apical sterile florets 1–2 in number, barren, in a clump, cuneate, 4–5 mm long. Apical sterile lemmas lobed, 4 -fid, awned, 3 -awned. Apical sterile lemma awns 7–9 mm long.

Flower and Fruit. Anthers 3, 2.5–3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Northeast Mexico. **Mesoamerica.** Costa Rica, El Salvador, Guatemala, Honduras.

TDWG4. Chihuahua.

Bouteloua chondrosioides (HBK) Benth. ex S. Wats. *Proc. Am. Acad.* 18: 179 (1883).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Dinebra chondrosioides* Kunth, *Nov. Gen. et Sp.* 1 173. t. 53 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Michoacan: Valladolid (P; IT: LE, US (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (258), R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (98, Fig 30).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Resembling *Chondrosium* in respect of the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–60 cm long. Ligule a fringe of hairs. Leaf-blades 2–6 cm long, 1–2.5 mm wide, stiff. Leaf-blade surface pubescent, hairy abaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 4–6, borne along a central axis, ascending, oblong, unilateral, 1–1.5 cm long. Central inflorescence axis 4 cm long. Rhachis deciduous from axis, angular, villous on surface, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface villous. Lower glume apex acuminate. Upper glume lanceolate, 4 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface villous. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 6 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface villous. Lemma apex lobed, 3 -fid, with simple equal lobes, incised 0.33 of lemma length, mucronate. Palea keels puberulous. Palea surface villous, hairy on flanks. Palea apex with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 7 mm long (and often winged).

Flower and Fruit. Caryopsis with adherent pericarp, ovoid, 2.5 mm long. Embryo 0.9 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona. Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica. Costa Rica, El Salvador, Guatemala, Honduras.

TDWG4. Distrito Federal, Mexico State, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Sonora. Jalisco, Michoacan, Oaxaca. Chiapas.

Bouteloua curtispindula (Michx.) Torr. *Explor. Red River Louisiana* 300 (1853).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Basionym or Replaced Name: *Chloris curtispindula* Michx., *Fl. Bor. Am.* 1 59 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Michaux s.n.*, USA: hauteurs du Missouri et Poste Vicenne (P; IT: US (fragm.)).

Recent Synonyms: *Bouteloua brasiliensis* Ekman, *Arkiv Bot. Stockh.* 10 No. 17, 29 (1911).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (67), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (as var. *curtispindula*, *caespitosa*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (270 as var. *curtispindula* & *caespitosa*), F.W.Gould, *The Grasses of Texas* (1975) (339, Fig. 178 as var. *curtispindula*), S.A.Rennoize, *Gramineas de Bolivia* (1998) (365, Fig 78), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 115, Fig. 17 (2001)), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 698).

Illustrations (Journals): *Ruizia* (13:289, Fig 35f-g (1993)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *curtus*, short; *pendeo*, hang down; -ulus, indicating tendency. With spikelets shortly twisted to one side of their slender axis.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, scaly. Culms 50–80 cm long. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 10–30 cm long, 2–7 mm wide. Leaf-blade margins tuberculate-ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, 35–80, borne along a central axis, deflexed, cuneate, unilateral, 1–3(–4) cm long, bearing few fertile spikelets, bearing 1–12 fertile spikelets on each. Central inflorescence axis 15–25 cm long, flattened. Rhachis deciduous from axis, angular, terminating in

a barren extension, extension bristle-like. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5.5–8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, exceeding apex of florets or reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–5 mm long, 0.66–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 5.5–8 mm long, 1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 5–7 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface smooth or asperulous, rough on veins. Lemma apex dentate, 3 -fid, mucronate, 3 -awned. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, oblong, 0.5–0.75 mm long. Apical sterile lemmas lobed, 2 -fid, acute, awned, 3 -awned. Apical sterile lemma awns 3–7 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid. Embryo 0.66 length of caryopsis.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). **Continent.** Europe (*), Tropical Asia, North America, South America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Arabian Peninsula, China (+). Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alberta, British Columbia, Manitoba, Saskatchewan. Ontario. Colorado, Montana. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Indiana, Maine, Michigan, Ohio, New York, Pennsylvania, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Tennessee, Virginia, District of Columbia. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Western South America, Brazil, Southern South America.** El Salvador, Guatemala, Honduras, Nicaragua. Bolivia, Colombia, Ecuador, Peru. Brazil South. Argentina Northwest, Uruguay.

TDWG4. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Luis, Tucuman. Cordoba, Formosa, La Pampa. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Bouteloua dactyloides (Nutt.) J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Buchloe*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Sesleria dactyloides* Nutt., *Gen. Am.* 1: 65 (1818). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Nuttall s.n.*, USA: plains of the Missouri River.

Recent Synonyms: *Buchloe dactyloides* (Nutt.) Engelm., *Trans. Acad. Sc. St. Louis*, 432 (1859).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (271 as *Buchloe*), F.W.Gould, *The Grasses of Texas* (1975) (357, Fig. 188), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (117, Fig. 31 as *Buchloe*), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 700, as *Buchloe*).

Derivation (Clifford & Bostock 2007): Gk. daktylos, finger; -oides, resembling. Inflorescence branches finger-like.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present, with alternating elongated and bunched internodes. Culms 5–10 cm long. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 2–12(–20) cm long, 1–2.5 mm wide. Monoecious (rarely) or dioecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes, shorter than basal leaves (male exerted), subtended by an inflated leaf-sheath, embraced at base by subtending leaf. Racemes 2, paired, globose, unilateral, 0.3–0.4 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Rhachis obsolete, deciduous from axis. Spikelets solitary. Fertile spikelets sessile. Male spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile

or the upper sterile. Spikelets ovate, dorsally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure or two, dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 0–0.5 length of upper glume, membranous. Upper glume ovate, 3–4 mm long, indurate (and involucre), without keels, 7 -veined. Upper glume apex lobed, 3 -fid, acuminate.

Florets. Fertile florets female. Fertile lemma ovate, dorsally compressed, 2.5–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 3 -fid, with outer lobes shorter, with lanceolate lobes, incised 0.5 of lemma length. Palea 0.5 length of lemma, 2 -veined. Palea keels scaberulous. Palea apex obtuse.

Flower and Fruit. Anthers 3, 2.5–3.5 mm long, orange or red. Caryopsis oblong or ovoid, 2–2.5 mm long, dark brown. Embryo 0.9 length of caryopsis. Disseminule comprising a branch.

Male inflorescence terminal, unlike female, of racemes along a central axis, with pectinate racemes. Male spikelets distinct from female, 2 flowered, ovate, 4–5.5 mm long. Male spikelet glumes 2. Male spikelet lemma 3 -veined, muticous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

TDWG4. Distrito Federal, Mexico State, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Sonora. Jalisco.

Bouteloua dimorpha J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Opizia stolonifera*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Opizia stolonifera* Presl, *Rel. Haenk.* i. 293. t. 41. f. 1 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, Mexico: Guerrero: Acapulco (PR; IT: US (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (270), R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983) (as *Opizia*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (141, Fig. 89 as *Opizia*).

Derivation (Clifford & Bostock 2007): Gk. dis, twice; morphe, appearance.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms 5–25 cm long. Ligule a ciliate membrane. Leaf-blades 1–12 cm long, 1–2 mm wide. Leaf-blade apex obtuse. Monoecious or dioecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes, bracteate at pedicel base (subulate, 0.5–1mm), embraced at base by subtending leaf. Racemes 1, single, unilateral, 1–2.5 cm long. Rhachis angular. Spikelet packing lax. Spikelets solitary. Fertile spikelets sessile. Male spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 2 mm long, falling entire. Spikelet callus square, pubescent.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume lanceolate, 2 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex acute.

Florets. Fertile florets female. Fertile lemma ovate, 2 mm long, coriaceous, much thinner above, keeled, 3 -veined, 0–3 -veined. Lemma apex lobed, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 5–7 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 5–7 mm long, subequal to principal. Palea fused below to rhachilla internode, orbicular, 1 length of lemma, cartilaginous, 2 -veined. Palea keels winged. Apical sterile florets 1 in number, lanceolate, 1.5 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 4–6 mm long, 3 per spikelet in number.

Flower and Fruit. Male inflorescence terminal, unlike female, a single raceme or of racemes along a central axis, with pectinate racemes. Male spikelets distinct from female, 1 flowered, lanceolate, 3 mm long, glabrous. Male spikelet glumes 2. Male spikelet lemma 3 -veined, muticous.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean.** Honduras. Cuba, Trinidad-Tobago.

Mexico State, Morelos, Puebla. Queretaro, San Luis Potosi. Veracruz. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Yucatan.

Bouteloua distans Swallen. *Contrib. U. S. Nat. Herb.* 29: 401 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E. Hernandez-Xolocotzi & J.A. Jenkins X-808*, 13 Dec 1945, Mexico: Oaxaca (US-1961989; IT: CHAPA, US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. disto, be apart. Spikelets widely separated in inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 38–60 cm long. Leaf-sheaths hirsute, with tubercle-based hairs. Ligule a fringe of hairs, 1 mm long. Leaf-blades curled, 7–15 cm long, 1.5–3.5 mm wide. Leaf-blade margins glabrous or tuberculate-ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, 20–50, borne along a central axis, unilateral, 0.8–1.5 cm long, bearing few fertile spikelets, bearing 2–3 fertile spikelets on each. Central inflorescence axis 12–19 cm long. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 8–9 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–4.5 mm long, 0.5 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume lanceolate, 8–9 mm long, 1 length of adjacent fertile lemma, membranous, purple, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile lemma ovate, 8–9 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex entire, acuminate. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns equal, 4–6 mm long.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico.

TDWG4. Puebla. Neuvo Leon. Oaxaca.

Bouteloua disticha (HBK) Benth. *Journ. Linn. Soc.* 19: 105. (1881).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Polyodon distichum* Kunth, *Nov. Gen. et Sp.* 1: 174. t. 175 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, May, Ecuador: Prov. Pichincha: Quito (P).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. distichos, two-rowed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Stolons absent or present. Culms decumbent or rambling, weak, 40–100 cm long. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 3–6 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, 15–45, borne along a central axis, unilateral, 1.5 cm long, bearing few fertile spikelets, bearing 3–4 fertile spikelets on each. Central inflorescence axis 3–12 cm long, tip subulate. Rhachis deciduous from axis, flattened, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Sterile Spikelets. Basal sterile spikelets well-developed, 1–2 in number.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume subulate, 3–4 mm long, 0.6–0.7 length of upper glume, membranous, 1 -veined. Lower glume lateral veins absent. Upper glume lanceolate, 4.5–7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 4.5–7 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 0.5–1 mm long overall. Lateral lemma awns present,

arising on margin of lemma, 1–1.5 mm long, subequal to principal. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 1 -awned or 3 -awned. Apical sterile lemma awns unequal, 6–10 mm long.

Flower and Fruit. Anthers orange or red. Caryopsis with adherent pericarp.

$2n = 20$ (1 ref TROPICOS), or 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Southern South America.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba. Venezuela. Colombia, Ecuador, Galapagos, Peru.

TDWG4. Morelos. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Yucatan.

Bouteloua diversispicula J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Cathestecum bevilifolium*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Cathestecum brevifolium* Swallen, *Journ. Wash. Acad. Sc.* 27: 500 (1937). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 4559, 5 Oct 1893, Mexico: Jalisco: Tequila, on thin gravelly soil (US-884043; IT: MO-2959035, US-821160, US-747968).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (as *Cathestecum*).

Derivation (Clifford & Bostock 2007): *L. diversus*, variable; *spica*, a point; hence, in particular, an ear or spike of grain; *-ula*, diminutive. Spikelets polymorphic, varying according to position and sex.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Butt sheaths villous. Culms erect or geniculately ascending, 5–10 cm long. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane. Leaf-blades curled, 1–2.5 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, hairy adaxially. Leaf-blade margins scabrous. Leaf-blade apex acute. Androdioecious.

Inflorescence. Inflorescence composed of racemes. Racemes 3–8, borne along a central axis, cuneate, 0.3 cm long, bearing a triad of spikelets. Central inflorescence axis 1–2.5 cm long, tip subulate. Rhachis deciduous from axis, terminating in a barren extension, extension bristle-like. Spikelets in threes. Fertile spikelets pedicelled, 1 in the cluster. Companion sterile spikelets sessile, 2 in the cluster. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas or containing empty lemmas, cuneate, laterally compressed, 2.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, pilose or villous, acuminate, mucous. Companion sterile spikelet lemmas 0–2, 0–1 mm long.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, reaching apex of florets, similar to fertile lemma in texture. Lower glume linear, 1 mm long, 0.3 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Upper glume lanceolate, 3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface villous. Upper glume apex dentate, 2 -fid, mucronate.

Florets. Fertile florets female. Fertile lemma oblong, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 1 mm long overall. Lateral lemma awns present, arising on margin of lemma, 1 mm long, subequal to principal. Apical sterile florets 2 in number, male or barren, oblong, 2.5 mm long. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 2–4 mm long.

Flower and Fruit. Male inflorescence similar to female.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** El Salvador, Honduras.

TDWG4. Morelos, Puebla. Aguascalientes, Chihuahua, Guanajuato, San Luis Potosi, Zacatecas. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Bouteloua elata Reeder & Reeder. *Brittonia* 15:215 (1963).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum elatum* (Reeder & Reeder) Clayton, *Kew Bull.*, 37(3): 418 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.R. Reeder & C.G. Reeder 2356*, 19 Sep 1953, Mexico: Colima: ca. 13 mi SW of Ciudad Colima (RM; IT: GH, US-2382028). Collection date 1963 in protologue.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. tall. Culms taller than those of most species of the genus.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect, 70–120(–140) cm long. Lateral branches lacking. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades flat or conduplicate or involute, 20–50 cm long, 3–4 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 9–20, borne along a central axis, unilateral, 2–8 cm long, bearing 40–100 fertile spikelets on each. Central inflorescence axis 20–40 cm long. Rhachis semiterete, tuberculate on margins, ciliate on margins, terminating in a spikelet. Rhachis hairs 2–3 mm long. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, acuminate, mucronate. Upper glume lanceolate, 3–4 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein tuberculate, ciliate. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, acuminate, mucronate.

Florets. Fertile lemma oblong, 2–2.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 2–4 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 2–4 mm long, subequal to principal. Palea 2 -veined. Palea apex awned. Rhachilla extension pilose, hairy at tip. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 3 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico, Southeast Mexico.

TDWG4. Colima, Guerrero, Jalisco, Nayarit, Oaxaca, Chiapas.

Bouteloua eludens D. Griffiths. *Contrib. US. Nat. Herb.* 14: 401 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *D. Griffiths 7269*, 17 Sep 1904, USA: Arizona: Santa Rita Mountains (US-81714; IT:MO). CS.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (258).

Derivation (Clifford & Bostock 2007): L. *eludo*, avoid.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Butt sheaths papery. Culms slender, 35–60 cm long. Leaf-sheaths outer margin glabrous or hairy. Ligule an eciliate membrane, lacerate. Leaf-blades flat, 5–15 cm long, 1–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 10–20, borne along a central axis, cuneate, unilateral, 0.7–1.1 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Central inflorescence axis 7–10 cm long, tip subulate. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 5–6 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 6–7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent, hairy generally. Upper glume apex acute to setaceously acuminate.

Florets. Fertile lemma ovate, 6–7 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, with linear lobes, with lobes 0.5–2 mm long, mucronate, 2 -awned (mucros). Palea surface pubescent, hairy on back, hairy above. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, oblong, 5–6 mm long. Apical sterile lemmas pubescent, lobed, 4 -fid, muticous or awned, 3 -awned. Apical sterile lemma awns 0.5–5 mm long, ciliate (below).

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 5 mm long. Embryo 0.5–0.75 length of caryopsis.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona. New Mexico. Northeast Mexico, Northwest Mexico. Coahuila, Chihuahua. Sonora.

Bouteloua erecta (Vasey & Hack.) J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Cathestecum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Cathestecum erectum* Vasey & Hack., *Bull. Torrey Bot. Club.* 11: 37. t. 45. (1884). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: V. *Havard* 2, Aug 1883, USA: Texas: Bone Spring (Tornillo Cr.), between El Paso and Presidio (US-884020; ILT: 884019). LT designated by ?.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (275 as *Cathestecum*), F.W.Gould, *The Grasses of Texas* (1975) (356 Fig. 187).

Derivation (Clifford & Bostock 2007): L. held upright. Spikelets or inflorescence branches held erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms 15–30 cm long. Ligule a ciliolate membrane, 0.3 mm long. Leaf-blades 3–6 cm long, 1–1.5 mm wide. Leaf-blade surface ribbed. Androdioecious.

Inflorescence. Inflorescence composed of racemes. Racemes 2–7, borne along a central axis, cuneate, 0.4–0.7 cm long, bearing a triad of spikelets. Central inflorescence axis 0.5–4 cm long, tip subulate (forked). Rhachis deciduous from axis, terminating in a barren extension, extension bristle-like. Raceme-bases linear, 0.5 mm long, persistent. Spikelets in threes. Fertile spikelets pedicelled, 1 in the cluster. Companion sterile spikelets sessile, 2 in the cluster. Pedicels present, linear, 1–1.5 mm long, scaberulous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, cuneate, laterally compressed, 3.5–5.5 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, emarginate, muticous. Companion sterile spikelet lemmas 2, lobed (3-fid), several-awned (3 awns).

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, reaching apex of florets or shorter than spikelet, similar to fertile lemma in texture. Lower glume oblong, 0.1–0.3 mm long, 0.05 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex emarginate. Upper glume lanceolate, 4 mm long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein ciliate (below). Upper glume lateral veins absent. Upper glume apex emarginate, mucronate.

Florets. Fertile lemma oblong, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn 0.5–1 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0.5–1 mm long, subequal to principal. Apical sterile florets 2 in number, male, separate, oblong. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 0.5–1 mm long.

Flower and Fruit. Male inflorescence similar to female.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. South-central USA, Mexico. Texas. Northeast Mexico, Northwest Mexico. **Mesoamerica.** El Salvador, Guatemala, Honduras. Coahuila, Chihuahua, Neuvo Leon, Tamaulipas, Zacatecas. Sonora.

Bouteloua eriopoda (Torr.) Torr. *Pacif. Rail. Rep.* 4 Bot. 155. (1856).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosium*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosium eriopodum* Torr., Emory, *Notes Mil. Reconnois.* 153 (1848). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *Wootton 458*, USA: New Mexico: Las Cruces (US-A865571 (fragm.)). NT designated by Gould, *Ann. Missouri Bot. Gard.* 66:397 (1979).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (263), F.W.Gould, *The Grasses of Texas* (1975) (350, Fig. 1184).

Illustrations (Journals): *Systematic Botany* (23:471, Fig.18(1999)).

Derivation (Clifford & Bostock 2007): Gk. erion, wool; pous, foot. Basal leaf-sheaths wooly.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Stolons absent or present. Culms decumbent, 20–60 cm long, wiry. Culm-internodes distally woolly. Ligule a ciliolate membrane. Leaf-blades convolute, 5–10 cm long, 0.5–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3–8, borne along a central axis, ascending, unilateral, 2–5 cm long, bearing 8–18 fertile spikelets on each. Central inflorescence axis 10–15 cm long, tip without extension or subulate. Rhachis semiterete, scabrous on surface, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Raceme-bases brief, pilose (woolly). Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2.5–4 mm long, 0.33–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume lanceolate, 6–9 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume apex attenuate.

Florets. Fertile lemma ovate, 6–9 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or puberulous, hairy below. Lemma apex dentate, 3 -fid, with outer lobes shorter, awned, 3 -awned. Principal lemma awn 1.5–3 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.3–0.5 mm long, shorter than principal. Palea 2 -veined. Rhachilla extension pilose, hairy at tip. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 4–8 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, oblong, 2.5–3 mm long. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Colorado. Kansas. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Tamaulipas, Zacatecas. Sonora.

Bouteloua eriostachya (Swallen) Reeder. *Bull. Torr. Bot. Cl.* 94:7 (1967).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosium*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bouteloua eriopoda* var. *eriostachya* Swallen, *Proc. Biol. Soc. Wash.* 56:81 (1943). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *I.M. Johnston 8718*, 1–3 Sep 1941, Mexico: Coahuila: cerca de Aguaje de Pajarito (US-154692; IT: GH, LL, US-2209363).

Recent Synonyms: *Chondrosium eriostachyum* (Swallen) Clayton, *Kew Bull.*, 37(3): 418 (1982).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. erion, wool; stachys, ear of corn. Inflorescence branches or spikelets densely hairy.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, persisting or short-lived, caespitose. Rootstock evident. Stolons absent. Culms erect, 40–60 cm long. Culm-internodes distally woolly. Leaves mostly basal. Ligule a ciliate membrane. Leaf-blades convolute, 0.5–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3–8, borne along a central axis, unilateral, 2–5 cm long, bearing 8–12 fertile spikelets on each. Central inflorescence axis 10–15 cm long. Rhachis semiterete, villous on surface. Spikelet packing broadside to rhachis, contiguous. Raceme-bases brief, pubescent. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 5–7 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 6–9 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or scabrous, villous or woolly. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 6–9 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent, hairy at base. Lemma apex lobed, 3 -fid, awned, 1 -awned. Principal lemma awn 1.5–3 mm long overall. Palea 2 -veined. Rhachilla extension pubescent, hairy at tip. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 4–8 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 2.5–3 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Coahuila.

Bouteloua gracilis Vasey, non Lag. (1840). Wheeler, *Exped.* 287 (1878).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Basionym or Replaced Name: *Chondrosum gracile* Kunth, *Nov. Gen. et Sp.* 1: 176. t. 58 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Guanajuato: La Bufa (B-W-1628; IT: P, US-A865679 (fragm.)).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (69), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (263), F.W.Gould, *The Grasses of Texas* (1975) (352, Fig. 185), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 698), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:28(1980)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or decumbent, 25–60 cm long. Culm-nodes glabrous or pubescent. Ligule a fringe of hairs. Leaf-blades 5–10 cm long, 1–2.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1–3(–4), single or borne along a central axis, spreading, arcuate, unilateral, 1.5–5 cm long. Central inflorescence axis 2–5 cm long, tip without extension or subulate. Rhachis semiterete, scabrous on surface. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–3.5 mm long, 0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scabrous, eciliate or ciliate. Lower glume lateral veins absent. Lower glume apex setaceously acuminate. Upper glume lanceolate, 5–6 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein smooth to scabrous, eciliate to ciliate. Upper glume lateral veins absent. Upper glume apex setaceously acuminate.

Florets. Fertile lemma oblong, 4–6 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.3 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 1–3 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 0.5–2 mm long, shorter than principal. Palea 2 -veined. Palea keels ciliolate. Palea apex with excurrent keel veins. Rhachilla extension pubescent, hairy at tip. Apical sterile florets 1(–2) in number, barren, cuneate, 0.4 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 2–3 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, 2.5–3 mm long. Embryo 0.75 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Subarctic America, Western Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Colorado, Idaho, Montana, Wyoming. Kansas, North Dakota, South Dakota. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Southwest Mexico.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Sonora. Jalisco, Michoacan, Oaxaca.

Bouteloua griffithsii J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Cathestecum prostratum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Cathestecum prostratum* J. Presl, *Rel. Haenk.* 1: 295. t. 42. (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T. Haenke s.n.*, no date, Mexico (PR; IT: LE-TRIN-2209.01, US-2489484 (fragm. ex PR)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): In honor of David Griffiths (1867–1935) United States agronomist and botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms prostrate, slender, 4–35 cm long. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades 1–5 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy adaxially. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 4–8, borne along a central axis, cuneate, 0.4 cm long, bearing a triad of spikelets. Central inflorescence axis 3 cm long, tip subulate. Rhachis deciduous from axis, terminating in a barren extension, extension bristle-like, extension 2 mm long. Spikelets in threes. Fertile spikelets pedicelled, 1 in the cluster. Companion sterile spikelets sessile, 2 in the cluster. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets well-developed, male, cuneate, laterally compressed, 3 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, villous, acuminate, mucronate. Companion sterile spikelet lemmas 2, 2–3 mm long, lobed (3-fid), several-awned (3 awns), with 1 mm long awn.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, reaching apex of florets, similar to fertile lemma in texture. Lower glume flabellate, 0.5–1 mm long, 0.1–0.2 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 4 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface villous. Upper glume apex obtuse or acute, mucronate.

Florets. Fertile florets female. Fertile lemma oblong, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma margins ciliate. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 1–2 mm long overall, limb ciliate. Lateral lemma awns present, arising on margin of lemma, 1–2 mm long, subequal to principal, ciliate. Palea apex awned, awns 2 mm long. Apical sterile florets 2 in number, male or barren, oblong. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 4–5 mm long, ciliate.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico.

Morelos, Puebla. Queretaro. Guerrero, Jalisco, Michoacan, Oaxaca.

Bouteloua hirsuta Lag. *Varied. Cienc.* 2, 4: 141 (1805).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosom*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosom hirsutum* (Lag.) Sweet, *Hort. Brit. ed.* 1: 455 (1826). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Lagasca s.n.*, Cult. Madrid Bot. Gard. from seed collected in Mexico by L. Nee (MA-245716; ILT: BM (possible ex herb. Roemer), M-7433 LE-TRIN-2125.6 (fragm. ex M and drawings)). LT designated by Griffiths, *Contr. U.S. Natl. Herb.* 14: 372 (1912); also cited by Gould, *Ann. Missouri Bot. Gard.* 66: ??? (1980).

Recent Synonyms: *Bouteloua hirsuta* var. *pectinata* (Featherley) Cory, *Rhodora* 38:405 (1936). *Bouteloua pectinata* Featherly, *Bot. Gaz.* 1931, 91: 103 (1931).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (as ssp. *hirsuta*, *pectinata*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (263 as subspecies *hirsuta* & *pectinata*), F.W.Gould, *The Grasses of Texas* (1975) (354, Fig. 186).

Derivation (Clifford & Bostock 2007): L. hairy. Plant hairy in respect to all or some parts.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming or caespitose. Stolons absent or present. Culms erect, 15–40(–60) cm long, 4–6 -noded. Culm-nodes swollen. Lateral branches lacking. Leaves basal and cauline. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades flat or involute, 1–2 mm wide. Leaf-blade margins tuberculate-ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes. Racemes 1–4, borne along a central axis, unilateral, 2.5–4 cm long, bearing 20–50 fertile spikelets on each. Central inflorescence axis 10–30 cm long. Rhachis flattened, terminating in a barren extension, extension bristle-like, extension 5–10 mm long. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 3 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume margins ciliate. Lower glume apex acuminate, awned, 1 -awned, awn 1–3 mm long, awn ciliolate. Upper glume lanceolate, 6 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, pilose, with tubercle-based hairs. Upper glume margins ciliate. Upper glume apex acuminate, awned, 1 -awned, awn 1–3 mm long.

Florets. Fertile lemma oblong, 6 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, awned, 1 -awned. Principal lemma awn 1 mm long overall. Palea 2 -veined. Rhachilla extension glabrous. Apical sterile florets 2 in number, barren, in a clump, cuneate, 1–1.5 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 4 mm long.

Flower and Fruit. Anthers 2–2.5 mm long, pallid or yellow. Caryopsis with adherent pericarp, obovoid, 1.5–2 mm long. Embryo 0.7–0.8 length of caryopsis.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Alberta, Saskatchewan. Colorado, Wyoming. Illinois, Iowa, North Dakota, Nebraska, South Dakota, Wisconsin. Ohio. Arizona, California, Nevada, Utah. New Mexico, Texas. Florida, Georgia. Central Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico.

Distrito Federal, Mexico State, Morelos, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California Sur, Sinaloa. Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Tabasco.

Bouteloua johnstonii Swallen. *Proc. Biol. Soc. Wash.* 56: 79 (1943).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Johnston 8491*, Mexico: Coahuila: S de Canada Oscuro, near Tanque La Luz (NA; IT: GH, US-1817790).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Ivan Murray Johnston (1898–1960) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms 10–30 cm long. Ligule a fringe of hairs. Leaf-blades curved, involute, 1–2 mm wide, stiff. Leaf-blade apex hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 6–12, borne along a central axis, cuneate, unilateral, 0.8–1.5 cm long, bearing 7–11 fertile spikelets on each. Central inflorescence axis 7–10 cm long, tip subulate. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–3 mm long, 0.4–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 5–7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface glabrous or pubescent, hairy at base. Upper glume apex acute to setaceously acuminate.

Florets. Fertile lemma ovate, 5–7 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, 2–3 mm long, subequal to principal. Rhachilla extension glabrous. Apical sterile florets 1–2 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 2–3 mm long.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Coahuila, Zacatecas.

Bouteloua juncea (Beauv.) Hitchcock. *Contrib. US. Nat. Herb.* 17: 343 (1913).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Triathera juncea* Desv. ex P. Beauv., *Agrost.* 40 (1812). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hispanola, (Known only from illustration possibly at G).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. juncea*, rush-like. Leaf-blades convolute resembling those of certain *Juncus* species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons absent or present. Culms slender, 5–30 cm long. Leaf-sheaths pilose. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades curved, involute, 1–4 cm long, 1–2 mm wide, stiff.

Inflorescence. Inflorescence composed of racemes. Racemes 8–20, borne along a central axis, erect or ascending, unilateral, 0.7 cm long, bearing 1 spikelet, bearing 1 fertile spikelets on each. Central inflorescence axis 1–5 cm long, tip subulate. Rhachis deciduous from axis, subterete, terminating in a barren extension, extension subulate, extension 1–2 mm long. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 2.8–5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 1 mm long, 0.3–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliate. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 1.8–3 mm long, 0.6–0.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 2.8–5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface scabrous, glabrous or pubescent. Lemma apex dentate, 3 -fid, acute, mucronate, 3 -awned (mucros). Palea apex with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, linear, 4 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns equal, 6–9 mm long.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, 1.5 mm long.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico. **Caribbean.** Cuba, Dominican Republic, Haiti, Puerto Rico.
Morelos. Hidalgo. Guerrero.

Bouteloua karwinskii (Fourn.) D.Griffiths. *Contrib. US. Nat. Herb.* 14: 394 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum karwinskyi*. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Karwinsky 1479*, Mexico: Cañon de las Minas et Victoria (P?; IT: LE, US-A865682 (fragm.)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): As for honor of Wilhelm Friedrich Karwinski Karwin (1780–1855) Hungarian-born German botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, slender, 20–30(–50) cm long. Leaves mostly basal. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades 3–9 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, borne along a central axis, erect or spreading, unilateral, 1–1.8 cm long. Central inflorescence axis 5–10 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 1.5–2 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–2.5 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, 3–4 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma margins pubescent. Lemma apex entire, muticous. Palea 2 -veined. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, cuneate, 0.4 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 1.5 mm long.

Flower and Fruit. Caryopsis with adherent pericarp.

$2n = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Coahuila, Durango, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas.

Bouteloua kayi Warnock. *Field & Lab.* 23: 15 (1955).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum kayi* (Warnock) Clayton, *Kew Bull.*, 37(3): 418 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Kay K-1*, 4 Aug 1954, USA: Texas: Brewster Co.: near Rio Grande River, in limestone (SRSC; IT: SMU, TEX).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (266).

Derivation (Clifford & Bostock 2007): In honor of Omar Lamar Kay (1920–2001) United States soil scientist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–40(–50) cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades involute, 1–1.5 mm wide, glaucous. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 7–15(–20), borne along a central axis, erect, unilateral, 1.5–3 cm long, bearing 7–14(–20) fertile spikelets on each. Rhachis semiterete, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis, lax. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.6–0.8 mm long.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2.5–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex entire or dentate, 2 -fid, acuminate, muticous or mucronate. Upper glume lanceolate, 2.5–4 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex entire or dentate, 2 -fid, acuminate, muticous or mucronate.

Florets. Fertile lemma oblong, 2–3 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent, hairy at base. Lemma apex lobed, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn 3–4 mm long overall. Lateral lemma awns present, arising on margin of lemma, 3–4 mm long, subequal to principal. Palea 2 -veined. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, cuneate, 0.5 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 3–4 mm long.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA. Texas.

Bouteloua longiseta Gould. *Brittonia*, 21: 271 (1969).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W. Gould 12759*, 8 Oct 1968, Mexico: Chiapas (TAES; IT: GH, TEX, US-2551471).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. longus*, long; *seta*, bristle. Glumes or lemmas long awned.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 15–40 cm long. Leaf-sheaths hispid, with simple hairs or tubercle-based hairs. Ligule a ciliate membrane. Leaf-blades 5–10 cm long, 1–5 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides, with simple hairs or tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 4–8, borne along a central axis, unilateral, 2–3 cm long, bearing 3–8 fertile spikelets on each. Central inflorescence axis 3–10 cm long, tip subulate. Rhachis deciduous from axis, angular, ciliate on margins, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile. Pedicels present, reduced to a stump, villous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 6–9 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 6–9 mm long, 0.9 length of upper glume, membranous, 1-keeled. Lower glume surface scabrous, rough on veins, glabrous or pubescent, hairy on veins. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6–9 mm long, membranous, 1-keeled. Upper glume surface scabrous, rough on veins, glabrous or puberulous, hairy on veins. Upper glume apex setaceously acuminate.

Florets. Fertile lemma ovate, 4.5–8 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, muticous or awned, 3 -awned. Principal lemma awn 1 mm long overall. Lateral lemma awns present, 1 mm long, subequal to principal. Apical sterile florets 1 in number, male, oblong. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 11–14 mm long.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Southwest Mexico, Southeast Mexico.

Oaxaca. Chiapas.

Bouteloua media (Fourn.) Gould & Kapadia. *Brittonia*, 16: 196 (1964).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Atheropogon medius* E. Fourn., *Mex. Pl. En. Gram.* 139 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Karwinsky*, Mexico: Hacienda del Limsn LT: *Liebmann 581*, Oct, Mexico: between T. Miguel and Sadani (US-2307995 (fragm.)). LT designated by Swallen, *N. Amer. Fl.* 17: 633 (1939).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (98, Fig 30).

Derivation (Clifford & Bostock 2007): L. middle. Characters midway between two or more other species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock not evident, or evident. Culms erect, 80–200 cm long, 5–7 -noded. Culm-nodes purple. Lateral branches sparse, arising from upper culm. Leaf-sheaths glabrous on surface to hirsute. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades 4–9 mm wide. Leaf-blade surface glabrous to hirsute.

Inflorescence. Inflorescence composed of racemes. Racemes 7–15, borne along a central axis, unilateral, 2–6 cm long, bearing 10–20 fertile spikelets on each. Central inflorescence axis 4–30 cm long, tip subulate. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume linear, 2.5–3 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth to scabrous, glabrous to pubescent. Lower glume apex acute to setaceous acuminate. Upper glume lanceolate, 3.4–4.5 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth to scabrous, glabrous to pubescent. Upper glume apex acute or acuminate.

Florets. Fertile lemma ovate, 4–6 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 0.5–1 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0.5–1 mm long, subequal to principal. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, oblong. Apical sterile lemmas dentate, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 3–8 mm long.

Flower and Fruit. Anthers orange or red. Caryopsis with adherent pericarp, ellipsoid, 2.2–2.5 mm long.

$2n = 27$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Pacific Is (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Brazil, Southern South America.** Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Brazil West Central. Argentina Northeast.

TDWG4. Cordoba, Entre Rios. Distrito Federal, Mexico State, Morelos, Puebla. San Luis Potosi, Zacatecas. Veracruz. Baja California Sur. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Bouteloua megapotamica (Spreng) Kuntze. *Rev. Gen. Pl.* 3:341 (1893).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Pappophorum megapotamicum* Spreng., *Syst. 4 Cur. Post.* 34 (1827). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Sello s.n.*, Brasil: Rio Grande (B?; US-72694 (fragm. ex B, herb. Sprengel)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (365, Fig. 78), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (263, Fig. 101), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (421, Fig. 109), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (504, Fig. 339), B.Rosengurt, *Gramineas Uruguayas I* (1970) (228, Fig. 91).

Derivation (Clifford & Bostock 2007): Gk. megas, large; potamos, river; -ike, belonging to. Mostly from Rio Grande do Sal, now La Platte. Otherwise from the Amazon or Rio Grande, a district in southern Brazil.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms erect or geniculately ascending, 15–20 cm long. Ligule a fringe of hairs. Leaf-blades 5–10 cm long, 1–2 mm wide, stiff.

Inflorescence. Inflorescence composed of racemes. Racemes 2–6, borne along a central axis, spreading, cuneate, unilateral, 1–1.5 cm long, bearing few fertile spikelets, bearing 3–10 fertile spikelets on each. Central inflorescence axis 1.5–2 cm long. Rhachis deciduous from axis, angular, terminating in a barren extension, extension a forked bristle. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 11–12 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 6 mm long, 0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface hispid. Lower glume apex setaceously acuminate. Upper glume lanceolate, 10 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface hispid. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 2 mm long.

Florets. Fertile lemma ovate, 11–12 mm long, coriaceous, shiny, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 5 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 4–5 mm long, subequal to principal. Palea apex with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 2–3 in number, barren, in a clump, lanceolate, 4 mm long. Apical sterile lemmas lobed, 2 -fid, acuminate, awned, 3 -awned. Apical sterile lemma awns 20 mm long, 9–12 per spikelet in number.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 2–2.5 mm long. Embryo 0.66 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil, Southern South America. Bolivia. Brazil South. Argentina Northwest, Argentina Northeast, Argentina South, Uruguay.

TDWG4. Sao Paulo Parana. Catamarca, Santiago del Estero, San Luis, Tucuman. Buenos Aires, Cordoba, Corrientes, Distrito Federal, Entre Rios, La Pampa, Misiones, Santa Fe. Río Negro.

Bouteloua mexicana (Scribn.) J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Soderstromia*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Fourniera mexicana* Scribn., *Bull. Div. Agrostol., U.S.D.A.* 4: 8–9 (1897). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Palmer* 43, Oct 1894, Mexico: Acapulco, growing in loose gravelly soil (US-81932, US-81933, US-494824, US-740915, US-740916, US-822265; ILT: BM, MO). LT designated by Pohl & Davidse, *Fl. Mesoamericana* 6: 297 (1994). ST: *Palmer* 41, Oct 1894, Mexico: Acapulco, growing in loose, gravelly soil (MO, US).

Recent Synonyms: *Soderstromia mexicana* (Scribn.) Morton, *Leafl. West. Bot.* 10: 327 (1966).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ana, indicating origin. From Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms 10–30 cm long. Ligule a fringe of hairs. Leaf-blades 2–7 cm long, 0.5–1 mm wide. Leaf-blade surface ribbed. Monoecious or dioecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes. Racemes 10–25, borne along a central axis, 0.3–0.4 cm long, bearing a triad of spikelets. Central inflorescence axis 1–5 cm long. Rhachis obsolete, deciduous from axis. Spikelets in threes. Fertile spikelets pedicelled. Companion sterile spikelets sessile, 2 in the cluster. Male spikelets sessile, 3 in a cluster (2 of them reduced to a glume). Pedicels present, oblong, 0.5 mm long.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, cuneate, 2–2.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, distinctly veined, 3 -veined, entire, truncate, muticous.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 3–3.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes one the lower absent or obscure, shorter than spikelet, thinner than fertile lemma. Upper glume cuneate, 2–2.5 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 2 -veined. Upper glume apex erose, truncate.

Florets. Fertile florets female. Fertile lemma elliptic, 3–3.5 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 3 -fid, with outer lobes shorter, incised 0.33 of lemma length, acute. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 3 mm long.

Flower and Fruit. Male inflorescence terminal, similar to female, of racemes along a central axis. Male spikelets resembling female, 2 flowered, lanceolate, 3–4 mm long. Male spikelet glumes 1, mucicous. Male spikelet lemma 3 -veined, mucicous.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Southwest Mexico. **Mesoamerica.** El Salvador, Guatemala. Guerrero.

Bouteloua multifida (Griffiths) J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Griffithsochloa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Cathestecum multifidum* D.Griffiths, *Contrib. U. S. Nat. Herb.* 14: 360 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico, Iguala: *Griffiths* (US holo, K).

Recent Synonyms: *Griffithsochloa multifida* (Griffiths) G.J. Pierce, *Bull. Torrey Bot. Club*, 105(2): 134 (1978).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. multus*, many; *findo*, cleave. The second lemma is divided into five-seven awns.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, slender, 15–40 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades 2.5–8 cm long, 1–1.5 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade margins tuberculate-ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 5–10, borne along a central axis, cuneate, 0.3–0.4 cm long, bearing a triad of spikelets. Central inflorescence axis 5–6 cm long, tip subulate. Rhachis deciduous from axis, terminating in a barren extension, extension bristle-like. Spikelets in threes. Fertile spikelets pedicelled, 1 in the cluster. Companion sterile spikelets sessile, 2 in the cluster. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets well-developed, male, cuneate, laterally compressed, 3–4 mm long, as long as fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, villous, acuminate, mucicous. Companion sterile spikelet lemmas 2, 2.5 mm long, lobed (3–6-fid), several-awned (3–5 awns), with 1 mm long awn.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, reaching apex of florets, similar to fertile lemma in texture. Lower glume linear, 2 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex acuminate. Upper glume lanceolate, 3 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1 mm long.

Florets. Fertile florets female. Fertile lemma oblong, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.1–0.25 of lemma length, mucicous. Apical sterile florets 2 in number, dissimilar. First apical floret male, oblong, awned (5 awns). Apical sterile florets barren ((upper)), in a clump, rudimentary. Apical sterile lemmas awned, 7–10 -awned. Apical sterile lemma awns 2–3 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico.

TDWG4. Mexico State, Morelos, Puebla. Tamaulipas. Guerrero, Michoacan, Oaxaca.

Bouteloua nervata Swallen. *N. Am. Fl.* 17: 626 (1939).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Buchlomimus*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.S. Hitchcock 6734, 6 Sep 1910–7 Sep 1910, Mexico: Hidalgo (US-883931).

Recent Synonyms: *Buchlomimus nervatus* (Swallen) Reeder, C. Reeder & Rzed., *Brittonia* 17: 30 (1965)

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. nervus*, nerve; -ata, possessing. Spikelets with conspicuously nerved lemmas or glumes.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect (male) or prostrate (female), 5–15 cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 3–8 cm long, 2–3 mm wide. Leaf-blade surface pilose. Dioecious.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, borne along a central axis, unilateral, 0.8–1.5 cm long. Central inflorescence axis 0.4–0.6 cm long. Rhachis deciduous from axis, flattened, terminating in a barren extension, extension bristle-like. Spikelet packing 2 -rowed. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Male spikelets sessile. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 8–10 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.66–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 8–10 mm long, membranous, without keels, 2–5 -veined. Upper glume apex acute.

Florets. Fertile florets female. Fertile lemma elliptic, 5–6 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma surface with 2 longitudinal grooves. Lemma apex awned, 3 -awned. Principal lemma awn 5 mm long overall. Lateral lemma awns present, 4 mm long, shorter than principal. Palea 1 length of lemma. Palea apex awned, awns 0.5–1 mm long. Apical sterile florets 3 in number, barren, in a clump, linear, 2 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 15–18 mm long.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, ellipsoid. Embryo 0.9 length of caryopsis.

Male inflorescence similar to female, of racemes along a central axis, with pectinate racemes. Male spikelets distinct from female, 1 flowered, without rhachilla extension, persistent, lanceolate, 4.5–6 mm long, glabrous. Male spikelet glumes 2, mucicous. Male spikelet lemma 3 -veined, mucicous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico.

TDWG4. Mexico State. Hidalgo.

Bouteloua parryi (Fourn.) D. Griffiths. *Contrib. US. Nat. Herb.* 14: 381 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum parryi* Fourn., *Mex. Pl. Enum. Gram.* 150 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Parry & Palmer 943 1/2*, Mexico: San Luis Potosi: circa San Luis Potosi (BR?; IT: US-81783, US-883835).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (268).

Derivation (Clifford & Bostock 2007): in honor of Charles Christopher Parry (1823–90), United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, mat forming or caespitose. Stolons absent or present. Culms erect or geniculately ascending or decumbent, slender, 10–60 cm long, firm or wiry, without nodal roots or rooting from lower nodes. Culm-nodes glabrous or pubescent. Leaves mostly basal. Leaf-sheaths pubescent. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs. Leaf-blades 0.5–2(–3) cm long, 1–2.5 mm wide. Leaf-blade surface hirsute, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 3–8, borne along a central axis, unilateral, 1–2 cm long, bearing 25–60 fertile spikelets on each. Central inflorescence axis 4–15 cm long. Rhachis semiterete, tuberculate on margins, ciliate on margins, terminating in a spikelet. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2 mm long, 0.5–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 3–3.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein tuberculate, ciliate. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, acuminate, awned, 1 -awned, awn 0.7 mm long.

Florets. Fertile lemma oblong, 3–3.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex lobed, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, 2–3 mm long, subequal to principal. Palea 2 -veined. Palea surface pubescent, hairy on flanks. Palea apex dentate, 5 -fid, awned. Rhachilla extension pilose, hairy at tip. Apical sterile florets 2 in number, barren, in a clump, cuneate, 1 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 2–3 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1.1–1.5 mm long. Embryo 0.8–0.9 length of caryopsis.

$2n = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona. New Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

TDWG4. Distrito Federal, Mexico State, Morelos. Coahuila, Chihuahua, Durango, Guanajuato, Neuvo Leon, San Luis Potosi, Zacatecas. Sinaloa, Sonora. Colima, Jalisco.

Bouteloua pedicellata Swallen. *N. Am. Fl.* 17: 627 (1939).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *A.S. Hitchcock 6302*, 19 Aug 1910, Mexico: Puebla (US-883950; IT: US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. pes, foot; -ellus, diminutive; -ata, possessing. Spikelets shortly stalked.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms 15–25 cm long. Ligule a fringe of hairs, 0.5–0.8 mm long. Leaf-blades involute, 2–5 cm long, 1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 10–20, borne along a central axis, unilateral, 0.6–0.8 cm long, bearing 1 spikelet, bearing 1 fertile spikelets on each. Central inflorescence axis 5–10 cm long, tip subulate. Rhachis deciduous from axis, subterete, terminating in a barren extension, extension subulate, extension 4–5 mm long. Spikelet packing broadside to rhachis. Raceme-bases linear, 2–3 mm long, pilose, hairy on margins. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 6–8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 3–4 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 6–8 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6–8 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma apex entire, acute, muticous. Palea 1 length of lemma. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 6–8 mm long.

Flower and Fruit. Anthers 3, yellow. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.
Country /Province /State. Mexico. Central Mexico, Northeast Mexico.
TDWG4. Tlaxcala. Hidalgo.

Bouteloua polymorpha (E. Fourn.) J.T. Columbus. *Aliso*, 18(1): 63 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Pentarrhaphis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Atheropogon polymorphus* E. Fourn., *Mex. Pl.* 2:141 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Virlet 1395*, Mexico: San Luis Potosm: San Luis Potosm (P; IT: US-A865361 (fragm.)).

Recent Synonyms: *Pentarrhaphis polymorpha* (E. Fourn.) Griffiths, *Contr. U.S. Natl. Herb.* 14(3): 357, f. 21 (1912).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. polys, many; morphe, shape. Producing spikelets of two kinds or otherwise variable.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 15–30 cm long. Ligule a fringe of hairs. Leaf-blades 5–10 cm long, 1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 4–8, borne along a central axis, cuneate, 0.6–1 cm long, bearing few fertile spikelets, bearing 2 fertile spikelets on each. Central inflorescence axis 2 cm long, tip filiform (0.5–1mm, forked). Rhachis deciduous from axis, terminating in a barren extension, extension a forked bristle. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded.

Glumes. Glumes dissimilar. Lower glume subulate, 4 mm long. Lower glume surface hispid. Upper glume subulate, 5–6 mm long. Upper glume surface hispid.

Florets. Fertile lemma elliptic, 3–4 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins close to midvein. Lemma surface pilose. Lemma hairs 1 mm long. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.33 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 3–4 mm long overall. Lateral lemma awns present, arising on margin of lemma, 3–4 mm long, subequal to principal. Palea 1 length of lemma. Palea apex dentate, 2 -fid, with excurrent keel veins. Apical sterile florets 1 in number, male, lanceolate, 2.5–3 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 3–4 mm long.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Durango, Guanajuato, Queretaro, San Luis Potosi, Zacatecas. Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca.

Bouteloua purpurea Gould & Kapadia. *Brittonia*, 16: 197 (1964).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W. Gould 10211*, 10 Sep 1962, Mexico: Mixico: 30 mi W of Tepeji del Rmo (TAES; IT: GH, NY, TEX, UC, US-2551353).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. purple to reddish. Usually of purple spikelets.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Culms 20–60 cm long. Ligule a ciliate membrane, 0.4–0.8 mm long. Leaf-blades straight, 1.5–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, 30–50, borne along a central axis, unilateral, 0.5 cm long, bearing (1–)3–5(–7) fertile spikelets on each. Central inflorescence axis 12–20 cm long, tip subulate. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 3.5–4.5 mm long, 0.66 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 5–7 mm long, 1 length of adjacent fertile lemma, membranous, purple, 1-keeled, 1 -veined. Upper glume primary vein smooth or scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 5–7 mm long, membranous, purple, keeled, 3 -veined, 0–3 -veined. Lemma apex entire, acute, mucronate, 3 -awned (mucros). Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary or oblong, 0–3 mm long. Apical sterile lemmas dentate, 3 -fid, awned, 1 -awned. Apical sterile lemma awns 1–5 mm long.

Flower and Fruit. Anthers 3, 3–4 mm long, purple. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico.

TDWG4. Distrito Federal, Mexico State. Guanajuato, Hidalgo, Queretaro, San Luis Potosi. Michoacan.

Bouteloua quiriegoensis Beetle. *Phytologia* 59(4): 287 (1986).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosom*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R. Aguirre, R. Cuandra s.n., 25 Oct 1985, Mexico: Sonora, Quiriego Mun. (COCA; IT: US-03206090). OS.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Municipio de Quiriego, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms geniculately ascending, 30–40 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or involute, 3–15 cm long, 1–2 mm wide. Leaf-blade margins scabrous, tuberculate-ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes. Racemes 1–3, single or borne along a central axis, unilateral, 1.5–2 cm long, 2–5 mm wide, bearing 16–20 fertile spikelets on each. Central inflorescence axis 4–5 cm long. Rhachis flattened, puberulous on surface, terminating in a barren extension, extension bristle-like, extension 10–12 mm long. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1.8–2 mm long, 0.66 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume primary vein pubescent. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5–3 mm long, 0.66 length of adjacent fertile lemma, membranous, purple, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma oblong, 4–4.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma surface pubescent, hairy at base. Lemma apex lobed, 3 -fid, awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea 3.5–4 mm long, 2 -veined. Rhachilla extension 1 mm long, glabrous. Apical sterile florets 1 in number, barren, cuneate. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 4–4.5 mm long.

Flower and Fruit. Anthers 3, 1–1.5 mm long, yellow. Caryopsis with adherent pericarp, trigonous, 0.6–1 mm long, yellow.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northwest Mexico.

TDWG4. Sonora.

Bouteloua radicata (Fourn.) D. Griffiths. *Contrib. US. Nat. Herb.* 14: 411 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Atheropogon radicosus* E. Fourn., *Mex. Pl.* 2:140 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *M. Bourgeau* 450, 8 Jun 1865–18 Jun 1866, Mexico: near Mexico City (P; IST: BR, LE, MPU, US-81791, US-87200 (fragm. ex P), US-883896 (fragm)). LT designated by ?; cited by McVaugh, *Fl. Novo-Galic.* 14: 92 (1983).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (260).

Derivation (Clifford & Bostock 2007): *L. radix*, root; -osa, abundance. Plant with well developed roots or rhizomes.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect, 40–80 cm long. Ligule a fringe of hairs, 1 mm long. Leaf-blades 2–3 mm wide. Leaf-blade margins tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–12, borne along a central axis, unilateral, 1–3 cm long, bearing 3–10 fertile spikelets on each. Central inflorescence axis 10–15 cm long, tip subulate. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 7–12 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 4 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 5–6 mm long, 0.75–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4.5–8 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, 1 mm long, shorter than principal. Rhachilla extension glabrous. Apical sterile florets 1 in number, male, oblong, 5–8 mm long. Apical sterile lemmas lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns unequal, 6–8 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, 4–5 mm long. Embryo 0.8 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southwestern USA, South-central USA, Mexico.** Arizona. New Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico. **Western South America.** Colombia.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California Sur, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca.

Bouteloua ramosa Scribn. Vasey, *Illustr. N. Am. Grass.* 1,1 t. 44. (1891).

Regarded by K as a synonym (*B. curtipendula*).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosom*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *Nealley* 797, USA: Texas: Presidio Co.: Chenate Mts., SW Texas (US-883244). NT designated by Beal, *Grass. N. Amer.* 2: 418 (1896). LT: *G.C. Nealley* 797, 1888, USA: Texas: Presidio Co.: Chenate Mts. (US-883244). LT designated by Reeder, *Taxon* 35: 153 (1986). See also Beal, *Grasses N. Amer.* (1896); Griffiths (1912); Gould (1979: 411).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (268).

Derivation (Clifford & Bostock 2007): *L. ramus*, branch; -osa, abundance. Inflorescences or culms much branched.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rootstock evident. Culms geniculately ascending, 25–60 cm long, 4–5 -noded. Culm-internodes distally glabrous. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule a fringe of hairs, 0.1–0.2 mm long. Leaf-blades flat or involute, 2–5 cm long, 1–2 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1–4, single or borne along a central axis, linear or oblong, unilateral, 1–3.5 cm long, 4–5 mm wide, bearing 25–45 fertile spikelets on each. Central inflorescence axis 5–8 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2–2.5 mm long, 0.6–0.7 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 3–3.2 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 0.8–1 mm long.

Florets. Fertile lemma oblong, 4–5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 1.5–2 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 1–1.2 mm long, subequal to principal. Palea 2.5–4 mm long, 2 -veined. Apical sterile florets 1–2 in number, barren, in a clump, cuneate, 1 mm long. Apical sterile lemmas lobed, 4 -fid, awned, 3 -awned. Apical sterile lemma awns 3–5 mm long.

Flower and Fruit. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, obovoid, 2–2.5 mm long, yellow.

$N = 20$ (1 ref TROPICOS). $2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Mexico. Texas. Northwest Mexico. Coahuila, Chihuahua, Durango, Neuvo Leon, Tamaulipas, Zacatecas.

Bouteloua reederorum J.T. Columbus. *Aliso*, 18(1): 64 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Pringleochloa stolonifera*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name:** *Pringleochloa stolonifera* (Fourn.) Scribn., *Coult. Bot. Gaz.* 21: 138 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Liebmann* 588, 1842, Mexico: La Parada, Sierra de Oaxaca (IT: US-A865362 (fragm.)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. of the Reeder. Collected by John Raymond Raymond (1914-) and Charlotte Gooding (1916-) Reeder, American botanists.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Stolons present. Ligule a fringe of hairs. Leaf-blades 1–5 cm long, 0.5–2 mm wide, stiff. Leaf-blade apex obtuse. Monoecious or dioecious, with male and female spikelets in different inflorescences.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 3–5, borne along a central axis, closely spaced, in a head, cuneate, unilateral, 0.5–0.8 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Rhachis deciduous from axis, terminating in a barren extension, extension subulate. Spikelets solitary. Fertile spikelets sessile. Male spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, dorsally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes collateral, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 2–2.5 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex acuminate. Upper glume lanceolate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex acuminate.

Florets. Fertile florets female. Fertile lemma elliptic, 3–4 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma margins ciliate. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 0.5 mm long overall. Lateral lemma awns present, arising on margin of lemma, ciliolate. Apical sterile florets 2–3 in number, in a clump, rudimentary. Apical sterile lemmas awned. Apical sterile lemma awns 5–6 mm long, ciliate, 15–25 per spikelet in number.

Flower and Fruit. Male inflorescence terminal, unlike female, of racemes along a central axis, with pectinate racemes. Male spikelets distinct from female, 1 flowered, lanceolate, 3.5–4 mm long, glabrous. Male spikelet glumes 2. Male spikelet lemma 3 -veined, muticous.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico.

TDWG4. Puebla. Oaxaca.

Bouteloua reflexa Swallen. *N. Am. Fl.* 17: 632 (1939).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E. Palmer 1655*, 9–15 Oct 1891, Mexico: Sonora: mountain sides near Lodeigo (US-471374; IT: ARIZ, GH, US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. bent sharply backwards. Panicle branches reflexed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect, 60–120 cm long, 4–9 -noded. Ligule a ciliolate membrane. Leaf-blades 20–30 cm long, 2–6 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, 40–100, borne along a central axis, deflexed, cuneate, unilateral, 0.6–1 cm long, bearing few fertile spikelets, bearing 1–5 fertile spikelets on each (per raceme). Central inflorescence axis 15–20 cm long. Rhachis deciduous from axis, flattened, terminating in a barren extension, extension bristle-like. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

Sterile Spikelets. Basal sterile spikelets well-developed, 4–6 in number, deciduous with the fertile, barren or male, equalling fertile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–3 mm long, 0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.5–3.5 mm long, 0.6–0.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 4–5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, mucronate or awned, 3 -awned. Principal lemma awn 0.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.5 mm long, subequal to principal. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 1–4.5 mm long.

Flower and Fruit. Anthers orange. Caryopsis with adherent pericarp, 2.5 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northwest Mexico, Southwest Mexico.

TDWG4. Baja California, Baja California Sur, Sinaloa, Sonora. Nayarit.

Bouteloua repens (Kunth) Scribn. & Merrill. *U.S. Dept. Agric. Bull. Agrost.* 24: 26 (1901).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Dinebra repens* Kunth, *Nov. Gen. et Sp.* 1: 172. t. 52 (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Humboldt & Bonpland s.n.*, Apr, Mexico: Guerrero: Acapulco (P). LT designated by?; cited by McVaugh, *Fl. Novo-Galic.* 14: 91 (1983).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (260), F.W.Gould, *The Grasses of Texas* (1975) (345, Fig. 181), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (140, Fig. 88 as *B. heterostega*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (97, Fig 29).

Derivation (Clifford & Bostock 2007): L. repo, crawl. Rhizome well developed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rootstock not evident, or evident. Culms erect or geniculately ascending, 20–50 cm long. Ligule a ciliate membrane. Leaf-blades flat or involute, 5–10 cm long, 1–5 mm wide. Leaf-blade surface glabrous or hirsute, sparsely hairy. Leaf-blade margins tuberculate-ciliate, hairy all along or at base.

Inflorescence. Inflorescence composed of racemes, exerted or embraced at base by subtending leaf. Racemes 3–12, borne along a central axis, unilateral, 2.5 cm long, bearing 3–9(–20) fertile spikelets on each. Central inflorescence axis 10–15 cm long, tip subulate. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex or with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4.5–8 mm long, falling entire, deciduous with accessory branch structures. Floret callus glabrous or pilose.

Glumes. Glumes similar, shorter than spikelet or reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 4–7 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4.5–7.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 4.5–8 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex entire or dentate, 3 -fid, mucicous or awned, 3 -awned. Principal lemma awn 0–3 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0–1 mm long, shorter than principal. Palea apex mucicous or with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 1 in number, male, oblong, 5–8 mm long. Apical sterile lemmas lobed, 5 -fid, awned, 3 -awned. Apical sterile lemma awns unequal, 4–8(–10) mm long.

Flower and Fruit. Anthers 3, 3–4.5 mm long, yellow or orange or red or purple. Caryopsis with adherent pericarp, oblong, 3–4 mm long. Embryo 0.8 length of caryopsis.

$2n = 60$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Hawaii (*). **Southwestern USA, South-central USA, Mexico.** Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Pacific Is (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America.** Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Aruba, Cuba, Dominican Republic, Haiti, Puerto Rico, Venezuelan and Netherlands Antilles. Venezuela. Colombia.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Guadalupe Is, Roscas Alijos, Revillagigedo Is. Baja California Sur, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Tabasco, Yucatan.

Bouteloua rigidisetata (Steud.) Hitchcock. *Journ. Wash. Acad. Se.* 23: 453 (1933).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Aegopogon rigidisetatus* Steud.. *Syn. Pl. Gram.* 146. (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Drummond* 374, 1856, USA: Texas (P; IT: US-879824 (fragm. ex P), US-1063200 (fragm. ex E)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (260), F.W.Gould, *The Grasses of Texas* (1975) (343, Fig. 180), R.Pilger, *Die Natürlichen Pflanzenfamilien* 14d (1956) (113, Fig. 30).

Derivation (Clifford & Bostock 2007): *L. rigidus*, stiff; seta, bristle. Lemma awn rigid.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 10–50 cm long. Ligule a fringe of hairs. Leaf-blades flat or involute, 4–12(–17) cm long, 1–2 mm wide. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 7–10, borne along a central axis, spreading, cuneate, unilateral, 0.8–1.6 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Central inflorescence axis 3–6 cm long. Rhachis deciduous from axis, angular, pilose on surface, terminating in a barren extension, extension a forked bristle. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 2.5–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume linear, 2–3.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2.5–4 mm long, 1 length of adjacent fertile

lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein conspicuous, ciliate. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1–2.5 mm long.

Florets. Fertile lemma ovate, 2.5–4 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or puberulous. Lemma apex dentate, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 1.5–2 mm long overall. Lateral lemma awns present, arising on apex of lobes, 1 mm long, shorter than principal. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 5–10 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid. Embryo 0.66 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, South-central USA, Mexico. Oklahoma. Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Neuvo Leon, Tamaulipas. Sonora.

Bouteloua scabra (Kunth) J.T. Columbus. *Aliso*, 18(1): 64 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Pentarrhaphis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Pentarrhaphis scabra* H. B. & K., *Nov. Gen. et Sp.* 1: 178. t. 60. (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: prope Tula et Queretaro (P).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. rough or gritty to the touch. Plants with rough leaf-blades, spikelets or stems.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 15–30 cm long. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades involute, 2–5 cm long, 1 mm wide, coriaceous, stiff. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 8–12, borne along a central axis, cuneate, 0.4–0.8 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Central inflorescence axis 4–5 cm long, tip filiform. Rhachis deciduous from axis, terminating in a barren extension, extension a forked bristle. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets sessile, 1 in the cluster.

Sterile Spikelets. Companion sterile spikelets represented by awns, comprising 2 awns (hirsute), 4 mm long.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded.

Glumes. Glumes dissimilar. Lower glume subulate, 8 mm long. Lower glume surface hispid. Upper glume subulate, 4 mm long. Upper glume surface hispid.

Florets. Fertile lemma elliptic, 4 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.5 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 4 mm long overall. Lateral lemma awns present, arising on margin of lemma, 4 mm long, subequal to principal. Palea 1 length of lemma. Palea keels scaberulous. Apical sterile florets 1 in number, barren, ovate, 3 mm long. Apical sterile lemmas pubescent (at base), lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 3–4 mm long.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Northeast Mexico, Southeast Mexico. Mesoamerica, Western South America. Belize, Guatemala, Honduras. Colombia.

Hidalgo, Queretaro. Chiapas, Tabasco.

Bouteloua scorpioides Lag. *Gen. et Sp.* Nov. 5 (1816).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum scorpioides* (Lag.) Kunth, *Rev. Gram.* 1: 94 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Habitat in N. Hisp.,

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. The inflorescence bears a fanciful resemblance to a scorpion.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, slender, 20–35 cm long. Culm-nodes glabrous or bearded. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades involute, 2.5–7(–9) cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough adaxially.

Inflorescence. Inflorescence composed of racemes. Peduncle tipped by a glumaceous appendage (2 bracts). Racemes 1, single, arcuate, unilateral, 3.5–5 cm long, bearing 50–90 fertile spikelets on each. Rhachis semiterete, glabrous on surface, terminating in a spikelet. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–3.5 mm long, 0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume lanceolate, 5–5.5 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 4–5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma surface pilose. Lemma margins ciliate, hairy below. Lemma apex lobed, 3 -fid, with central lobe bidentate, awned, 3 -awned. Principal lemma awn from a sinus, 1.5 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 2 mm long, longer than principal. Palea 2 -veined. Rhachilla extension pubescent, hairy at tip. Apical sterile florets 2 in number, barren, in a clump, oblong, 2 mm long. Apical sterile lemmas lobed, 2 -fid, obtuse, awned, 3 -awned. Apical sterile lemma awns 4–4.5 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1.8–2.2 mm long.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Jalisco, Oaxaca.

Bouteloua simplex Lag. *Varied. Cienc.* 2, 4:141 (1805).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosum simplex* (Lag.) Kunth, *Rev. Gram.* 1: 94 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Lagasca s.n.*, Peru (MA; IT: M, LE-TRIN-2127.02).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (268), S.A.Renvoize, *Gramineas de Bolivia* (1998) (365, Fig. 78 as *Chondrosum*), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 109, Fig. 16 (2001) as *Chondrosum*).

Illustrations (Journals): *Ruizia* (13:289, Fig 35d-e (1993)).

Derivation (Clifford & Bostock 2007): L. simple. Culms or inflorescences unbranched.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 3–20(–40) cm long. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs. Leaf-blades flat or involute, 2–8 cm long, 1.5 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 1–2.5 cm long, bearing 30–80 fertile spikelets on each. Rhachis semiterete. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–2.5 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins distinct. Lower glume apex acute or acuminate. Upper glume lanceolate, 3.5–5 mm long, 1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 2.5–3.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 2 mm long overall. Lateral lemma awns present, arising on margin of lemma, 1–1.5 mm long, shorter than principal. Palea 2 -veined. Rhachilla extension pilose, hairy at tip. Apical sterile florets 1 in number or 2 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 5–6 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1.5–1.75 mm long. Embryo 0.66 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Northwest USA, Southwestern USA, South-central USA, Mexico. Colorado. Arizona, Utah. New Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico. Mesoamerica, Western South America, Southern South America. Panama. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest, Chile North, Chile Central.

TDWG4. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, Tucuman. Cordoba. Tarapaca, Antofagasta. Valparaiso. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California Sur, Sonora. Jalisco, Oaxaca.

Bouteloua stolonifera Scribn. *Proc. Acad. Nat. Sci. Philadelphia* 43(2): 302 (1891).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C.G. Pringle 3174, 19 Aug 1890, Mexico: Zacatecas: La Honda Station (US-72212; IT: CR-11469, MO-2959825, US-820985, US-883933, US-747802).

Recent Synonyms: *Cyclostachya stolonifera* (Scribn.) Reeder & C. G.Reeder, *Bull. Torr. Bot. Cl.* 90: 196 (1963).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. stolo, shoot; fero, bear. Plant with well developed underground stems.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect, 5–15 cm long. Leaves mostly basal. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades flat or involute, 4–8 cm long, 1 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate. Dioecious.

Inflorescence. Inflorescence composed of racemes, deciduous as a whole. Racemes 1, single, arcuate, unilateral, 2–2.5 cm long. Rhachis flattened. Spikelet packing 2 -rowed. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, linear.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 6–7 mm long, falling entire, deciduous with accessory branch structures. Floret callus pubescent (briefly).

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume linear, 5–7 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume lanceolate, 6–7 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein ciliate. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile florets female. Fertile lemma lanceolate, 6–7 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma apex awned, 3 -awned. Principal lemma awn 3–4 mm long overall. Lateral lemma awns present, 1–2 mm long, shorter than principal. Palea 0.75 length of lemma, 2 -veined. Palea apex awned, awns 0.5–1 mm long. Apical sterile florets 2–3 in number, barren, in a clump, linear, 1 mm long. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 10–15 mm long.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, fusiform, 2.5 mm long. Embryo 0.66 length of caryopsis.

Male inflorescence similar to female, a single raceme, with pectinate racemes. Male spikelets distinct from female, 1 flowered, with rudimentary apical florets (1 floret), persistent, lanceolate, 4–5 mm long, hairy. Male spikelet glumes 2, muticous. Male spikelet lemma 3 -veined, muticous (but rudiment 3-awned).

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Aguascalientes, San Luis Potosi, Zacatecas.

Bouteloua swallenii J.T. Columbus. *Aliso*, 18(1): 64 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Pentarrhaphis annua*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Honduras. **Basionym or Replaced Name:** *Pentarrhaphis annua* Swallen, *Ceiba*, 4: 286 (1955). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.R. Swallen 10861*, 18 Oct 1951, Honduras: El Paramso (US-2076680).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Jason Richard Swallen (1903–1991) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 10–25 cm long. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades involute, 1–4 cm long, 1 mm wide.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Axillary inflorescences different from terminal (of 1–2 spikelets). Racemes 2–10, borne along a central axis, cuneate, 0.8–0.9 cm long, bearing few fertile spikelets, bearing 1 fertile spikelets on each. Central inflorescence axis 2–3 cm long, flattened (crescentic), tip filiform (0.5–1mm, forked). Rhachis deciduous from axis, terminating in a barren extension, extension a forked bristle. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets sessile, 1 in the cluster.

Sterile Spikelets. Companion sterile spikelets represented by awns, comprising 2 awns (hirsute), 2.5 mm long.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, dorsally compressed, 3–3.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded.

Glumes. Glumes dissimilar. Lower glume subulate, 2–2.5 mm long. Lower glume surface hispid. Upper glume subulate, 3.5–4 mm long. Upper glume surface scabrous.

Florets. Fertile lemma elliptic, 3–3.5 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins close to midvein. Lemma surface pilose, hairy in the middle. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.33 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 4–5 mm long overall. Lateral lemma awns present, arising on margin of lemma, 4–5 mm long, subequal to principal. Palea 1 length of lemma. Palea apex dentate, 2 -fid. Apical sterile florets 1 in number, barren, lanceolate, 2.5–3 mm long. Apical sterile lemmas awned, 3 -awned.

Flower and Fruit. Anthers 3, 0.7–0.8 mm long. Caryopsis with adherent pericarp, ellipsoid, 1.3 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. Mesoamerica, Northern South America, Western South America. Costa Rica, El Salvador, Honduras. Venezuela. Peru.

Bouteloua triaena (Trin.) Scribn. *Bull. Torrey Bot. Club.* 18: 314 (1891).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Triaena racemosa* Kunth, *Nov. Gen. et Sp.* 1: 179 [t. 61] (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Guanajuato: between Guanajuato and Villalpando (P).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. triaena, trident. Spikelet with a lower bisexual floret and an upper rudimentary 3-partite floret.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 20–50 cm long. Ligule a ciliolate membrane. Leaf-blades 2–6 cm long, 1–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, 20–80, borne along a central axis, deflexed or spreading, unilateral, 0.5–0.6 cm long, bearing 1 spikelet, bearing 1 fertile spikelets on each. Central inflorescence axis 8–15 cm long, tip subulate. Rhachis deciduous from axis, subterete, terminating in a barren extension, extension bristle-like. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, similar to fertile lemma in texture, gaping. Lower glume lanceolate, 2–3 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4–6 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6–8 mm long, membranous, yellow or purple, keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma apex entire, acute, mucicous. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 10–15 mm long.

Flower and Fruit. Anthers 3, yellow or orange. Caryopsis with adherent pericarp, ovoid, 3 mm long.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** Guatemala.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla, Coahuila, Guanajuato, Hidalgo, Sinaloa, Colima, Guerrero, Jalisco, Michoacan, Oaxaca, Campeche, Chiapas, Quintana Roo, Yucatan.

Bouteloua trifida Thurb. ex S. Wats. *Proc. Am. Acad.* 18: 177 (1883).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Chondrosom*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Chondrosom trifidum* (Thurb.) Clayton, *Kew Bull.*, 37(3): 418 (1982). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *E. Palmer 1355*, Aug 1880 [Feb-Oct given on specimens at GH and US, this crossed out on the GH label and Aug written in; the 2nd US sheet has Aug 14–17], Mexico: Coahuila: Monclova (GH; IT: NY, US-A865565, US-821003, US-883967).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (as var. *trifida*, *burkii*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (266 as var. *trifida* & *burkii*), F.W.Gould, *The Grasses of Texas* (1975) (348, Fig. 183).

Derivation (Clifford & Bostock 2007): L. tria, three; findo, divide. Lemma conspicuously divided into three awns.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Culms geniculately ascending, slender, (8–)10–30(–40) cm long, wiry. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades 4–8 cm long, 1–1.5 mm wide. Leaf-blade surface smooth or scaberulous, glabrous or puberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 2–7, borne along a central axis, unilateral, 1.2–2.5 cm long, bearing 8–24(–32) fertile spikelets on each. Central inflorescence axis 3–9 cm long. Rhachis semiterete, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–4 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 4–5 mm long, 2–2.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute to setaceously acuminate.

Florets. Fertile lemma oblong, 2 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent, hairy at base. Lemma hairs 0.2–0.5 mm long. Lemma apex lobed, 3 -fid, awned, 3 -awned. Principal lemma awn 3–4 mm long overall. Lateral lemma awns present, arising on margin of lemma, 3–4 mm long, subequal to principal. Palea 2 -veined. Rhachilla extension glabrous. Apical sterile florets 1 in

number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns 3.5–6 mm long.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid, 1 mm long. Embryo 0.66 length of caryopsis.

Distribution (TDWG). Continent. Europe (*), North America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Southwestern USA, South-central USA, Mexico.** Arizona, California, Nevada. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Guanajuato, Neuvo Leon, San Luis Potosi, Tamaulipas. Baja California, Baja California Sur.

Bouteloua uniflora Vasey. *Contrib. U. S. Nat. Herb.* 2: 533 (1894).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G.C. Nealley* 222, 1890, USA: Texas: Crockett Co. (US-2307997; IT: GH).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (256).

Derivation (Clifford & Bostock 2007): L. unus, one; flos, flower. Spikes of one spikelet.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons absent. Culms erect, slender, 35–50 cm long. Ligule a fringe of hairs. Leaf-blades involute, 2–10 cm long, 1–2 mm wide. Leaf-blade surface glabrous or puberulous. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 25–35, borne along a central axis, unilateral, 0.8–0.9 cm long, bearing 1 spikelet, bearing 1 fertile spikelets on each. Central inflorescence axis 15–25 cm long, tip subulate. Rhachis deciduous from axis, subterete, terminating in a barren extension, extension subulate, extension 4 mm long. Spikelet packing broadside to rhachis. Raceme-bases brief. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 7–8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 3–4 mm long, 0.4–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 7–8 mm long, 1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 6 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma apex entire, acute, mucous. Palea 5 mm long, 0.8 length of lemma. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 1 -awned. Apical sterile lemma awns 1–4 mm long.

Flower and Fruit. Anthers 3, 2.5–3 mm long, yellow. Caryopsis with adherent pericarp, ovoid, 3 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA, South-central USA, Mexico.** Utah. Texas. Northeast Mexico.

TDWG4. Aguascalientes, Coahuila, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas.

Bouteloua vaneedenii Pilger. *Urb.Symb.Antill.* 6: 2 (1909).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *I. Boldingh* 3512, 1906, St. Christopher-Nevi: Anguilla I. (B; IT: US-2307996 (fragm. ex B)).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (137, Fig. 86).

Derivation (Clifford & Bostock 2007): in honor of Willem Frederik van Eeden (1829–1901) Dutch botanist and museum director, Netherlands.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect, 30–40 cm long. Ligule a fringe of hairs, 0.1–0.3 mm long. Leaf-blades filiform, involute, 6–10 cm long, 0.5–1.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 15–35, borne along a central axis, unilateral, 0.6–1 cm long, bearing few fertile spikelets, bearing 1–5 fertile spikelets on each. Central inflorescence axis 12–15 cm long, tip filiform. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis. Spikelets appressed, solitary. Fertile spikelets sessile.

Sterile Spikelets. Basal sterile spikelets well-developed.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4–6 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 2–4 mm long, 0.5–0.8 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 3.5–5 mm long, 1 length of adjacent fertile lemma, membranous, purple, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 3.5–5 mm long, coriaceous, mid-green, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 0.5–1 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0.5–1 mm long, subequal to principal. Palea apex with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns unequal, 1–2.5 mm long.

Flower and Fruit. Anthers yellow. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Caribbean, Northern South America. Cuba, Leeward Is. Venezuela.

Bouteloua varia (Swallen) J.T. Columbus. *Aliso*, 18(2): 64 (1999).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Cathestecum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Cathestecum varium* Swallen, *Journ. Wash. Acad. Sc.* 27: 498. (1937). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.S. Hitchcock 6072 [=*Amer. Gr. Nat. Herb.* 395], 9 Aug 1910, Mexico: Puebla: Tehuacan, on dry soil under mesquite (US-1720270; IT: MO-790200, US-726631).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. variable. Species polymorphic and usually with many varieties.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms geniculately ascending or decumbent, 10–15 cm long. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane. Leaf-blades 1–4 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, borne along a central axis, cuneate, 0.4–0.7 cm long, bearing a triad of spikelets. Central inflorescence axis 1.5–2 cm long, tip subulate (forked). Rhachis deciduous from axis. Spikelets in threes. Fertile spikelets sessile and pedicelled, 3 in the cluster, heteromorphic.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume flabellate, 1 mm long, 0.2 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate. Upper glume elliptic, 5 mm long, 1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex entire or dentate, 2 -fid, acuminate, awned, 1 -awned, awn 0.5–1 mm long.

Florets. Fertile florets bisexual or female. Fertile lemma oblong, 4 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex lobed, 3 -fid, with outer lobes shorter or with central lobe bidentate, incised 0.33 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 2–2.5 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0.5–1 mm long, shorter than principal. Palea surface pubescent, hairy on back. Palea apex with excurrent keel veins. Apical sterile florets 2 in number, male or barren, separate, oblong. Apical sterile lemmas glabrous, lobed, 3 -fid, awned, 3 -awned. Apical sterile lemma awns 3–3.5 mm long, ciliate (below).

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, dorsally compressed, trigonous, 1.5 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico, Southwest Mexico.
TDWG4. Puebla. Zacatecas. Jalisco, Michoacan, Oaxaca.

Bouteloua warnockii Gould & Kapadia. *Southwest. Nat.* 7: 176 (1962).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W. Gould & Z. Kapadia* 9533, 18 Jul 1961, USA: Texas: Culberson Co. (TAES; IT: MICH, MO, SMU, SRSC, TEX, UC, US-2551367).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (256).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–35(–50) cm long. Leaf-sheath oral hairs ciliate. Ligule a fringe of hairs, 1–1.5 mm long. Leaf-blades straight or curved, involute, 5–15(–25) cm long, 1–1.5(–2.5) mm wide, glaucous. Leaf-blade margins tuberculate-ciliate, hairy at base. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 9–15(–25), borne along a central axis, unilateral, 0.4–0.6 cm long, bearing 2–6 fertile spikelets on each. Central inflorescence axis 5–10 cm long, tip filiform. Rhachis deciduous from axis, angular, terminating in a barren extension, extension subulate. Spikelet packing broadside to rhachis, lax. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 5–6.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 3–5 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–6 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 5–6.5 mm long, coriaceous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 0.5–1 mm long overall. Lateral lemma awns present, arising on margin of lemma, 0.5–1 mm long, subequal to principal. Palea apex with excurrent keel veins. Rhachilla extension glabrous. Apical sterile florets 1 in number, barren, rudimentary. Apical sterile lemmas awned, 3 -awned. Apical sterile lemma awns unequal, 4–5 mm long.

Flower and Fruit. Anthers purple. Caryopsis with adherent pericarp, ovoid, 3.2–3.6 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Mexico. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Neuvo Leon, Tamaulipas. Sonora.

Bouteloua williamsii Swallen. *Ceiba*, 4: 285 (1955).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L.O. Williams 16902*, 2 Oct 1949, Honduras: El Paramso: open rocky hillsides near Las Mesas, alt. 900 m, ca. 14:N, 87:W, drainage of the Rmo Yeguaré (US-2044038; IT: F, ISC, MO-1731263, UC, WIS).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Louis O. Williams who collected in Honduras.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 35–90 cm long. Ligule a fringe of hairs. Leaf-blades 10–25 cm long, 1.5–2.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 7–14, borne along a central axis, ascending, unilateral, 2–4 cm long, bearing 9–20 fertile spikelets on each. Central inflorescence axis 6–15 cm long. Rhachis deciduous from axis, flattened, pubescent on margins, terminating in a barren extension, extension bristle-like. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 4.5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous or pilose. Floret callus pubescent.

Glumes. Glumes similar, exceeding apex of florets or reaching apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 2.5–4.5 mm long, 0.5–0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4.5–6 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 4–6 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or puberulous. Lemma apex dentate, 3 -fid, awned, 3 -awned. Principal lemma awn 2–3 mm long overall. Lateral lemma awns present, arising on apex of lobes, 0.5–1.5 mm long, shorter than principal. Palea surface pubescent, hairy on back. Palea apex with excurrent keel veins. Rhachilla extension pilose, hairy at tip. Apical sterile florets 1 in number, male, oblong, 3–5 mm long. Apical sterile lemmas glabrous or pubescent, dentate, 3 -fid, acute, awned, 3 -awned. Apical sterile lemma awns 4–7 mm long.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** Guatemala, Honduras.

TDWG4. Mexico State, Puebla. Aguascalientes, Zacatecas. Guerrero, Jalisco, Nayarit, Oaxaca. Chiapas.

Brachyachne ambigua Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 1 I (1947).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Indonesia, Java. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Dorzelo 3169*, Dec 1924, Java: Gersik, east Java, on low rocky hill (BO; IT: L).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (296, Fig 50), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. J. Bot.* (*Suppl.*5: 44, Fig.19(1972)).

Derivation (Clifford & Bostock 2007): L. uncertain. Species that may be readily confused with others or do not necessarily belong in the genus in which they have been placed or are intermediate in characters between other genera.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 3–7 cm long. Leaf-sheaths 0.5–2 cm long. Ligule an eciliate membrane, truncate. Leaf-blades 1–3 cm long, 1 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1–2, single or paired, unilateral, 1.5–2 cm long, bearing 10–20 fertile spikelets on each. Rhachis flattened. Spikelet packing broadside to rhachis, lax, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes deciduous, similar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume lanceolate, 2.5 mm long, 1 length of upper glume, coriaceous, 1-keeled, wingless, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 2.5 mm long, 1.4 length of adjacent fertile lemma, coriaceous, 1-keeled, wingless, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, laterally compressed, 1.8 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy on veins. Lemma hairs 0.25–0.3 mm long. Lemma apex acute. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia, Australasia (*).

Country /Province /State. Malesia, Papuasia. Java. New Guinea. **Australia.** Western Australia (*), Northern Territory (*).

TDWG4. Kimberley. Darwin & Gulf.

Brachyachne ciliaris (Kuntze) C. E. Hubbard. *Kew Bull.* 1934, 448 (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. **Basionym or Replaced Name:** *Cynodon ciliaris* Benth. *Fl. Austral.* 7: 610 (1878); *Capriola ciliaris* Kuntze, *Revis. Gen. Pl.* 2: 764 (1891). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Central Australia: Charlotte Waters, *Giles s.n.*.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (342, Fig 274), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (299, Fig 51), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (170), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. J. Bot.*.

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. cilium, eyelid; -are, pertaining to. Glumes or lemmas ciliate on nerves or margins.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 5–25 cm long. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a ciliate membrane. Leaf-blades 1–3 cm long, 1–2 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs.

Inflorescence. Inflorescence composed of racemes. Racemes 2, paired, unilateral, 3–4 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume oblong, 3–4 mm long, 1 length of upper glume, coriaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface grooved on either side of midvein. Lower glume apex obtuse. Upper glume oblong, 3–4 mm long, 1.5 length of adjacent fertile lemma, coriaceous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, laterally compressed, 2–2.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, with a transverse fringe of hair. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliate, adorned in the middle.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1–1.5 mm long, pitted.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Northern Territory, South Australia, Queensland, New South Wales.

TDWG4. Central Australia. NW & Lake Eyre, Southern. North, Central, Inland. Western Plains.

Brachyachne convergens (F.Muell.) Stapf. *Hook. Ic. Pl. sub t.* 3099 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. **Basionym or Replaced Name:** *Cynodon convergens* F. Muell., *Fragmenta Phytographiae Australiae* 8: 113 (1873). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Victoria R., N.T., *Elsey*; holo: MEL; iso: K.

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (213, Pl 63), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1132, Fig. 326), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (170), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (164, Fig. 25), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (296, Fig. 50 & 299, Fig 51), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Hooker's Icones Plantarum* (3099), *Austr. J. Bot.* (*Suppl.*5: 44, Fig.19; 46, Fig.20 (1972)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;

Derivation (Clifford & Bostock 2007): L. convergo, approach. Spikelets two-ranked but appearing to be one-ranked.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 20–45 cm long. Ligule a ciliate membrane. Leaf-blades 3–6 cm long, 2–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3–4, digitate, unilateral, 3–5 cm long. Rhachis flattened, scabrous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 3–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume oblong, 3–5 mm long, 1 length of upper glume, coriaceous, 1-keeled, winged on keel, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 3–5 mm long, 1.5–2.5 length of adjacent fertile lemma, coriaceous, 1-keeled, winged on keel, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, laterally compressed, 2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliate.

Flower and Fruit. Caryopsis with adherent pericarp, ovoid, 1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland, New South Wales.

TDWG4. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, South East, Inland. Coast, Western Plains.

Brachyachne fulva Stapf. *Hook. Ic. Pl. t.* 3099 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zaire, Katanga: Homble 21 (K holo).

Illustrations (Books): R.M.Pohill, F.T.E.A., *Gramineae* (2(1974):312, Fig.87).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3099 (1922)).

Derivation (Clifford & Bostock 2007): L. brown, deep yellow. Usually a reference to spikelet color.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, (15–)25–50(–70) cm long, 1–1.5 mm diam. Leaves basal and cauline. Ligule a ciliolate membrane. Leaf-blades flat or involute, 3–12(–25) cm long, 1.5–3 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes (2–)3–5(–7), digitate, unilateral, 2.5–6 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 3.4–4.8(–5.5) mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, subequal in width, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume oblong, 3.4–4.8(–5.5) mm long, 1 length of upper glume, coriaceous, dark brown, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 3.4–4.8(–5.5) mm long, 1.2–1.5 length of adjacent fertile lemma, coriaceous, dark brown, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma oblong, laterally compressed, 2.5–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex obtuse, mucronate. Palea ovate, 0.8 length of lemma, 2 -veined. Palea keels scaberulous.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, ellipsoid.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. DRC. Tanzania. Angola, Malawi, Zambia, Zimbabwe.

Brachyachne obtusiflora (Benth.) C. E. Hubbard. *Kew Bull.* 1933, 503 (1933).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Nigeria. **Basionym or Replaced Name:** *Microchloa obtusiflora* Benth., *Hook. Niger Fl.* 565 (1849). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nigeria, Patti: Vogel (K holo).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (211, Fig. 135), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):241, t. 73).

Derivation (Clifford & Bostock 2007): L. obtusus, blunt; flos, flower. Glume or lemma apices rounded.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 10–20 cm long. Ligule a ciliolate membrane. Leaf-blades involute, 1–4 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–6 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 2.2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume oblong, 2.2–2.5 mm long, 1 length of upper glume, cartilaginous, yellow, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 2.2–2.5 mm long, 2 length of adjacent fertile lemma, cartilaginous, yellow, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, laterally compressed, 1 mm long, hyaline, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate, hairy below. Lemma margins ciliate, hairy below. Lemma apex emarginate. Palea hyaline, 2 -veined. Palea keels approximate, ciliate.

Flower and Fruit. Anthers 3, 0.7–0.8 mm long, purple. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, South tropical Africa. Ghana, Ivory Coast, Mali, Nigeria, Senegal, Sierre Leone. Central African Republic, DRC. Angola, Zambia.

Brachyachne patentiflora (Stent & Rattray) C. E. Hubbard. *Kew Bull.* 1933, 503 (1933).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Zimbabwe. **Basionym or Replaced Name:** *Microchloa patentiflora* Stent & Rattray, *Proc. Rhodes. Scientif. Assoc.* 32: 59 (1933). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Zimbabwe, Salisbury: Eyles 1955 (SRGH holo, BM, EA, K).

Illustrations (Books): G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (69, Fig 31).

Derivation (Clifford & Bostock 2007): L. pateo, lie open; flos, flower. The spikelets are borne on flexuous spreading pedicels.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 8–30(–45) cm long, 0.3–0.5 mm diam. Leaves mostly basal. Ligule a ciliolate membrane. Leaf-blades curled, flat or involute, 3–12 cm long, 0.5–1 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, (2.5–)5–12 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, (2.5–)3–4.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, subequal in width, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume oblong, (2.5–)3–4.4 mm long, 1 length of upper glume, coriaceous, dark brown, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, (2.5–)3–4.4 mm long, 1.2–1.5 length of adjacent fertile lemma, coriaceous, dark brown, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma oblong, laterally compressed, (1.8–)2.5–3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex truncate or obtuse, mucronate. Palea ovate, 0.8 length of lemma, 2 -veined. Palea keels ciliate.

Flower and Fruit. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, ellipsoid.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa, Southern Africa. DRC. Kenya, Tanzania, Uganda. Angola, Zambia, Zimbabwe. Botswana.

Brachyachne pilosa Van der Veken. *Bull. Jard. Bot. Brux.* 28: 84 (1958).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from DRC. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Zaire: Dist. Haut-Katanga: Parc National de l'Upemba, petit ruissellement tributaire de la riv. Lukanga, sur larges dalles de laterite, Feb 1949, *Van Meel in de Witte 5458* (HT: BR).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. pilus*, a hair; -osa, abundance. The whole plant or any of its organs invested with long spreading hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, slender, 20–40 cm long, 5–7 -noded. Lateral branches lacking. Leaf-sheaths striately veined, glabrous on surface. Ligule an eciliate membrane, 0.4 mm long. Leaf-blades filiform, convolute, 5–6 cm long, 0.5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1–4, digitate, straight or arcuate, unilateral, 1–7.5 cm long. Rhachis flattened, 0.3–0.4 mm wide, scaberulous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, acute, 2.3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume lanceolate, 2.3 mm long, 1 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex obtuse. Upper glume oblong, 2.3 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile lemma elliptic or ovate, laterally compressed, 1.7–2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma surface puberulous. Lemma margins ciliate, hairy below. Lemma hairs dark brown. Lemma apex emarginate or truncate, mucronate. Palea 1 length of lemma, 2 -veined. Palea keels winged, narrowly winged, scaberulous. Rhachilla extension 1–1.5 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa. DRC.

Brachyachne prostrata C. A. Gardner & C. E. Hubbard. *Hook. Ic. Pl.* 4 t. 3362 (1938).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Australia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Gardner s.n.*, 2 Aug 1927, Australia: Western Australia: Eremaean Prov: i mi N of (PERTH; IT: K).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3362 (1938)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. prosterno*, throw to the ground. Culms creeping or wiry so as to fall on the ground.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Culms prostrate, 5–10 cm long, rooting from lower nodes. Lateral branches ample. Leaf-sheaths 0.5–1.5 cm long, striately veined. Leaf-sheath oral hairs bearded. Ligule an eciliate membrane. Leaf-blades lanceolate, 0.5–1 cm long, 0.5–1.5 mm wide, stiff. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Inflorescence composed of racemes, subtended by a spatheole, embraced at base by subtending leaf or enclosed. Spatheole lanceolate, 0.5–2 cm long. Racemes 3–4, digitate, unilateral, 0.4–1.1 cm long, 1.3–1.8 mm wide. Rhachis deciduous from axis, flattened, scaberulous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both

fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, compressed strongly, obtuse, 3–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes deciduous, dissimilar, with lower wider than upper, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 3–3.3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic or oblong, 3–3.3 mm long, 1.3–1.4 length of adjacent fertile lemma, indurate, with membranous margins, without keels, 1 -veined. Upper glume primary vein grooved on either side. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, laterally compressed, 2.2–2.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below, with marginal hair tufts or with tufts of hair on midvein, bearing 3 hair tufts in all. Lemma hairs 1 mm long. Lemma apex obtuse. Palea 1 length of lemma, 2 -veined. Palea keels ciliate. Rhachilla extension 1 mm long.

Flower and Fruit. Anthers 3, 0.7–0.9 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. Australia. Western Australia, Northern Territory, Queensland.

TDWG4. Eremean. Victoria R & Barkly Tableland, Central Australia. Inland.

Brachyachne simonii F.K. Kupicha & T.A. Cope. *Kew Bull.*, 40(1): 89 (1985).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Zambia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Zambia: W: Kasempa Distr.: 3 km E of Chizela, *Simon & Williamson 2068* (HT: K; IT: BM, SRGH).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Bryan Kenneth Simon (1943-) South African-born Australian botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths withering. Culms erect, 50–60 cm long, 4–5 -noded. Culm-internodes smooth, distally glabrous. Lateral branches lacking. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Ligule a ciliolate membrane. Leaf-blades straight or curved, filiform, conduplicate or involute, 3–9 cm long, 0.5–1 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, digitate, straight, unilateral, 6.5–8 cm long. Rhachis flattened, 0.4 mm wide, scaberulous on margins. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 2.8–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, subequal in width, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume oblong, 2.8–3.8 mm long, 1 length of upper glume, coriaceous, dark brown, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic or oblong, 2.8–3.8 mm long, coriaceous, dark brown, 1-keeled, 1 -veined. Upper glume primary vein tuberculate. Upper glume lateral veins absent. Upper glume surface pilose, hairy on veins. Upper glume apex obtuse.

Florets. Fertile lemma ovate, laterally compressed, 1.8 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, obtuse, mucronate. Palea 2 -veined. Palea keels ciliolate.

Flower and Fruit. Anthers 3, 1.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa. Zambia.

Brachyachne tenella (R. Br.) C. E. Hubbard. *Kew Bull.* 1934, 448 (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Australia. **Basionym or Replaced Name:** *Cynodon tenellus* R. Br., *Prodr.* 187 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *R. Brown 6239*, Australia: Northern Territory: Arnhem Land, Caledon Bay (BM; IT: E, K, US-865639 (fragm. ex BM)).

Illustrations (Books): J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (136), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Illustrations (Journals): *Austr. J. Bot.* (Suppl.5: 44, Fig.19(1972)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms erect or geniculately ascending, 20–40 cm long, without nodal roots or rooting from lower nodes. Ligule a ciliolate membrane. Leaf-blades 5–10 cm long, 1–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 3–6, digitate, unilateral, 4–7 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 1.8–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, with lower wider than upper, exceeding apex of florets, similar to fertile lemma in texture, parallel to lemmas. Lower glume oblong, 1.8–2.2 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1.8–2.2 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, laterally compressed, 1 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma margins pubescent. Lemma apex obtuse. Palea 2 -veined. Palea keels approximate, pubescent.

Flower and Fruit. Anthers 3, 0.3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Tropical Asia, Australasia.

Country /Province /State. Malesia, Papuasia. Java, Lesser Sunda Is. New Guinea PNG. New Guinea. **Australia.** Western Australia, Northern Territory, Queensland.

TDWG4. Kimberley, Eremean. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central, Inland.

Brachychloa fragilis S.M. Phillips. *Kew Bull.*, 37(1): 159 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: Natal: Ulukondo, *Pooley 1650* (HT: K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. weak. Inflorescences readily disarticulating.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 25–50 cm long. Ligule a ciliolate membrane. Leaf-blades 5–10 cm long, 2–6 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 1.5–4 cm long. Central inflorescence axis 5–10 cm long. Rhachis deciduous from axis, angular, glabrous on margins. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 4–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3–5 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma ovate, 1.5–2.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein eciliate or pubescent, hairy below. Lemma margins pubescent. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with free soft pericarp, ellipsoid, isodiametric, trigonous, sulcate on hilar side.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa, Southern Africa. Mozambique. Limpopo, Kwazulu-Natal.

Brachyachloa schiemaniana (Schweickerdt) S.M. Phillips. *Kew Bull.*, 37(1): 159 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Heterocarpha schiemaniana* Schweick., *Der Zuchter*, 31: 192 (1961). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Portugiesche Ostafrika (Mocambique): Maputo, stoloniferous perennial on sand dunes, Apr 1948, *Schweickerdt 1908* (HT: PRE; IT: B, K, M, PRE, US).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):48, t. 22), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (70, Fig 32).

Derivation (Clifford & Bostock 2007): in honor of E. Schieman (fl. 1921) German cereal breeder.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Basal innovations flabellate. Culms erect, 10–20 cm long. Ligule a ciliate membrane. Leaf-blades 2–6 cm long, 2–6 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes borne along a central axis, unilateral, 0.5–3 cm long. Central inflorescence axis 3–10 cm long. Rhachis persistent, angular, glabrous on margins. Spikelet packing broadside to rhachis. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.9 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein scabrous. Lower glume apex acute. Upper glume oblong, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 5–7 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma ovate, 1.2–2 mm long, membranous, keeled, 5–7 -veined, more than 3-veined. Lemma midvein eciliate. Lemma margins eciliate. Lemma apex dentate, 2 -fid, mucronate. Palea bowed outwards. Palea keels smooth. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with free soft pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. South tropical Africa, Southern Africa. Mozambique. Kwazulu-Natal.

Brachyelytrum aristosum (Michx.) P. Beauv. ex Trel. *Annual Rep. Geol. Surv. Arkansas* 1888(4): 235. 1888 [1891].

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

Recent Synonyms: *Brachyelytrum septentrionale* (Babel) G.C. Tucker, *J. Arnold Arbor.*, 69(3): 253 (1988).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007).

Classification. Subfamily Pooideae. Tribe: Brachyelytreae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 28.5–96 cm long, 0.6–1 mm diam. Culm-internodes 3.9–15.5 cm long, distally glabrous or pubescent. Culm-nodes pubescent. Leaves cauline. Leaf-sheaths 3.2–10.4 cm long, pubescent. Ligule an eciliate membrane, 1.8–2.5 mm long. Leaf-blades linear or lanceolate, 6.9–16.1 cm long, 8–16 mm wide. Leaf-blade venation without cross veins or with obscure cross veins. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade margins scabrous, ciliate.

Inflorescence. Inflorescence a panicle, comprising 8–55 fertile spikelets. Panicle open, linear or oblong, 6.6–17.5 cm long, 0.4–0.8 cm wide, bearing many spikelets or few spikelets. Primary panicle branches 1–7 in number, indistinct the panicle almost racemose or simple or sparsely divided. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.1–0.9 mm long, 0.15–0.3 length of upper glume, membranous, without keels, 0 -veined. Lower glume

lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.6–3 mm long, 0.3–0.6 length of adjacent fertile lemma, membranous, without keels, 1(–3) -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 9–10 mm long, 0.7–1.4 mm wide, herbaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface scaberulous, glabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 14–26 mm long overall. Palea tightly convolute around flower, 7.7–11.5 mm long, 2 -veined. Rhachilla extension 4–6.9 mm long.

Flower and Fruit. Lodicules 2. Anthers 2, 2–3.5 mm long. Stigmas 2. Caryopsis with tardily free pericarp, linear, 5.5–7.5 mm long, light brown or dark brown.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, Northeast USA, and Southeastern USA. Minnesota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. North Carolina, Tennessee, Virginia.

Brachyelytrum erectum (Schreb.) Beauv. *Agrost.* 39, 155. (1812).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

Basionym or Replaced Name: *Muhlenbergia erecta* Schreb., *Graes.* 2: 139. t. 50 (1802). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: North America: "Habitat in America Boreali", See note in IGS.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (41, Fig 9), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (61).

Derivation (Clifford & Bostock 2007): L. held upright. Spikelets or inflorescence branches held erect.

Classification. Subfamily Pooideae. Tribe: Brachyelytreae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 60–110 cm long, 0.5–0.8 mm diam., 6–7 -noded. Leaves cauline. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades linear or lanceolate, 8–15 cm long, 6–9 mm wide. Leaf-blade venation without cross veins or with obscure cross veins. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle, comprising 10–25 fertile spikelets. Panicle open, lanceolate or oblong, 9–15 cm long, bearing few spikelets. Primary panicle branches 2–5 cm long, bearing 1–4 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.8 mm long, pilose.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5–0.7 mm long, 0.3–0.5 length of upper glume, 0.05 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1–2.5 mm long, 0.1–0.25 length of adjacent fertile lemma, membranous, without keels, 1(–3) -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 8–10 mm long, herbaceous, without keel, 5 -veined, more than 3-veined. Lemma surface hispidulous, hairy on veins. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 15–18 mm long overall, limb scabrous. Palea tightly convolute around flower, 1 length of lemma, 2 -veined. Palea keels scaberulous. Palea apex dentate, 2 -fid. Rhachilla extension 0.66–0.8 length of fertile floret.

Flower and Fruit. Lodicules 2. Anthers 2, 4 mm long. Stigmas 2. Ovary beaked, pubescent on apex. Caryopsis with tardily free pericarp, linear, hairy at apex, apex rostrate.

$N = 11$ (1 ref TROPICOS). $2n = 22$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Eastern Canada, North-central USA, Northeast USA, Southeastern USA. New Brunswick, Nova Scotia, Ontario, Prince Edward I, Quebec. Illinois, Iowa, Missouri, Nebraska, Oklahoma. New Jersey, New York, Pennsylvania, West Virginia. Alabama, Arkansas, Delaware, Georgia, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia.

Brachyelytrum japonicum (Hack.) Matsuma ex Honda. *J. Fac. Sci. Univ. Tokyo*, sect. 3, Bot., 3:210 (1930).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Basionym or Replaced Name: *Brachyelytrum erectum* var. *japonicum* Hack., *Bull. Herb. Boiss.* 7:647 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *J. Matsumura* 2, no date,

Japan: Hab. Koyasan, Prov. Kii [given by Hackel as: Honshu I., Mie / Wakayama Prefect] (W-19818 IT: US-A865557 (fragm. ex W)). LT proposal in prep. by Saarala et al..

ST: *Faurie 1228*, 9 Jul 1897, Japan: Sendai (W-19816).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 253).

Derivation (Clifford & Bostock 2007): *L. -ica*, belonging to; *Japan*, a modified spelling of Zhapan introduced into Europe by Marco Polo as a transliteration for the Chinese name for the large islands to the east of that country. From Japan.

Classification. Subfamily Pooideae. Tribe: Brachyelytreae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 37.5–76 cm long, 0.5–0.9 mm diam., 6–7 -noded. Culm-internodes 4.2–11.7 cm long, distally glabrous. Culm-nodes glabrous or pubescent. Leaves cauline. Leaf-sheaths 3.7–5.4 cm long, glabrous on surface or hispid. Ligule an eciliate membrane, 2–3.2 mm long. Leaf-blades linear or lanceolate, 8.1–14.5 cm long, 5–8 mm wide. Leaf-blade venation without cross veins or with obscure cross veins. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade margins scabrous, ciliate.

Inflorescence. Inflorescence a panicle, comprising 9–19 fertile spikelets. Panicle open, linear or oblong, 8.3–18 cm long, 0.4–0.8 cm wide, bearing few spikelets. Primary panicle branches 1–5 in number, indistinct the panicle almost racemose or simple or sparsely divided, 2–55 cm long, bearing 1–4 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.8 mm long, pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.2–2 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.8–4.8 mm long, 0.4–0.8 length of adjacent fertile lemma, membranous, without keels, 1(–3) -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 10–12 mm long, herbaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface smooth or scaberulous, hispidulous, hairy on veins. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 9.5–19.4 mm long overall, limb scabrous. Palea tightly convolute around flower, 7.6–11.4 mm long, 2 -veined. Palea keels scaberulous. Palea apex dentate, 2 -fid. Rhachilla extension 6.9–8.8 mm long.

Flower and Fruit. Lodicules 2. Anthers 2, 3.3–4.5 mm long. Stigmas 2. Ovary beaked, pubescent all over. Caryopsis with tardily free pericarp, linear, 4.5–7 mm long, hairy at apex, apex rostrate.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. China South Central, China Southeast. Japan, Korea. Japan Honshu, or Shikoku, or Kyushu.

TDWG4. Anhui, Jiangsu, Jiangxi, Zhejiang. Yunnan.

Brachypodium arbusculum H. Knoch. *Vagandi Mos.*: 272 (1923).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Ile de fer, dans les rochers [...] au dessus du Golfo, cote nord-ouest de l'ile, 15 May 1855, *Perraudiere s.n.* (T: K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. shrub*. Shrubby in habit.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 30–40 cm long, wiry. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades 4–8 cm long, 3–5 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, bilateral, 3–5 cm long, bearing few fertile spikelets, bearing 3–15 fertile spikelets on each. Spikelet packing broadside to rachis, crowded, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1–1.5 mm long.

Fertile Spikelets. Spikelets comprising 8–15 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 13–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 6–7 mm long, 0.75 length of upper glume, membranous, without keels, 5 -veined. Lower glume surface glabrous or puberulous. Lower glume

apex acute. Upper glume ovate, 8–9 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume surface glabrous or puberulous. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–8 mm long, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous or puberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 1 mm long overall. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 18$ (3 refs TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. Macaronesia. Canary Is.

Brachypodium bolusii Stapf. Dyer, *Fl. Cap.* 7: 737 (1900).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: Central Region: Graaf Reinet Division: rocky places on Compass Berg, 8500 ft, about 100–200 ft below the summit, *Bolus 1986* (K holo).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (67, Fig 40).

Derivation (Clifford & Bostock 2007): in honor of Harry Bolus (1834–1911) English-born South African business-man and botanist.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 15–45 cm long. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades erect, lanceolate, 2–7(–17) cm long, 2–4 mm wide, stiff.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight, bilateral, 3–6 cm long, bearing few fertile spikelets, bearing 1–4 fertile spikelets on each. Spikelet packing broadside to rachis, lax, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–8 mm long, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 4–10 mm long, 0.6–0.9 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 7–11 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 4–8 mm long overall. Palea oblong, 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape.

Brachypodium columbianum Pilg. *Bot. Jahrb. Syst.* 27(1–2): 34 (1899).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *F.C. Lehmann 6981*, no date, Colombia: in silvis densis in monte Alto de Pesares supra oppidum Popayan, alt. 2400–2800 m (US-81750).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Colombia.

Brachypodium distachyon (L.) Beauv. *Agrost.* 101 (1812).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the*

Soviet Union (1983) (as *Trachynia & Eltrigia geniculata*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Ethiopia. **Basionym or Replaced Name:** *Bromus distachyos* L., *Fl. Palaest.* 13 (1756). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: (LINN-93.48). LT designated (as NT) by Schippmann & Jarvis, *Taxon* 37: 158, f. 1 (1988). Jarvis now believes this to be original material, so that a lectotype designation is correct (*vide*: Jarvis, *The Linnaean Plant Name Typification Project*).

Recent Synonyms: *Trachynia distachya* (L.) Link, *Hort. Berol.* 1: 43 (1827).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (178, Fig. 101 as *Trachynia distachya*), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl 200), L.Boulos, *Flora of Egypt* 4 (2005) (182, Pl. 52), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 22 as *Trachynia*), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (171, Pl. 58 as *Trachynia*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (589, Fig. 66), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (262, Fig. 203), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (87, Pl. 24), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (171), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (189), F.W.Gould, *The Grasses of Texas* (1975) (94, Fig. 43), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (51, Fig. 11), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 517), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:132(1980) as *Trachynia distachya*).

Images: L.Boulos, *Flora of Egypt* 4 (2005);

Derivation (Clifford & Bostock 2007): Gk. dis, twice; stachys, an ear of corn. Inflorescence two-branched inflorescence.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 3–30 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 1–12 cm long, 1–6 mm wide, glaucous. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 2–8(–10) cm long, bearing few fertile spikelets, bearing 1–7 fertile spikelets on each. Spikelet packing broadside to rachis. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1 mm long.

Fertile Spikelets. Spikelets comprising 5–16 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 5–6 mm long, 0.75 length of upper glume, coriaceous, without keels, 5–7 -veined. Lower glume lateral veins ribbed. Lower glume apex acute. Upper glume oblong, 7–8 mm long, 0.75 length of adjacent fertile lemma, coriaceous, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Fertile lemma oblong, laterally compressed, 8–10 mm long, coriaceous, glaucous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous or pilose. Lemma margins ciliolate, hairy above. Lemma apex acute, awned, 1 -awned. Principal lemma awn 8–12 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, ciliate. Anthers 3, 0.5–1 mm long. Ovary pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, hairy at apex. Embryo 0.25 length of caryopsis. Hilum linear, 1 length of caryopsis.

$2n = 20$ (1 ref TROPICOS), or 28 (1 ref TROPICOS), or 30 (5 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), North America, South America.

Region. Northern Europe (*), Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Balears, Corsica, France, Portugal, Sardinia, Spain, Azores. : Albania, Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. Krym, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, Northeast tropical Africa, Southern Africa** (*), **Middle Atlantic ocean.** Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Eritrea, Sudan. Northern Cape, Western Cape. St Helena. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia.** Turkmenistan, Tadjikistan. Afghanistan, Iran. Gulf States, Kuwait, Oman. Tibet. Japan. Japan Honshu. **Indian Subcontinent.** Pakistan, West Himalaya. **Australia.** Western Australia (*), South Australia (*), New South Wales (*), Victoria (*), Tasmania (*). **Northwest USA, Northeast USA, Southwestern USA, Mexico.** Colorado, Oregon. New Jersey. California. Northwest Mexico. **Western South America, Southern South America.** Colombia. Argentina Northeast, Chile Central, Juan Fernandez Is.

TDWG4. Punjab. South-West. Southern. Coast, Western Slopes. Buenos Aires, Distrito Federal, Entre Rios. Coquimbo, Valparaiso, O'Higgins, Maule, Biobio. Baja California.

Brachypodium firmifolium H. Lindb. *Acta Soc. Sci. Fenn., n. s. B., ii.* No. 7, 7 (1946).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Cyprus.

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, slender, 20–45 cm long. Culm-internodes smooth, distally glabrous. Culm-nodes pubescent. Leaf-sheaths striately veined, smooth, glabrous on surface. Ligule an eciliate membrane, truncate. Leaf-blades 5–10 cm long, 2–5 mm wide, glaucous. Leaf-blade surface scaberulous, rough adaxially, hispid, sparsely hairy, hairy adaxially. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 2–6 cm long, bearing few fertile spikelets, bearing 2–5 fertile spikelets on each. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6 mm long, 0.75–0.9 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume apex acuminate. Upper glume lanceolate or oblong, 6.5–7 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong or ovate, 6.5–7 mm long, without keel, 7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface puberulous, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 4–8 mm long overall. Palea 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.5 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Cyprus.

Brachypodium flexum Nees. *Fl. Afr. Gram.* 456. (1841).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Districtu Capensis, *Zeyher s.n.*.

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (177, Fig. 100), R.M.Pollhill, F.T.E.A., *Gramineae* (1(1970):72, Fig. 24), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):66, T. 18), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (66, Fig. 39), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (71, Fig. 33), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (56, Fig. 26).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. flecto, bend. Rhachis flexuose.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, culms solitary or mat forming. Culms decumbent, 30–100 cm long, wiry, rooting from lower nodes. Culm-internodes scaberulous. Culm-nodes pubescent. Leaf-sheaths scaberulous, glabrous on surface or pilose. Ligule an eciliate membrane, 1 mm long. Leaf-blades 5–17 cm long, 2–6 mm wide, flaccid. Leaf-blade surface scabrous, rough abaxially, pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, drooping or erect, bilateral, 4–15 cm long, bearing few fertile spikelets, bearing 3–9 fertile spikelets on each. Rhachis glabrous on surface, scabrous on margins. Spikelet packing broadside to rhachis, lax, 1.5 their length apart, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1.5 mm long.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, (3–)4–8 mm long, 0.9–1 length of upper glume, membranous, without keels, (3–)4–5 -veined. Lower glume apex acute or acuminate. Upper glume lanceolate, 4–10 mm long, 0.5–1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, (5–)7–11 mm long, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous, glabrous or pubescent or pilose. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 4–8 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 9$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. West tropical Africa, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa, Western Indian ocean. Nigeria, Sierre Leone. Cabinda, Cameroon, Annobon, Principe & Sao Tome, Bioko, Rwanda. Eritrea, Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, North-West, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Madagascar.

Brachypodium humbertianum A. Camus. *Bull. Soc. Bot. France* 102: 121 (1955).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: domaine central de Madagascar (S): vallee de la Manambolo, rive droite (bassin du Mandrare, aux environs d'Isomono), *Humbert 13215* (HT: not designated).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–40 cm long. Culm-nodes glabrous. Leaf-sheaths striately veined, pilose. Ligule an eciliate membrane, 1.5 mm long. Leaf-blades 11–15 cm long, 3–4 mm wide. Leaf-blade surface pilose, hairy abaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, bearing few fertile spikelets, bearing 3 fertile spikelets on each. Spikelet packing broadside to rachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4.8–5 mm long, 0.66 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 8 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 14 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 7 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Brachypodium kawakamii Hayata. *Bot. Mag. Tokyo*, 21: 51 (1907).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Taiwan: in verticum montis Morrison, ca. 3000 m, *T. Kawakami* & *G. Nakahara s.n.* (HT: TI).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (62, Fig 17), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (292), C-C Hsu, *Taiwan Grasses* (1975) (427, Pl. 1386), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 518).

Derivation (Clifford & Bostock 2007): in honor of Takiya Kawakamii (1871–1915) Japanese botanist.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect or geniculately ascending, 10–30 cm long, 0.75–1 mm diam., 3–5 -noded. Lateral branches sparse. Leaves basal and cauline.

Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades involute, 3–6 cm long, 1.5 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 1–2 fertile spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–16 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, compressed slightly, 12–27 mm long, 6–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5 mm long, pilose. Floret callus glabrous or pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume elliptic or oblong, 5–8 mm long, 0.5–0.6 length of upper glume, chartaceous, without keels, 5–7 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume elliptic or oblong, 10–13 mm long, 1.1 length of adjacent fertile lemma, chartaceous, without keels, 7(–9) -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 9–12 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 3–6 mm long overall. Palea elliptic or oblong, 1 length of lemma. Palea keels ciliolate. Palea apex emarginate or truncate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China, Eastern Asia. Taiwan.

Brachypodium kotschy Boiss. *Fl. Orient.* 5: 659 (1884).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Turkey. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Turkey, Bulgar Magara: Kotschy 233 (G holo, K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Karl Georg Theodor Kotschy (1813–1866) Austrian botanist and traveller.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect or geniculately ascending, 30–70 cm long, 1 mm diam. Lateral branches lacking. Leaves 2–3 per branch. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades filiform, convolute, 4–8 cm long, 1 mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 2–4.5 cm long, bearing few fertile spikelets, bearing 2–7 fertile spikelets on each. Spikelet packing broadside to rachis, lax, 2 -rowed. Spikelets solitary. Fertile spikelets sessile. Pedicels absent.

Fertile Spikelets. Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 9–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear or oblong, 4–6 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume linear or oblong, 5–8 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 6–9 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma apex obtuse, mucous. Palea oblong, 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Turkey.

Brachypodium madagascariense A. Camus. *Bull. Mus. Hist. Nat. (Paris)* 28: 443 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Tsiafajavona: *Perrier 13380* (P holo, K).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms decumbent, 15–30 cm long, 2 mm diam. Culm-internodes scaberulous. Leaf-sheaths striately veined, retrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 3 mm long. Leaf-blades 10–15 cm long, 3–4 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, bilateral, 4–5 cm long, bearing few fertile spikelets, bearing 4–5 fertile spikelets on each. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 35 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6 mm long, 0.66 length of upper glume, membranous, without keels, 5 -veined. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, 9 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 12 mm long, without keel, 7 -veined, more than 3-veined. Lemma surface scabrous, glabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn apical, 6 mm long overall. Palea oblong, 8 mm long. Palea keels ciliolate. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Brachypodium luzoniense Hack. *Philipp. J. Sci.* 1(suppl. 4): 269. 1906.

Not on *GrassBase*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -ense*, denoting origin. From Luzon, Philippines.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Eastern Asia. Taiwan.

Brachypodium mexicanum (Roem. & Schult.) Link. *Hort. Berol.* 1: 41 (1827).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Festuca mexicana* Roem. & Schult., *Syst.* 2: 732 (1817). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: Cultivated from material collected by Sessi.

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983), S.A.Renvoise, *Gramineas de Bolivia* (1998) (250, Fig 49), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (109, Fig 33).

Illustrations (Journals): *Ruizia* (13:146, Fig15d-f (1993)).

Derivation (Clifford & Bostock 2007): *L. -ana*, indicating origin. From Mexico.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Culms 40–150 cm long. Culm-internodes scaberulous. Culm-nodes pubescent. Leaf-sheaths scaberulous, glabrous on surface or puberulous. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 5–25 cm long, 1–2 mm wide. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 2–15 cm long, bearing few fertile spikelets, bearing 2–8 fertile spikelets on each. Rhachis glabrous on surface. Spikelet packing broadside to rhachis, lax. Spikelets ascending or spreading, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 2–3 mm long.

Fertile Spikelets. Spikelets comprising 2–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4.5–9 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume

lanceolate, 7–11 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 8–12 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous, rough above. Lemma apex obtuse or acute, awned, 1 -awned. Principal lemma awn apical, 3–6 mm long overall. Palea 8–12 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 38$ (1 ref TROPICOS), or 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica, Northern South America, Western South America.** Bolivia, Colombia.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Coahuila, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California Sur. Colima, Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Brachypodium perrieri A. Camus. *Bull. Mus. Hist. Nat. Paris*, 28: 442 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Madagascar, Tsiafajavona: Perrier 13514.

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar* (1969) (185, Fig 65).

Derivation (Clifford & Bostock 2007): in honor of Joseph Marie Henri Alfred Perrier de la Bbthie (1872–1958) French botanist.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Culms erect or geniculately ascending, 40–100 cm long. Culm-internodes smooth or scaberulous. Culm-nodes pubescent. Lateral branches lacking or sparse. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane. Leaf-blades flat or convolute, 4–30 cm long, 1–6 mm wide. Leaf-blade surface smooth or scabrous, pubescent, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, bilateral, 5–15 cm long, bearing few fertile spikelets, bearing 3–7 fertile spikelets on each. Spikelet packing broadside to rachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, cuneate, 2 mm long.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6–10 mm long, 0.75–0.85 length of upper glume, membranous, without keels, 7–11 -veined. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, 8–12 mm long, 0.85–1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 9.5–12 mm long, without keel, 7–9 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn apical, 5–9 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian ocean.** Madagascar.

Brachypodium phoenicoides (L.) Roem. & Schult. *Syst.* 2: 740 (1817).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Basionym or Replaced Name: *Festuca phoenicoides* L., *Mant.* 1: 33 (1767). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Habitat in Galloprovinciae maritimus arenosis,.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (191).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. As for Phoenix.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, culms solitary. Culms 45–90 cm long. Culm-internodes smooth. Culm-nodes pubescent. Leaf-sheaths antrorsely scabrous, glabrous on surface or pilose. Ligule an eciliate membrane, 1.6–3.5 mm long. Leaf-blades 20–35 cm long, 2–4 mm wide. Leaf-blade surface scabrous, glabrous or pilose.

Inflorescence. Inflorescence composed of racemes. Peduncle antrorsely scabrous above. Racemes 1, single, bilateral, 6–20 cm long, bearing few fertile spikelets, bearing 4–12 fertile spikelets on each. Rhachis glabrous on surface. Spikelet packing broadside to rhachis, lax. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 12–14(–20) fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, curved, subterete, 25–35 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–6.9 mm long, 0.75 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 7–8.2 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 9 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–11.5 mm long, chartaceous, glaucous, without keel, 5–7 -veined, more than 3-veined. Lemma surface scaberulous, rough above. Lemma apex obtuse, mucicous or mucronate. Palea 6.8–10.5 mm long. Palea keels eciliate or pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 1.4–1.5 mm long. Anthers 3, 4.4–4.6 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$N = 14$ (1 ref TROPICOS). $2n = 14$ (1 ref TROPICOS), or 28 (3 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa.

Region. Southwestern Europe, Southeastern Europe.

Country /Province /State. : Baleares, Corsica, France, Portugal, Sardinia, Spain. : Greece, Italy, Sicily, Yugoslavia. **Northern Africa, Macaronesia.** Algeria, Morocco, Tunisia. Madeira.

Brachypodium pinnatum (L.) Beauv. *Agrost.* 101 (1812).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (& as *B. rupestre*), W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Europe. **Basionym or Replaced Name:** *Bromus pinnatus* L., *Sp. Pl.* 78 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Habitat in Europae sylvis montosis asperis,.

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (92), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (113 (80), Pl.1), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl 199), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (169, Pl. 57), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (191, & as *B. rupestre*).

Images: R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

Derivation (Clifford & Bostock 2007): L. pinna, feather; -atum, possessing. Spikelets long sessile arising alternately from a central axis.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, scaly. Culms erect, 30–120 cm long, 2–3 -noded. Culm-internodes smooth. Culm-nodes glabrous. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 15–45 cm long, 2–6 mm wide, firm or flaccid. Leaf-blade surface scabrous, glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, drooping or erect, bilateral, 4–25 cm long, bearing few fertile spikelets, bearing 3–15 fertile spikelets on each. Spikelet packing broadside to rhachis, lax, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1–2 mm long.

Fertile Spikelets. Spikelets comprising 8–22 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–5 mm long, 0.6–0.7 length of upper glume, membranous, without keels, 3–6 -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume ovate, 5–7 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–10 mm long, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 1–5 mm long overall. Palea oblong, 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3.5–4.5 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 7$ (1 ref TROPICOS). $2n = 18$ (4 refs TROPICOS), or 28 (6 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Foroyar, Great Britain, Iceland, Svarlbad. : Balears, Azores. Belarus, Estonia, Latvia, Lithuania, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, Northeast tropical Africa.** Algeria, Tunisia. Cape Verde. Eritrea. Siberia, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Russia.** Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Kazakhstan, Kirgizistan. Iran, Iraq. China South Central, Inner Mongolia, China Southeast, Tibet. Mongolia. **Indian Subcontinent.** India. **Australia, New Zealand.** New Zealand North I, New Zealand South I. **Southern South America.** Uruguay.

TDWG4. Shanxi. Yunnan.

Brachypodium pratense P.C. Keng. *Acta Bot. Yunnanica*, 4(3): 278 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: circ. Lijiang, ad pratum, 4200 m, 2 Nov. 1924, *G. Schneider 2343* (HT: US(776505)).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 516).

Derivation (Clifford & Bostock 2007): *L. pratense*, a meadow; *-ense*, denoting origin. Meadow species.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent. Culms erect or geniculately ascending, 45–90 cm long, 3–5 -noded. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 2 mm long. Leaf-blades 10–18 cm long, 3–8 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–15 cm long, bearing few fertile spikelets, bearing 3–6 fertile spikelets on each. Spikelet packing broadside to rachis, lax, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear or oblong, 2–3(–5.5) mm long.

Fertile Spikelets. Spikelets comprising 10–18 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–7 mm long, 0.6–0.75 length of upper glume, membranous, without keels, 5 -veined. Lower glume surface glabrous. Lower glume apex acuminate. Upper glume lanceolate, 7–9 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume surface glabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 9–10 mm long, without keel, 7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface smooth, glabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 5–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central.

TDWG4. Sichuan, Yunnan.

Brachypodium pringlei Scribn. ex Beal. *Grasses N. Amer.* 2: 627 (1896).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Mexico: moist banks near Monterey, in 1889, *Pringle 2525*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Cyrus Guernsey Pringle (1838–1911) United States botanist.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, culms solitary. Culms geniculately ascending, 25–60 cm long, wiry. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5 mm long, erose. Leaf-blades 7–15 cm long, 3–6 mm wide, flaccid.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 2–4 cm long, bearing few fertile spikelets, bearing 1–4 fertile spikelets on each. Rhachis glabrous on surface. Spikelet packing broadside to rhachis, contiguous. Spikelets appressed or ascending, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 19–23 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 4 mm long, 0.66 length of upper glume, membranous, without keels, 5 -veined. Lower glume lateral veins prominent. Lower glume apex obtuse. Upper glume oblong, 6 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 7 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface smooth. Lemma apex obtuse, muticous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province/State. Mexico. Northeast Mexico.

TDWG4. Coahuila, Neuvo Leon, Tamaulipas.

Brachypodium retusum (Pers.) Beauv. *Agrost.* 101 (1812).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from France. **Basionym or Replaced Name:** *Bromus retusus* Pers., *Syn.* 1: 96 (1805). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. in Gall. meridionali, in maritimis, (HT: L).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. retundo, blunt. Glume apices retuse-mucronate.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 30–60 cm long. Leaves distichous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades aciculate, involute, 2–10 cm long, 1–3 mm wide, stiff, glaucous. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 2–8 cm long, bearing few fertile spikelets, bearing 1–5 fertile spikelets on each. Spikelet packing broadside to rhachis, lax, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–15 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–8 mm long, 0.5–1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 8–9 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–9 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn apical, 0.5–3 mm long overall. Palea oblong, 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$N = 14$ (1 ref TROPICOS). $2n = 28$ (3 refs TROPICOS), or 36 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia.

Region. Northern Europe (*), Southwestern Europe, Southeastern Europe.

Country /Province /State. : GB Aliens (Ryves et al.) : Balears, Corsica, France, Portugal, Sardinia, Spain. : Albania, Greece, Italy, Crete, Sicily, Yugoslavia. **Northern Africa, Northeast tropical Africa.** Algeria, Libya, Morocco, Tunisia. **Western Asia, Arabian Peninsula.** East Aegean Is, Lebanon-Syria, Turkey. Saudi Arabia, Yemen.

Brachypodium sylvaticum (Huds.) Beauv. *Agrost.* 101 (1812).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from England. **Basionym or Replaced Name:** *Festuca sylvatica* Huds., *Fl. Angl. ed.* 1: 38 (1762). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Hudson s.n.*, Great Britain.

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (90), G.Hegi, *Flora von Mitteleuropa* 1 (1909) (& as *Festuca sylvatica*), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (60, Fig 16), C-C Hsu, *Taiwan Grasses* (1975) (as var. *kelungensis*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (280), K.M.Matthew, *Flora Palni Hills* (1996) (791, Pl. 791), H.J.Noltie, *The Grasses of Bhutan* (2000) (631, Fig. 29), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (44 Pl. 11), E.Edgar. & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (375, Fig. 13), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (189), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (320, Fig. 109), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 515).

Images: R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): *L. silva*, wood; -ica, belonging to. Growing in woodlands.

Classification. Subfamily Pooideae. Tribe: Brachypodieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 30–90 cm long, wiry, 4–5 -noded. Culm-internodes smooth. Culm-nodes pubescent. Leaf-sheaths smooth, pilose. Ligule an eciliate membrane, 1–6 mm long. Leaf-blades 15–35 cm long, 4–12 mm wide, flaccid. Leaf-blade surface scabrous, pilose.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, drooping or erect, bilateral, 6–20 cm long, bearing few fertile spikelets, bearing 4–14 fertile spikelets on each. Spikelet packing broadside to rachis, lax, 2 -rowed. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, linear or oblong, 0.5–2 mm long.

Fertile Spikelets. Spikelets comprising 8–16 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 6–8 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate or oblong, 8–11 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 7–11 mm long, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 8–12 mm long overall. Palea oblong, 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3.5–4 mm long. Ovary with a fleshy appendage below style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 9$ (5 refs TROPICOS). $2n = 18$ (9 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechtenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Balears, Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibraltar, Spain, Azores. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kaliningrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia, Northeast tropical Africa.** Algeria, Morocco, Tunisia. Azores, Canary Is,

Cape Verde, Madeira. Eritrea, Ethiopia (inc. Eritrea). Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia.** Altay, Buryatiya, Chita, Irkutsk, Tuva. Kuril Is, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Japan, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China, Malesia, Papuasia.** Assam, Eastern Himalaya, India, Nepal, Pakistan, Sri Lanka, West Himalaya. Java, Lesser Sunda Is, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea PNG. New Guinea. **New Zealand.** New Zealand North I, New Zealand South I. **Northwest USA, Southwestern USA, Southeastern USA.** Oregon. California. Virginia. **Southern South America.** Argentina Northeast.

TDWG4. Gansu, Shaanxi. Anhui, Jiangsu, Zhejiang. Guizhou, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Meghalaya, Nagaland. Distrito Federal.

Briza humilis Bieb. *Fl. Taur. Cauc.* 1: 66 (1808).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Brizochloa*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *s.c. s.n., s.d.*, Ukraine: Crimea (LE).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 333), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 2), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (57, Pl. 17).

Derivation (Clifford & Bostock 2007): L. low growing. Short-statured in comparison with related species often prostrate.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect, 8–40 cm long. Ligule an eciliate membrane. Leaf-blades conduplicate or convolute, 3–15 cm long, 1–3 mm wide, flaccid. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, 2–10 cm long, 0.5–1 cm wide. Primary panicle branches appressed or ascending. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1–6 mm long.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, obtuse, 4–5 mm long, 3–4 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 2.5–3 mm long, 0.8–1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume orbicular, 2.5–3 mm long, 0.75–0.9 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, 2.5–3 mm long, membranous, much thinner on margins, keeled, lightly keeled, keeled below, 5–7 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex cuspidate. Palea oblong, 0.8–0.9 length of lemma, 2 -veined. Palea keels winged, narrowly winged, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia.

Region. Northern Europe (*), Southeastern Europe, Eastern Europe.

Country /Province /State. : Great Britain (*). : Albania, Bulgaria, Greece, Crete, Turkey Europe. Krym. **Caucasus, Western Asia.** North Caucasus, Transcaucasus. Iran, Iraq.

TDWG4.

Briza marcowiczii Woronow. *Opred. Rast. Kavkaza 1 Kryma*, 1: 116 (1908).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *B. Marcowicz* 263, 24 Jul 1899, Caucasus, Ossetia (LE). Orig. label: Auf Alpenwiesen in der Landschaft Ossetien im Kaukasus (Russland), ca. 3000 m u.d.M..

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of V.V. Marcowicz (Basil) (fl. 1926–1928) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 6–14 cm long. Ligule an eciliate membrane. Leaf-blades 2–7 cm long, 1–3 mm wide. Leaf-blade surface smooth. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle, comprising 8–16 fertile spikelets. Panicle open, obovate, effuse, 4–5 cm long, 4–5 cm wide, bearing few spikelets. Primary panicle branches spreading, branching divaricately. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–6 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 2.5–3 mm long, 0.8–1 length of upper glume, membranous, much thinner on margins, purple, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume orbicular, 2.5–3 mm long, 0.6–0.9 length of adjacent fertile lemma, membranous, with hyaline margins, purple, without keels, 3–5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblate, auriculate at base, gibbous, 4 mm long, membranous, much thinner on margins, purple or yellow, bordered with last colour, keeled, lightly keeled, keeled below, 7–9 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex obtuse. Palea oblong, 0.8–0.9 length of lemma, 2 -veined. Palea keels winged, narrowly winged, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus, Western Asia. North Caucasus, Transcaucasus. Turkey.

TDWG4.

Briza maxima Linn. *Sp. Pl.* 70 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Sequier s.n.*, (LINN-88.6). LT designated by Hubbard in Milne-Redhead & Polhill (ed.), *Fl. Trop. E. Africa, Gramineae* 1: 53 (1970).

ST: *van Royen s.n.*, unknown (L).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (212), R.M.Polhill, F.T.E.A., *Gramineae* (1(1970):52, Fig. 19), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):46, T. 12), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (47, Fig. 16), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 334), L.Boulos, *Flora of Egypt* 4 (2005) (147, Fig 41), K.M.Matthew, *Flora Palni Hills* (1996) (792, Pl. 792), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (115, Fig. 74), C.A.Gardner, *Flora of Western Australia, Vol 1, Part 1, Gramineae* (1952) (129, Pl. 38), N.Walsh & T.Entwistle, *Flora of Victoria Vol 2* (1994) (413, Fig. 82), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales, 4th edn* (2008) (172), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989), D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae, part 1* (2007), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 25 Poaceae, part 2* (2003), N.N.Tsvelev, *Grasses of the Soviet Union* (1983), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (74, Fig. 33), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (95, Fig. 31 & 98, Fig. 33), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987), E.Hafliger & E.Schultz, *Grass Weeds, CIBA-GEIGY* (2:29(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass. Grasses of Australia. CD-Rom Version 1.0.* (2002);, K.O.Mallett (ed.). *Flora of Australia, Vol 44 A* (2002) & *Vol 44B* (2004). *Poaceae*;, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. greatest. Culms very tall.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or decumbent, 10–60 cm long. Ligule an eciliate membrane, 2–5 mm long. Leaf-blades 5–20 cm long, 3–8 mm wide. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle, comprising 3–12 fertile spikelets. Panicle open, obovate, 3–10 cm long, bearing few spikelets. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, recurved, 5–20 mm long.

Fertile Spikelets. Spikelets comprising 7–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 14–25 mm long, 8–15 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 5–7 mm long, 1 length of upper glume, chartaceous, without keels, 7–9 -veined. Lower glume apex obtuse. Upper glume ovate, 5–7 mm long, 0.75 length of adjacent fertile lemma, chartaceous, without keels, 7–9 -veined. Upper glume apex obtuse.

Florets. Fertile lemma orbicular, auriculate at base, gibbous, 6–8 mm long, chartaceous, much thinner on margins, keeled, lightly keeled, keeled below, 7–9 -veined, more than 3-veined. Lemma surface glabrous or pubescent, with capitate hairs. Lemma apex cuspidate. Palea orbicular, 0.5 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2. Anthers 3, 2–2.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 2.5 mm long. Embryo 0.25 length of caryopsis. Hilum linear, 0.5 length of caryopsis.

$N = 7$ (5 refs TROPICOS). $2n = 14$ (10 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Great Britain. : Balears, Corsica, France, Portugal, Sardinia, Spain, Azores. : Albania, Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, East European Russia, South European Russia. **Northern Africa, Macaronesia, East tropical Africa, South tropical Africa, Southern Africa** (*). Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Kenya. Zimbabwe. Limpopo, Gauteng, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Russian far east, **Caucasus, Western Asia, China** (+). Amur. **Indian Subcontinent, Malesia.** Pakistan, Sri Lanka. Java. **Australia, New Zealand.** Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord Howe-Norfolk Is (*). Chatham Is, New Zealand North I, New Zealand South I, Stewart Is. **North-central Pacific.** Marquesas (*). Hawaii (*). **Eastern Canada, Southwestern USA, South-central USA.** New Brunswick, Ontario, Quebec. California. Texas. **Mesoamerica, Caribbean, Western South America, Brazil, Southern South America.** Guatemala, Honduras. Bermuda, Jamaica. Colombia. Brazil Southeast, Brazil South. Argentina Northeast, Chile North, Chile Central, Chile South, Juan Fernandez Is.

TDWG4. Meghalaya. Tamilnadu. South-West. Southern. South East, Inland. Coast, Tablelands, Western Slopes. Catamarca. Buenos Aires, Cordoba, Entre Rios, Santa Fe. Chubut. Atacama. Valparaiso, Maule, Biobio, La Araucania. Los Lagos, Magellanes.

Briza media Linn. *Sp. Pl.* 70 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *B. elatior*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (LINN-88.5). LT designated by Meikle in *Fl. Cyprus* 2 : 1720 (1985).

Recent Synonyms: *Poa media* (L.) Cav., *Elench. Pl. Hort. Matrit.* 28 (1803).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (214), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (787 (519), Pl.9), H.J.Noltie, *The Grasses of Bhutan* (2000) (541, Fig. 14), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (74, Fig. 35), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 360), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:30(1980)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. middle. Characters midway between two or more other species.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 15–75 cm long. Ligule an eciliate membrane, 0.5–1.5 mm long. Leaf-blades 4–15 cm long, 2–4 mm wide. Leaf-blade surface smooth. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, effuse, 4–18 cm long, bearing many spikelets. Primary panicle branches spreading. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, recurved, 5–20 mm long.

Fertile Spikelets. Spikelets comprising 4–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–7 mm long, 4–7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 2.5–3.5 mm long, 0.8–1 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume orbicular, 2.5–3.5 mm long, 0.6–0.9 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblate, auriculate at base, gibbous, 4 mm long, membranous, much thinner on margins, keeled, lightly keeled, keeled below, 7–9 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex obtuse. Palea oblong, 0.8–0.9 length of lemma, 2 -veined. Palea keels winged, narrowly winged, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2. Anthers 3, 2–2.5 mm long. Ovary glabrous. Caryopsis with adherent pericarp. Embryo 0.25 length of caryopsis. Hilum punctiform.

$2n = 14$ (11 refs TROPICOS), or 28 (8 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechtenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibraltar, Spain. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kaliningrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Macaronesia.** Canary Is. **Caucasus, Western Asia, China.** North Caucasus, Transcaucasus. Tibet. **Indian Subcontinent, Indo-China.** Eastern Himalaya, Nepal, Pakistan, West Himalaya. **New Zealand.** New Zealand South I. Hawaii (*). **Western Canada, Eastern Canada, Northeast USA.** British Columbia. Newfoundland, Nova Scotia, Ontario. Connecticut, Massachusetts, Michigan, Vermont. **Western South America, Southern South America.** Colombia. Argentina South.

TDWG4. Sichuan, Yunnan. Bhutan, Sikkim. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir. Neuquén, Río Negro.

Briza minor Linn. *Sp. Pl.* 70 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: CT: *Anon.*, Habitat in Helvetia, Italia (LINN-88.1). LT designated by Hubbard, *Fl. Trop. E. Afr. Gram.* 53 (1970); CT proposed by Jarvis, *Taxon* 41: 558 (1992).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (210), R.M.Pohill, F.T.E.A., *Gramineae*, G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):46, T. 12), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (48, Fig. 17), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990) (72, Fig. 34), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 332), L.Boulos, *Flora of Egypt* 4 (2005), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (308), C-C Hsu, *Taiwan Grasses* (1975) (438, Pl. 1391), K.M.Matthew, *Flora Palni Hills* (1996) (793, Pl. 793), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (116, Fig. 75), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (129, Pl. 38), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (172), J.C.Tothill, & J.B.Hacker. *The grasses of southern Queensland* (1983) (138), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), W.L.Wagner et al.,

Manual of the Flowering Plants of Hawai'i, Vol. 2 (1990) (1506, Pl. 221), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (613), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003), F.W.Gould, *The Grasses of Texas* (1975) (123, Fig. 60), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (32, Fig. 12), S.A.Renouze, *Gramineas de Bolivia* (1998) (130, Fig. 32), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (68, Fig. 42), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (228, Fig. 50 & 232, Fig. 52), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (62, Fig. 14), M.N.Correa, *Flora Patagonica Parte III*, Gramineae (1978) (74, Fig. 34), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (111, Fig. 34), B.Rosengurt, *Gramineas Uruguayas I* (1970) (95, Fig. 31 & 98, Fig. 33), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 360), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:31(1980)).

Illustrations (Journals): *Ruizia* (13:113, Fig12d-e (1993)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. smaller, lesser. Plants small in comparison with related species.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or decumbent, 10–60 cm long. Ligule an eciliate membrane, 3–6 mm long. Leaf-blades 3–14 cm long, 3–9 mm wide. Leaf-blade surface scaberulous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, 4–20 cm long, bearing many spikelets. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, recurved, 5–15 mm long.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate or orbicular, laterally compressed, 3–5 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 2–3.5 mm long, 0.8–1 length of upper glume, chartaceous, without keels, 3–5 -veined. Lower glume apex obtuse. Upper glume ovate, 2–3.5 mm long, 1 length of adjacent fertile lemma, chartaceous, without keels, 3–5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblate, auriculate at base, gibbous, 2–3 mm long, chartaceous, much thinner on margins, keeled, lightly keeled, keeled below, 7–9 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex obtuse. Palea orbicular, 0.66 length of lemma, 2 -veined. Palea keels winged, narrowly winged, ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2. Anthers 3, 0.6 mm long. Ovary glabrous. Caryopsis with adherent pericarp, 2.25 mm long. Embryo 0.25 length of caryopsis. Hilum punctiform.

$N = 5$ (5 refs TROPICOS). $2n = 10$ (7 refs TROPICOS), or 14 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe.

Country /Province /State. : Great Britain. : Belgium. : Balears, Corsica, France, Portugal, Sardinia, Spain, Azores. : Albania, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. **Northern Africa, Macaronesia, East tropical Africa, South tropical Africa, Southern Africa** (*), **Middle Atlantic ocean, Western Indian ocean.** Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Tanzania. Zimbabwe. North-West, Gauteng, Mpumalanga, Northern Cape, Western Cape, Eastern Cape. Ascension, St Helena. Mauritius (*), Madagascar (*). **Caucasus, Western Asia, China** (+), **Eastern Asia.** Iran, Iraq. China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent, Malesia, Papuasias.** Pakistan, Sri Lanka. Java, Malaya, Sulawesi. New Guinea PNG. New Guinea. **Australia, New Zealand.** Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord Howe-Norfolk Is (*). Kermadec Is, New Zealand North I, New Zealand South I, Stewart Is. **South-central Pacific, North-central Pacific.** Easter Is (*), Marquesas (*), Tubuai Is (*). Hawaii (*). **Western Canada, Northwest USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** British Columbia. Oregon. California. Texas. Alabama, Arkansas, Florida, Georgia, North Carolina, South Carolina, Virginia. Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Jamaica. Bolivia, Colombia. Brazil Southeast, Brazil South. Argentina Northeast, Chile Central, Chile South, Juan Fernandez Is.

TDWG4. Fujian, Jiangsu, Zhejiang. Guizhou. Tamilnadu. South-West. Southern. Central, South East. Coast, Tablelands, Western Slopes, Western Plains. Mendoza, Tucuman. Buenos Aires, Cordoba, Corrientes, Entre Rios, La Pampa, Misiones, Santa Fe. Río Negro. Atacama. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule. Los Lagos. Distrito Federal, Mexico State, Morelos, Puebla. Veracruz. Michoacan, Oaxaca. Chiapas.

Bromidium ramboi (Parodi) Z.E. Rugolo de Agrasar. *Darwiniana*, 24:207 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Agrostis*).

Basionym or Replaced Name: *Agrostis ramboi* Parodi, *Bol. Soc. Argent. Bot.* 1: 119 (1946). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Brasil: Rio Grande do Sul, Bon Jesus, Arroyo Capoeira Grande, a 1000 m.s.m., 15 Jan 1942, *B. Rambo S.J.*, 9068 (HT: BAA; IT: LP, PACA).

Recent Synonyms: *Agrostis hygrometrica* Nees, *Mart. Fl. Bras.* 2: 404 (1829).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Rambo who collected in Brazil.

Classification. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 25–35 cm long, 3–4-noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 3 mm long. Leaf-blades 6–9 cm long, 2–3.5 mm wide, flaccid. Leaf-blade surface scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 8–15 cm long, 1–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, gaping. Lower glume lanceolate, 4.5 mm long, 1.05 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4 mm long, 1.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 1.6 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 4 -fid, awned, 5 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, geniculate, 8 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 2–3 mm long. Palea absent or minute.

Flower and Fruit. Anthers 3, 0.75 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil. Brazil South.

Bromidium trisetoides (Steudel) Z.E. Rugolo de Agrasar. *Syn. Pl. Gram.* 1: 172. (1854).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Agrostis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Chile. **Basionym or Replaced Name:** *Agrostis trisetoides* Steud. *Syn. Pl. Gram.* 1: 172. (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *W. Lechler 724*, no date, Chile: Arigue (P; IT: B, BAA-3566, US-2656085 (fragm. ex P)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk *-oides*, resembling. Resembling *Trisetum*.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 7–40 cm long. Ligule an eciliate membrane, 2.5–4 mm long, truncate. Leaf-blades 2–8 cm long, 1–2 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, oblong, interrupted, 2–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma, shiny, gaping. Lower glume lanceolate, 4 mm long, 1 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4 mm long, 1.3 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 3 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pilose, hairy below. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising

0.1 way up back of lemma, geniculate, 6–7 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 0.5 mm long. Palea absent or minute.

Flower and Fruit. Lodicules 2, membranous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Chile Central, Chile South.

Tarapaca, Antofagasta, Atacama, Coquimbo. Maule, Biobio, La Araucania. Los Lagos.

Bromuniola gossweileri Stapf & C. E. Hubbard. *Kew Bull.* 1926, 366 (1926).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: TYPE COLLECTION: *J. Gossweiler 8933*, Jun 1925, Angola (US-1258630).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (141, Fig. 66), R.M.Pohill, F.T.E.A., *Gramineae* (1(1970):160, Fig. 51), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):144, T. 38).

Derivation (Clifford & Bostock 2007): in honor of John Gossweiler (1873–1952) Swiss-born Angolan botanist.

Classification. Subfamily Panicoideae. Tribe: Centothecae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or decumbent, 60–120 cm long. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades lanceolate, 10–20 cm long, 10–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pilose, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse. Primary panicle branches spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, 20–60 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 3–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas, scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 5–7.5 mm long, 0.8–0.9 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume primary vein scaberulous. Lower glume apex acute, muticous or mucronate. Upper glume ovate, 6–8 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins with cross-veins. Upper glume apex acute, muticous or mucronate.

Florets. Basal sterile florets 1, barren, without significant palea, separately deciduous. Lemma of lower sterile floret similar to fertile lemma, ovate, 9 mm long, membranous, much thinner on margins, 1-keeled, 7 -veined, acute, mucronate. Fertile lemma ovate, 6–9.5 mm long, membranous, much thinner on margins, keeled, 7 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2.5–4 mm long overall. Palea oblong, bowed outwards, 0.9 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 2–3 mm long. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. West-central tropical Africa, East tropical Africa, South tropical Africa. DRC. Tanzania. Angola, Zambia.

Bromus aegyptiacus Tausch. *Flora*, 20: 124 (1837).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Tausch!*, 1840, Aegypt. (LE).

Illustrations (Books): L.Boulos, *Flora of Egypt* 4 (2005) (189, Pl. 54).

Derivation (Clifford & Bostock 2007): L. Egyptian. From Aegyptus, now Egypt.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 25–50 cm long. Culm-internodes smooth or scaberulous. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 3–8 cm long, 1–3 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 3–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong, laterally compressed, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 3–4 mm long, 0.66 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 5–6 mm long, 0.8–1 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 5–7 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface glabrous to pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, straight, 4–11 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northern Africa. Egypt.

Bromus aleutensis Trin. ex Ledeb. *Fl. Ross.* 4: 361 (1853).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.F.G. von Eschscholtz s.n.*, 1829, USA: Alaska (LE; IT: LE (4 sheets), US-865506 (fragm.)). Kostalsky cited on sheet as collector.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (202).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. As for *aleutica*..

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 40–130 cm long. Culm-internodes distally pubescent. Leaf-sheaths striately veined, pilose, with reflexed hairs. Ligule an eciliate membrane, 3.5–5 mm long, lacerate. Leaf-blades 13–35 cm long, 6–15 mm wide. Leaf-blade surface pilose, sparsely hairy or moderately hairy, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–28 cm long, with spikelets clustered towards branch tips. Primary panicle branches ascending, bearing 2–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 22–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 9–13 mm long, 0.9 length of upper glume, membranous, 1-keeled, 3–5 -veined. Lower glume surface glabrous or pubescent. Lower glume apex acute. Upper glume lanceolate, 10–15 mm long, 0.8 length of adjacent fertile lemma, membranous, 1-keeled, 7(–9) -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

Florets. Fertile lemma oblong, 12–17 mm long, chartaceous, much thinner on margins, keeled, 9(–11) -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, (3–)5–10 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.2–4.2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. Subarctic America, Western Canada, and Northwest USA. British Columbia. Washington.

Bromus alopecuroides Poir. *Voy. Barb.* 2: 100 (1789).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Basionym or Replaced Name: *Bromus alopecuroides* Poir., nom superfl, *Encyc. Suppl.* 1: 703 (1810), *B. sericeus* Tenore, in syn, *Fl. Nap.* 2:84 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Barbaria, El Kala,.

Recent Synonyms: *Bromus sericeus* Drobov, Fedde, *Repert.* 21: 39 (1925).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 234 as ssp. *caroli-henrici*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (254, Fig 195), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (174).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): Resembling *Alopecurus*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 10–80 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 5–20 cm long, 3–5 mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 6–20 cm long, 1–3 cm wide. Panicle branches stiff. Spikelets appressed, solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, 24–45 mm long, 3–7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–10 mm long, 0.75–0.9 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume lanceolate, 11–20 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma trullate, 10–18 mm long, 3–5 mm wide, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, spreading or briefly coiled at base of limb, flat below, 11–20 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5–1.2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), North America.

Region. Northern Europe (*), Southeastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Greece, Italy, Crete, Sicily. **Northern Africa, Southern Africa** (*). Algeria, Egypt, Libya, Morocco, Tunisia. Western Cape. **Western Asia.** Cyprus, Iran, Iraq, Lebanon-Syria, Palestine, Israel & Jordan, Turkey. **Indian Subcontinent.** Pakistan. **Australia.** Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), Victoria (*), Tasmania (*). **Northeast USA.** Michigan.

TDWG4. South-West. Southern. Inland. Coast, Tablelands, Western Slopes.

Bromus andringitrensis A. Camus. *Notul. Syst. (Paris)* 15: 136 (1956).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Madagascar, Andringitra: *Perrier 14434* .

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 80–90 cm long. Culm-nodes pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, striately veined, hirsute, with tubercle-based hairs. Ligule an eciliate membrane. Leaf-blades 15–25 cm long, 3–4 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, equilateral or nodding, 22–25 cm long, bearing few spikelets. Panicle axis scaberulous. Panicle branches capillary, terete, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–2.5 mm long.

Fertile Spikelets. Spikelets comprising 9–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 40–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2.5–3.5 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 10 mm long, 0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 2 mm long. Upper glume lanceolate, 11 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

Florets. Fertile lemma lanceolate, 7–153 mm long, herbaceous, keeled, 7 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 6–8 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 4.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Western Indian ocean. Madagascar.

Bromus anomalus Fourn. *Mex. Gram.* :126 (1886).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *H. Galeotti 5757*, no date, Mexico: Oaxaca: Cerro San Felipe, 8000 ft (P; IST: US-A865510 (fragm. ex P; see note on US-A865511)). [not on A865511 has 8500 ft, specimen from Brux. hb.].

LT: *H. Galeotti 5815*, 1840, Mexico: pre Real de Monte, 7000, Cordillera (P; ILT: US-A865511 (fragm. ex P-FOURN-291 & drawing)). LT designated by Wagner in *Brittonia* 7:469 (1952). Note J.H. Beaman & T.R. Soderstrom annotation for choice of lectotypification..

LT: *Hahn s.n.*, Mexico: Mixico: Teotihuacan (P ; ILT: US (fragm.)). LT designated by Soderstrom & Beaman, *Publ. Mus. Mich. St. Univ., Biol. Ser.* 3(5): 495 (1968).

ST: *Karwinski 1001*, Mexico: La Miquiguana, in pratis editoribus (LE; US-A865511 (fragm. ex LE)).

ST: *Liebman 490*, May, Mexico: Chinantla.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (215), F.W.Gould, *The Grasses of Texas* (1975) (88, Fig. 39).

Derivation (Clifford & Bostock 2007): Gk. anomalos, irregular. Diverging from the normal, often with respect to number of lemmas in the spikelet or otherwise unusual for the genus in some respect.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 45–75 cm long. Culm-nodes pubescent. Leaf-sheaths pilose. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–15 cm long, bearing few spikelets. Primary panicle branches drooping. Panicle branches flexuous, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 22–27 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume apex acuminate. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 11 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 1–4 mm long overall. Palea 9.5 mm long. Palea surface puberulous, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.5 mm long, orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Western Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA, Southeastern USA, Mexico. Alberta, British Columbia, Saskatchewan. Colorado, Idaho, Montana, Wyoming. North Dakota, South Dakota. Arizona, California, Nevada, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. Mesoamerica. Costa Rica, Guatemala, Panama.

TDWG4. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, Tamaulipas, Zacatecas. Baja California Sur, Sonora. Jalisco, Michoacan, Oaxaca. Chiapas.

Bromus araucanus R. Phil. *Anal. Univ. Chil.* 94: 343 (1896).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: Jan 1877, Chile: Cordillera de Nahuelbuta (SGO-PHIL-470 ; IT: SGO-37508, US-556382 (fragm. ex SGO)).

Illustrations (Books): M.N.Corréa, *Flora Patagónica* Parte III, Gramineae (1978) (85, Fig. 45).

Derivation (Clifford & Bostock 2007): in honor of the Araucana, a Chilean tribe.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms robust, 70–120 cm long. Lateral branches lacking. Leaf-sheaths pilose. Ligule an eciliate membrane, 4–5 mm long, pubescent on abaxial surface, lacerate. Leaf-blades 3–10 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 15–23 cm long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 17–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 6–7 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 9–11 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 13–18 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4–5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile Central, Chile South.

TDWG4. Chubut, Río Negro, Tierra del Fuego. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso, Chiloe, Aisen, Magellanes. La Araucania. Los Lagos, Magellanes.

Bromus arenarius Labill. *Nov. Holl. Pl.* 1 23. t. 28. (1804).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. in terrb Von, *Leuwin*.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (255, Fig 196), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (504, Fig 98), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (174), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (84, Fig. 12), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (236).

Derivation (Clifford & Bostock 2007): L. arena, sandy place; -aria, pertaining to. Of sandy habitats.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 30–40 cm long. Culm-internodes distally glabrous or pubescent. Culm-nodes pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 3–5 mm wide. Leaf-blade surface glabrous to pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 8–15 cm long. Primary panicle branches spreading. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes clavate, 2 mm long, scaberulous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–8 mm long, 0.75–0.8 length of upper glume, membranous, without keels, 3–4 -veined. Lower glume surface puberulous. Lower glume apex acute. Upper glume lanceolate, 8–10 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume surface puberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 12–15 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous or scabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 10–15 mm long overall. Palea 0.8 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe (*), Australasia, North America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Australia, New Zealand.** Western Australia, South Australia, Queensland, New South Wales, Victoria, Tasmania. Chatham Is, New Zealand North I. **Northwest USA, Northeast USA, Southwestern USA, Mexico.** Oregon. Pennsylvania. Arizona, California, Nevada. Northeast Mexico, Northwest Mexico.

TDWG4. Eremean, South-West. NW & Lake Eyre, Southern. South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Coahuila. Baja California.

Bromus aristatus (Koch) Steud. *Syn. Pl. Gram.* 820. (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Bromopsis aristata*).

Basionym or Replaced Name: *Festuca aristata* C. Koch, *Linnaea*, 21: 412 (1848). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *N. Tzvelev & al.* 314, 7 Jun 1961, [Caucasus]: Dagestan: Bujnask distr.: Verkhn. Kazanishchi 1 (LE). Orig. label: Dagestan, Bujnaskij r-n, vost. chast' Gimrinskogo khrebta, k zap. ot s. Verkhn. Kazanishchi, tenistyj dubovyj les v ushchel'e..

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. arista*, bristle; *-ata*, possessing. The apices of lemmas, paleas or glumes drawn out into a distinct awn.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 40–100 cm long, 2–4 -noded, with 0.33 of their length below uppermost node. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 2–5 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate. Primary panicle branches 2–7 -nate, bearing 1–5 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–22 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4–9 mm long, 0.75–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 7–10 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 8–11 mm long, chartaceous, much thinner above, much thinner on margins, light green, without keel, 7 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 3–7 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus.** North Caucasus, Transcaucasus.

TDWG4. Tablelands, Western Slopes.

Bromus arizonicus (Shear) Stebbins. *Proc. Calif. Acad. Sci., Ser. 4*, 25: 309 (1944).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus carinatus* var. *arizonicus* Shear, *US Dept. Agric., Div. Agrost. Bull.* 23:62 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.G. Pringle s.n.*, 3 May 1884, USA: Arizona: Pima Co.: Tucson, Santa Cruz Valley (US-81568).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (202).

Derivation (Clifford & Bostock 2007): *L. -ica*, belonging to. From Arizona, USA.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 30–70 cm long. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane. Leaf-blades 2–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–25 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, compressed strongly, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 0.8–0.9 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface glabrous or puberulous. Lower glume apex acuminate. Upper glume lanceolate, 1 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume surface glabrous or puberulous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 11–15 mm long, herbaceous, keeled, 7 -veined, more than 3-veined. Lemma surface glabrous or pilose. Lemma apex dentate, 2 -fid, with lobes 0.7–2 mm long, acute, awned, 1 -awned. Principal lemma awn subapical, 7–15 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona, California. New Mexico. Northeast Mexico, Northwest Mexico.

Chihuahua. Baja California.

Bromus armenus Boiss. *Fl. Orient.* 5: 642 (1884).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): from Armenia.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect or geniculately ascending, 10–60 cm long. Culm-internodes distally pubescent. Leaf-sheaths glabrous on surface or pubescent or pilose. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or involute, 7–15 cm long, 2–4 mm wide. Leaf-blade surface pubescent or pilose, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–10 cm long, 2–4 cm wide, bearing few spikelets. Primary panicle branches ascending, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 20–25 mm long, 3–4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–8 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acute. Upper glume lanceolate, 8–10 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface puberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate or elliptic, 12–14 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 4–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 5–6 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Turkey.

Bromus arvensis Linn. *Sp. Pl.* 77 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et

al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Anon.*, (LINN-93.21). LT designated by P. M. Smith, Notes Roy. Bot. Gard. Edinb. 42: 499 (1985).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (76), G.Hegi, *Flora von Mitteleuropa* 1 (1909), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (229), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 534), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (2:32(1980)).

Derivation (Clifford & Bostock 2007): *L. arvum*, arable field; -ensis, denoting origin. Uncultivated species.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 25–90 cm long, 2–8 -noded. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–4 mm long, erose. Leaf-blades 5–20 cm long, 2–6(–10) mm wide. Leaf-blade surface scaberulous, pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, elliptic or ovate, equilateral or nodding, 8–25 cm long, 6–20 cm wide. Primary panicle branches spreading, bearing 1–8 fertile spikelets on each lower branch. Panicle branches flexuous, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–30 mm long.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–24 mm long, 3–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, parallel to lemmas. Lower glume lanceolate, 4–6 mm long, 0.6–0.9 length of upper glume, chartaceous, much thinner above, 1-keeled, 3(–5) -veined. Lower glume apex acute. Upper glume elliptic, 6–8 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, with membranous margins, 1-keeled, 5–7(–9) -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7–9 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 6–10 mm long overall, limb scabrous. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 14$ (8 refs TROPICOS), or 21 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia, North America (*), South America (*).

Region. Northern Europe (*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain (*), GB Aliens (Ryves et al), Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland. : Balears, France, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Baltic States, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Russia.** Irkutsk, Tuva, Primorye. Iran. China North-Central, China Southeast. **Western Canada, Eastern Canada, North-central USA, Northeast USA, Southwestern USA, Southeastern USA.** British Columbia. Ontario, Quebec. North Dakota. New York. Arizona, California, Nevada. Maryland. **Southern South America.** Argentina Northeast.

TDWG4. Gansu. Jiangsu. Himachal Pradesh, Jammu Kashmir. Buenos Aires.

Bromus attenuatus Swallen. *Contrib. U. S. Nat. Herb.* 29: 397 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.G. Meyer & D.J. Rogers* 2937, 11 Aug 1948, Mexico: Nuevo Lesn: Dulces Nombres, Neuvo Lesn, and just east of border into Tamaulipas, 24°N, 99°30'–100°30'W, alt. 1900 m, in rich humus on ledges above dry stream course in canyon on east side of Cerro Linadero (US-1962991; IT: MO-1598493).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. thin*. Spikelets terete or narrow.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100 cm long. Leaf-sheaths smooth or scaberulous, pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.4 mm long. Leaf-blades

30–60 cm long, 8–16 mm wide. Leaf-blade surface scabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 18 cm long. Primary panicle branches drooping, bearing 1–2 fertile spikelets on each lower branch. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–28 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6.5–7.5 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7–8 mm long, 0.6 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 12–13 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 2–3 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico, Southwest Mexico.

TDWG4. Neuvo Leon, Tamaulipas. Michoacan.

Bromus auleticus Trin. ex Nees. *Mart. Fl. Bras.* 2: 468 (1829).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *F. Sellow s.n.*, no date, Uruguay: Montevideo (US-865513 (fragm.)).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (201 & 208, Fig. 41 & 44), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (73, Fig 21), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (95, Fig. 24), B.Rosengurt, *Gramineas Uruguayas I* (1970) (110, Fig. 39), H.M. Longhi-Wagner, *Flora Illustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): Gk. aulos, flute; -ike, belonging to. From Auletus, now Aulet, Spain.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 40–120 cm long. Leaf-sheaths glabrous on surface or pilose, with reflexed hairs. Ligule an eciliate membrane. Leaf-blades 30–65 cm long, 3–4 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–11 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 7–11 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 9–13 mm long, chartaceous, without keel, more than 3-veined. Lemma surface glabrous or pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 1–6 mm long overall. Palea 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–8 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, dark brown, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Brazil, Southern South America. Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest.

TDWG4. Sao Paulo Parana, Catarina, Rio Grande do Sul. San Luis. Buenos Aires, Cordoba, Entre Rios, La Pampa, Santa Fe.

Bromus ayacuchensis Saarela & P.M.Peterson. *Sida* 22:919 (2006).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Peru: Depto. Ayacucho: Prov. Lucanas: 12 km E of Puquio on road towards Cuzco (14°41' 19.2S x 74° 04' 28.3"W), 3730 m, among large boulders with Berberis, above meadow with small creek, 11 Mar 2002, *P.M. Peterson & N.F. Refulio-Rodriuez 16425* (HT: US; IT: K, MO, UBC, USM).

Illustrations (Journals): *Sida* (22 (2): 920, Fig. 2 (2006)).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Cataphylls evident. Rhizomes short. Basal innovations extravaginal. Culms erect, (30–)50–120 cm long. Culm-internodes distally pilose. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 0.66–0.75 of their length closed, 8–10 cm long, pilose, with reflexed hairs, outer margin glabrous. Ligule an eciliate membrane, 3–6.6 mm long, pilose on abaxial surface, erose, obtuse. Leaf-blades 20–55 cm long, 3–8 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, loose, equilateral or nodding, 12–26 cm long, 1–8 cm wide. Primary panicle branches ascending or spreading or drooping, 2–4 -nate, 1.5–10 cm long. Panicle axis scabrous, with scattered hairs or glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, (12–)18–27 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–3 mm long.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–8 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex obtuse. Upper glume lanceolate, 8–11.2 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume surface glabrous or pilose. Upper glume apex acute, mucicous or mucronate.

Florets. Fertile lemma lanceolate, 10–12.6 mm long, chartaceous, keeled, 5–7 -veined, more than 3-veined. Lemma surface pubescent. Lemma hairs 0.2–0.5 mm long. Lemma apex entire or dentate, 2 -fid, with lobes 0.2 mm long, awned, 1 -awned. Principal lemma awn apical or from a sinus, 3–5.5 mm long overall. Palea 9–12 mm long. Palea keels ciliate. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, elliptic or obovate, 1–1.3 mm long, membranous. Anthers 3, 3.1–3.8 mm long, yellow or orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblanceolate, 5.8–7 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Peru.

Bromus benekenii (Lange) Trimen. *Journ. Bot., Lond.* 10: 333 (1872).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Basionym or Replaced Name: *Schedonorus benekenii* Lange, *Fl. Dan.* t. 2826 (1871).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (70).

Derivation (Clifford & Bostock 2007): in honor of Ferdinand Beneken (1800–1859) German apothecary.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 45–120 cm long. Leaf-sheaths hispid, with reflexed hairs. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1–3 mm long, erose. Leaf-blades drooping, 10–25 cm long, 4–12 mm wide, dark green. Leaf-blade surface scaberulous, glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence a panicle. Peduncle glabrous or pubescent above (obscurely), tipped by a glumaceous appendage. Panicle contracted, oblong, nodding, 12–20 cm long. Primary panicle branches appressed, 1–3 -nate, 3–7.5 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches flexuous, scaberulous. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–6 mm long.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume linear, 5–9 mm long, 0.7–0.8 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 8–11 mm long, 0.7–0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 10–14 mm long, chartaceous, much thinner on margins, without keel or keeled, lightly keeled, 5 -veined, more than 3-veined. Lemma surface scaberulous, hirsute (near margins). Lemma apex entire, awned, 1 -awned. Principal lemma awn subapical, 3–8 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 28$ (5 refs TROPICOS), or 42 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain, Norway. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : France, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, Middle Asia, Caucasus, Western Asia, China, Russia. Altay. Kazakhstan. Iran. Xinjiang.

Bromus berterioanus Colla. *Mem. Acc. Torin.* 9: 25 (1836).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus trinii* E.Desv., non *B. hirtus* Licht (1817), C. Gay, *Fl. Chil.* 6: 441. (1853). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Betero 117*, Chile (TO(photo, CONC); IT: P(photo, CONC), SGO).

Recent Synonyms: *Bromus trinii* E.Desv., non *B. hirtus* Licht (1817), C. Gay, *Fl. Chil.* 6: 441 (1853).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (223), S.A.Renvoize, *Gramineas de Bolivia* (1998) (244, Fig 48), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (as *B. trinii*).

Derivation (Clifford & Bostock 2007): in honor of Carlo Guiseppe Bertero (1789–1831) Italian botanist, physician, pharmacist and traveller.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 10–80 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 5–20 cm long, 2–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate or oblong, dense, 5–15 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, scaberulous.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, 13–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–8 mm long, 0.3–0.6 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, muticous or awned, 1 -awned, awn 0–2 mm long. Upper glume lanceolate, 10 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 2–3 mm long.

Florets. Fertile lemma elliptic, 10–12 mm long, chartaceous, keeled, 7 -veined, more than 3-veined. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–15 mm long overall, with twisted column. Palea lanceolate, 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy.

Distribution (TDWG). Continent. Europe (*), North America, South America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Northwest USA, Southwestern USA, Mexico.** Colorado, Oregon. Arizona, California, Nevada, Utah. Northeast Mexico, Pacific Is (Mexico), Northwest Mexico. **Western South America, Southern South America.** Bolivia. Argentina South, Argentina Northwest, Chile North, Chile Central, Juan Fernandez Is.

TDWG4. Mendoza. La Pampa. Chubut, Neuquén, Río Negro. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Tarapaca, Antofagasta, Atacama. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania. Chihuahua. Baja California Sur.

Bromus biebersteinii Roem. & Schult. *Syst 2*: 638 (1817).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Friedrich August Marschall von Bieberstein (1768–1826) German-born Russian botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect or geniculately ascending, 50–100 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 2–4 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 7–15 cm long, 1–2 cm wide. Primary panicle branches ascending, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 8–11 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 10–14 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblanceolate, 14–16 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 2–4 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus, Western Asia.** Iran, Iraq.

TDWG4.

Bromus bikfayensis A. Camus & Gombault. *Bull Soc. Bot. France*, 1, 4: 310 (1937).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Bikfaya, Lebanon.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 130–150 cm long. Culm-nodes bearded. Lateral branches lacking. Leaf-sheaths pilose, with reflexed hairs, outer margin hairy. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 5 mm long. Leaf-blades 30–35 cm long, 6–8 mm wide. Leaf-blade surface pilose, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 20–30 cm long, bearing few spikelets. Primary panicle branches appressed, 2 -nate, 5–6 cm long. Panicle axis scaberulous. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 50–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 4–5 mm long, eventually visible between lemmas, pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 12–13 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume apex acuminate. Upper glume lanceolate,

13–15 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate, awned.

Florets. Fertile lemma lanceolate, 16–18 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 7–8 mm long overall. Palea 12–13 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 7–8 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, 14–16 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Lebanon-Syria.

Bromus borianus H.Scholz. Willdenowia, 11(1): 95 (1981).

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Marand to Sufen: Rechinger 41172 (W holo).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iran.

Bromus bonariensis L. Parodi & J. H. Camara. *Rev. Argent. Agron.* 29: 12 (1963).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *L. R. Parodi 10329*, 9 Nov 1932, Argentina: Prov. Buenos Aires: Sierra de Curru-Malal (BAA; IT: L, SI, US-1539642).

Illustrations (Books): A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (88, Fig. 22).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Provincia de Buenos Aires, Argentina.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations intravaginal. Culms 40–70 cm long, 4–5 -noded. Culm-nodes glabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–1.5 mm long, obtuse. Leaf-blades flat or conduplicate, 6–20 cm long, 1–2.5 mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 12–20 cm long. Primary panicle branches spreading, 2–4 -nate, 2–8 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 20–40 mm long, 6–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3 mm long, pubescent. Floret callus glabrous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 10–11 mm long, 0.75 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acuminate. Upper glume lanceolate, 14–15 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 7–9 -veined. Upper glume surface scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 16–18 mm long, chartaceous, keeled, 9 -veined, more than 3-veined. Lemma midvein scabrous. Lemma surface scabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 3–5 mm long overall. Palea 13–14 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 1 mm long, membranous. Anthers 3, 3–7 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, 7–9 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina Northeast.

TDWG4. Buenos Aires, La Pampa.

Bromus brachyantherus Doell. *Mart. Fl. Bras.* 2 (3): 110 (1878).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Brachiaria uruguayensis* Arech., *An. Mus. Montevideo*, 1: 493 (1897).
T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *F. Mueller s.n.*, no date, Brazil: Santa Catarina (US-865511 (fragm.)).

Recent Synonyms: *Bromus uruguayensis* Arech., *An. Mus. Montevideo*, 1: 493 (1897).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (201 & 205, Fig. 41 & 43), A.Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, Gramineas (1969) (72, Fig. 20 & as *B. uruguayensis*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (91, Fig. 23), B.Rosengurt, *Gramineas Uruguayas I* (1970) (110, Fig. 39 & as ssp. *uruguayensis*), H.M. Longhi-Wagner, *Flora Illustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): Gk. brachys, short; antherix, ear or spike of wheat. Inflorescence or inflorescence branches short and spicate.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths withering. Culms 40–70 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades 4–8 mm wide, dark green. Leaf-blade surface glabrous or puberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 3–4 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 5–8 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 8–12 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, glabrous or pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 6–12 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1–1.8 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, 7.5 mm long, hairy at apex, apex fleshy. Hilum linear.

$2n = 42$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Brazil, Southern South America. Bolivia. Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest.

TDWG4. Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Tucuman. Buenos Aires, Cordoba, Corrientes, Distrito Federal, Entre Rios, Misiones.

Bromus brachystachys Hornung. *Flora*, 16, 2: 417 (1833).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Hornung*, 1831, Germany: In der Ndh. von Aschersleben an einem Ackerraine untermischt mit *Br. arvensis* fand.

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 230), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (135, Pl. 45).

Derivation (Clifford & Bostock 2007): Gk. brachys, short; stachys, ear of corn.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose, clumped loosely. Culms erect or geniculately ascending, 30–50 cm long. Culm-internodes smooth, distally glabrous. Culm-nodes glabrous or pubescent. Lateral branches ample. Leaf-sheaths hirsute, with reflexed hairs. Ligule an eciliate membrane. Leaf-blades 5–20 cm long, 2–4 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, linear or oblong, 6–15 cm long, 2–4 cm wide. Primary panicle branches whorled at lower nodes, indistinct the panicle almost racemose to moderately divided, 0–5 cm long, bearing 1–4 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong, laterally compressed, 6–9 mm long, 4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, parallel to lemmas. Lower glume oblong, 3.5–4 mm long, 0.9 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume oblong, 4–4.5 mm long, 0.9–1 length of adjacent fertile lemma, chartaceous, 1-keeled, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–5 mm long, 3–4 mm wide, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface smooth or scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 6–7 mm long overall. Palea 0.8–0.9 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe (*), Temperate Asia.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Western Asia, China.** Afghanistan, Iraq. China North-Central.

TDWG4. Gansu.

Bromus brevis Steud. *Syn. Pl. Gram.* 326. (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

TYPE from Argentina. **Basionym or Replaced Name:** *Ceratochloa brevis* (Steudel) Jacks., *Ind. Kew.* 1:487 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Gillies s.n.*, Argentina: Mendoza (?; IT: K(fragm., US)).

Illustrations (Books): S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (174), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (91, Fig. 23), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (80, Fig. 37).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. short. Culms short.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 20–70 cm long. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades flat or conduplicate, 2–4 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate, 10–25 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed strongly, 14–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8–9 mm long, 0.9 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 8–9 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 8–14 mm long, chartaceous, keeled, 5–7 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma apex mucronate or awned, 1 -awned. Principal lemma awn subapical, 1–2 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 42$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), Australasia (*), South America.

Region. Northern Europe (*).

Country /Province /State. : Great Britain (*). **Australia, New Zealand.** New South Wales (*), Tasmania (*). New Zealand South I. **Southern South America.** Argentina Northeast, Argentina South.

TDWG4. Buenos Aires. Neuquén, Río Negro, Santa Cruz.

Bromus briziformis Fisch. & Mey. *Ind. Sem. Hort. Petrop.* 3: 30 (1837).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *C.A. Meyer 1036.27*, [Caucasus: Azerbajdzhan]: Taliisch (LE, 4 sheets). herb. Ledebour.

3 IT: (LE).

HT: *C. Meyer*, 1830, Iran: Tahlysh: in locis aridis montosis prope pag. Limar (LE).

Illustrations (Books): N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 18), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (137, Pl. 46), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (227).

Derivation (Clifford & Bostock 2007): L. forma, appearance. The spikelets resemble those of *Briza*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 10–20 cm long. Leaf-sheaths tubular for much of their length, pubescent. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 4–7 mm wide, flaccid. Leaf-blade surface pilose, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, equilateral or nodding, 8–16 cm long. Primary panicle branches 3–6 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 10–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 10–20 mm long, 3.5–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume oblong, 5–6 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 6–8 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 7–9 mm long, chartaceous, keeled, 7–9 -veined, more than 3-veined. Lemma surface glabrous. Lemma apex acute, mucous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (2 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia, North America.

Region. Northern Europe (*), Middle Europe, Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). Ukraine. **Middle Asia, Caucasus, Western Asia.** Tadzhikistan. Iran, Iraq. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** Alaska. British Columbia. Ontario. Idaho, Montana, Oregon, Washington, Wyoming. Kansas, Nebraska, Oklahoma, South Dakota. Indiana, Massachusetts, Michigan, Ohio, New York, Pennsylvania. California, Nevada, Utah. New Mexico. Delaware, Maryland.

TDWG4.

Bromus brizoideus (nomen illeg.) Crepin. *Bull. Soc. Roy. Bot. Belgique* 6: 399 (1867).

Basionym or Replaced Name: *Bromus arduennensis*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. -oidea, resembling. Similar to *Bromus*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 60–130 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 5–10 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, nodding, 18–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, compressed slightly, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.75 length of upper glume, coriaceous, without keels, 3–5 -veined. Lower glume lateral veins prominent. Lower glume surface glabrous or pubescent. Lower glume apex attenuate. Upper glume lanceolate, 0.75 length of adjacent fertile lemma,

coriaceous, without keels, 5–7 -veined. Upper glume primary vein conspicuous. Upper glume surface glabrous or pubescent. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 12–14 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface glabrous or pubescent. Lemma margins involute. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn subapical, 8–12 mm long overall. Lateral lemma awns present, 1–3 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, concavo-convex, 3 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe.

Region. Northern Europe (*), Middle Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Belgium, Germany.

Bromus bromoideus (Lej.) Crep. *Bull. Soc. Bot. Belge* 6:399 (1867).

Accepted by: T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Distribution (TDWG). Continent. Europe.

Region. Middle Europe.

Country /Province /State. : Belgium.

Bromus cabrerensis C. Acedo & F. Llamas. *Willdenowia*, 27: 48 (1997).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Spain: La Cabrera, Truchas, 29TQG18, beside an irrigation channel, with *Holcus lanatus*, *Poa trivialis*, ... on nitrophilous soil, 7 Jul 1992, F. Llamas & C. Acedo *s.n.* (LEB-52595).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From La Cabrera, Spain.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms erect, 85–120 cm long, 5–8 -noded. Leaf-sheaths 9–15 cm long, pubescent. Ligule an eciliate membrane, 2–3 mm long, entire, acute. Leaf-blades 15–30 cm long, 4.5–10 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface hirsute, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, elliptic, equilateral, 10–20 cm long, 2–5 cm wide. Primary panicle branches bearing 1–6(–25) fertile spikelets on each lower branch. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, subterete, 12–13 mm long, 3–3.5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes curved, 0.75–1 mm long, obscured by lemmas, pilose, hairy all along but hairs longer above, with 0.2 mm long hairs. Floret callus evident, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet, parallel to lemmas. Lower glume ovate, 5.5–7 mm long, 0.9–1 length of upper glume, chartaceous, much thinner on margins, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 6–7 mm long, 0.9–1 length of adjacent fertile lemma, chartaceous, with scarious margins, without keels, 7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 6–7.5 mm long, 4–4.5 mm wide, herbaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface pilose. Lemma hairs 0.1–0.3 mm long. Lemma apex erose or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 5–8 mm long overall, 0.6–1.2 length of lemma, limb scaberulous. Palea oblong, 6–7 mm long, 0.9–1 length of lemma. Palea keels ciliolate or ciliate. Palea apex erose, emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 1 mm long, membranous. Anthers 3, 2–2.5 mm long. Stigmas 2, white. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, flattened, concealed by floret, 6–7 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis. Disseminule comprising a floret.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Spain.

Bromus cappadocicus Boiss. & Bal. *Bull. Soc. Bot. Fr.* 4: 306 (1857).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Turkey: Phrygia: Ouchak, 900 m, 20 June 1857, *B. Balansa 1344* (HT: ?; IT: LE) Balansa pl. Or. exsicc. 841.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Cappadocia, a region of Central Turkey.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Butt sheaths glabrous, persistent and investing base of culm, with reticulate dead sheaths. Culms erect, slender, 25–40 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades involute, 2–3.5 cm long, 1.5 mm wide, stiff, glaucous. Leaf-blade surface pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, ovate, 3–9 cm long. Primary panicle branches drooping, 2–3 -nate, bearing 1–2 fertile spikelets on each lower branch. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 14–25 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 7–8 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 8–10 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, ascending or spreading, 4–6 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–2.75 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 56$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia.

Region. Southeastern Europe.

Country /Province /State. : Albania, Bulgaria, Greece, Yugoslavia. **Caucasus, Western Asia, China.** Iran, Turkey. China North-Central.

TDWG4. Gansu.

Bromus carinatus Hook. & Arn. *Bot. Beech. Voy. Suppl.* 403. (1841).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Basionym or Replaced Name: *Ceratochloa carinata* (Hook. & Arn.) Tutin, Clapham, Tutin & E.F. Warb. *Fl. Brit. Isles*, 145 (1952). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *D. Douglas s.n.*, 1833, USA: California: Monterrey or San Francisco, at no great distance from the coast (BM; ILT: US-865522 (fragm.)). LT designated by ?; cited by Pavlick, *Bromus of N. Amer.* 140 (1995).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (71), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (as var. *carinatus* & var. *marginatus*), F.W.Gould, *The Grasses of Texas* (1975).

Derivation (Clifford & Bostock 2007): L. carina, keel; -atus, possessing. Spikelets with keeled lemmas or glumes.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, short-lived. Culms 30–100 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths tubular for much of their length, with 0.75 of their length closed, pilose. Leaf-sheath auricles absent or falcate, 0.5 mm long. Ligule an eciliate membrane, 1–3 mm long, glabrous on abaxial surface or pilose on abaxial surface, erose. Leaf-blades 3–12 mm wide. Leaf-blade surface glabrous to pilose.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–25 cm long. Primary panicle branches appressed or ascending. Panicle branches terete. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, compressed strongly, 15–45 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5–9 mm long, 0.5 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 10–15 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 5(–7) -veined. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 11–15 mm long, herbaceous, keeled, 7 -veined, more than 3-veined. Lemma surface smooth or scaberrulous, glabrous to pubescent. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn subapical, 3–15 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1–5 mm long, eventually exerted or retained within floret. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 56$ (3 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia, North America, South America.

Region. Northern Europe, Middle Europe.

Country /Province /State. : Great Britain (*). : Netherlands. **China, Eastern Asia.** China North-Central. Taiwan. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico.** Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Mesoamerica, Western South America, Southern South America.** Colombia.

TDWG4. Beijing. Distrito Federal, Mexico State, Morelos, Puebla. Coahuila, Chihuahua, Durango, Hidalgo, San Luis Potosi, Zacatecas. Veracruz. Baja California, Sinaloa. Michoacan, Oaxaca. Chiapas.

Bromus caroli-henrici Greuter. *Ann. Naturhist. Mus. Wien* 75: 83 (1971) [1972].

Regarded by K as a synonym (*B. alopecuroides*).

TYPE from Greece. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Kato Lastos, in faucibus Kunepa, 23 May 1963, *Greuter 5518*.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (234).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Flower and Fruit. $N = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, North America.

Region. Southeastern Europe.

Country /Province /State. : Greece. **Southwestern USA.** California.

Bromus catharticus Vahl. *Symb. Bot.* 2: 22 (1791).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *B.unioides*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *B.unioides*), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Ceratochloa cathartica* & *C. unioides*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from South America. **Basionym or Replaced Name:** *Bromus willdenowii* Kunth, nom nov, *Rev. Gram.* 1: 134 (1829). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *P. Commerson s.n.*, no date, Peru: Lima (US-865523). LT designated by Pinto-Escobar, *Caldasia* 11(54): 9–16 (1976); also discussed in *Bot. Jahrb. Syst.* 102: 447 (1981); and Hitchcock, *Amer. J. Bot.* 21: 127 (1934).

Recent Synonyms: *Ceratochloa cathartica* (Vahl) Herter, *Rev. Sudamer. Bot.* 6:144 (1940). *Bromus bolivianus* S.A. Renvoize, *Gramineas de Bolivia*: 247 (1998).

Bromus unioides H. B. & K., *Nov. Gen. et Sp.* 1: 151. (1815).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):61, T. 17 as *B. unioides*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (63, Fig. 35), G.E.Gibbs Russell et al, *Grasses of Southern Africa* (1990), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 244), L.Boulos, *Flora of Egypt* 4 (2005) (187, Pl. 53), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (34, Fig 6), C-C Hsu,

Flora of Taiwan, Vol 5 (1978) (296), C-C Hsu, *Taiwan Grasses* (1975), K.M. Matthew, *Flora Palni Hills* (1996) (794, Pl. 794), H.J. Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28), J.P. Jessop, G.R.M. Dashorst & F.M. James, *Grasses of South Australia* (2006) (256, Fig. 197), C.A. Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (93, Pl. 26 as *Ceratochloa*), N. Walsh & T. Entwistle, *Flora of Victoria* Vol 2 (1994) (509, Fig 99), S.W.L. Jacobs, R.D.B. Whalley & D.J.B. Wheeler, *Grasses of New South Wales*, 4th edn (2008) (174), J.C. Tohill, & J.B. Hacker. *The grasses of southern Queensland* (1983) (as *B. unioloides*), T.D. Stanley & E. Ross, *Flora of South East Queensland, Gramineae* (1989) (123, Fig. 19), A. Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (84, Fig. 12), E. Edgar. & H.E. Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (357, Fig. 12 as *B. willdenowii*), W.L. Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1506, Pl. 221 as *B. willdenowii*), M.E. Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (200, as var. *catharticus* & var. *elatus*), F.W. Gould, *The Grasses of Texas* (1975) (85, Fig. 37 as *B. unioloides*), A.S. Hitchcock, *Manual of the Grasses of the West Indies* (1936) (25, Fig. 6), S.A. Renvoize, *Gramineas de Bolivia* (1998) (244, Fig. 48), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (201, Fig. 41 & 202, Fig. 42), A. Burkat, *Flora Illustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (68, Fig. 17 & 69, Fig. 18 as *B. unioloides*), A.L. Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (91, Fig. 23 as *B. unioloides*), M.N. Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (82, Fig. 43 as *B. unioloides*), B. Rosengurtt, *Gramineas Uruguayas I* (1970) (112, Fig. 40 as *B. unioloides*), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 539), H.M. Longhi-Wagner, *Flora Illustrada do Rio Grande do Sul, Gramineae, Poaceae* (1987), E. Haflioger & E. Schultz, *Grass Weeds*, CIBA-GEIGY (2:33(1980)).

Illustrations (Journals): *Novon* (8: 55 Figs. 1 & 2 (1998) as var. *catharticus* & var. *rupestris*), *Ruizia* (13:138, Fig. 14f (1993)).

Images: D. Sharp & B.K. Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, L. Boulos, *Flora of Egypt* 4 (2005);, F. van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): *L. catharticus*, purge. If ingested, liable to damage the gut.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 80–100 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 10–30 cm long, 3–8 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 10–40 cm long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, compressed strongly, 16–40 mm long, 4–10 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 10–15 mm long, 0.9 length of upper glume, chartaceous, 1-keeled, 5–9 -veined. Lower glume apex acuminate. Upper glume lanceolate, 11–17 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, 1-keeled, 9–13 -veined. Upper glume apex acuminate.

Florets. Fertile florets imbricate to tip. Fertile lemma oblong, laterally compressed, 12–20 mm long, 3–7 mm wide, chartaceous, much thinner on margins, keeled, distinctly keeled, 9–13 -veined, more than 3-veined. Lemma surface scaberrulous, rough on veins. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 1–9 mm long overall. Palea 0.7–0.7 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$N = 21$ (1 ref TROPICOS). $2n = 42$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America, Antarctica.

Region. Northern Europe (*), Southwestern Europe, Eastern Europe.

Country /Province /State. : Great Britain (*). : France, Portugal, Azores. Central European Russia, East European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa** (*), **Middle Atlantic ocean.** Algeria, Egypt, Morocco, Tunisia. Azores, Canary Is, Madeira. Rwanda. Eritrea, Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Zimbabwe. Namibia, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. St Helena. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Eastern Asia.** Tadzhikistan. Iran. Kuwait. China South Central, Inner Mongolia, China North-Central, China Southeast. Japan, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Malesia.** Assam, Eastern Himalaya, Pakistan, Sri Lanka. Java. **Australia, New Zealand.** Western Australia (*), South Australia (*), Queensland (*),

New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord Howe-Norfolk Is (*). Chatham Is, Kermadec Is, New Zealand North I, New Zealand South I, Stewart Is. **North-central Pacific.** New Caledonia (*). Easter Is (*). Hawaii (*). **Eastern Canada, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Labrador, Ontario. Kansas, Oklahoma, South Dakota. New York. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Virginia. Central Mexico, Northeast Mexico. **Mesoamerica, Caribbean, Northern South America, Western South America, Brazil, Southern South America.** Bermuda (& as *B. unioides*), Dominican Republic (as *B. unioides*), Haiti (& as *B. unioides*), Jamaica (& as *B. unioides*). Bolivia, Colombia. Brazil West Central, Brazil Southeast, Brazil South. Argentina Northeast, Argentina South, Argentina Northwest, Chile North, Chile Central, Chile South, Juan Fernandez Is. **Subantarctic islands.** Falkland Is (Malvinas), Tristan de Cunha.

TDWG4. Hebei. Jiangsu. Guizhou, Yunnan. Darjeeling, Bhutan. Tamilnadu. Himachal Pradesh. South-West. NW & Lake Eyre, Southern. Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Catamarca, Jujuy, La Rioja, Mendoza, Salta, Santiago del Estero, San Juan, San Luis, Tucuman. Buenos Aires, Chaco, Cordoba, Corrientes, Distrito Federal, Entre Rios, Formosa, La Pampa, Misiones, Santa Fe. Chubut, Neuquén, Río Negro, Santa Cruz. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso, Chiloe, Aisen, Magallanes. Tarapaca, Antofagasta, Atacama. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania. Los Lagos, Aisen, Magallanes. Distrito Federal. Neuvo Leon, Zacatecas.

Bromus cebadilla Steud. *Syn. Pl. Gram.* 321. [12/13 April] (1854).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002).

TYPE from Chile. **Basionym or Replaced Name:** *Bromus valdivianus* Phil., *Linnaea*, 29: 102 (1858), *Bromus stamineus* E.Desv., C. Gay, *Fl. Chil.* 6: 440 [after mid 1854] (1854). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: ST: *C.G. Bertero 117*, 1828, Chile: Juan Fernandez Islands: Rancagua (P; IT: US-865524 (fragm. ex P)). Also type of *Bromus stamineus* E. Desv..

ST: *Bertero 118*,

ST: *Bertero 861*,

ST: *Bertero 1411*,

Recent Synonyms: *Bromus stamineus* E.Desv., C. Gay, *Fl. Chil.* 6: 440 [after mid 1854] (1854). *Bromus valdivianus* Phil., *Linnaea*, 29 102 (1858).

Illustrations (Books): N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (509, Fig 99), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (82, Fig 41 as *B. stamineus*).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): Span. cebada, barley; -illa, diminutive.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–120 cm long. Lateral branches lacking. Leaf-sheaths pilose. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades 12–30 cm long, 4–7 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–11 mm long, 0.9 length of upper glume, membranous, 1-keeled, 5–7 -veined. Lower glume apex acute. Upper glume lanceolate, 7–13 mm long, 0.75–1 length of adjacent fertile lemma, membranous, 1-keeled, 9 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10–13 mm long, chartaceous, keeled, 7–9 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 8–12 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe (*), Australasia (*), South America.

Region. Northern Europe (*).

Country /Province /State. : Great Britain (*). **Australia, New Zealand.** New South Wales (*), Victoria (*), Tasmania (*). New Zealand North I, New Zealand South I, Stewart Is. **Southern South America.** Chile North, Chile Central, Juan Fernandez Is.

TDWG4. Tablelands, Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.

Bromus ceramicus Ohwi. *Bull. Tokyo Sci. Mus.*, No. 18, 11 (1947).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Eyma 2246*, 24–25 Nov 1937, Ceram: G. Ueimpoku, 3000 m (BO; IT: L). L lists holding as HT.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ica*, belonging to. From Seram, Indonesia.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–60 cm long, 3–4 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1 mm long, truncate or obtuse. Leaf-blades 10–15 cm long, 2–3.5 mm wide. Leaf-blade surface pilose, hairy on both sides.

Inflorescence. Inflorescence a panicle, comprising 6–12 fertile spikelets. Peduncle glabrous. Panicle open, nodding, 8–12 cm long, bearing few spikelets. Primary panicle branches 2–3 -nate, bearing 1–2 fertile spikelets on each lower branch. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 17–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–2 mm long, pilose. Floret callus glabrous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–5.5 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 8–9 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma margins pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4–6 mm long overall. Palea 7 mm long, 0.7–0.8 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, 7 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Moluccas.

Bromus chrysopogon Viv. *Fl. Lyb. Spec.* 4. t. 2 (1824).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Cyrenaica,.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. *chrysos*, yellow; *pogon*, beard. Most species have golden-yellow hairs at the base of the spikelet.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 20–25 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 5–10 cm long, 2.5–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, obovate, dense, 4–5 cm long, 1–2.5 cm wide. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–25 mm long, 4–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, 0.75 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume lanceolate, 7–9 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 9–11.5 mm long, 3–4 mm wide, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 8–14 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.25–0.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa, Temperate Asia.

Country /Province /State. Northern Africa. Libya. Western Asia. Turkey.

Bromus ciliatus Lam., non L. (1753), in syn. *Fl. Fr.* 3: 609 (1778).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Bromopsis canadensis*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *B. yezoensis*).

TYPE from France. **Basionym or Replaced Name:** *Bromopsis ciliaris* Panzer, in syn, *Pflanzenz. Syst.* 12: 429 (1785). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: France,.

Recent Synonyms: *Bromus yezoensis* Ohwi, *Acta Phytotax. & Geobot.* 2: 30 (1933).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (73), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (223).

Derivation (Clifford & Bostock 2007): *L. cilium*, eyelid; -ata, possessing. Plant hairy overall or in part.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 60–100 cm long. Culm-nodes pubescent. Leaf-sheaths without keel, pubescent, with reflexed hairs. Ligule an eciliate membrane. Leaf-blades 5–10 mm wide. Leaf-blade surface smooth or scaberulous, glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–20 cm long. Primary panicle branches drooping, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–20 mm long.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear or lanceolate, 0.75–0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 0.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate, awned.

Florets. Fertile lemma oblong, 10–11 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma margins pubescent, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 3–3.5 mm long overall. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), Temperate Asia, North America.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). Russian far east, **China, Mongolia, Eastern Asia, Russia.** Kamchatka, Kuril Is, Sakhalin. Inner Mongolia. Mongolia. Japan. Japan Hokkaido. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** Alaska. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Minnesota, North Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico. Maryland.

TDWG4.

Bromus coloratus Steud. *Syn. Pl. Gram.* 429 (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Lechler 1221*, Chile: Magallanes: near Sandy Point (P; IT: BHU, K, LE, M, US-1127134, US-87197 (fragm., possible type)).

Illustrations (Books): M.N.Corréa, *Flora Patagónica* Parte III, Gramineae (1978) (80, Fig. 38).

Derivation (Clifford & Bostock 2007): *L. color*, color; -ata, possessing. Colored unusually, especially with reference to lemmas.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 80–130 cm long. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades 15–30 cm long, 2–5 mm wide. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–30 cm long. Primary panicle branches 2–3-nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed strongly, 10–21 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7.5–9 mm long, 0.8 length of upper glume, membranous, 1-keeled, 3–5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–11 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 10–12 mm long, chartaceous, keeled, 5–7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface glabrous or puberulous, hairy below. Lemma apex awned, 1-awned. Principal lemma awn subapical, 5–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile Central, Chile South.

TDWG4. Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego. Chiloe, Aisen, Magallanes. Valparaíso, Biobío, La Araucanía. Los Lagos, Aisen, Magallanes.

Bromus commutatus Schrad. *Fl. Germ.* 1: 353 (1806).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Germany. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Germany: Inter segetes, ad vias, sepes, alibique,.

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (86), G.Hegi, *Flora von Mitteleuropa* 1 (1909), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (175), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (229), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (95, Fig. 24), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (112, Fig. 40), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poaeae* (1987), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:34(1980)).

Derivation (Clifford & Bostock 2007): *L. commuto*, change. Of species that in the opinion of the proposer may be confused with another.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–150 cm long, 3–5 -noded. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–4 mm long, erose. Leaf-blades 10–30 cm long, 3–9 mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Peduncle glabrous or pubescent above. Panicle open, elliptic or oblong, effuse, nodding, 6–25 cm long. Primary panicle branches ascending, 3–12 cm long, bearing 1–4 fertile spikelets on each lower branch. Panicle branches flexuous, scabrous, glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 20–40 mm long.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, compressed slightly, 18–28 mm long, 4.5–7 mm wide, breaking up at maturity, disarticulating early below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, parallel to lemmas. Lower glume oblong, 5–7 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels, 3–5 -veined.

Lower glume apex acute. Upper glume elliptic, 6–9 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 5–9 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic or obovate, 8–11 mm long, coriaceous (thinly), much thinner on margins, without keel, 7–11 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 4–10 mm long overall, limb scabrous. Palea 0.8–0.9 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, fusiform, concealed by floret, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 14$ (1 ref TROPICOS), or 28 (4 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Australasia, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Great Britain, Ireland, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, France, Spain. : Albania, Greece, Italy, Romania, Sicily, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Baltic States, Krym, Central European Russia, Northwest European Russia, Ukraine. **Northern Africa, Southern Africa** (*). Algeria, Morocco, Tunisia. Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Russian far east, **Middle Asia, Caucasus, Western Asia.** Primorye. Kazakhstan, Tadjikistan. Iran, Iraq. **Australia, New Zealand.** New Zealand North I, New Zealand South I. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, Mexico.** Northwest Territories. British Columbia. Quebec. Colorado, Oregon. Minnesota. Michigan, Ohio, New Jersey, New York, Pennsylvania. California, Utah. **Brazil, Southern South America.** Brazil South. Argentina Northeast.

TDWG4. Mendoza. Buenos Aires, Corrientes, Distrito Federal, La Pampa. Neuquén, Río Negro.

Bromus confinis Nees ex Steud. *Syn. Pl. Gram.* 320 (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. adjoining. Geographical distribution overlapping that of another species.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose, clumped loosely. Rhizomes elongated. Culms erect or geniculately ascending, 50–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 10–25 cm long, 3–6 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 10–18 cm long. Primary panicle branches indistinct the panicle almost racemose, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, (15–)20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–10 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 9–14.5 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma lanceolate or oblong, 11–16 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 1.5–6 mm long overall. Palea 1 length of lemma. Palea keels ciliolate. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–7 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). **Continent.** Temperate Asia, Tropical Asia.

Country /Province /State. **Western Asia, China.** Iran, Iraq. China North-Central. **Indian Subcontinent.** India, Pakistan, West Himalaya.

TDWG4. Gansu.

Bromus danthoniae Trin. *C. A. Mey. Verz. Pfl. Cauc.* 24 (1831).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Caucasus. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *C. A. Meyer* 124, 1829, 1830, Pr. pag. Swant. (LE).

LT: *C. A. Meyer s. n.*, 22 Jun 1830, Caucasus: Azerbaijan: Talush: in collibus lapidosis aridis pr. pag. ant (LE). LT designated by ?; cited by Scholz (as holotype), *Willdenowia* 28: 144 (1998).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 232), L.Boulos, *Flora of Egypt* 4 (2005) (187, Pl. 53), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 20), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (139, Pl. 47), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (581, Fig 64), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (234), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 538).

Derivation (Clifford & Bostock 2007): spikelets resemble those of *Danthonia*..

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 5–40 cm long. Leaf-sheaths tubular for much of their length, pubescent. Ligule an eciliate membrane. Leaf-blades 2–10 cm long, 2–5 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 2–10 cm long, 1–2 cm wide. Primary panicle branches simple. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–16 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 10–40 mm long, 4–10 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 6–8 mm long, 0.8–0.9 length of upper glume, chartaceous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 7–9 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 7–9 -veined. Upper glume apex acute.

Florets. Fertile florets all alike or with the lowest dissimilar. Lowest fertile lemma muticous. Fertile lemma elliptic, 8–12 mm long, chartaceous, much thinner on margins, without keel, 9–11 -veined, more than 3-veined. Lemma surface glabrous or pubescent or pilose or villous. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, curved, spreading, 5–15 mm long overall. Lateral lemma awns present, arising dorsally, shorter than principal. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia.

Region. Northern Europe (*), Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). **Northern Africa.** Egypt. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Russia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq, Sinai. Kuwait, Oman. Tibet. **Indian Subcontinent.** India, Pakistan, West Himalaya.

TDWG4.

Bromus densus Swallen. *Contrib. U. S. Nat. Herb.* 29: 396 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.G. Meyer & D.J. Rogers* 2976, 18 Aug 1948, Mexico: Nuevo Lesn: Mun. Zaragoza: Cerro del Viejo, 15 mi W Dulces Nombres, in open pine forest, alt. 3330 m, densely tufted perennial to 3.5 ft tall (US-1962994; IT: MO-1599222).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): dense. Growing in large clumps.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 110 cm long. Culm-internodes antrorsely

scabrous. Leaf-sheaths antrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 0.5 mm long, erose. Leaf-blades 10–25 cm long, 2–3 mm wide. Leaf-blade surface scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 9.5 cm long, 2 cm wide. Primary panicle branches appressed. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–7 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 9–11 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 12–13.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn subapical, 1–1.5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Neuvo Leon.

Bromus diandrus Roth. *Bot. Abh.* 44 (1787).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*, N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Anisantha diandra*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

Basionym or Replaced Name: *Anisantha diandra* (Roth) Tutin ex Tsvelev, *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS*, 22: 4 (1963). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *Gr. Bromoides, locustis maximus, lanuginosum, Italicum. Hist. Nat.: 261, no. 444, (OXF (Scheuzer Herb.))*. NT designated by Sales, *Edinb. J. Bot.* 50(1): 8 (1993).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (68), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (66, Fig 38), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 242), L.Boulos, *Flora of Egypt* 4 (2005) (195, Pl. 56 as var. *diandrus* & var. *rigidus*), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 19), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (143, Pl. 48), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (257, Fig 198), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (97, Pl 27 *B. gussonii*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (504, Fig 98), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (175), D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (225), F.W.Gould, *The Grasses of Texas* (1975) (89, Fig. 40), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:30(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002);, E.Edgar & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): Gk. dis, twice; aner, man. Florets with two stamens.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 35–150 cm long, 3–6 -noded. Leaf-sheaths hispid. Ligule an eciliate membrane, 3–6 mm long, lacerate. Leaf-blades 4–25 cm long, 4–8 mm wide. Leaf-blade surface scaberulous, pilose.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, nodding, 10–25 cm long. Primary panicle branches drooping, 2–4 -nate, simple, 3–10 cm long, bearing 1(–2) fertile spikelets on each lower branch. Panicle branches flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets cuneate, laterally compressed, (20–)45–60 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1 mm long.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, gaping. Lower glume linear, 15–35 mm long, 0.7–0.8 length of upper glume, chartaceous, 1-keeled, 1–3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 20–45 mm long, 0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 3(–5) -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 22–45 mm long, chartaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, incised 0.1–0.2 of lemma length, awned, 1 -awned. Principal lemma awn subapical, 35–75 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 2–3, 0.8–1.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 21$ (1 ref TROPICOS), or 28 (2 refs TROPICOS). $2n = 42$ (1 ref TROPICOS), or 54 (1 ref TROPICOS), or 56 (4 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Great Britain (*). : Belgium. : Balears, Corsica, France, Portugal, Sardinia, Spain, Azores. : Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. Krym. **Northern Africa, Macaronesia, East tropical Africa, Southern Africa** (*). Egypt, Libya. Canary Is, Madeira. Kenya, Tanzania. Namibia, Limpopo, North-West, Mpumalanga, Free State, Kwazulu-Natal, Northern Cape, Western Cape, Eastern Cape. Russian far east, **Caucasus, Western Asia, Arabian Peninsula, China.** Primorye. Iran, Iraq. Tibet. **Indian Subcontinent, Malesia.** Sri Lanka. Lesser Sunda Is. **Australia, New Zealand.** Western Australia (*), Northern Territory (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord Howe-Norfolk Is (*). Chatham Is, Kermadec Is, New Zealand North I, New Zealand South I, Stewart Is. **North-central Pacific.** Hawaii (*). **Western Canada, Northwest USA, Southwestern USA, Mexico.** British Columbia. Colorado, Montana, Oregon, Washington. Arizona, California, Nevada. Central Mexico. **Mesoamerica, Caribbean, Southern South America.** Dominican Republic, Haiti, Jamaica. Juan Fernandez Is.

TDWG4. Tamilnadu. Eremean, South-West. Central Australia. NW & Lake Eyre, Southern. South East. Coast, Tablelands, Western Slopes, Western Plains. Puebla.

Bromus dolichocarpus Wagnon. *Leafl. West. Bot.* 6: 65 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: R. McVaugh 9887, 18 Mar 1949, Mexico: Michoacan: in fir forest, ca. 10 mi NW of Ciudad Hidalgo (MICH; IT: US-2012739).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. dolichos, narrow; karpos, fruit. Grain terete.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 100–180 cm long. Leaf-sheaths pilose. Leaf-sheath auricles erect, 5 mm long. Ligule an eciliate membrane, 4–7 mm long. Leaf-blades 15–38 cm long, 8–18 mm wide. Leaf-blade surface pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, lanceolate, nodding, 25–36 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 30–45 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 11–14 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 14–15 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 18–20 mm long, chartaceous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma surface

pilose, hairy between veins. Lemma margins ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn subapical, 6–11 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Central Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica.** Guatemala.

Mexico State. Michoacan. Chiapas.

Bromus epilis Keng ex Keng f. *Acta Bot. Yunnan.* 4(4): 348–349. 1982.

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: Lijiang, ad alpinum montem, 10 May 1922, *J.F. Rock 5930* (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 529).

Derivation (Clifford & Bostock 2007): *L. e-*, lacking; *pilus*, hair. Glabrous in some respect.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose, clumped loosely. Culms erect, 60–75 cm long, 1.2–2 mm diam., 3 -noded, with 0.5 of their length below uppermost node. Culm-internodes smooth. Leaf-sheaths 8–10 cm long, mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 0.5–1.5 mm long, scarious, brown, truncate. Leaf-blades flat or involute, 10–30 cm long, 2–4 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, nodding, 14–18 cm long. Primary panicle branches spreading or reflexed, 2–4 -nate, 3–6 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–3 mm long, glabrous. Floret callus glabrous.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume linear, 10–13 mm long, 0.8–0.9 length of upper glume, chartaceous, 1-keeled, 1–3 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent or obscure. Lower glume apex acuminate. Upper glume lanceolate, 12–15 mm long, 0.9–1 length of adjacent fertile lemma, chartaceous, 1-keeled, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, 13–15 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma margins eciliate or pubescent. Lemma apex entire, awned, 1 -awned. Principal lemma awn subapical, curved, recurved at base of limb, 8–14 mm long overall. Palea 10 mm long. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2.5–3 mm long. Ovary with a fleshy appendage above style insertion.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central.

TDWG4. Yunnan.

Bromus erectus Huds. *Fl. Angl. ed.* 1: 89 (1762).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Bromopsis erecta*).

Basionym or Replaced Name: *Bromopsis erecta* (Huds.) Fourr., *Ann. Soc. Linn. Lyon, N. S.* 17: 187 (1869). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Habitat in cretaceis circa Rochester, Dartford et Gravesend, in Cantino,.

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (74), G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *Festuca montana*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (219), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:36(1980)).

Derivation (Clifford & Bostock 2007): *L. held upright*. Spikelets or inflorescence branches held erect.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 40–120 cm long, 3–4 -noded. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 0.3–3 mm long,

erose. Leaf-blades flat or involute, 5–30 cm long, 2–3(–7) mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, dense or loose, equilateral or nodding, 6–25 cm long. Primary panicle branches appressed or ascending, bearing 1–4 fertile spikelets on each lower branch. Panicle branches straight, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–40 mm long, 3–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume linear, 5–12 mm long, 0.8–0.9 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7–14 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 10–15 mm long, chartaceous, much thinner on margins, keeled, lightly keeled, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 2–8 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 5–8 mm long, orange or red. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 21$ (1 ref TROPICOS). $2n = 28$ (1 ref TROPICOS), or 42 (1 ref TROPICOS), or 56 (6 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain, Ireland, Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Balears, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Central European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa.** Algeria, Morocco, Tunisia. **Caucasus, Western Asia, China.** Iran. Tibet. **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, Southeastern USA.** British Columbia. Ontario, Quebec. Washington. Wisconsin. Maine, New York, West Virginia. California. Alabama, Kentucky. **Southern South America.** Chile Central, Chile South. Falkland Is (Malvinas), Kerguelen, South Georgia.

TDWG4. Buenos Aires, Cordoba, Santa Fe. Biobio. Magellanes.

Bromus exaltatus Bernh. *Linnaea*, 15 Litt. 90. (1841).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *H. Galeotti* 5769, Mexico: Veracruz: Pic d'Orizaba, 10–12500 ft (P; INT: K, US, US-865491 (fragm. ex W), W). NT designated by Soderstrom & Beaman, *Publ. Mus. Mich. St. Univ., Bot. Ser.* 3(5): 504 (1968); NT superceded by LT of Pohl & Davidse (1992).

LT: *Anonymous s.n.*, Mexico (MO-2957788). LT designated by Davidse & Pohl, *Novon* 2(2): 100 (1992).

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983), W.Burger, *Flora Costaricensis* 15, *Gramineae: Fieldiana Botany New Series* 4 (1980) (113, Fig 35).

Derivation (Clifford & Bostock 2007): L. lofty. Culms tall.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms geniculately ascending, 45–80 cm long, 2 mm diam. Culm-internodes thin-walled, distally glabrous or pilose, with reflexed hairs. Lateral branches lacking. Leaf-sheaths pilose, with reflexed hairs. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 10–30 cm long, 3–7 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Peduncle 10–12 cm long, glabrous. Panicle open, lanceolate, nodding, 10–22 cm long. Primary panicle branches 1–3 -nate, 5–11 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong, laterally compressed, 25–32 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–11.5 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 8.5–14 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 12–17 mm long, chartaceous, purple or yellow, bordered with last colour, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent, hairy below. Lemma margins ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn subapical, 2.5–4 mm long overall. Palea 8.7–10.5 mm long. Palea keels scabrous. Palea surface glabrous or puberulous, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.2–2.8 mm long, yellow. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Mexico. Gulf (Mexico), Southeast Mexico. **Mesoamerica.** Costa Rica, Guatemala, Panama.

TDWG4. Veracruz. Chiapas.

Bromus fasciculatus Presl. *Cyp. et Gram. Sic.* 39. (1820).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Anon.*, Sicily: in arvis arenosis, Panormi in planitie della Cunzulazione (PRC). LT designated by Sales, *Edinb. J. Bot.* 50: 17 (1993).

T: *Unknown s.n.*, unknown (L).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 237), L.Boulos, *Flora of Egypt* 4 (2005) (198, Pl. 57), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (145, Pl. 49).

Derivation (Clifford & Bostock 2007): L. fascis, bundle; -ulus, diminutive. -ata, possessing. With spikelets or branches clustered in the inflorescence.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 4–25 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 2–10(–20) cm long, 2–3 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, obovate, 2–6 cm long, 0.7–2 cm wide. Primary panicle branches bearing 1(–2) fertile spikelets on each lower branch. Panicle branches pubescent. Spikelets solitary. Fertile spikelets sessile or pedicelled. Pedicels absent or present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 10–20 mm long, 5–12 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 6–8 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 8–12 mm long, 0.75–0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma lanceolate, 11–15 mm long, 1–1.5 mm wide, chartaceous, without keel, (3–)5 -veined, 0–3 -veined or more than 3-veined. Lemma margins involute. Lemma apex dentate, 2 -fid, with lobes 0.5–1.5 mm long, awned, 1 -awned. Principal lemma awn subapical, curved, 10–18 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.4–0.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, 7.5–13 mm long, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia.

Region. Northern Europe (*), Southwestern Europe, Southeastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Baleares, Corsica, Sardinia. : Greece, Italy, Crete, Sicily. **Northern Africa.** Algeria, Egypt, Libya. **Western Asia, Arabian Peninsula, China.** Cyprus, Iran, Iraq, Lebanon-Syria, Palestine, Israel & Jordan, Turkey. Oman, Saudi Arabia. Xinjiang.

Bromus firmior (Nees) Stapf. Dyer, *Fl. Cap.* 7: 733 (1900).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus speciosus* var. *firmior* Nees, *Fl. Afr. Austr.* :454 (1841).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. stouter*. Culms stouter than those of related species.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 50–150 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 20–40 cm long, 4–8 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 15–30 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–45 mm long, 4–8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 8–16 mm long, 0.75 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 10–20 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 10–20 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–12 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Mpumalanga, Kwazulu-Natal, Lesotho, Eastern Cape.

Bromus flexuosus Planchuelo. *Kurtziana*, 16: 123 (1983).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *A.T. Hunziker & L. Ariza 20464*, 19 Feb 1970, Argentina: Catamarca: Poman Dept. (CORD; IT: US-2669022).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. flecto*, bend; *-osa*, abundance. Inflorescence branches lax and drooping in a zigzag fashion.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Basal innovations intravaginal. Culms 50–110 cm long. Leaf-sheaths retrorsely scabrous, glabrous on surface or pubescent. Ligule an eciliate membrane, lacerate. Leaf-blades 10–50 cm long, 1–8 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 20–25 cm long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 16–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–10 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex acuminate. Upper glume elliptic, 9–12 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or pilose. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 10–13 mm long, 2.5–2.8 mm wide, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface smooth or scaberulous. Lemma margins ciliate. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 5–8 mm long overall. Palea 1 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, sulcate on hilar side, dark brown, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.
Country /Province /State. Southern South America. Argentina Northwest.
TDWG4. Catamarca, La Rioja, Salta.

Bromus formosanus Honda. *Bot. Mag., Tokyo*, 42: 136 (1928).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Taiwan: on monte Nankotaizan, 11–12000 ft, 1922, *S. Sasaki s.n.* (HT: ?).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (298), C-C Hsu, *Taiwan Grasses* (1975) (431, Pl. 1387), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 527).

Derivation (Clifford & Bostock 2007): L. -ana, indicating location. For Formosa, now Taiwan.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 22–30 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths longer than adjacent culm internode, striately veined, glabrous on surface. Ligule an eciliate membrane, 1 mm long, brown. Leaf-blades involute, 10–20 cm long, 2–4 mm wide, stiff. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle, comprising 3–9 fertile spikelets. Panicle open, lanceolate, 8–10 cm long, bearing few spikelets. Primary panicle branches 1–2 -nate, indistinct the panicle almost racemose, 1–4 cm long, bearing 1 fertile spikelets on each lower branch. Panicle axis 2–3 noded, with lower internodes 1–3 cm long, scabrous. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or elliptic, laterally compressed, compressed slightly, 15–20 mm long, 5–7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 8–9 mm long, 0.75 length of upper glume, chartaceous, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 11–12 mm long, 0.9 length of adjacent fertile lemma, chartaceous, with hyaline margins, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or elliptic, 12–13 mm long, 2.5–3 mm wide, herbaceous, much thinner on margins, light green, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 3–7 mm long overall. Palea 10 mm long. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. Eastern Asia. Taiwan. **Malesia, Papuasias.** Borneo. New Guinea PNG, or West Papua (Irian Jaya). New Guinea.

Bromus frigidus Boiss. & Haussk. ex Boiss. *Fl. Orient.* 5: 645 (1884).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iran: Persia: in regione alpina montium Periae australis ad nives, mons Kuh Daena....

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. cold. Growing at high altitudes.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 20–40 cm long. Ligule an eciliate membrane. Leaf-blades 5–10 cm long, 1–1.5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 7–15 cm long, bearing few spikelets. Primary panicle branches spreading, 1 -nate, 2–4 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 6–8 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 8–10 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 11–12 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 3–6 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 4.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iran.

Bromus frondosus (Shear) Woot. & Standl. *Bull. New Mex. Coll. Agr.* 81:144 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus porteri* var. *frondosus* Shear, *US Dept. Agric., Div. Agrost. Bull.* 23:37 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.G. Smith s.n.*, 19 Aug 1897, USA: New Mexico: Grant Co.: Mangas Springs (US-81587).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (214).

Derivation (Clifford & Bostock 2007): *L. frons*, leaf; -osa, abundance. Origin uncertain.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 80–100 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 2–5 mm wide, light green. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–15 cm long. Primary panicle branches drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 22–27 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.75 length of upper glume, membranous, without keels, 2–3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 11 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 1–4 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, Mexico. Arizona, California, Utah. New Mexico. Northwest Mexico. Coahuila.

Bromus garamas Maire. *Bull. Soc. Hist. Nat. Afr. Nord*, 3: 6, in obs., 97 (1942).

Regarded by K as a synonym (*B. pectinatus*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *Maire s.n.*, Sahara central:Tassili-n-Ajjer (AL). ST: *Chipp s.n.*, Sahara Central: oasis de Silet (AL).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): from Garamas, Libya.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 15–75 cm long. Culm-nodes black, glabrous. Leaf-sheaths without keel, pubescent, with reflexed hairs. Ligule an eciliate membrane, 2–3 mm long, lacerate, truncate. Leaf-blades 10–25 cm long, 3–6 mm wide, glaucous. Leaf-blade

surface scabrous, pubescent, hairy adaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex abruptly acute, hooded.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–20 cm long. Primary panicle branches 2–3-nate, 6–12 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes scaberulous. Floret callus evident.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.66–0.75 length of upper glume, membranous, much thinner on margins, without keels, 5 -veined. Lower glume primary vein scabrous. Lower glume apex acute. Upper glume oblong, 9–10 mm long, 0.75–0.9 length of adjacent fertile lemma, membranous, with scarios margins, without keels, 7 -veined. Upper glume primary vein scabrous. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma lanceolate, 10–13 mm long, chartaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface smooth or scaberulous. Lemma margins flat. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 10–12 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, without sulcus, 9–10 mm long, hairy at apex, apex fleshy. Embryo 0.2 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northern Africa. Algeria.

Bromus gracillimus Bunge. *Mem. Sav. Etr. Petersb.* 7: 527 (1851).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Nevsliella gracillima*).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. very delicate. Of slender habit.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 12–40 cm long. Leaf-sheaths tubular for much of their length, pubescent. Ligule an eciliate membrane. Leaf-blades 3–12 cm long, 1.5–4 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 3–8 cm long, 1–4 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 4–7 mm long, 3.5–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–5 mm long, 1 length of upper glume, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1–1.1 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4–4.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 12–19 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. Middle Asia, Western Asia, China. Kazakhstan, Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran. Tibet, Xinjiang. **Indian Subcontinent.** Pakistan, West Himalaya.

TDWG4. Himachal Pradesh, Jammu Kashmir.

Bromus grandis (Shear) Hitchcock. *Jepson, Fl. Calif.* 1 :175 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus orcuttianus* var. *grandis* Shear, *US Dept. Agric., Div. Agrost. Bull.* 23:43 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: C.R. Orcutt 472, 25 Jun 1883, USA: California: San Diego Co.: La Maite (US-81613).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (214).

Derivation (Clifford & Bostock 2007): L. tall. Plants robust with tall culms.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 100–150 cm long. Leaf-sheaths pubescent, with reflexed hairs. Ligule an eciliate membrane, 2 mm long, obtuse. Leaf-blades 15–35 cm long, 10–20 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–20 cm long. Primary panicle branches drooping, 2-nate, 7–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 10–12 mm long, 1 length of upper glume, membranous, without keels, 3-veined. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 10–14 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 3-veined. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 12–15 mm long, chartaceous, without keel, 5–7-veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex awned, 1-awned. Principal lemma awn subapical, 5–7 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA. California.

Bromus grossus Desf. ex Lam & DC. *Lam. & DC. Fl. Fr.* ed.3, 3:68 (1805).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. large. Spikelets large.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 60–130 cm long. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane. Leaf-blades 3–8 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, equilateral or nodding, 14–18 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, compressed slightly, 18–50 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.75 length of upper glume, coriaceous, without keels, 5-veined. Lower glume surface glabrous or pubescent. Lower glume apex acute, muticous or mucronate, awn subapical. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, coriaceous, without keels, 7-veined. Upper glume surface glabrous or pubescent. Upper glume apex acute, muticous or mucronate, awn subapical.

Florets. Fertile lemma oblong, 10–12 mm long, chartaceous, without keel, 7–9-veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins involute. Lemma apex entire or dentate, 2-fid, with lobes 0.1–0.5 mm long, awned, 1-awned. Principal lemma awn subapical, 8–12 mm long overall. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, concavo-convex, 10–12 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe, Temperate Asia.

Region. Northern Europe (*), Middle Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Belgium. **China.** Tibet.

Bromus gunckelii O. Matthei. *Gayana, Bot.*, 43(4): 62 (1986).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Chile: I Region: Parinacota: frente a Socoroma, en quebrada surcada por riachuelo, 3300 m, 5 May 1972, *Ricardi, Weldt & Quezada 192* (HT: CONC).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of H. Gunckel (fl. 1931) who collected in Chile.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 8–40 cm long, 1–4 -noded. Culm-nodes pubescent. Leaf-sheaths tubular for much of their length, pubescent. Ligule an eciliate membrane, 2–3 mm long, erose. Leaf-blades 2–15 cm long, 1–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 6–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.2–2.5 mm long, glabrous. Floret callus pubescent, hairy on the margins, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 4.1–4.6 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume linear, 5.2–6 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 8–10 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous to pubescent. Lemma apex dentate, 2 -fid, with lobes 0.5–1 mm long, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn subapical, geniculate, with twisted column. Palea lanceolate, 6–9 mm long, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0.2–0.3 mm long. Anthers 3, 1 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, without sulcus, 6 mm long, hairy at apex, apex fleshy.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Chile North. Tarapaca.

Bromus hallii (Hitchc.) Saarela & P.M. Peterson. *Sida* 21 (4): 2004 (2005).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from USA. **Basionym or Replaced Name:** *Bromus orcuttianus* var. *hallii* Hitchc. *Fl. Calif.* 1: 175 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: California: in the San Jacinto Mts., 27 Jun 1901, *H.M.Hall 2301* (HT: US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (212).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 90–150 cm long, 2–4 -noded. Culm-internodes distally glabrous or pubescent. Culm-nodes brown, pubescent. Leaf-sheaths tubular for much of their length, 3.5–11 cm long, mostly shorter than adjacent culm internode, pubescent. Leaf-sheath oral hairs ciliate, 2–3 mm long. Ligule an eciliate membrane, 1.5–2.5 mm long, glabrous on abaxial surface or pilose on abaxial surface, erose, obtuse. Leaf-blades 7.5–16.5 cm long, 3–12 mm wide. Leaf-blade surface pubescent, densely hairy. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or pyramidal, 7–13.5 cm long, 2–10 cm wide. Primary panicle branches appressed or ascending or spreading, 1–2(–3) -nate, 3.5–11 cm long, bearing 1–5 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–8(–9) mm long, 0.75 length of upper glume, membranous, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, (7–)8–9 mm long, 0.75 length of

adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute, mucicous or mucronate.

Florets. Fertile lemma oblong, 10–14 mm long, chartaceous, without keel or keeled, lightly keeled, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent. Lemma apex dentate, 2 -fid, with lobes 0.1–0.2 mm long, awned, 1 -awned. Principal lemma awn subapical, 3.5–7 mm long overall. Palea 8–11 mm long. Palea surface glabrous or puberulous, hairy on back and on margins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–6 mm long, yellow or orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, 6–9 mm long, dark brown or purple, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA. California.

Bromus haussknechtii Boiss. *Fl. Orient .5*: 648 (1884).

Not on *GrassBase*.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *C. Haussknecht*, May 1868, Iraq: in desertis prope Bagdad (G, LE).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Heinrich Carl Haussknecht (1838–1903) German botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 15–25 cm long. Leaf-sheaths loose, pubescent, with reflexed hairs. Ligule an eciliate membrane, 2–4.5 mm long, lacerate. Leaf-blades 9–18 cm long, 1.5 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins ciliate, hairy at base.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, oblong, 6–7 cm long, 1.5 cm wide. Primary panicle branches ascending. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, gaping. Lower glume linear, 7.5 mm long, 0.75 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume oblong, 10 mm long, 0.75 length of adjacent fertile lemma, 1-keeled, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 13 mm long, 2 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 13–15 mm long overall, limb scabrous. Palea 11 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iraq.

Bromus himalaicus Stapf. *Hook. f. Fl. Brit. Ind.* 7: 358 (1896).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28 as var. *grandis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 530).

Derivation (Clifford & Bostock 2007): *L. -ica*, belonging to. From the Himalayas.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 35–70 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 15–25 cm long, 3–7 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 15–24 cm long. Primary panicle branches spreading or reflexed, 2–5 -nate, 5–7.5 cm long. Panicle axis scaberulous (above). Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes scaberulous.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume linear, 5–7.5 mm long, 0.66–0.9 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7.5–8.5 mm long, 0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–10 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma margins pubescent. Lemma apex entire, awned, 1 -awned. Principal lemma awn subapical, curved, 10–12 mm long overall, 1–1.2 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear or ellipsoid, 5 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. **China.** China South Central, Tibet. **Indian Subcontinent, Indo-China.** Assam, Eastern Himalaya, India, Nepal.

TDWG4. Yunnan. Darjeeling, Bhutan, Sikkim. West Bengal.

Bromus hordeaceus Linn. *Sp. Pl.* 77 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (as *B. mollis*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (& as *B. mollis*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *B. mollis*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

Basionym or Replaced Name: *Bromus mollis* L., *Sp. Pl. ed. 2*: 112. (1762). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Morison, Pl. Hist. Univ. 3: s. 8, pl. 7, f. 18 (1699)*, LT designated by Smith in Cafferty et al., *Taxon* 49(2): 248 (2000).

ET: (LINN-93.7). ET designated by Smith in Cafferty et al., *Taxon* 49(2): 248 (2000).

NT: *Anon.*, (LINN-93.7). NT designated by P.M. Smith, *Notes Roy. Bot. Gard. Edinb.* 42: 499 (1985), but not correct as there is original material [see Smith in Cafferty et al., *Taxon* 49(2): 247 (2000)].

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (78 as *B.mollis*), H.J.Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (258, Fig 199 as subsp. *hordeaceus*), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (97, Pl. 27 as *Serrafalcus*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (509, Fig. 99 as subsp. *hordeaceus*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (175 & 176 as *B.molliformis*), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (84, Fig. 12 & 91, Fig 13), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina)*, Pt II, *Gramineas* (1969) (70, Fig. 19 as *B. mollis*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (231, as subspecies *hordeacues*, *molliformis*, *pseudothominei* & *thominei*), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (as *B.mollis*), M.N.Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (88, Fig. 49 as *B.mollis*), B.Rosengurtt, *Gramineas Uruguayas I* (1970) (112, Fig. 40 as *B. mollis*), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 535), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poaeae* (1987) (as *B.mollis*), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:37(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. *Grasses of Australia*. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. -acea, resembling. Inflorescence as with *Hordeum*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–100 cm long, 2–9 -noded. Culm-nodes pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–3 mm long, erose. Leaf-blades 5–22 cm long, 2–7 mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, equilateral or nodding, 1.5–16 cm long, 0.5–6 cm wide. Primary panicle branches bearing 1–7(–14) fertile spikelets on each lower branch. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–10 mm long.

Fertile Spikelets. Spikelets comprising 6–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, compressed slightly, 12–22 mm long, 3.5–6(–8) mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, parallel to lemmas. Lower glume oblong or ovate, 5–8 mm long, 0.8–0.9 length of upper glume, chartaceous, without keels, 3–7 -veined. Lower glume apex acute. Upper glume elliptic, 5–9 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 5–7(–9) -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic or obovate, 8–11 mm long, 2.5–5 mm wide, chartaceous, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface hirsute. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 5–10 mm long overall, limb scabrous. Palea 0.8–0.9 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.2–2.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, fusiform, concealed by floret, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 7$ (1 ref TROPICOS), or 14 (1 ref TROPICOS). $2n = 14$ (1 ref TROPICOS), or 28 (9 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America (*), South America (*).

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Foroyar, Great Britain, Iceland, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechtenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Balears, Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibraltar, Spain, Azores. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kaliningrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia, Southern Africa** (*). Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Mpumalanga, Northern Cape, Western Cape, Eastern Cape. **Caucasus, Western Asia, China, Mongolia, Eastern Asia, Russia.** China North-Central, Qinghai, Xinjiang. Taiwan. **Indian Subcontinent.** Eastern Himalaya, Pakistan. **Australia, New Zealand.** Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*), Lord Howe-Norfolk Is (*). Chatham Is, Kermadec Is, New Zealand North I, New Zealand South I. **North-central Pacific.** Hawaii (*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alaska, Greenland. Alberta, British Columbia. New Brunswick, Nova Scotia, Ontario, Quebec. Idaho, Montana, Oregon, Washington. Iowa, Missouri, South Dakota. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. California, Nevada, Utah. New Mexico. Delaware, Maryland, North Carolina. Northwest Mexico. **Brazil, Southern South America.** Brazil South. Argentina Northeast, Argentina South, Chile Central, Juan Fernandez Is. Falkland Is (Malvinas).

TDWG4. Gansu, Hebei. Bhutan. South-West. Southern. South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Mendoza. Buenos Aires, Distrito Federal. Chubut, Río Negro, Santa Cruz. Baja California.

Bromus induratus Hausskn. & Bornm. *Mitth. Thuring. Bot. Ver. n. s.* 20: 48 (1905).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. induro*, make hard. Leaf-sheaths woody.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths coriaceous, purple, persistent and investing base of culm, with compacted dead sheaths. Culms erect, 60 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, lacerate. Leaf-blades 7–15 cm long, 3–5 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate. Primary panicle branches spreading. Panicle axis scaberrulous, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 30–40 mm long, 12–14 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 10 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 11–12 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 17–18 mm long, 3 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 9–11 mm long overall. Palea 10–11 mm long. Palea keels ciliate. Palea surface puberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus. Transcaucasus.

TDWG4.

Bromus inermis Leyss. *Fl. Hal.* 16; *Linn. Mant.* 2: 186 (1761).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

Basionym or Replaced Name: *Bromopsis inermis* (Leyss.) Holub, *Folia Geobot. Phytotax.*, 8(2): 167 (1973). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: In pratis fertilibus succulentis Pomariis in den Pulverweiden im Amstgarten ad Belberg Crollwitz et alibi frequens,.

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909), L.Boulos, *Flora of Egypt* 4 (2005), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (175), K.F.Best, et al, *Prairie Grasses* (1971) (75), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (208), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 535), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:38(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);

Derivation (Clifford & Bostock 2007): L. unarmed. Apices of lemmas or glumes rounded.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Rhizomes elongated. Butt sheaths glabrous to pubescent, persistent and investing base of culm, with fibrous dead sheaths. Culms 30–100 cm long. Culm-internodes distally pubescent. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface or puberulous. Ligule an eciliate membrane. Leaf-blades 10–35 cm long, 4–8 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, ovate, dense, equilateral or nodding, 10–15 cm long, 4–10 cm wide. Primary panicle branches 3–4 -nate, 1–10 cm long, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–25 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–9 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 9–11 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 9–12 mm long, chartaceous, mid-green or purple, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous or pubescent, hairy below. Lemma apex dentate, 2 -fid, mucicous or awned, 1 -awned. Principal lemma awn subapical, 5–10 mm long overall. Palea 1 length of lemma. Palea keels ciliolate. Palea surface glabrous or pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 0–1.5 mm long, membranous. Anthers 3, 4–5.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 42$ (1 ref TROPICOS), or 28 (6 refs TROPICOS), or 56 (1 ref TROPICOS).

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain (*), Iceland, Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Switzerland. : France, Portugal, Spain. : Bulgaria, Italy, Romania, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Southern Africa** (*). Egypt (*). Gauteng, Mpumalanga, Eastern Cape. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Eastern Asia.** Altay, Irkutsk, Krasnoyarsk, Tuva, Amur, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Mongolia. Japan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent.** Pakistan, West Himalaya. **Australia, New Zealand.** New South Wales (*). New Zealand North I, New Zealand South I. **North-central Pacific. Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA.** Alaska, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Newfoundland, Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, North Dakota, Nebraska, South Dakota, Wisconsin. Indiana, Michigan, Ohio. Arizona, California. New Mexico. **Western South America, Southern South America.** Bolivia.

TDWG4. Gansu, Hebei, Shaanxi, Shandong, Shanxi. Jiangsu. Guizhou, Sichuan, Yunnan. Sikkim. Uttah Pradesh. Jammu Kashmir. Tablelands, Western Slopes, Western Plains. Buenos Aires, Distrito Federal.

Bromus insignis Buse. *Miq. Pl. Jungh.* 347 (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Junghuhn s.n.*, March, Java: Dieng (L-904.84–98).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. outstanding. Culms tall for genus.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 90–180 cm long. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaf-sheaths glabrous on surface or pubescent, with reflexed hairs. Ligule an eciliate membrane, 1(–2) mm long, truncate. Leaf-blades 27–37 cm long, 5–10 mm wide, flaccid. Leaf-blade surface scabrous, rough on both sides, pubescent, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, nodding, 18.5–30 cm long, 4–6 cm wide. Primary panicle branches 3–5 -nate, 11.5–20 cm long, bearing 5–8 fertile spikelets on each lower branch. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 17–25 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, hairy in a ring above, disarticulating obliquely, with circular scar.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–7 mm long, 0.7–0.85 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume lanceolate, 8.5–9.5 mm long, 0.85–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 3–5 -veined. Upper glume primary vein smooth or scaberulous. Upper glume apex acute, mucronate.

Florets. Fertile lemma lanceolate, 9–11 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous or pilose, hairy below, hairy on veins. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 6–10 mm long overall. Palea 7–8.5 mm long, 0.75 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–3 mm long, orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, lanceolate, 8.5–9 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. Malesia. Java.

Bromus intermedius Guss. *Fl. Sic. Prod.* 1: 114 (1827).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. intermedius*. Having affinities with but distinct from other species.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 10–75 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 5–11 cm long, 1–4 mm wide. Leaf-blade surface hirsute, sparsely hairy, hairy on both sides. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–15 cm long. Primary panicle branches ascending, 2–6 -nate, 1–4 cm long. Panicle branches tangled. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, 1 length of fertile spikelet.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 9–20 mm long, 3–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–5 mm long, 0.75–0.9 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume surface hirsute. Lower glume apex acute. Upper glume lanceolate, 5.5–7.5 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume surface hirsute. Upper glume apex acute.

Florets. Fertile lemma oblong, 7–9 mm long, 3–4 mm wide, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface hirsute. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, curved, reflexed, flat below, 5–11.5 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (2 refs TROPICOS).

Distribution (TDWG). Europe, Africa, Temperate Asia.

Region. Northern Europe (*), Southwestern Europe, Southeastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). : Corsica, France, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. **Northern Africa.** Algeria, Libya, Morocco, Tunisia. **Western Asia, China.** Iran. Xinjiang.

Bromus interruptus (Hack.) G. C. Druce. *Journ. Bot.* 2: 344 (1895).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Basionym or Replaced Name: *Bromus mollis* var. *interruptus* Hack., *Rep. Bot. Exch. Cl. Brit. Isles* 1880:240 (1880). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: England: Berkshire, 1888, G. C. Druce (CGE, K).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (82).

Derivation (Clifford & Bostock 2007): *L. not continuous*. Spikelets or inflorescence branches clustered at intervals along an axis.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 20–100 cm long, 2–4 -noded. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–2 mm long, erose. Leaf-blades 6–20 cm long, 2–6 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or oblong, interrupted, equilateral, 2–9 cm long, 1–2 cm wide. Primary panicle branches 0.5–1.5 cm long, bearing 2–3 fertile spikelets on each lower branch. Spikelets in pairs or in threes. Fertile spikelets sessile, 2–3 in the cluster.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong or ovate, laterally compressed, compressed slightly, 10–15 mm long, 5–8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, parallel to lemmas. Lower glume oblong, 5–7 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels, 3–7 -veined. Lower glume apex acute. Upper glume elliptic or ovate, 6–9 mm long, 0.8–1 length of adjacent fertile lemma, chartaceous, without keels, 5–9 -veined. Upper glume apex acute.

Florets. Fertile lemma obovate, 7.5–9 mm long, chartaceous, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 4–8 mm long overall, limb scabrous. Palea readily splitting down midline, 0.8–0.9 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1–1.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, concealed by floret, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Northern Europe.

Country /Province /State. : Great Britain.

Bromus japonicus Thunb. *Fl. Jap.* 51. t. 11. (1784).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960) (& as *B. gedrosianus*), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Japan,.

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 231), L.Boulos, *Flora of Egypt* 4 (2005) (192, Pl. 55), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (38, Fig 8), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (237), F.W.Gould, *The Grasses of Texas* (1975) (92, Fig. 41), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (95, Fig. 24), M.N.Correa, *Flora Patagonica* Parte III, *Gramineae* (1978) (85, Fig. 48), S-L Chen et al, *Flora of China*, Illustrations, *Poaceae* (2007) (Fig. 533), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:39(1980)).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to; Japan, a modified spelling Zhapan introduced into Europe by Marco Polo as a transliteration for the Chinese name for the large islands to the east of that country. From Japan.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 35–70 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 5–15 cm long, 3–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 10–20 cm long, 5–10 cm wide. Primary panicle branches spreading or drooping. Panicle branches multilateral or secund, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–15 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 15–35(–40) mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4–5 mm long, 0.66 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or pubescent. Lower glume apex acute. Upper glume lanceolate, 6–7 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

Florets. Fertile lemma elliptic or trullate, widest at 0.6 of its length from base, 8–12 mm long, coriaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous or pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, curved, spreading or reflexed, flat below, 5–16 mm long overall (lower shorter). Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.75–1.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$N = 7$ (1 ref TROPICOS), or 14 (1 ref TROPICOS). $2n = 14$ (7 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Pacific, North America (*), South America.

Region. Northern Europe (*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Great Britain (*). : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : France. : Bulgaria, Greece, Italy, Romania, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa.** Egypt. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Eastern Asia, Russia.** Altay, Irkutsk, Tuva. Amur, Primorye. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran, Iraq. China South Central, Inner Mongolia, Manchuria, China North-Central, China Southeast, Tibet, Xinjiang. Mongolia. Japan, Taiwan. Japan Honshu, or Shikoku, or Kyushu. **Indian Subcontinent.** Pakistan, West Himalaya. **North-central Pacific.** Hawaii (*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alberta, British Columbia, Manitoba. Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Massachusetts, Michigan, Ohio, New York, Pennsylvania, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Arkansas, Georgia, Kentucky, Maryland, North Carolina, Tennessee, Virginia. Northeast Mexico, Northwest Mexico. **Southern South America.** Argentina Northeast.

TDWG4. Gansu, Hebei, Shaanxi, Shandong, Shanxi. Anhui, Henan, Hunan, Jiangsu, Jiangxi. Hubei, Sichuan, Yunnan. West Bengal. Himachal Pradesh, Jammu Kashmir. Buenos Aires. Chubut, Río Negro. Chihuahua. Baja California, Sonora.

Bromus javorkae Penzes. *Magyar Bot. Lap.* 3: 23 (1934).

Regarded by K as a synonym (*B. hordeaceus*).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Sandor Javorka (1883–1961) Hungarian phytogeographer.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 10–15 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1 mm long. Leaf-blades 3–12 cm long, 2–3 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 5–7 cm long. Primary panicle branches 1 cm long, bearing 1 fertile spikelets on each lower branch. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 13–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 6–8 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 7–9 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 11–12 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 7–10 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northern Africa. Egypt.

Bromus kalmii A. Gray. *Man.* 600 (1848).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Canada, *Kalm* (HT: LINN) This specimen labeled "*B. ciliatus*" but is not *B. ciliatus* L. --ASH IGS.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007).

Derivation (Clifford & Bostock 2007): in honor of Pehr Kalm (1715–79) Swedish botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect, 75–125 cm long. Culm-nodes pubescent. Leaf-sheaths pilose, with reflexed hairs. Ligule an eciliate membrane, 0.3–0.7 mm long, lacerate. Leaf-blades erect, 7–25 cm long, 2.5–3 mm wide. Leaf-blade surface pubescent, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Peduncle glabrous or pubescent above. Panicle open, ovate, 10–15 cm long. Primary panicle branches drooping, 2–3-nate, 2–5 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–6.5 mm long, 0.75 length of upper glume, membranous, without keels, 3-veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 7–8 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 5-veined. Upper glume surface pubescent. Upper glume apex obtuse, mucronate.

Florets. Fertile lemma oblong, 8–10 mm long, chartaceous, without keel, 7-veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex awned, 1-awned. Principal lemma awn subapical, 2–3 mm long overall. Palea keels ciliate. Palea surface pubescent. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Eastern Canada, North-central USA, Northeast USA, South-central USA. Manitoba. Ontario, Quebec. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Texas.

Bromus kinabaluensis (Jansen) J.F. Veldkamp. *Blumea*, 35(2): 492 (1991).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

Basionym or Replaced Name: *Bromus insignis* var. *kinabaluensis* Jansen, *Reinwardtia* 2:245 (1953). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Clements* 29174, 26 Mar 1932, Malaysia: Borneo, Sabah State: upper Kinabalu (L; IT: US-1537128 (fragm. ex L)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Mt Kinabalu, Borneo.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 30–64 cm long, 4-noded. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, 1–2 mm long, truncate. Leaf-blades 20–27 cm long, 3.5–6 mm wide, flaccid. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, nodding, 15–17 cm long, 1.5–2 cm wide. Primary panicle branches 1–2-nate, 2.8–7 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle axis smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 25 mm long, 8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.75–3 mm long, pubescent. Floret callus glabrous or pilose, hairy in a ring above, disarticulating obliquely, with circular scar.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8–10.5 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 1–3-veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent or obscure. Lower glume apex acute or acuminate. Upper glume linear or elliptic, 10–13 mm long, 0.85 length of adjacent fertile lemma, membranous, 1-keeled, 3–5-veined. Upper glume primary vein smooth or scaberulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 11–15 mm long, chartaceous, without keel, 5-veined, more than 3-veined. Lemma surface puberulous, hairy below. Lemma apex awned, 1-awned. Principal lemma awn subapical, 4–7 mm long overall. Palea 10–12 mm long, 0.8–0.9 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.5–3 mm long, yellow or orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Borneo.

Bromus koeieanus Melderis. *K. Danske Vid. Selsk., Biol. Skrift.* 14(4): 57 (1965).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Afghanistan. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Afghanistan, Koh-I Baba: *Koeie 2631* (C hol., K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. In honor of Mogens Ergell Kxie (1911-) Danish botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths light brown, glabrous. Culms geniculately ascending, 20–35 cm long, 2–3 -noded. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface or puberulous. Ligule an eciliate membrane, 1–4 mm long, lacerate. Leaf-blades 3–10 cm long, 1–2 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 5–8 cm long, bearing few spikelets. Primary panicle branches appressed or ascending, 1–2 -nate, 1.5–4 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–18 mm long, 3–4.5 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 5.5 mm long, 0.5–0.66 length of upper glume, membranous, much thinner on margins, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acuminate. Upper glume lanceolate, 8–12 mm long, 1 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3–5 -veined. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate or oblong, 8–12 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–4 mm long overall. Palea 1 length of lemma. Palea keels ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 4.5–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iran.

Bromus kopetdagensis Drobov. Fedde, *Repert.* 21: 38 (1925).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Prov Trans-Caspia: Distr. Ashkhabad: in declivibus mont. Kopet-dag, 1921, *Popov 733*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Kopet Dag Khrebet mountains, Turkmenskaja (Turkmenistan), former Soviet Union.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with reticulate dead sheaths. Culms geniculately ascending, 45–90 cm long. Culm-internodes distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades flat or involute, 10–20 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 9–15 cm long, bearing few spikelets. Primary panicle branches ascending, 1–2 -nate, bearing 1 fertile spikelets on each lower branch. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–45 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 10–13 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 12–15 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 15–18 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn subapical, straight or curved, 3–5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, Western Asia. Tadjhikistan. Iran.

TDWG4.

Bromus korotkiji Drobov. *Trav. Mus. Bot. Acad. Petersb.* 12: 238 (1914).

Not on *GrassBase*.

Accepted by: S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 526).

Derivation (Clifford & Bostock 2007): In honor of M. F. Korotkij (? -1915) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Siberia, **China, Mongolia.** Inner Mongolia, China North-Central, Xinjiang. Mongolia.

TDWG4. Gansu.

Bromus laevipes Shear. *U.S. Dept. Agric. Bull. Agrost.* 23: 45 (1900).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: W.N. Suksdorf 178, 25 May 1885-Jun 1885, USA: Washington: Klickitat Co.: on the Columbia River (US-81577).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (210).

Derivation (Clifford & Bostock 2007): *L. laevis*, smooth; pes, foot. Pedicels smooth.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–150 cm long, rooting from lower nodes. Culm-internodes distally glabrous or pubescent. Culm-nodes pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs scanty or lacking. Ligule an eciliate membrane, 2–4.2 mm long, lacerate, obtuse. Leaf-blades 13–26 cm long, 4–10 mm wide, light green or glaucous. Leaf-blade surface smooth or scaberulous, glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, secund, 10–20 cm long. Primary panicle branches ascending or spreading or drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 23–35 mm long, with hairs extending 1 mm beyond apex or 3 mm beyond apex, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–9 mm long, membranous, without keels, 3 -veined. Upper glume lanceolate, 8–12 mm long, membranous, without keels, 5 -veined. Upper glume surface scabrous.

Florets. Fertile lemma oblong, 12–16 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4–6 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3.5–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA and Southwestern USA. Oregon. California.

Bromus lanatipes (Shear) Rydb. *Bull. Colo. Agr. Exp. Sta.* 100:52 (1906).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus porteri* var. *lanatipes* Shear, *US Dept. Agric., Div. Agrost. Bull.* 23:37 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.L. Shear 739*, 27 Aug 1895, USA: Colorado: Idaho Springs (US-81588).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (221).

Derivation (Clifford & Bostock 2007): *L. lana*, wool; -ata, possessing; pes, foot. Pedicels hairy.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Butt sheaths woolly. Culms robust, 100–130 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths pubescent, with reflexed hairs. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 5–10 mm wide. Leaf-blade surface glabrous or puberulous, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, equilateral or nodding, 10–25 cm long. Primary panicle branches 1–3 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Fertile lemma obovate, 9–11 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 2–5 mm long overall. Palea 1 length of lemma. Palea surface glabrous or puberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3.6–3.9 mm long, orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

N = 14 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA, North-central USA, Southwestern USA, South-central USA, Mexico. Colorado. Oklahoma. Arizona, Nevada, Utah. New Mexico, Texas. Northwest Mexico. Coahuila.

Bromus lanatus Kunth. *Nov. Gen. et Sp.* 1: 150 (1816).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Mart, Ecuador: Pichincha/Napo: 2180 m (P; IT: BM, P, US-865493 (fragm.)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (244 Fig 48).

Derivation (Clifford & Bostock 2007): *L. lana*, wool; -ata, possessing. Leaf-blades densely pubescent.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 15–40 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 3–4 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–6 cm long. Primary panicle branches drooping. Panicle branches flexuous, puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, villous.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–7.5 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7–8.5 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 8–9 mm long, chartaceous, without keel, more than 3-veined. Lemma surface villous. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 3–4 mm long overall. Palea 6.5–7.5 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). **Continent.** South America.

Country /Province /State. **Western South America, Southern South America.** Bolivia, Colombia. Argentina South, Chile North.

TDWG4. Catamarca, Jujuy, La Rioja, San Juan, Tucuman.

Bromus lanceolatus Roth. *Catalect.* 1: 18 (1797).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

Basionym or Replaced Name: *Bromus tomentosus* Rohde, nom nud, *Schrad. N. Journ.* 3: 42 (1809). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: CT: (LE). det. Roth. in 1802.

LT: *Roth s.n.*, 1802, Cult. in Berlin in Roth's personal garden from seed from Roemer probably collected in the Canary Islands (BREM). LT designated by Scholz, *Willdenowia* 28: 150, f. 5 (1998).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 233 as var. *lanatus*), L.Boulos, *Flora of Egypt* 4 (2005) (189, Pl. 54), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (149, Pl. 50 & as *B. tomentosus*), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (509, Fig 99), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (236), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 537), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:40(1980)).

Derivation (Clifford & Bostock 2007): *L. lanceus*, lance; -ola, diminutive; -ata, possessing. Mostly a reference to lanceolate leaf-blades.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 20–85 cm long. Culm-nodes glabrous or bearded. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 4–20 cm long, 2–6 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, (2–)6–12(–20) cm long, 2–8 cm wide. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, (12–)25–50 mm long, 6–16 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–9 mm long, 0.6–0.8 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface glabrous or hirsute. Lower glume apex acute. Upper glume lanceolate, 8–12 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume surface glabrous or hirsute. Upper glume apex acute.

Florets. Fertile lemma lanceolate, (8.5–)12–18 mm long, 5–6 mm wide, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface glabrous or hirsute. Lemma apex dentate, 2 -fid, with lobes 1–2.5 mm long, awned, 1 -awned. Principal lemma awn subapical, spreading or briefly coiled at base of limb (sometimes), flat below, 6–12 mm long overall. Palea keels ciliate, adorned sparsely. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Tropical Asia, North America, South America.

Region. **Northern Europe** (*), **Southwestern Europe, Southeastern Europe.**

Country /Province /State. : Great Britain (*). : Corsica, France, Portugal, Sardinia, Spain. : Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. **Northern Africa, Macaronesia.** Algeria, Egypt, Libya, Morocco, Tunisia. Canary Is, Madeira. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China.** Turkmenistan, Tadjikistan. Afghanistan, Iran, Iraq. Gulf States. Xinjiang. **Indian Subcontinent.** Pakistan. **Northeast USA, Southwestern USA, South-central USA.** New York. Arizona. Texas. **Southern South America.** Chile Central.

TDWG4. Maule.

Bromus latiglumis (Shear) Hitchcock. *Rhodora*, 8: 211 (1906).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus purgans* var. *latiglumis* Shear, *US Dept. Agric., Div. Agrost. Bull.* 23:40 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *L.H. Pammel* 222, Aug 1896, USA: Iowa: Humboldt Co.: Dakota City (US-294664).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (210).

Derivation (Clifford & Bostock 2007): *L. latus*, broad; gluma, husk. Glumes broad.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect, 75–125 cm long, 8–15 -noded. Leaf-sheaths longer than adjacent culm internode, pilose. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.7 mm long. Leaf-blades 15–25 cm long, 6–11 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 12–20 cm long. Panicle branches scabrous, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4.5–6.5 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 6.5–8.5 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume surface pubescent. Upper glume apex obtuse or acute, mucronate.

Florets. Fertile lemma oblong, 10–12 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4–5 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2.8 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Eastern Canada, North-central USA, Northeast USA, Southeastern USA. Illinois, Iowa, Minnesota, Missouri, North Dakota, Nebraska, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. North Carolina.

Bromus lepidus Holmb. *Bot. Notiser*, 1924, 326 (1924).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (80), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (231).

Derivation (Clifford & Bostock 2007): *L. pretty*. Plants with an attractive appearance as with colored spikelets.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–90 cm long, 2–6 -noded. Culm-nodes pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 0.5–1.5 mm long, erose. Leaf-blades 5–20 cm long, 2–5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate, equilateral or nodding, 2–10 cm long, 1–4 cm wide. Primary panicle branches 2–4 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, compressed slightly, 7–15 mm long, 2.5–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, parallel to lemmas. Lower glume oblong or ovate, 4–5 mm long, 0.5–0.75 length of upper glume, chartaceous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 4.5–6 mm long, 0.9 length of adjacent fertile lemma, chartaceous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma obovate, 5.5–6.5 mm long, chartaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface asperulous, glabrous or pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–7 mm long overall, limb scabrous. Palea 0.8–0.9 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.8–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, fusiform, exposed between gaping lemma and palea at maturity, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, North America (*), South America (*).

Region. Northern Europe, Middle Europe, Southwestern Europe.

Country /Province /State. : Denmark, Great Britain (*), Ireland, Sweden. : Belgium, Germany, Netherlands. : France. **Northern Africa.** Egypt. **China.** Xinjiang. **Northeast USA.** Massachusetts, New York. **Southern South America.** Uruguay.

Bromus leptoclados Nees. *Fl. Afr. Austr. Gram.* 1: 453 (1841).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: T: *Drige s.n.*, (LE). HT: *Drige 8131*, South Africa: Cape Province: Krai Rivier (P).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (176, Fig. 99 as *B. scabridus*), R.M.Phillips, F.T.E.A., *Gramineae* (1(1970):69, Fig. 23), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):61, T. 17), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (56, Fig. 26), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (156, Fig. 79).

Derivation (Clifford & Bostock 2007): Gk *leptos*, narrow; *klados*, branch. Culms slender.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 50–200 cm long. Leaf-sheaths hispid. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane, 2–5 mm long, obtuse. Leaf-blades 10–30 cm long, 5–13 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, equilateral or nodding, 15–30 cm long. Primary panicle branches drooping. Panicle branches angular, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or cuneate, laterally compressed, 13–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–6 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, awned, 1 -awned, awn 1–5 mm long. Upper glume lanceolate, 7–14 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute, awned, 1 -awned, awn 1–5 mm long.

Florets. Fertile lemma elliptic, 7–14 mm long, herbaceous, much thinner above, much thinner on margins, keeled, 3–5(–7) -veined, 0–3 -veined or more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins pubescent. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 2–12 mm long overall. Palea keels ciliate (0.2mm long hairs). Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.5–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, 8 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). **Continent.** Africa, Temperate Asia.

Country /Province /State. **West-central tropical Africa, Northeast tropical Africa, East tropical Africa, South tropical Africa, Southern Africa.** Cameroon, Rwanda. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Malawi, Zimbabwe. North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. **Arabian Peninsula.** Yemen.

Bromus lithobius Trin. *Linnaea* 10: 303 (1836).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

Basionym or Replaced Name: *Bromus fonkii* Phil., *Linnaea*, 29: 102. (1858). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *E.F. Poppig s.n. mis. [Kunze]*, Dec. 1828, Chile austr.: in lapidosis Andium de St. Rosa (LE-TRIN-2951.02; IT: US-865494 (fragm. ex W), W).

IT: *Kunze*, Chil. austr.: Antuco (LE-TRIN-2951.01). *mis e plantis Poppigii* 1832 : Pg. coll. III. 41.

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (258, Fig 200), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (509, Fig 99), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (80, Fig. 39 as *Bromus fonki*).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. lithos, stone; bios, manner of living. Growing amongst rocks.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–80 cm long. Lateral branches lacking. Leaf-sheaths antrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 4 mm long. Leaf-blades 9–15 cm long, 2–6 mm wide. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6 mm long, 0.9 length of upper glume, membranous, 1-keeled, 5 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 7 mm long, 0.66–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 7 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 8–11 mm long, chartaceous, keeled, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–6 mm long overall. Palea gaping. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Australasia (*), South America.

Country /Province /State. Australia, New Zealand. South Australia (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*). New Zealand North I, New Zealand South I. **Southern South America.** Argentina South, Juan Fernandez Is.

TDWG4. Coast. Neuquén, Río Negro.

Bromus luzonensis J. Presl. *Rel. Haenk.* 1:262 (1830).

Regarded by K as a synonym (*B. carinatus*).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *Haenke s.n.*, California or British Columbia (PR). see Veldkamp, *Taxon* 39: 660 (1990), for typification.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Luzon, Philippines.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Southwestern USA. British Columbia. California.

Bromus macrocladus Boiss. *Diagn. Ser.* 1, 13: 64 (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. makros, large; klados, stem. Panicle branches long and slender.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 50–100 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 10–30 cm long, 3–7 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or pyramidal, effuse, 15–30 cm long, 12–25 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or oblong,

laterally compressed, 18–36 mm long, 5–9 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 4.5–6 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 6.5–8.5 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, widest at 0.5 of its length from base, 9–13 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn dorsal, arising 0.75 way up back of lemma, curved, spreading, (2–)8–13 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Turkey.

Bromus madritensis Linn. *Cent. Pl.* 1, 5 *Amoen. Acad.* 4: 265 (1755).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Anisantha*), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Loefling s.n.*, Spain: manifesto prope Madritum (LINN-93.55). LT (as NT) designated by P.M. Smith, *Notes Roy. Bot. Gard. Edinb.* 43: 500 (1985).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (66), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 239 & 240 as ssp. *madritensis* & ssp. *delilei*), L.Boulos, *Flora of Egypt* 4 (2005) (198, Pl. 57), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (259, Fig 201), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (504, Fig. 98), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (175), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (123, Fig. 19), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (91, Fig. 13), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (227), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (100, Fig. 25).

Images: L.Boulos, *Flora of Egypt* 4 (2005);.

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Madrid, Spain.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–60 cm long, 2–4 -noded. Leaf-sheaths hirsute or hispid. Ligule an eciliate membrane, 1.5–4 mm long, lacerate. Leaf-blades 2–20 cm long, 2–6 mm wide. Leaf-blade surface glabrous or pubescent or hirsute.

Inflorescence. Inflorescence a panicle. Panicle contracted, ovate or obovate, 4–15 cm long, 1.5–6 cm wide. Primary panicle branches ascending, 0.5–3.5 cm long, bearing 1–3 fertile spikelets on each lower branch. Panicle branches straight, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–13 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 15–45 mm long, 2–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, gaping. Lower glume linear, 6–11 mm long, 0.6–0.7 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or hirsute. Lower glume apex acute or acuminate. Upper glume lanceolate, 10–15 mm long, 0.5–0.75 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume surface glabrous or hispid. Upper glume apex acute.

Florets. Fertile lemma lanceolate or elliptic, 10–19 mm long, chartaceous, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma surface scaberulous, glabrous or pilose. Lemma apex dentate, 2 -fid, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn subapical, 7–23 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, 8–11 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 14$ (2 refs TROPICOS). $2n = 14$ (1 ref TROPICOS), or 28 (2 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Australasia (*), Pacific, North America, South America.

Region. Northern Europe, Southwestern Europe, Southeastern Europe (*), Eastern Europe.

Country /Province /State. : Great Britain (*). Northern Africa, Macaronesia, Northeast tropical Africa, Southern Africa (*). Algeria, Egypt, Libya, Morocco, Tunisia. Azores, Canary Is, Madeira. Eritrea. Western Cape. Caucasus, Western Asia, Arabian Peninsula, China. Afghanistan, Iran, Iraq, Kuwait, Oman. Tibet. Australia, New Zealand. Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*), Tasmania (*). New Zealand North I. North-central Pacific. Hawaii (*). Northwest USA, Southwestern USA, Mexico. Oregon. California. Pacific Is (Mexico), Northwest Mexico. Southern South America. Argentina Northeast, Argentina Northwest, Chile Central.

TDWG4. South-West. Southern. South East. Coast, Tablelands, Western Slopes, Western Plains. Jujuy (*). Buenos Aires. Neuquén. Coquimbo, Valparaiso, Maule, La Araucania. Baja California Sur.

Bromus magnus Keng. *Sunyatsenia*, 6: 53 (1941).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Gansu: 15 Aug. 1923, R.C. Ching 763 (HT: US).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 521).

Derivation (Clifford & Bostock 2007): L. large. Plants large and generally with tall culms.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Culms 120–150 cm long, 2–3.5 mm diam., 6–7-noded. Culm-internodes smooth. Leaf-sheaths 10–13 cm long, longer than adjacent culm internode, striately veined, pubescent, with reflexed hairs. Ligule an eciliate membrane, 5 mm long, brown, entire or trilobed. Leaf-blades 15–40 cm long, 4–9 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scaberulous, glabrous or pilose, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, nodding, 18–25 cm long. Primary panicle branches drooping, 2-nate, simple, 10–15 cm long, bearing 2–5 fertile spikelets on each lower branch. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, clavate, 2–5 mm long.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 18–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–3 mm long, pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume linear, 7–10 mm long, 0.75–0.9 length of upper glume, chartaceous, purple, 1-keeled, 1-veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 9–11 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, purple, 1-keeled, 3-veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, 11–13 mm long, chartaceous, without keel or keeled, lightly keeled, 5-veined, more than 3-veined. Lemma surface glabrous or puberulous, hairy on veins. Lemma apex dentate, 2-fid, awned, 1-awned. Principal lemma awn subapical, straight or curved, 5–8 mm long overall. Palea 8 mm long. Palea keels ciliate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, China North-Central, Qinghai, Tibet.

TDWG4. Gansu. Sichuan.

Bromus mairei Hackel ex Hand.-Mazz. *Symb. Sin. Pt. 7*: 1290 (1936).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Eduard Ernest Maire (1848-) French cleric who collected in China.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 25–100 cm long. Ligule an eciliate membrane, 0.5–1.5 mm long, lacerate, truncate. Leaf-blades 10–20 cm long, 1–7 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, nodding, 10–20 cm long. Primary panicle branches 1–2 -nate, 5–10 cm long. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–25 mm long, scaberulous.

Fertile Spikelets. Spikelets comprising 4–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 15–25 mm long, 6–10 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 9–10 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 9–10 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 9–10 mm long, 3 mm wide, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, spreading or reflexed, 10–20 mm long overall. Palea keels ciliolate. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, Qinghai, Tibet.

TDWG4. Sichuan, Yunnan.

Bromus mango E. Desv. C. Gay, *Fl. Chil.* 6: 440 (1853).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Chile. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: C. Gay *s.n.*, no date, Chile (P (fragm., US-865442); IT: B, K, SGO).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (80, Fig 40).

Derivation (Clifford & Bostock 2007): The vernacular name for the species in Chile.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual or perennial, rhizomatous, short-lived. Rhizomes short. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 40–60 cm long. Lateral branches lacking. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 2–5 mm long, obtuse. Leaf-blades 5–35 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous.

Inflorescence. Inflorescence a panicle, comprising 5–40 fertile spikelets. Panicle open, lanceolate, equilateral or nodding, 4–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 7–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4–9 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3–7 -veined. Lower glume surface pilose. Lower glume apex acuminate. Upper glume lanceolate, 5–11 mm long, 0.8 length of adjacent fertile lemma, membranous, 1-keeled, 5–9 -veined. Upper glume surface pilose. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 6–13 mm long, chartaceous, much thinner on margins, keeled, 7–9 -veined, more than 3-veined. Lemma surface pilose. Lemma apex mucicous or mucronate or awned, 1 -awned. Principal lemma awn subapical, 0–1 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile Central, Chile South.

TDWG4. Chubut, Neuquén, Río Negro. Rest of Chile- Biobio, La Araucanía, Maule, O'Higgins, Santado, Valpariso. La Araucanía. Aisen.

Bromus marginatus Steud. *Syn. Pl. Gram.* 322 (1854).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: Oregon Territory: Columbia River, *Douglas s.n.*

Recent Synonyms: *Ceratochloa marginata* (Nees ex Steud.) W.A. Weber, *Brittonia*, 33(3) 325 (1981). *Bromus pauciflorus* Nutt. ex Shear, US Dept. Agric., Div. Agrost. Bull. 23:53 (1900).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. margo, border; -ata, possessing. Leaf-blades or lemma with hairs in their margins or the margins otherwise conspicuous.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 60–90 cm long. Culm-internodes distally pubescent. Leaf-sheaths pilose, with reflexed hairs. Ligule an eciliate membrane, 2–3.5 mm long, erose, obtuse. Leaf-blades 15–25 cm long, 6–12 mm wide. Leaf-blade surface glabrous or puberulous or pubescent or pilose, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–30 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, compressed strongly, 25–40 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 7–9 mm long, 0.9 length of upper glume, chartaceous, 1-keeled, 3–5 -veined. Lower glume surface smooth or asperulous, glabrous or pubescent. Lower glume apex acuminate. Upper glume lanceolate, 9–11 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 5–7 -veined. Upper glume surface smooth or asperulous, glabrous to pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, laterally compressed, 11–14 mm long, chartaceous, much thinner on margins, keeled, distinctly keeled, 7–9 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface glabrous or pubescent. Lemma margins eciliate or pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4–7 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, apex fleshy.

Distribution (TDWG). Continent. Europe (*), Temperate Asia, North America.

Region. Northern Europe (*).

Country /Province /State. : Great Britain (*). **China.** China North-Central. **Western Canada, Northwest USA, Southwestern USA, South-central USA,** and **Mexico.** Alberta, British Columbia, Saskatchewan, Colorado, Oregon, Washington, Wyoming, Arizona, California, Nevada, Northeast Mexico, Northwest Mexico.

TDWG4. Hebei, Coahuila, Chihuahua, Baja California.

Bromus maritimus (Piper) Hitchcock. Jepson, *Fl. Calif.* 1: 177 (1912).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name:** *Bromus marginatus* var. *maritimus* Piper, *Proc. Biol. Soc. Wash.* 18:148 (1905). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: California: Point Reyes, *Davy 6789* (HT: US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (202).

Derivation (Clifford & Bostock 2007): L. belonging to the sea. Growing by the seaside.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, robust, 22–70 cm long. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 1–6 mm long, erose, obtuse or acute. Leaf-blades 15–25 cm long, 6–8 mm wide. Leaf-blade surface smooth or scaberulous, glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 9–10 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 10–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, compressed strongly, 30–40 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 8–12 mm long, 0.9 length of upper glume, chartaceous, 1-keeled, 3–7 -veined. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 10–13 mm long, 0.8–0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 3–9 -veined. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, laterally compressed, 12–14 mm long, chartaceous, much thinner on margins, keeled, distinctly keeled, 9–11 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface pubescent or pilose. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 2–7 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, apex fleshy.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA and Southwestern USA. Oregon. California.

TDWG4.

Bromus maroccanus Pau & Font Quer. *Font Quer, Iter Marocc.* 1927, No. 79 (1928).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. From Morocco.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 40–80 cm long, swollen at the base, forming an ovoid corm. Culm-internodes distally pilose, with reflexed hairs. Culm-nodes brown, bearded. Leaf-sheaths without keel, glabrous on surface or pubescent, with reflexed hairs. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.2–0.5 mm long. Leaf-blades 20–40 cm long, 2–4.5 mm wide. Leaf-blade midrib widened. Leaf-blade surface smooth, glabrous. Leaf-blade margins ciliate. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 10–20 cm long, 2–4 cm wide. Primary panicle branches appressed, 4–6 -nate, bearing 1–3 fertile spikelets on each lower branch. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes scaberulous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8–9 mm long, 0.8 length of upper glume, membranous, much thinner on margins, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 10–11 mm long, 0.9 length of adjacent fertile lemma, membranous, with scarious margins, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 11–12 mm long, chartaceous, much thinner above, without keel, 7 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 1–3 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 4.5–6 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Northern Africa. Morocco.

Bromus meyeri Swallen. *Contrib. U. S. Nat. Herb.* 29: 395 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.G. Meyer & D.J. Rogers 2561*, 18 Jun 1948, Mexico: Nuevo Lesn: Dulces Nombres, Nuevo Lesn, and just east of border into Tamaulipas, 24., 99.30'-100.0'W, 1850 m, rhizomatous perennial to 2 ft tall, amongst low thorny shrubs on north hillside (US-1962983; IT: MO-1598683).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): In honor of Frederick Gustav Meyer (1917-) United States botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Butt sheaths persistent and investing base of culm. Culms erect, 40–85 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, hirsute, with reflexed hairs. Ligule an eciliate membrane, 0.5–0.7 mm long, brown, glabrous on abaxial surface, erose. Leaf-blades 15–30 cm long, 3–4 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous or pubescent, sparsely hairy, hairy on both sides. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 8–17 cm long. Primary panicle branches bearing 2–6 fertile spikelets on each lower branch. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 7–15 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic or cuneate, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4.4–6.6 mm long, 0.6–0.8 length of upper glume, membranous, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 7.2–8 mm long, 0.75 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 9.7–9.8 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma surface scabrous. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 1 mm long overall. Palea elliptic, 6.6–7.2 mm long. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.1 mm long, orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico.

TDWG4. Neuvo Leon.

Bromus modestus S.A. Renvoize. *Kew Bull.*, 49(3): 545 (1994).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (244, Fig 48).

Derivation (Clifford & Bostock 2007): L. moderate. Culms of average height.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–40 cm long. Leaves mostly basal. Ligule an eciliate membrane. Leaf-blades flat or conduplicate, 3.5–11 cm long, 1–3 mm wide. Leaf-blade surface pubescent or pilose. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 3–8 cm long, bearing few spikelets. Panicle branches flexuous, glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, 0.75 length of upper glume, membranous, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume surface smooth or scabrous, glabrous or pilose. Lower glume apex acute or acuminate. Upper glume lanceolate, 7–9 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface smooth or scabrous, glabrous or pilose. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 7–10 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 2–4 mm long overall. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Bolivia, Peru.

TDWG4. Jujuy, Salta.

Bromus moellendorffianus (Aschers. & Graebn.) Hayek. Fedde, *Repert. Beih.* 3: 208 (1932).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

Basionym or Replaced Name: *Bromus erectus* subsp. *moellendorffianus* Asch. & Graebn., *Syn. Mitteleur. Fl.* 2:582 (1901).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -anus, indicating connection. In honor of Otto Moellendorff (1848–1903) German diplomat who collected plants in Russia.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, slender, 20–40 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades conduplicate, 2–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–5 cm long. Primary panicle branches appressed, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–23 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 11 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–10 mm long, chartaceous, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 7–9 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe.

Country /Province /State. : Yugoslavia.

Bromus moesiacus Velen. *Fl. Bulg.* 616 (1891).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -acus, belonging to. From Moesia a region of the lower Danube straddling the boundary of present day Bulgaria and Serbia.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 20–40 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 3–5 cm long, 1–1.5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, equilateral, 8 cm long, 4 cm wide. Primary panicle branches appressed, 4–5 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–20 mm long, 3–4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4–5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 4–5 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pubescent. Upper glume apex acute, awned, 1 -awned, awn subapical, awn 1 mm long.

Florets. Fertile lemma lanceolate, 6–7 mm long, chartaceous, purple, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 3 -fid, awned, 1 -awned. Principal lemma awn subapical, 6–7 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.
Region. Southeastern Europe.
Country /Province /State. : Bulgaria.

Bromus morrisonensis Honda. *Bot. Mag., Tokyo*, 42: 137 (1928).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Taiwan: Chiayi Co., Mt. Morrison, grassy places on gravel slopes, ca. 2800 m, 1909, *Kawakami & Sasaki s.n.* (HT: TI).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (300), C-C Hsu, *Taiwan Grasses* (1975) (432, Pl. 1388), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 528).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Nutaka Yara, known to the English as Mount Morrison, Taiwan.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, short-lived, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 50–70 cm long. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades 21–23 cm long, 3–3.5 mm wide, flaccid. Leaf-blade surface scabrous, rough adaxially, glabrous.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, nodding, 13–16 cm long, 2.5–3 cm wide. Primary panicle branches 3-nate, 7 cm long, bearing 3 fertile spikelets on each lower branch. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 18–23 mm long, 5–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–2.5 mm long, pubescent. Floret callus pilose, hairy in a ring above, disarticulating obliquely, with circular scar.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear or lanceolate, 4.5–5.5 mm long, 0.75–0.85 length of upper glume, membranous, 1-keeled, 1-veined. Lower glume primary vein smooth. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume elliptic, 5.75–6.5 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 3-veined. Upper glume primary vein smooth. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate, 9–10 mm long, chartaceous, without keel, 3(–5)-veined, 0–3-veined or more than 3-veined. Lemma surface puberulous, hairy below. Lemma apex awned, 1-awned. Principal lemma awn subapical, 4.5–5 mm long overall. Palea 6.5 mm long, 0.66–0.8 length of lemma. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long, yellow or orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China, Eastern Asia. Taiwan. Malesia. Philippines.

Bromus mucroglumis Wagnon. *Leafl. West. Bot.* 6: 67 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: PT: *L.N. Goodding et al. s.n.*, no date, USA: Arizona: Cochise Co., Chiricahua Mts., South Cave Creek (US-2154824). The type specimen was grown from 2nd generation seed of this collection.

HT: *H.K. Wagnon 1520*, 28 Jul 1948, Cult.: Univ. Mich. (MICH; IT: US-2154824).

PT: *Soil Conservation Service A-5712*, Cult.: New Mexico, Albuquerque.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (219).

Derivation (Clifford & Bostock 2007): *L. mucro*, sharp point. A sharp point to the end of the glume.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Butt sheaths pubescent or pilose. Culms 50–100 cm long. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate or woolly. Ligule an eciliate membrane, 1 mm long or 2 mm long, truncate or obtuse. Leaf-blades 4–8 mm wide. Leaf-blade surface pilose, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–20 cm long. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent or pilose. Lower glume apex mucronate. Upper glume lanceolate, membranous, without keels, 3 -veined. Upper glume surface pubescent or pilose. Upper glume mucronate.

Florets. Fertile lemma oblong, 10–11 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent or pilose. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 3–5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.5–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA, South-central USA, and Mexico. Arizona, Utah. Northwest Mexico.

Durango.

Bromus natalensis Stapf. Dyer, *Fl. Cap.* 7: 732 (1900).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Estern Region: Natal: without precise locality, *Buchanan* 58.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (64, Fig 36).

Derivation (Clifford & Bostock 2007): L. -ense, denoting origin. From Natal, South Africa.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 50–120 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 4–7 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 10–25 cm long. Primary panicle branches drooping, simple. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 35–55 mm long, 5–10 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 13–15 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 17–20 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 15–18 mm long, chartaceous, mid-green or purple, without keel, 7–9 -veined, more than 3-veined. Lemma surface smooth or scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 6–15 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal.

Bromus nepalensis A.Melderis. *Enum. Fl. Pl. Nepal*, 1: 125 (1978).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Nepal: riverbanks, grassy places, thickets on slopes, ca. 3000 m,.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Nepal.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 45–55 cm long. Culm-internodes striate, smooth, distally glabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane, 0.5–1 mm long, membranous, lacerate. Leaf-blades 5–10 cm long, 2.5–4 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, nodding, 8–15 cm long. Primary panicle branches 3–5 -nate, 3–4 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle axis scaberulous, glabrous. Panicle branches flexuous.

Fertile Spikelets. Spikelets comprising 10–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 30–45 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pubescent.

Glumes. Glumes dissimilar. Lower glume lanceolate, 5–6 mm long, 0.75 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume lateral veins prominent. Lower glume apex acute. Upper glume lanceolate, 8–8.5 mm long, 0.66 length of adjacent fertile lemma, chartaceous, 1-keeled, 5–7 -veined. Upper glume primary vein scabrous. Upper glume lateral veins prominent. Upper glume apex obtuse or acute.

Florets. Fertile lemma 11–13 mm long, 5–7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, straight, 7–12 mm long overall. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.8–1 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. Tibet. Indian Subcontinent. Nepal.

Bromus nervosus C. Acedo & F. Llamas. *Willdenowia*, 27: 50 (1997).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

TYPE from Portugal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Portugal: Estremadura, Regengos de Monsaraz, Herdade de Esperas, "Malhadas," 29SPC25, 18 Apr 1949, *Joaquim Tapum s.n.* (LISI).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. nervus*, nerve; -osa, abundance. With conspicuous nerves in the glumes or lemmas.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 20–40 cm long, 4–5 -noded. Culm-internodes striate. Culm-nodes pubescent. Leaf-sheaths 6–11 cm long, pubescent. Ligule an eciliate membrane, 1.5 mm long, lacerate, acute. Leaf-blades 8–17 cm long, 2.5–5 mm wide. Leaf-blade surface hirsute, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, equilateral, 6–11 cm long, 2–3 cm wide. Primary panicle branches bearing 1–5 fertile spikelets on each lower branch. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

Fertile Spikelets. Spikelets comprising 7–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, compressed slightly, (10–)15–20 mm long, 7–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes straight, 1.5 mm long, obscured by lemmas, pilose. Floret callus evident.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, parallel to lemmas. Lower glume linear, 8–9 mm long, 0.8–0.9 length of upper glume, herbaceous, of similar consistency on margins, 1-keeled, 3 -veined. Lower glume lateral veins prominent. Lower glume apex acute. Upper glume lanceolate, 9.5–10.5 mm long, 0.8–0.9 length of adjacent fertile lemma, 0.5 length of spikelet, herbaceous, with undifferentiated margins, 1-keeled, 5 -veined. Upper glume lateral veins prominent. Upper glume apex acute.

Florets. Fertile lemma trullate, widest at 0.5 of its length from base, 11–13 mm long, 2.5–3 mm wide, herbaceous, of similar consistency above, of similar consistency on margins, without keel, 9 -veined. Lemma lateral veins prominent. Lemma surface pilose, hairy above. Lemma margins pilose, hairy all along. Lemma apex dentate, 2 -fid, truncate, awned, 1 -awned. Principal lemma awn subapical, 2–6.5 mm long overall, 0.2–0.5 length of lemma, limb scaberulous. Palea lanceolate, 7–8 mm long, 0.6–0.7 length of lemma. Palea keels ciliate, adorned sparsely. Palea apex erose, emarginate. Apical sterile florets resembling fertile though underdeveloped, 3–4 in number.

Flower and Fruit. Lodicules 2, ovate, 1 mm long, membranous. Anthers 3, 1.5 mm long. Stigmas 2, white. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp,

ellipsoid, flattened, concealed by floret, 7–8 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis. Disseminule comprising a floret.

Distribution (TDWG). Continent. Europe.

Region. Southwestern Europe.

Country /Province /State. : Portugal.

Bromus nottowayanus Fernald. *Rhodora*, 43: 530 (1941).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M.L. Fernald & B.H. Long 12239*, 14 Jul 1940, USA: Virginia, Sussex Co. (US-1912876 (fragm., US-87196)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (215).

Derivation (Clifford & Bostock 2007): *L. -anus*, indicating connection. From valley of Nottoway River, Virginia, USA.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 70–120 cm long, 6–8 -noded. Leaf-sheaths longer than adjacent culm internode, pilose, with reflexed hairs. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 6–13 mm wide. Leaf-blade surface pilose, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 12–22 cm long. Primary panicle branches drooping. Panicle branches with insignificant pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–7 mm long, 0.75 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 6–8 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–13 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 5–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. North-central USA, Northeast USA, Southeastern USA. Illinois, Missouri. Indiana, Ohio, West Virginia. Arkansas, Kentucky, North Carolina, Tennessee, Virginia.

Bromus orcuttianus Vasey. *Coult. Bot. Gaz.* 10: 223 (1885).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **T:**<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *C.R. Orcutt s.n.*, 1844, USA: California: in the mountains near San Diego (US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (212).

Derivation (Clifford & Bostock 2007): in honor of Charles Russel Orcutt (1864–1929) United States botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 90–150 cm long, 2–4 -noded. Culm-internodes distally pruinose or pubescent. Culm-nodes brown, pubescent. Leaf-sheaths tubular for much of their length, 3.5–11 cm long, mostly shorter than adjacent culm internode, pilose. Leaf-sheath oral hairs ciliate, 2–3 mm long. Ligule an eciliate membrane, 1–3 mm long, glabrous on abaxial surface or pilose on abaxial surface, erose, obtuse. Leaf-blades 7–24 cm long, 3–12 mm wide. Leaf-blade surface glabrous. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or pyramidal, 7–13.5 cm long, 2–10 cm wide. Primary panicle branches appressed or ascending or spreading, 1–2(–3) -nate, 3–7.5 cm long, bearing 1–5 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–37 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–9 mm long, 0.75 length of upper glume, membranous, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 7–11 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume apex acute, mucicous or mucronate.

Florets. Fertile lemma oblong, 9–15 mm long, chartaceous, without keel or keeled, lightly keeled, 5–7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous or puberulous. Lemma apex dentate, 2 -fid, with lobes 0.1–0.2 mm long, awned, 1 -awned. Principal lemma awn subapical, (4–)5.5–8 mm long overall. Palea 8–11 mm long. Palea surface glabrous or puberulous, hairy on back and on margins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3.5 mm long, yellow or orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, 6–9 mm long, dark brown or purple, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA, Southwestern USA. Oregon, Washington. Arizona, California.

Bromus oxyodon Schrenk. *Enum. Pl. Nov.* 2: 1 (1842).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Xinjiang: desert grasslands, 500–2600 m.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk *oxys*, sharp; *odous*, tooth.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 30–60 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 2–5 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–20 cm long, 2–15 cm wide. Primary panicle branches spreading, whorled at most nodes, bearing 1–4 fertile spikelets on each lower branch. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–14 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, (15–)30–50 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 9–11 mm long, 1 length of upper glume, membranous, without keels, 3(–5) -veined. Lower glume surface glabrous or hispidulous. Lower glume apex acuminate. Upper glume lanceolate or ovate, 9–13 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume surface glabrous or hispidulous. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 12–18 mm long, herbaceous, much thinner on margins, purple, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous or hispidulous. Lemma apex dentate, 2 -fid, with lobes 1.2–2.5 mm long, awned, 1 -awned. Principal lemma awn subapical, reflexed or briefly coiled at base of limb, flat below, 15–30 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. Middle Asia, Western Asia, China, Mongolia. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran. Xinjiang. Mongolia. **Indian Subcontinent.** India, Pakistan, West Himalaya.

TDWG4. Himachal Pradesh, Jammu Kashmir.

Bromus pacificus Shear. *U.S. Dept. Agric. Bull. Agrost.* 23: 23 (1900).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: **HT:** *C.L. Shear & F.L. Scribner 1703*, 11 Aug 1899, USA: Oregon: Clatsop Co.: in moist thickets near the seashore, south of Seaside (US-1867129; IT: US-81585).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (217).

Derivation (Clifford & Bostock 2007): of the Pacific Ocean. From the west coast of North America.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 60–150 cm long, without nodal roots or rooting from lower nodes. Culm-nodes glabrous or pubescent. Leaves cauline. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 2–5 mm long, brown, pubescent on abaxial surface, erose. Leaf-blades 4–10 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous or pubescent, sparsely hairy, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–30 cm long, with spikelets clustered towards branch tips. Primary panicle branches spreading or drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–9 mm long, 0.66–0.9 length of upper glume, membranous, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 9–10 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3(–7) -veined. Upper glume surface puberulous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 11–14 mm long, chartaceous, without keel or keeled, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 4–11 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3 mm long, eventually exerted or retained within floret. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Subarctic America, Western Canada, Northwest USA. Alaska. British Columbia. Oregon, Washington.

Bromus pannonicus Kummer & Sendt. *Flora*, 2: 757 (1849).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. -icus*, belonging to. From Pannonia, Hungary.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose, clumped loosely. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect, 30–70(–130) cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades flat, 2–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, 8–12 cm long. Primary panicle branches appressed, 3–5 -nate, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong, laterally compressed, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–7 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 6–7 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 9 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface scabrous, rough on veins. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 7–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe.

Region. Middle Europe, Southeastern Europe.

Country /Province /State. : Czechoslovakia, Hungary. : Romania, Yugoslavia.

Bromus parodii Covas & Itria. *Bol. Soc. Argent. Bot.* 12: 1, 13 (1968).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Lorenzo Raimondo Parodi (1895–1966) Argentinian agrostologist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations intravaginal. Culms 40–50 cm long, 4–5 -noded. Leaf-sheaths pubescent, outer margin hairy. Ligule an eciliate membrane, 2–3 mm long, erose, truncate. Leaf-blades 10–40 cm long, 3–8 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–30 cm long. Primary panicle branches ascending, 2–5 -nate, 6–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 9–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 27–35 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–2.5 mm long, scaberulous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 9–13 mm long, 0.75 length of upper glume, membranous, 1-keeled, 5–7 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acuminate. Upper glume lanceolate, 12–15 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 7–9 -veined. Upper glume surface scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 12–15 mm long, 2–2.8 mm wide, chartaceous, keeled, 9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 1–3 mm long overall. Palea 0.75 length of lemma. Palea keels ciliolate, adorned above, with 0.66 of their length adorned. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 1 mm long, membranous. Anthers 3, 0.9 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, without sulcus, 6–8 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina Northeast.

TDWG4. La Pampa.

Bromus paulsenii Hack. ex Paulsen. *Kjoeb. Vidensk. Meddel.* 1903, 174 (1903).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Tajikistan: Pamir Mountains, 2000–4000 m, 13 ?? 1898, *O. Paulsen 1108* (HT: W; IT: US).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): in honor of Ove Vilhelm Paulsen (1874–1947) Danish botanist and traveller.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–40 cm long, 2-noded. Culm-internodes distally pubescent. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 7–15 cm long, 3–5 mm wide, stiff. Leaf-blade surface pubescent, densely hairy, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–12 cm long. Primary panicle branches 1–2-nate, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 17–24 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.75 length of upper glume, membranous, without keels, 3-veined. Lower glume apex acute. Upper glume lanceolate, 0.75 length of adjacent fertile lemma, membranous, without keels, 3–5-veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10–13 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7-veined, more than 3-veined. Lemma surface smooth or scaberulous, glabrous or puberulous. Lemma apex awned, 1-awned. Principal lemma awn subapical, 3–5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, Western Asia, China. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan. Inner Mongolia, Xinjiang.

TDWG4.

Bromus pectinatus Thunb. *Prod. Pl. Cap.* 1: 22 (1794).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from Ethiopia. **Basionym or Replaced Name:** *Bromus adoensis* Hochst. ex Steud., *Syn. Pl. Gram.* 326. (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: South Africa: Cape of Good Hope, *Thunberg* 2522 (HT: UPS).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (56, Fig 26), L.Boulos, *Flora of Egypt* 4 (2005) (192, Pl. 55 & as *B. pulchellus*), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 17 as *B. rechingii*), H.J.Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 536).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): *L. pecten*, comb; -ata, possessing. Inflorescence with spikes or racemes bearing a fanciful resemblance to a comb.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 10–80 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane, 4–6 mm long, lacerate. Leaf-blades 5–30 cm long, 2–8 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, nodding, 5–25 cm long. Primary panicle branches drooping. Panicle branches terete, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or cuneate, laterally compressed, 13–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5.5–8 mm long, 0.7–0.8 length of upper glume, membranous, 1-keeled, 3-veined. Lower glume apex acuminate. Upper glume lanceolate, 7–11 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 7-veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 8–13 mm long, herbaceous, much thinner above, much thinner on margins, keeled, lightly keeled, 7-veined, more than 3-veined. Lemma surface smooth or scaberulous, glabrous or puberulous or pubescent. Lemma apex dentate, 2-fid, acute, awned, 1-awned. Principal lemma awn subapical, 9–17 mm long overall. Palea 0.8 length of lemma. Palea keels ciliate (0.5mm long hairs). Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe (*), Africa, Temperate Asia, Tropical Asia.

Region. Northern Europe (*).

Country /Province /State. : GB Aliens (Ryves et al). **Northern Africa, Northeast tropical Africa, East tropical Africa, Southern Africa, Middle Atlantic ocean, Western Indian ocean.** Algeria, Egypt, Morocco, Tunisia, Eritrea, Ethiopia (inc. Eritrea), Sudan, Kenya, Uganda, North-West, Gauteng, Mpumalanga, Free State, Northern Cape, Western Cape, Eastern Cape. St Helena. Madagascar. **Middle Asia, Western Asia, Arabian Peninsula, China.** Turkmenistan, Tadjikistan. Afghanistan, Iran, Sinai. Gulf States, Oman, Saudi Arabia. China South Central, Inner Mongolia, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. **Indian Subcontinent.** Eastern Himalaya, India, Nepal, Pakistan, West Himalaya.

TDWG4. Gansu, Hebei, Shaanxi, Shanxi. Henan. Sichuan, Yunnan. Bhutan.

Bromus pellitus Hack. ex P. Dusen. *Ergebn. Schwed. Exp. Magell.* 3, 5 :230 (1900).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *P. Dusin s.n.*, Jan 1896, Argentina: Tierra del Fuego (W; IT: US-87195 (fragm.), US-1161219). Possible type fragment.

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (85, Fig. 46).

Derivation (Clifford & Bostock 2007): L. covered with skins. The fertile floret(s) is protected by hairy investing glumes or sterile florets.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 20–40 cm long. Lateral branches lacking. Leaf-sheaths pilose. Ligule an eciliate membrane, 0.5–1 mm long, obtuse. Leaf-blades involute, 2–3 cm long, 1–3 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 3–5 cm long, bearing few spikelets. Primary panicle branches sparsely divided. Panicle axis pubescent. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, 13–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6 mm long, 0.9 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 8 mm long, 0.75–1 length of adjacent fertile lemma, membranous, purple, without keels, 3 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 8–10 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile South.

TDWG4. Santa Cruz, Tierra del Fuego. Chiloe, Aisen, Magellanes. Magellanes.

Bromus pflanzii Pilger. *Engl. Jahrb.* 49: 189 (1912).

Regarded by K as a synonym (*B. lanatus*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *K. Pflanz 272, 349, 274*, no date, Bolivia: La Paz (US-81740 (fragm.)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (244, Fig 48).

Derivation (Clifford & Bostock 2007): in honor of Karl Pflanz (1872–1925) German botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 135–150 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, 30–50 cm long, 2–4 mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–20 cm long. Primary panicle branches drooping, whorled at lower nodes. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets cuneate, laterally compressed, 20–25 mm long, 10–15 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–9 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex acute or acuminate. Upper glume lanceolate, 11–14 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pilose. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 12–16 mm long, chartaceous, without keel, more than 3-veined. Lemma margins pubescent. Lemma apex acute, muticous or mucronate. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 5–6 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Bolivia.

Bromus pindicus Hausskn. *Mitth. Thuring. Bot. Ver. n. s.* 13: 53 (1897).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -icus, belonging to. From Pindo, Thessaly, Greece.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Butt sheaths persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms 50–100 cm long. Ligule an eciliate membrane. Leaf-blades flat, 2–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 12–28 cm long. Primary panicle branches appressed, 1–2 -nate, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 40–50 mm long, 10–12 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 10–11 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 11–12 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 16–20 mm long, chartaceous, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 10 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 4–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe.

Region. Southeastern Europe.

Country /Province /State. : Greece.

Bromus pitensis Kunth. *Nov. Gen. et Sp.* 1: 152 (1816).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Ceratochloa pitensis* (Kunth) Holub, *Folia Geobot. Phytotax.*, 8(2): 171 (1973). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *F.W.H.A. von Humboldt & A.J.A. Bonpland* 2297, Feb, Ecuador: Pichincha/Cotopaxi: 2412 m (P; IT: US-81742 (fragm.)).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Pita River, Ecuador.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America. Venezuela. Bolivia, Colombia, Ecuador, Peru.

Bromus plurinodis Keng. *Fl. Tsinlingensis*, 1(1): 439 (1976).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 522).

Derivation (Clifford & Bostock 2007): L. plus, several; nodus, knot. Culms several-noded.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 40–120 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths antrorsely scabrous, pilose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 2–5 mm long. Leaf-blades 2–5 mm wide. Leaf-blade surface scaberulous, rough on both sides, pubescent, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 15–30 cm long. Primary panicle branches bearing 1 fertile spikelets on each lower branch. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 9–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3.5–6.5 mm long, 0.5–0.66 length of upper glume, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous, rough on veins. Lower glume apex acuminate. Upper glume lanceolate, 7–10 mm long, 1 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume surface asperulous, rough on veins. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 7–10 mm long, herbaceous, much thinner on margins, keeled, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough on veins, puberulous, hairy at base. Lemma apex awned, 1 -awned. Principal lemma awn apical, straight or curved, 10–15 mm long overall. Palea 1 length of lemma. Palea keels scabrous, eciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.2–3.2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet.

TDWG4. Gansu, Shaanxi. Sichuan, Yunnan.

Bromus polyanthus Scribn. ex Shear. *U.S. Dept. Agric. Bull. Agrost.* 23: 56 (1900).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Ceratochloa*).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (204).

Derivation (Clifford & Bostock 2007): Gk. polys, many; anthos, flower. Spikelets with more than the expected number of florets.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, robust, 90–125 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane. Leaf-blades 6–15 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 12–25 cm long. Primary panicle branches ascending. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 25–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.8 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume surface smooth to scabrous. Lower glume apex acuminate. Upper glume lanceolate, 0.7–0.8 length of adjacent fertile lemma, chartaceous, 1-keeled, 5–7 -veined. Upper glume surface smooth to scabrous. Upper glume apex acuminate.

Florets. Fertile florets imbricate to tip. Fertile lemma oblong, laterally compressed, 8–15 mm long, chartaceous, much thinner on margins, keeled, distinctly keeled, 5–7 -veined, more than 3-veined. Lemma

margins scabrous. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4–6 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, North America.

Country /Province /State. **Middle Asia.** Kirgizistan. **Northwest USA, Southwestern USA, South-central USA.** Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Arizona, California, Nevada, Utah. New Mexico, Texas.

TDWG4.

Bromus porphyranthos T.A. Cope. *Fl. Pakistan*, 143: 574 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. porphyrā, purple dye; anthos, flower. Spikelets purple.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 35–70 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 3–4 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–20 cm long. Primary panicle branches drooping, bearing 1 fertile spikelets on each lower branch. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 18–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes obscured by lemmas or eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 12–15 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 14–17 mm long, 1–1.2 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pubescent. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma lanceolate, 11–16 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 12–18 mm long overall. Palea keels ciliolate. Palea surface pubescent, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. **China.** China South Central, Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Nepal, Pakistan.

TDWG4. Yunnan.

Bromus porteri Nash. *Bull. Torrey Bot. Club*, 22: 512 (1895).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Basionym or Replaced Name: *Bromus kalmii* var. *porteri* J.M. Coult., *Man. Rocky Mt.* :425 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IST: *J.M. Coulter s.n.*, 23 Jul 1873, USA: Colorado: Chaffee / Park Co. (US-254366).

LT: *T.C. Porter s.n.*, 25 Jul 1872, USA: Colorado: Lake Co.: Twin Lakes (NY). LT designated by Wagnon, *Brittonia* 7: 415–480 (1952).

ST: *Coulter s.n.*, 23 Jul 1873, USA: Buffalo Peaks (US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (215).

Derivation (Clifford & Bostock 2007): in honor of Thomas Conrad Porter (1822–1901) United States botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 30–100 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous or pubescent. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 2.5 mm long, truncate or obtuse. Leaf-blades 4–8 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, nodding, 7–15 cm long. Primary panicle branches drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, membranous, without keels, 3 -veined. Lower glume surface pubescent. Upper glume lanceolate, membranous, without keels, 3 -veined. Upper glume surface pubescent.

Florets. Fertile lemma oblong, 8–14 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent or pilose. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 1–3.5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Northwest USA, Southwestern USA, South-central USA, and Mexico. Manitoba. Colorado. Arizona, California, Nevada, Utah. New Mexico. Northeast Mexico. Chihuahua, Durango, Hidalgo, Neuvo Leon, Queretaro.

Bromus psammophilus P.M. Smith. *Notes Roy. Bot. Gard. Edinburgh*, 42(3): 492 (1985).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: S. Turkey: C5 Icel: Tarsus, dunes, 3 Jun 1973, *Uslu 36425* (HT: E).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): as for *Psammophila*. Growing in sandy places.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 25–30 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 3–5 cm long, 1.5–2.5 mm wide. Leaf-blade surface pilose, densely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 7 cm long, 6 cm wide. Primary panicle branches ascending, bearing 1–4 fertile spikelets on each lower branch. Panicle branches straight or flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 length of fertile spikelet.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 10–15 mm long, 5–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3.5 mm long, 0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 4–4.5 mm long, 0.75–0.9 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma trullate, widest at 0.5–0.66 of its length from base, 5.5–6 mm long, 3–4 mm wide, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex entire, emarginate or obtuse, mucous. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Turkey.

Bromus pseudobrachystachys H. Scholz. *Bot. Jahrb. Syst.* 91: 462 (1972).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Iraq. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Iraq, Kerkuk: *Bornmuller 1850* (B holo, W).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Bromus brachystachyus*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, slender, 20–25 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 5–10 cm long, 2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, effuse, 10 cm long, 5 cm wide. Primary panicle branches spreading or drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 5–10 mm long, 2–3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–2.5 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 2.5–3.5 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma trullate, widest at 0.6 of its length from base, 4–5 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, subterete below, 3–5 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Iraq, Turkey.

Bromus pseudodanthoniae Drobov. Fedde, *Repert.* 21 :39 (1925).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: (TAK). LT designated by Tsvelev, Zlaki SSSR [Poaceae URSS] ? (1976).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Bromus danthonii*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 20–50 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths tubular for much of their length, pubescent, with reflexed hairs. Ligule an eciliate membrane, 2 mm long, obtuse. Leaf-blades 5–10 cm long, 2–5 mm wide. Leaf-blade surface glabrous to pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 5–10 cm long. Primary panicle branches 3–6 in number, simple, bearing 2–5 fertile spikelets on each lower branch. Panicle branches straight or flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, subterete, 15–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, chartaceous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, chartaceous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile florets all alike or with the lowest dissimilar. Lowest fertile lemma muticous. Fertile lemma oblong or trullate, 12–15 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn dorsal, arising 0.66–0.75 way up back of lemma, curved, spreading, 12–15 mm long overall. Lateral lemma awns present, arising dorsally, shorter than principal. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

2n = 28 (2 refs TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, Caucasus, and Western Asia. Turkmenistan, Tadzhikistan, Uzbekistan. Transcaucasus.

TDWG4.

Bromus pseudolaevipes Wagnon. *Leafl. West. Bot.* 6 : 64 (1950).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: California: Grown from seed collected by G.L.Stebbins 2862, from along the Ridge Route W of Castaic, Los Angeles Co., *Wagnon 1507* (HT: MICH).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (212).

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Bromus laevipes*..

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 60–120 cm long, 4–6 -noded. Culm-internodes distally pubescent. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 0.5–1 mm long, erose. Leaf-blades 8–25 cm long, 3–7.5 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, equilateral or nodding, 9–15 cm long. Primary panicle branches ascending or spreading, 2 -nate. Panicle axis puberulous. Panicle branches glabrous or puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–35 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–6 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface pubescent. Lower glume apex obtuse or acute. Upper glume lanceolate, 6.5–8 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex obtuse or acute.

Florets. Fertile lemma ovate, 10–12 mm long, herbaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins pubescent. Lemma apex obtuse or acute, awned, 1 -awned. Principal lemma awn subapical, 3–5 mm long overall. Palea keels ciliate. Palea surface puberulous, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3.5–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, 6–9 mm long, yellow, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Southwestern USA. California.

Bromus pseudoramosus P.C. Keng. *Acta Bot. Yunnanica*, 4(4): 347 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: China: Yunnan: Lijiang, ad alpinum montem, ca. 2600 m, 1923–24, *J.F. Rock 10643* (HT: N).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 523).

Derivation (Clifford & Bostock 2007): Gk *pseudos*, false. Resembling *Bromus ramosus*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 60–120 cm long, 5–8 -noded. Culm-internodes smooth, distally glabrous. Leaf-sheaths glabrous on surface or pilose. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane, 1.5 mm long, brown. Leaf-blades 15–45 cm long, 3–9 mm wide. Leaf-blade surface scaberulous, rough abaxially, pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–30 cm long. Primary panicle branches reflexed, 2 -nate, bearing 1–3 fertile spikelets on each lower branch. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or elliptic, laterally compressed, compressed slightly, 18–25 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 9–11 mm long, 0.75–0.85 length of upper glume, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 11–13 mm

long, 0.9 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume margins pubescent. Upper glume apex acute, mucous or mucronate.

Florets. Fertile lemma lanceolate or elliptic, 12–15 mm long, herbaceous, without keel, 7 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 5–14 mm long overall. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, Tibet.

TDWG4. Yunnan.

Bromus pseudosecalinus Philip Smith. Fedde, *Repert.* 77: 63 (1968).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk pseudos, false. Resembling *Bromus secalinus*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms 30–60 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 5–10 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or ovate, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume elliptic, 0.75 length of upper glume, coriaceous, without keels, 3 -veined. Lower glume apex acute. Upper glume ovate, 0.75 length of adjacent fertile lemma, coriaceous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5–6 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma margins involute. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 2–6 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.25–1.75 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, concavo-convex, 4–4.5 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe.

Region. Northern Europe.

Country /Province /State. : Great Britain, Ireland.

Bromus pubescens Muhl. Willd. *Enum. Hort. Berol.* 120 (1809).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *H.C. Muhlenberg 154*, no date, USA: Pennsylvania: Lancaster County (PH; IT: US-865456 (fragm. ex PH)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (221).

Derivation (Clifford & Bostock 2007): L. pubesco, become hairy. Plant whole or in part hairy.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 65–150 cm long. Culm-internodes distally glabrous or pubescent. Culm-nodes pubescent. Leaf-sheaths pilose, with reflexed hairs. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane, 0.5–2 mm long, erose, truncate or obtuse. Leaf-blades 12–32 cm long, 4–8 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–25 cm long. Primary panicle branches spreading or drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 15–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4–8 mm long, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Upper glume lanceolate, 5–10 mm long, membranous, without keels, 3(–5) -veined. Upper glume surface pubescent.

Florets. Fertile lemma oblong, 8–12 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins eciliate or ciliate. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 3–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, South-central USA, and Southeastern USA.** Manitoba. Colorado, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

Bromus pumpellianus Scribn. *Bull. Torrey Bot. Club* 15: 9 t. 76, fig. d. (1888).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *B. articus*).

Basionym or Replaced Name: *Bromus sibiricus* Drobov, *Trav. Mus. Bot. Acad. Petersb.* 12: 229 (1914). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: USA: Montana: Meagher Co., Belt Mountains, 1883, *F.L. Lamson-Scribner 418* (HT: US-81590).

Recent Synonyms: *Bromopsis pumpelliana* (Scribn.) Holub, *Folia Geobot. Phytotax.*, 8(2): 168 (1973). *Bromus arcticus* Shear ex Scribner & Merrill, *Contrib. U. S. Nat. Herb.* 13: 83 (1910).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (7), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (208, as var. *pumpellianus* & var. *dicksonii*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 524).

Derivation (Clifford & Bostock 2007): L. -anus, indicating connection. In honor of Raphael Pumpelly (1837–1923) United States geologist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 20–100 cm long. Ligule an eciliate membrane. Leaf-blades 3–8 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 3–15 cm long. Primary panicle branches bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 12–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–8 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 7–10 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10–13 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent, hairy at base. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 1.5–3 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Europe, Temperate Asia, North America.

Region. Northern Europe (*), Eastern Europe.

Country /Province /State. : GB Aliens (Ryves et al). Central European Russia, East European Russia, North European Russia. Siberia, Russian far east, **China, Mongolia, Russia.** Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Magadan, Primorye, Sakhalin. Inner Mongolia, Manchuria, China North-Central, Xinjiang. **Subarctic America, Western Canada, Eastern Canada,**

Northwest USA, North-central USA, Northeast USA. Alaska, Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Ontario. Colorado, Idaho, Montana, Wyoming. South Dakota. Michigan. **TDWG4.** Gansu, Shanxi.

Bromus racemosus Linn. *Sp. Pl. ed. 2*, 114 (1762).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Anon.*, (LINN-93.31). LT designated by P. M. Smith, *Notes Roy. Bot. Gard.* 42: 499 (1985).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (84), G.Hegi, *Flora von Mitteleuropa* 1 (1909), H.J.Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (234), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (88, Fig. 50).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): *L. racemus*, stalk of a cluster of grapes; -osa, abundance. The spikelets are borne in racemes or contracted panicles.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–150 cm long, 2–7(–9) -noded. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–3 mm long, erose. Leaf-blades 5–20 cm long, 2–5(–8) mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, elliptic or oblong, dense, equilateral, 4–17 cm long, 1.5–4 cm wide. Primary panicle branches appressed, 2–6 cm long, bearing 1–4 fertile spikelets on each lower branch. Panicle branches stiff, straight, scabrous, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–25 mm long.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, compressed slightly, 12–16 mm long, 3.5–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, parallel to lemmas. Lower glume oblong, 4–6.5 mm long, 0.7–0.9 length of upper glume, chartaceous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 4.5–8 mm long, 0.7–0.9 length of adjacent fertile lemma, chartaceous, without keels, 5–9 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic or obovate, 6.5–8 mm long, coriaceous (thinly), much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 5–10 mm long overall, limb scabrous. Palea 0.8–0.9 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, 1–2 mm long, membranous. Anthers 3, 2–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, fusiform, concealed by floret, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 14$ (1 ref TROPICOS), or 28 (4 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Temperate Asia, Tropical Asia, Australasia (*), North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Great Britain, Ireland, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : France, Portugal, Spain. : Albania, Bulgaria, Italy, Crete, Sicily. Estonia, Latvia, Lithuania, East European Russia, South European Russia, Northwest European Russia. **Middle Asia, Caucasus, Western Asia, China.** Kazakhstan, Turkmenistan, Tadjikistan, Uzbekistan. Afghanistan, Iran. China North-Central, Qinghai, Tibet, Xinjiang. **Indian Subcontinent.** Eastern Himalaya. **Australia, New Zealand.** New South Wales (*), Victoria (*). New Zealand North I, New Zealand South I. **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, Southeastern USA.** Yukon. British Columbia, Saskatchewan. Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington. Illinois. Connecticut, Maine, Michigan, New Jersey, New York. Arizona, California, Nevada, Utah. Delaware, Maryland, North Carolina. **Southern South America.** Argentina Northeast, Chile South.

TDWG4. Gansu. Bhutan. Coast, Tablelands. Distrito Federal. Chubut. Los Lagos, Magellanes.

Bromus ramosus Huds. *Flora Anglica* 40 (1762).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Bromopsis*).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: England: in sylvis et sepibus frequens.

Recent Synonyms: *Bromopsis ramosa* (Huds.) Holub, *Folia Geobot. Phytotax* 8(2): 168 (1973). *Bromus ramosus* L., *Mant. Pl.* 1: 34 (1767).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (72), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (309 (213), Pl.3, as *Bromopsis ramosa* ssp. *benekenii*), K.M.Matthew, *Flora Palni Hills Supplement* (1998), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (176), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (221).

Derivation (Clifford & Bostock 2007): L. ramus, branch; -osa, abundance. Inflorescences or culms much branched.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 45–180 cm long, 3–5 -noded. Leaf-sheaths hispid, with reflexed hairs. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 3–6 mm long, lacerate. Leaf-blades drooping, 20–60 cm long, 6–16 mm wide, dark green. Leaf-blade surface scaberulous, glabrous or pubescent, sparsely hairy.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above, tipped by a glumaceous appendage. Panicle open, oblong, effuse, nodding, 15–50 cm long. Primary panicle branches drooping, 2 -nate, bearing 1–9 fertile spikelets on each lower branch. Panicle branches flexuous, scaberulous. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 6–30 mm long.

Fertile Spikelets. Spikelets comprising 4–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–45 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume linear, 6–9 mm long, 0.6–0.7 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 9–12 mm long, 0.7–0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 3–5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 10–15 mm long, chartaceous, much thinner on margins, without keel or keeled, lightly keeled, 7 -veined, more than 3-veined. Lemma surface hirsute. Lemma apex entire, awned, 1 -awned. Principal lemma awn subapical, 4–11 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 28$ (2 refs TROPICOS). $2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Great Britain, Ireland, Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Romania, Sicily, Turkey Europe, Yugoslavia. Baltic States, Northwest European Russia, Ukraine. **Northern Africa.** Morocco. **Middle Asia, Western Asia, China.** Kazakhstan, Tadjikistan. Iran. Tibet. **Indian Subcontinent, Indo-China.** Assam, Eastern Himalaya, Pakistan, West Himalaya.

TDWG4. Sikkim. Meghalaya, Nagaland. Tamilnadu. Himachal Pradesh, Jammu Kashmir.

Bromus remotiflorus (Steud.) Ohwi. *Acta Phytotax. & Geobot.* 4: 58 (1935).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. **Basionym or Replaced Name:** *Festuca remotiflora* Steud., *Syn. Pl. Gram.* 315 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan.; *P.F. von Siebold* (HT: L, ex Museo Lugd. Bat. Japonia.).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (36, Fig 7), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (302), C-C Hsu, *Taiwan Grasses* (1975) (as var. *piananensis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 525).

Derivation (Clifford & Bostock 2007): *L. remotus*, distant; flos, flower. Spikelets with widely separated florets.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–128 cm long, 1.75–2 mm diam., 6–7 -noded. Culm-nodes pubescent. Leaves cauline. Leaf-sheaths tubular for much of their length, pubescent. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 18–38 cm long, 5–9 mm wide. Leaf-blade surface scaberulous, rough on both sides, pubescent, hairy abaxially.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, elliptic, nodding, 20–30 cm long, 3–6 cm wide. Primary panicle branches drooping, 3–6 -nate, whorled at most nodes, bearing 5–14 fertile spikelets on each lower branch. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed slightly, 20–35 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear, 4–7 mm long, 0.5–0.6 length of upper glume, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume linear, 8–12 mm long, 0.8 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 10–15 mm long, herbaceous, keeled, 7 -veined, more than 3-veined. Lemma surface asperulous, pubescent, hairy on veins. Lemma apex acute, awned, 1 -awned. Principal lemma awn apical, 6–12 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.5–2.5(–3) mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, oblong, 8–10 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. **China, Eastern Asia.** China South Central, China North-Central, Qinghai, China Southeast, Tibet. Japan, Korea, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Malesia.** Philippines.

TDWG4. Shaanxi. Anhui, Fujian, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Bromus richardsonii Link. *Hort. Berol.* 2: 281 (1833).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Hab. in America septentrionali occidentali... semina mist cl.: Grown from seed in Berlin, *Richardson*.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (223).

Derivation (Clifford & Bostock 2007): in honor of John Richardson (1787–1865) English physician, naturalist and Arctic explorer.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Butt sheaths pilose. Culms 50–145 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane, 0.4–2 mm long, obtuse. Leaf-blades 10–35 cm long, 3–12 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, nodding, 10–25 cm long. Primary panicle branches ascending or spreading or drooping. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets oblong, laterally compressed, 15–40 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7.5–12.5 mm long, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous. Upper glume lanceolate, 9–13.5 mm long, membranous, without keels, 3 -veined. Upper glume surface glabrous. Upper glume mucicous or mucronate.

Florets. Fertile lemma oblong, 9–16 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma margins ciliate, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 2–5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex.

$N = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia, North America.

Country /Province /State. Siberia, Russian far east, **China.** Kamchatka, Sakhalin. Manchuria. **Subarctic America, Western Canada, Northwest USA, South-central USA,** and **Mexico.** British Columbia. California. Texas. Northeast Mexico.

Heilongjiang, or Jilin, or Liaoning. Durango.

Bromus rigidus Roth. *Roem. & Ust. Mag. Bot.* 4: 21 (1790).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: (LE). "Hort. propr." (Roth). NT: *Roth, Catal. Bot. 1:17*, Habitat in Europa australi (B-W). NT designated by Sales, *J. Bot.* 50(1): 9–10 (1993).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 243), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1506, Pl. 221), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (25, Fig. 6), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (100, Fig. 25), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (92, Fig. 54), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:41(1980)).

Derivation (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 15–50 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 8–20 cm long, 2–6 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, elliptic, dense, equilateral, 15–20 cm long, 5–12 cm wide. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 3–5 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 20–30 mm long, 5–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pungent, disarticulating obliquely.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 15–18 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or hirsute. Lower glume apex acute. Upper glume lanceolate, 20–25 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or hirsute. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma lanceolate, 20–25 mm long, chartaceous, without keel, 5(–7) -veined, more than 3-veined. Lemma surface glabrous or hirsute. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 25–40 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, 9–18 mm long, hairy at apex, apex fleshy. Hilum linear.

$N = 21$ (1 ref TROPICOS), or 28 (1 ref TROPICOS). $2n = 42$ (5 refs TROPICOS), or 70 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Australasia (*), Pacific, North America (*), South America (*).

Region. Northern Europe (*), **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**.

Country /Province /State. : Great Britain (*). : Czechoslovakia, Hungary. : Balears, Corsica, France, Portugal, Sardinia, Spain, Azores. : Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. **Northern Africa**, **Macaronesia**, **Southern Africa** (*). Algeria, Libya, Morocco, Tunisia. Azores, Canary Is. Western Cape, Eastern Cape. **Middle Asia**, **Caucasus**, **Western Asia**, **China**, **Eastern Asia**. Iran, Iraq. China Southeast. Japan, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Australia**. Western Australia, South Australia, Queensland, New South Wales, A.C.T., Victoria, Tasmania. **North-central Pacific**. Hawaii (*). **Western Canada**, **Northwest USA**, **Southwestern USA**, **South-central USA**, **Southeastern USA**. British Columbia. Idaho, Oregon, Washington. Arizona, California, Nevada, Utah. Texas. Maryland, Virginia. **Caribbean**, **Southern South America**. Jamaica. Argentina Northeast, Chile Central, Juan Fernandez Is.

TDWG4. Jiangxi. Buenos Aires, Chaco, La Pampa. Río Negro, Santa Cruz. Atacama. Coquimbo, Valparaíso, Santiago, O'Higgins, Maule, Biobío, La Araucanía. Los Lagos.

Bromus riparius Rehm. *Notiz. Veg. Gest. Schwarz. Meer.* 8. (1872).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Russia, Odessa: Rehm 184b (K iso, LE).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007).

Images: R.Darke, *The Encyclopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. ripa, river bank; -aria, pertaining to. Growing on river banks.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Butt sheaths pilose, persistent and investing base of culm, with reticulate dead sheaths. Culms erect or geniculately ascending, 30–60 cm long. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades flat or involute, 10–18 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough adaxially, glabrous or pilose, sparsely hairy. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 8–12 cm long, 4–10 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or cuneate, laterally compressed, 20–30 mm long, 4–7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–9 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume apex acute. Upper glume lanceolate, 8–11 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma oblong, 10–13 mm long, chartaceous, mid-green or purple, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 4–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.5–3.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 70$ (2 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Temperate Asia.

Region. **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Bulgaria, Greece, Romania, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Russian far east, **Middle Asia**, **Caucasus**, **Western Asia**, **China**. Primorye. Tadzhikistan. Iran, Iraq. China North-Central.

TDWG4. Gansu.

Bromus rubens Delile, nom nud. *Fl. Egypte* 2:52 (1812).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D.

& B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *Anisantha*), T.G.Tutin et al, *Flora Europaea* 5 (1980), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Loefling* 84, Spain (LINN-93.28). LT (as NT) designated by P.M. Smith, Notes Roy. Bot. Gard. Edinb. 43: 500 (1985).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 238), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (153, Pl. 51), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (260, Fig 202), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (504, Fig 98), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler., *Grasses of New South Wales*, 4th edn (2008) (176), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (227), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:42(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;

Derivation (Clifford & Bostock 2007): *L. rubeo*, be red. Spikelets reddish-purple.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 10–40 cm long. Leaf-sheaths hirsute. Ligule an eciliate membrane. Leaf-blades 2–12 cm long, 3.5–6 mm wide. Leaf-blade surface hirsute, hairy on both sides.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, obovate, 5–10 cm long, 2–5 cm wide. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 15–30 mm long, 2–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 5–9 mm long, 0.66–0.75 length of upper glume, membranous, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or hirsute. Lower glume apex acute. Upper glume lanceolate, 7–13.5 mm long, 0.75 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3 -veined. Upper glume surface glabrous or hispid. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma elliptic, 10–17 mm long, 2–3 mm wide, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface glabrous or pilose. Lemma apex dentate, 2 -fid, with lobes 2–3 mm long, awned, 1 -awned. Principal lemma awn subapical, straight, 7–23 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, 8–11 mm long, hairy at apex, apex fleshy. Hilum linear.

$N = 14$ (1 ref TROPICOS). $2n = 14$ (1 ref TROPICOS), or 28 (4 refs TROPICOS).

Distribution (TDWG). **Continent.** Europe, Africa, Temperate Asia, Australasia (*), Pacific, North America (*), South America (*).

Region. Northern Europe (*), Southwestern Europe, Southeastern Europe.

Country /Province /State. : Great Britain (*). : Balears, Corsica, France, Portugal, Sardinia, Spain, Azores. : Greece, Italy, Crete, Sicily, Turkey Europe. **Northern Africa, Macaronesia, Southern Africa** (*). Algeria, Egypt, Libya, Morocco, Tunisia. Namibia. **Middle Asia, Caucasus, Western Asia, China.** Turkmenistan, Tadjikistan. Iran, Iraq, Xinjiang. **Australia.** Western Australia (*), South Australia (*), Queensland (*), New South Wales (*), A.C.T. (*), Victoria (*). **North-central Pacific.** Hawaii (*). **Northwest USA, Northeast USA, Southwestern USA, South-central USA, Mexico.** Oregon, Washington. Massachusetts, New York. Arizona, California, Nevada, Utah. New Mexico, Texas. Northwest Mexico. **Southern South America.** Argentina Northeast, Argentina South, Argentina Northwest.

TDWG4. South-West. Southern. South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Catamarca, Mendoza. Buenos Aires. Neuquén. Baja California.

Bromus scoparius Linn. *Cent. Pl.* 1, 6 *Amoen. Acad.* 4: 266 (1755).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: NT: *Loefling* 81, Spain (LINN-93.32). NT designated by P.M. Smith, Notes Roy. Bot. Gard. Edinb. 42: 499 (1985).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 235), L.Boulos, *Flora of Egypt* 4 (2005), N.L.Bor, *Gramineae in Flora of Iraq* (1968), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (236).

Images: L.Boulos, *Flora of Egypt* 4 (2005);.

Derivation (Clifford & Bostock 2007): *L. scopae*, broom; -aria, pertaining to. Inflorescences condensed resembling a broom.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 10–50 cm long. Leaf-sheaths glabrous on surface or hirsute. Ligule an eciliate membrane. Leaf-blades 3–20 cm long, 1.5–6 mm wide. Leaf-blade surface pilose, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, oblong or obovate, dense, 1–7 cm long, 0.5–3 cm wide. Primary panicle branches 0.3–0.4 cm long. Spikelets solitary. Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 10–15 mm long, 2–3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–5.5 mm long, 0.6–0.9 length of upper glume, membranous, without keels, 3(–5) -veined. Lower glume surface glabrous. Lower glume apex acute. Upper glume lanceolate, 5–7 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume surface glabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 7.5–9 mm long, 1.5–3 mm wide, herbaceous, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma surface glabrous or puberulous. Lemma apex dentate, 2 -fid, with lobes 0.25–1.6 mm long, awned, 1 -awned. Principal lemma awn subapical, spreading or briefly coiled at base of limb, flat below, 4–10 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.3–0.7 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (5 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, North America, South America.

Region. Northern Europe (*), Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Great Britain (*). : Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. Krym, East European Russia, South European Russia. **Northern Africa.** Algeria, Egypt, Libya, Morocco, Tunisia. **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iraq. Gulf States. China Southeast, Xinjiang. **Indian Subcontinent.** India, Pakistan, West Himalaya. Lord Howe-Norfolk Is. **Northeast USA, Southwestern USA, Southeastern USA.** Michigan. California. Virginia. **Southern South America.** Chile Central.

TDWG4. Jiangsu. Jammu Kashmir. Valparaiso, Santiago, O'Higgins, Biobio.

Bromus scopulorum Chase. *Journ. Arn. Arb.* 24: 78 (1943).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Irian Jaya: 7 km n.e. of Wilhelmina top, dry ledges of limestone cliff, 3560 m, Sept. 1938, *Brass & Myer-Drees 9825* (HT: A; IT: BO, L, US-1761707).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. scopulus*, cliff. Growing amongst rocks or at the bases of cliffs.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 25–50 cm long, 3 -noded. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths glabrous on surface or puberulous, with reflexed hairs. Ligule an eciliate membrane, 0.5–1 mm long, truncate or obtuse. Leaf-blades 17–19 cm long, 2.25–3.5 mm wide, flaccid. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy on both sides.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle open, nodding, 8–9 cm long, 2 cm wide. Primary panicle branches 1–2 -nate, 0.7–3.5 cm long, bearing 1 fertile spikelets on each lower branch. Panicle axis smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets laterally compressed, 22–30 mm long, 4–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–2.5 mm long, pubescent. Floret callus pubescent, disarticulating obliquely, with circular scar.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear or lanceolate, 6–8.5 mm long, 0.75–0.85 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume primary vein smooth. Lower glume lateral veins absent or obscure. Lower glume apex acute, mucronate. Upper glume lanceolate, 8–10 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume primary vein smooth. Upper glume apex acute, mucronate.

Florets. Fertile lemma lanceolate, 11–13.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough on veins. Lemma margins pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 5–10 mm long overall. Palea 9–10 mm long, 0.66–0.8 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–2.8 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia, Papuaia. New Guinea.

Bromus secalinus Linn. *Sp. Pl.* 76 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: CT: *Anon.*, (LINN-93.1). NT designated by P. M. Smith, *Notes Roy. Bot. Gard. Edinburgh* 42: 498 (1985); CT proposed by Jarvis, *Taxon* 41: 559 (1992).

ST: *van Royen s.n.*, (L).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (88), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (309 (213), Pl.3), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (41, Fig 9), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (176), M.E.Barkworth et al, *Flora of North America north of Mexico Vol 24 Poaceae*, part 1 (2007) (229), F.W.Gould, *The Grasses of Texas* (1975) (92, Fig. 41), M.N.Correa, *Flora Patagonica Parte III, Gramineae* (1978) (88, Fig 51), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 532), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:43(1980)).

Derivation (Clifford & Bostock 2007): L. -inus, belonging to. Growing in fields of rye (*Secale*).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect, 20–120 cm long, 5–7 -noded. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1–2 mm long, erose. Leaf-blades 10–25 cm long, 4–10 mm wide. Leaf-blade surface scaberulous, pubescent.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, ovate, equilateral or nodding, 5–20 cm long. Primary panicle branches 2–8 cm long, bearing 1–4 fertile spikelets on each lower branch. Panicle branches scabrous, glabrous or pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 10–30 mm long.

Fertile Spikelets. Spikelets comprising 4–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, compressed slightly, 12–25 mm long, 4–7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, parallel to lemmas. Lower glume oblong or ovate, 4.6–6.5 mm long, 0.7–0.8 length of upper glume, coriaceous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic or ovate, 5–8.5 mm long, 0.7–0.9 length of adjacent fertile lemma, coriaceous, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 6–10 mm long, 4–11 mm wide, coriaceous, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma margins involute. Lemma apex mucicous or awned, 1 -awned. Principal lemma awn subapical, 0–8 mm long overall, limb scabrous. Palea 1 length of lemma. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, ellipsoid, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 28$ (1 ref TROPICOS). $2n = 28$ (3 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Australasia (*), Pacific, North America (*), South America (*).

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain, Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, France, Portugal, Sardinia, Spain, Azores. : Bulgaria, Greece, Italy, Crete, Romania, Sicily, Yugoslavia. Estonia, Latvia, Lithuania, Baltic States, Central European Russia, East European Russia, North European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia.** Algeria. Azores. Siberia, Russian far east, **Caucasus, Western Asia, China, Eastern Asia, Russia.** Kamchatka, Primorye, Sakhalin. Turkmenistan. Iran. China North-Central, Tibet, Xinjiang. Japan, Taiwan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Australia.** New South Wales (*). **North-central Pacific.** Hawaii (*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alaska. Alberta, British Columbia. New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia. Gulf (Mexico). **Southern South America.** Argentina South, Chile Central, Chile South.

TDWG4. Gansu. Tablelands. Buenos Aires, Distrito Federal. Chubut, Neuquén, Río Negro. Biobio, La Araucanía. Los Lagos, Magellanes. Veracruz.

Bromus segetum H. B. & K. *Nov. Gen. et Sp.* 1: 152 (1815).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Ecuador. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Humboldt & Bonpland s.n.*, Jan, Ecuador: Pichincha (P; IT: B, US-865467 (fragm. ex P-Bonpl.)). Coll. not recorded on the US fragm..

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *seges*, cornfield; -*etum*, place of growth. Growing amongst cultivated cereals.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms erect, 80–120 cm long. Leaf-sheaths striately veined, pubescent. Ligule an eciliate membrane. Leaf-blades 20–30 cm long, 5–10 mm wide. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–25 cm long. Primary panicle branches drooping. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 15–23 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, membranous, without keels. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 8–12 mm long, chartaceous, without keel, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 5–9 mm long overall. Palea keels ciliate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Northern South America, Western South America. Colombia.

Bromus setifolius J. Presl. *Rel. Haenk.* 1: 261 (1830).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *T. Haenke s.n.*, no date, Mexico (PR; IT: MO-1837418, MO-2969609 (line drawing), S-865468 (fragm.)).

Recent Synonyms: *Bromus macranthos* E.Desv., nom superfl, C. Gay, *Fl. Chil.* 6: 443 (1853). *Bromus pictus* Hook. f., *Fl. Antarct.* 387 (1847).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (297, Fig. 98), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (85, Fig 47 as var. *brevifolius*).

Derivation (Clifford & Bostock 2007): L. seta, bristle; folium, leaf. Leaf-blades bristle-like.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–100 cm long. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2 mm long, lacerate. Leaf-blades filiform or linear, flat or involute, 6–8 cm long, 1–3 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate, 9–18 cm long, bearing few spikelets. Primary panicle branches sparsely divided. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 15–35 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–10 mm long, 0.66 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface scabrous. Lower glume apex acute. Upper glume lanceolate, 8–15 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10–25 mm long, chartaceous, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous. Lemma margins ciliate. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 4 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 28$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Chile North, Chile Central, Chile South.

TDWG4. La Rioja, Mendoza, San Juan. Chubut, Neuquén, Río Negro, Santa Cruz. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso, Chiloe, Aisen, Magellanes. Atacama. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio, La Araucania. Los Lagos, Aisen, Magellanes.

Bromus sewerzowii Regel. *Trudy Imp. S.-Peterburgsk. Bot. Sada* 75 (2): 601 (1881).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, Western Asia, China, Mongolia. Kazakhstan, Kirgizistan, Tadjikistan. Afghanistan. Xinjiang. Mongolia.

Bromus sibiricus Drobov. *Trav. Mus. Bot. Acad. Petersb.* 12: 229 (1914).

Regarded by K as a synonym (*B. pumpellianus*).

Accepted by: S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. *-ica*, belonging to. From Siberia.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Distribution (TDWG). Continent. Europe, Temperate Asia.

Country /Province /State. Siberia, **China, Mongolia.** Inner Mongolia, Manchuria, China North-Central. Mongolia.

TDWG4. Hebei.

Bromus sinensis P.C. Keng. *Acta Bot. Yunnanica*, 4(4): 349 (1982).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

TYPE from China. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: China: Sichuan: Taining, 10 Aug. 1964, K.L. Chu 7447 (HT: NJU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 531).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Sina, now China.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose, clumped loosely. Culms 50–60 cm long. Culm-nodes black, pubescent. Leaf-sheaths longer than adjacent culm internode, pilose. Leaf-sheath auricles absent or falcate. Ligule an eciliate membrane, 1–3 mm long, brown, glabrous on abaxial surface or pubescent on abaxial surface, entire or erose, truncate. Leaf-blades erect, flat or conduplicate, 12–24 cm long, 3–5 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface glabrous or pilose, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, nodding, 12–24 cm long. Primary panicle branches spreading, 2–4 -nate, 5–10 cm long, bearing 1–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 12–20 mm long, 5–8 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1–2 mm long, pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8–12 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 11–17 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface pubescent. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma oblong, 10–15 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent or pilose. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, reflexed, 8–14 mm long overall. Palea oblong, 8–10 mm long. Palea keels contiguous above a sulcus. Palea surface puberulous, hairy on back. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1.8–3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. China. China South Central, Qinghai, Tibet.

TDWG4. Sichuan, Yunnan.

Bromus sipyleus Boiss. *Diagn. Ser.* 1, 13: 65 (1854).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): from Mt Sipylo, now Manissa Dag, Turkey.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 75–150 cm long. Leaf-sheaths pilose. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 2 mm long. Leaf-blades 15–35 cm long, 6–12 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Peduncle cylindrical at apex or tipped by a glumaceous appendage. Panicle open, ovate, effuse, 16–25 cm long, 5–10 cm wide. Primary panicle branches ascending or spreading, 1–2 -nate, bearing 4–9 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 30–35 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 11–13 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 12–15 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 15–18 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 7–9 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Turkey.

Bromus sitchensis Trin. *Mem. Acad. Petersb.* 6, *Math. Phys. Nat.* 2:173 (1832).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *D. Mertens*, Sitcha (LE-TRIN-2975.01).

Recent Synonyms: *Ceratochloa sitchensis* (Trin.) T.A. Cope & T.B. Ryves, *Watsonia*, 21(1): 135 (1996).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (200).

Derivation (Clifford & Bostock 2007): *L. -ensis*, denoting origin. From Sitcha Island, Alaska.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 50–150 cm long. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 2–8 mm long, erose. Leaf-blades 8–15 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–35 cm long, with spikelets clustered towards branch tips. Primary panicle branches appressed or ascending or spreading or drooping, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 20–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8–10 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3–5 -veined. Lower glume apex acute. Upper glume lanceolate, 10–13 mm long, 1.1–1.4 length of adjacent fertile lemma, membranous, 1-keeled, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 7–12 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous or puberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 7–12 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1(–6) mm long, eventually exerted or retained within floret. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Australasia, North America.

Country /Province /State. New Zealand. New Zealand South I. **Subarctic America, Western Canada, Northwest USA.** Aleutian Is, Alaska. British Columbia. Oregon, Washington.

Bromus speciosus Nees. *Fl. Afr. Austr.* 1: 454 (1841).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (65, Fig 37).

Derivation (Clifford & Bostock 2007): *L. species, beauty; -osa, abundance.* Showy in some respect, in particular the inflorescence.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 30–60 cm long. Leaf-sheaths pubescent or pilose. Ligule an eciliate membrane. Leaf-blades 8–20 cm long, 2–4 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches simple. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 length of fertile spikelet, smooth or scaberulous, glabrous.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–50 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 7–9 mm long, 0.75 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume surface pubescent. Lower glume

apex acute. Upper glume lanceolate, 10–13 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 10–15 mm long, chartaceous, purple, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–6 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 5–7 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. Southern Africa. Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Eastern Cape.

Bromus squarrosus Linn. *Sp. Pl.* 76 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Spain. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: LT: *Loefling 79a*, Spain (LINN-93.8). LT designated by P. M. Smith, *Notes Roy. Bot. Gard. Edinb.* 42: 500 (1985).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (237).

Derivation (Clifford & Bostock 2007): L. spreading at right angles from a common axis. Inflorescence arms held at right angles to common axis.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 10–50 cm long. Culm-nodes purple. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades 3–15 cm long, 1–6 mm wide. Leaf-blade surface glabrous or hirsute.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle open, ovate, secund, 4–18 cm long, 3–6 cm wide, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Racemes 1, single, paucilateral. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 8–30 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong or ovate, laterally compressed, 15–50 mm long, 4–15 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume ovate, 5–8 mm long, 0.75 length of upper glume, membranous, without keels, 5–7 -veined. Lower glume surface glabrous or hirsute. Lower glume apex acute. Upper glume elliptic, 6–9 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

Florets. Fertile lemma trullate, widest at 0.5 of its length from base, 8–11 mm long, 5–9 mm wide, chartaceous, without keel, 7–11 -veined, more than 3-veined. Lemma surface glabrous or hirsute. Lemma apex entire, emarginate or acute, awned, 1 -awned. Principal lemma awn subapical, spreading or reflexed, 4–11 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.75–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, 4.5–6.5 mm long, hairy at apex, apex fleshy. Hilum linear.

$N = 7$ (1 ref TROPICOS). $2n = 14$ (11 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, North America (*), South America (*).

Region. Northern Europe (*), Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Great Britain (*). : Austria, Czechoslovakia, Hungary, Switzerland. : Balears, France, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia.** Algeria, Morocco, Tunisia. Canary Is. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, China, Mongolia, Russia.** Altay. Primorye. Kazakhstan. Iran, Iraq. China North-Central, Xinjiang. Mongolia. **Western Canada, North-central USA, Northeast USA.** Alberta, British Columbia, Manitoba. North Dakota. Michigan. **Southern South America.** Chile Central.

TDWG4. Gansu. Santiago.

Bromus staintonii A. Melderis. *Enum. Fl. Pl. Nepal*, 1: 125 (1978).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): H.J. Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 525).

Derivation (Clifford & Bostock 2007): in honor of John David Adam Stainton (1921-) English botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect or geniculately ascending, 70–125 cm long. Culm-internodes striate, smooth, distally glabrous. Leaf-sheaths pilose, with simple hairs or reflexed hairs. Ligule an eciliate membrane, 0.5–1 mm long, lacerate. Leaf-blades 10–25 cm long, 1.5–5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, nodding, 10–30 cm long. Primary panicle branches 2–4 -nate, bearing 1–3 fertile spikelets on each lower branch.

Fertile Spikelets. Spikelets comprising 5–20 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear or oblong, laterally compressed, 15–22 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes dissimilar. Lower glume lanceolate, 6–7 mm long, 0.75 length of upper glume, chartaceous, much thinner on margins, 1–3 -veined. Lower glume surface pubescent. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 8–10 mm long, 0.9 length of adjacent fertile lemma, chartaceous, with membranous margins, 3–5 -veined. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma 10–11 mm long, 5–7 -veined, more than 3-veined. Lemma apex awned, 1 -awned. Principal lemma awn subapical, straight, 2.5–5 mm long overall. Palea 1 length of lemma. Palea apex emarginate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2–2.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. China. Tibet. **Indian Subcontinent.** Eastern Himalaya, India, Nepal.

TDWG4. Bhutan, Sikkim.

Bromus stenostachyus Boiss. *Fl. Orient.* 5: 643 (1884).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online, U. Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. stenos, narrow; stachys, ear of corn.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or geniculately ascending, 30–75 cm long. Culm-internodes distally glabrous. Leaf-sheaths pubescent or hispid. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 1.5–2.5 mm wide, dark green. Leaf-blade surface hispid, hairy abaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 11–18 cm long. Primary panicle branches indistinct the panicle almost racemose, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6.5–9 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 7.5–10 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma lanceolate, 10–12 mm long, chartaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 2.5–3.5 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 4–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia, Tropical Asia.

Country /Province /State. Western Asia, China. Afghanistan, Iran. Xinjiang. **Indian Subcontinent.** Pakistan.

Bromus sterilis Linn. *Sp. Pl.* 77 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Anisantha*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Loefling* 82, Spain (LINN-93.19). LT designated by Smith, *Notes Roy. Bot. Gard. Edinburgh* 42:500 (1985). According to Veldkamp, *Blumea* 35: 497 (1991) this is a mistake as the specimen represents *Bromus diandrus* Roth..

CT: *C.E. Hubbard* 9045, 15 Jun 1932, England: Surrey: Tothill, near Headley, scattered plants in derelict hay-field on heavy soil overlying chalk (E; INT: K). CT proposed by Sales, *Taxon* 41: 584 (1992).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (62 374), G.Hegi, *Flora von Mitteleuropa* 1 (1909), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 241), L.Boulos, *Flora of Egypt* 4 (2005) (195, Pl. 56), N.L.Bor, *Gramineae in Flora of Iraq* (1968) (159, Pl. 54), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (504, Fig 98), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (177), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (225), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (24, Fig. 5), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (92, Fig 53), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:44(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. sterile. The spikelets fall soon after attaining maturity.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 15–100 cm long, 3–5 -noded. Leaf-sheaths hispid. Ligule an eciliate membrane, 2–4 mm long, erose. Leaf-blades 5–20 cm long, 2–7 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, nodding, 5–25 cm long. Primary panicle branches drooping, simple, 2–10 cm long, bearing 1(–3) fertile spikelets on each lower branch. Panicle branches flexuous, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 20–35 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, gaping. Lower glume linear, 5–15 mm long, 0.6–0.7 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 7.5–20 mm long, 0.7–0.9 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 8–25 mm long, chartaceous, much thinner on margins, without keel or keeled, lightly keeled, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, incised 0.1–0.2 of lemma length, awned, 1 -awned. Principal lemma awn subapical, 15–40 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5–2 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$2n = 14$ (4 refs TROPICOS), or 28 (3 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Australasia (*), Pacific, North America (*), South America (*).

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Finland, Great Britain, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechtenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Balears, Corsica, Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Gibraltar, Spain. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Crete, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kalingrad, Latvia, Lithuania, Baltic States, Krym, East European Russia, South

European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa, Macaronesia.** Algeria, Egypt, Morocco, Tunisia. Madeira. **Middle Asia, Caucasus, Western Asia, China, Eastern Asia.** Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. China South Central, China Southeast. Japan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Australia, New Zealand.** Western Australia (*), New South Wales (*), Victoria (*), Tasmania (*). Chatham Is, New Zealand North I, New Zealand South I. **North-central Pacific.** Hawaii (*). **Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA.** British Columbia. Ontario. Colorado, Oregon, Washington. Illinois. Connecticut, Indiana, Massachusetts, Michigan, Ohio, New York, Pennsylvania. California, Utah. New Mexico. Alabama, Arkansas, North Carolina, Tennessee, Virginia. **Caribbean, Southern South America.** Haiti. Argentina South, Chile Central, Chile South. Tristan de Cunha.

TDWG4. Jiangsu. Sichuan. South-West. Coast, Tablelands, Western Slopes. Distrito Federal, Santa Fe. Chubut, Neuquén. Valparaiso, Santiago, O'Higgins, Biobio, La Araucania. Los Lagos, Magellanes.

Bromus striatus Hitchcock. *Contrib. U. S. Nat. Herb.* 24: 316 (1927).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: A.S. Hitchcock 22386, no date, Peru: Arequipa: Mollendo Prov. (US-1164908; IT: US-1258951).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. stria*, furrow; -ata, possessing. Glumes and lemmas streaked.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 50–80 cm long, 4 -noded. Culm-internodes distally glabrous or pubescent. Leaf-sheaths striately veined, pilose, with reflexed hairs. Ligule an eciliate membrane, 2–3 mm long, pubescent on abaxial surface, lacerate, truncate. Leaf-blades 10–15 cm long, 4–8 mm wide. Leaf-blade surface pubescent, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, nodding, 10–15 cm long. Primary panicle branches spreading or drooping, 2 -nate, 2–6 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle axis scabrous. Panicle branches flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, compressed strongly, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 3 mm long, scaberulous.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 10 mm long, 0.75 length of upper glume, membranous, much thinner on margins, 1-keeled, 3 -veined. Lower glume primary vein scabrous. Lower glume apex acuminate. Upper glume lanceolate, 14 mm long, 0.9 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 5–7 -veined. Upper glume primary vein scabrous. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 15 mm long, chartaceous, keeled, 7 -veined, more than 3-veined. Lemma midvein scabrous. Lemma surface smooth or scaberulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 12–18 mm long overall. Palea keels ciliolate. Palea apex with excurrent keel veins. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America. Peru.

Bromus suksdorfii Vasey. *Coult. Bot. Gaz.* 10: 223 (1885).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IST: W.N. Suksdorf 620, 31 Jul 1883, USA: Washington: hillsides, Paddo Mt., elev. 6000–7000 ft (LE). IST.

ILT: W.N. Suksdorf s.n., 31 Jul 1883, USA: Washington: Adams Co. (US-86725). ILT (probable).

LT: W.N. Suksdorf 74, 31 Jul 1883, USA: Washington: in loose soil on dry mountain sides, Paddo (Mt. Adams), 7000 ft (US-81595). LT LT designated (as type) by Shear, U.S.D.A. Div. Agrostol. Bull. 23: 46 (1900) [this sheet matches Shear's stated loc. precisely, *fide* RJS 2002].

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (219).

Derivation (Clifford & Bostock 2007): in honor of Wilhelm Nikolaus Suksdorf (1850–1932), German-born United States botanist.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 50–100 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1 mm long, erose. Leaf-blades 6–10 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 8–12 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7–10 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 9–12 mm long, 0.7–0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 13 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 3–4 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Northwest USA, Southwestern USA. Oregon, Washington. California, Nevada.

Bromus sundaicus *Bromus sundaicus*. *Bull. Tokyo Sci. Mus.*, No. 18, 11 (1947).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Indonesia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *Van Steenis 10936*, 15 Jul 1938, Java: Besuki, Jang Plateau, Selonyeng (BO).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ica, belonging to. From Java and near to the Sunda Strait.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 35–70 cm long, 3 -noded. Culm-nodes glabrous or pubescent. Lateral branches lacking. Leaf-sheaths puberulous or pubescent, with tubercle-based hairs. Ligule an eciliate membrane, 2.25–3.5 mm long. Leaf-blades 19–25.5 mm long, 2–6 mm wide, flaccid. Leaf-blade surface scabrous, rough on both sides, pubescent, hairy adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, nodding, 18–22 cm long, 2.5–4 cm wide. Primary panicle branches 2 -nate, 7–14 cm long, bearing 1–2(–4) fertile spikelets on each lower branch. Panicle axis scabrous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, 17–30 mm long, 4 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.7–3.3 mm long, pubescent. Floret callus pilose, disarticulating obliquely, with circular scar.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 7.5–9 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3–5 -veined. Lower glume primary vein scaberulous. Lower glume apex acute. Upper glume lanceolate, 12.5–13 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 5(–7) -veined. Upper glume primary vein scaberulous. Upper glume apex acute, mucous or mucronate.

Florets. Fertile lemma lanceolate, 12–13 mm long, chartaceous, without keel, (3–)5–7 -veined, more than 3-veined. Lemma surface scaberulous, rough on veins. Lemma margins pubescent. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 5–10 mm long overall. Palea 8–11 mm long, 0.66–0.85 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4 mm long, yellow or orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, 8.5–9 mm long, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Java.

Bromus syriacus Boiss. & Blanche. *Diagn. Ser.* 2, 4: 139 (1859).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl 228).

Derivation (Clifford & Bostock 2007): L. *-acus*, pertaining to. From Syria.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 60–100 cm long. Leaf-sheaths pubescent or pilose. Ligule an eciliate membrane. Leaf-blades 2–6 mm wide, flaccid.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, equilateral or nodding, 10–20 cm long. Primary panicle branches appressed or ascending, 3–6 cm long, bearing 1–2 fertile spikelets on each lower branch. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 20–30 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5–6 mm long, 0.5–0.66 length of upper glume, scarios, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 9 mm long, 0.9–1 length of adjacent fertile lemma, scarios, with hyaline margins, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 9–11 mm long, chartaceous, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–5 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Western Asia. Lebanon-Syria, Palestine, Israel & Jordan.

Bromus tectorum Linn. *Sp. Pl.* 77 (1753).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006) (as *Anisantha*), N.L.Bor, *Grasses of Burma, Ceylon, India and Pakistan* (1960), T.G.Tutin et al, *Flora Europaea* 5 (1980), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, *Key to Pacific Grasses* (2010).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: LT: *Anon.*, Europe (LINN-93.25). LT designated by Smith, *Notes Roy. Bot. Gard. Edinb.* 42: 500 (1985).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (64), G.Hegi, *Flora von Mitteleuropa* 1 (1909), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 236), L.Boulos, *Flora of Egypt* 4 (2005) (195, Pl. 56), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (44, Fig 10), H.J.Noltie, *The Grasses of Bhutan* (2000) (625, Fig. 28), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (504, Fig 98), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler, *Grasses of New South Wales*, 4th edn (2008) (177), K.F.Best, et al, *Prairie Grasses* (1971) (79), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (225), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (92, Fig. 52), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 534), E.Hafliger & E.Schultz, *Grass Weeds*, CIBA-GEIGY (2:45(1980)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);

Derivation (Clifford & Bostock 2007): L. *tectum*, roof. Growing on earth roofs but not exclusively so.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 5–60 cm long, 2–5 -noded. Leaf-sheaths hispid. Ligule an eciliate membrane, 2–5 mm long, lacerate. Leaf-blades 2–16 cm long, 1.5–4 mm wide. Leaf-blade surface pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, interrupted (branches clustered), nodding, 4–18 cm long. Primary panicle branches drooping, bearing 5–8 fertile spikelets on each lower branch. Panicle branches flexuous, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1–8 fertile florets, with diminished florets at the apex. Spikelets of 1 fertile floret with or without additional sterile florets, or of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, 10–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, gaping. Lower glume linear, 6–11 mm long, 0.7–0.8 length of upper glume, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 6–13 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 9–16 mm long, chartaceous, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma surface scaberulous, glabrous or hirsute. Lemma apex dentate, 2 -fid, incised 0.2 of lemma length, awned, 1 -awned. Principal lemma awn subapical, 10–25 mm long overall, limb scabrous. Palea 0.8 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.5–1 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, linear, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

$N = 7$ (4 refs TROPICOS). $2n = 14$ (8 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Tropical Asia, Australasia (*), Pacific, North America, South America.

Region. Northern Europe, Middle Europe, Southwestern Europe, Southeastern Europe, Eastern Europe.

Country /Province /State. : Denmark, Great Britain (*), Ireland, Norway, Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Latvia, Lithuania, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa, Macaronesia, Southern Africa** (*). Algeria, Egypt, Morocco, Tunisia. Canary Is. Gauteng, Northern Cape. Siberia, Russian far east, **Middle Asia, Caucasus, Western Asia, Arabian Peninsula, China, Mongolia, Eastern Asia, Russia.** Primorye. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran, Iraq. Kuwait. China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet, Xinjiang. Japan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. **Indian Subcontinent, Indo-China.** Assam, Eastern Himalaya, Pakistan, West Himalaya. **Australia, New Zealand.** New South Wales (*), A.C.T. (*), Victoria (*). New Zealand North I, New Zealand South I. **North-central Pacific.** Hawaii (*). **Subarctic America, Western Canada, Eastern Canada, Northwest USA, North-central USA, Northeast USA, Southwestern USA, South-central USA, Southeastern USA, Mexico.** Alaska, Yukon, Greenland. Alberta, British Columbia, Manitoba, Saskatchewan. New Brunswick, Nova Scotia, Ontario, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona, California, Nevada, Utah. New Mexico, Texas. Arkansas, Kentucky, Louisiana, North Carolina, Tennessee, Virginia. Northeast Mexico, Pacific Is (Mexico). **Southern South America.** Chile Central, Chile South.

TDWG4. Gansu, Shaanxi. Sichuan, Yunnan. Bhutan. Himachal Pradesh, Jammu Kashmir. Coast, Tablelands, Western Slopes, Western Plains. La Pampa. Chubut, Neuquén, Río Negro. La Araucania. Magellanes. Coahuila.

Bromus texensis (Shear) Hitchcock. *Contrib. US. Nat. Herb.* 17: 381 (1913).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from USA. **Basionym or Replaced Name:** *Bromus purgans* var. *texensis* Shear, *US Dept. Agric., Div. Agrost. Bull.* 23:41 (1900). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *G. Jerny* 230, no date, USA: Texas: Bexar Co. (US-81591).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (217), F.W.Gould, *The Grasses of Texas* (1975) (86, Fig. 38).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. As for *texana*..

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms 40–75 cm long. Leaf-sheaths pubescent, with reflexed hairs. Ligule an eciliate membrane. Leaf-blades 3–7 mm wide. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–15 cm long, bearing few spikelets. Primary panicle branches ascending or spreading, indistinct the panicle almost racemose or simple. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4–6 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 6–8 mm long, 0.75 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 9–12 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, with lobes 1 mm long, awned, 1 -awned. Principal lemma awn subapical, 6–10 mm long overall. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. South-central USA, Mexico. Texas. Northeast Mexico. Coahuila.

Bromus thysanoglottis Soderstr. & Beaman. *Publ. Mus. Michigan State Univ., Biol. Ser.*, 3, 509 (1968).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: HT: *J.R. Reeder, C.G. Reeder & T.R. Soderstrom 3348*, 8 Sep 1960, Mexico: Durango (US-2457688).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. thysanos, fringe; glottis, throat. Leaf-blade with a dense rim of long hairs, immediately behind the ligule.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 75–130 cm long, 4–6 -noded. Culm-internodes ridged, distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, pilose, with reflexed hairs, outer margin hairy. Ligule an eciliate membrane, 1.8 mm long, brown, ciliate from base of abaxial surface, erose. Leaf-blades 40–45 cm long, 7–8 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins ciliate, hairy at base.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, nodding, 24–30 cm long. Primary panicle branches drooping, 8–16 cm long, bearing 2–5 fertile spikelets on each lower branch. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 20–30 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 10–12 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8.8–9.3 mm long, 0.75 length of upper glume, membranous, much thinner on margins, without keels, 1 -veined. Lower glume primary vein scabrous, eciliate or ciliolate. Lower glume lateral veins absent. Lower glume apex setaceously acuminate. Upper glume lanceolate, 10.2–12.8 mm long, 0.9 length of adjacent fertile lemma, membranous, with hyaline margins, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume surface glabrous or pubescent. Upper glume apex setaceously acuminate.

Florets. Fertile lemma elliptic, 11.6–12.8 mm long, chartaceous, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 3.5–4.5 mm long overall. Palea elliptic, 10.9–11 mm long. Palea surface glabrous or puberulous, hairy on back. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 2.3–2.4 mm long, orange. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Mexico. Northeast Mexico. Durango.

Bromus timorensis J.F. Veldkamp. *Blumea*, 35(2): 495 (1991).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Indonesia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Indonesia: Timor, Mt. Tatamailau, 2800 m, 5 Jan 1954, *van Steenis 18467* (HT: L; IT: BO, LISC).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): L. -ensis, denoting origin. From Timor.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations extravaginal. Culms erect or geniculately ascending, 45–90 cm long, 3-noded. Culm-nodes pubescent. Lateral branches lacking. Leaf-sheaths puberulous to pilose, with tubercle-based hairs. Ligule an eciliate membrane, 0.9–2 mm long, truncate or acute. Leaf-blades 20–27 cm long, 4–7 mm wide, flaccid. Leaf-blade surface scabrous, rough on both sides, glabrous to pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, nodding, 16–17 cm long, 3–3.5 cm wide. Primary panicle branches 2-nate, 4–8.5 cm long, bearing 2–4 fertile spikelets on each lower branch. Panicle axis smooth or scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets laterally compressed, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2.75–2.85 mm long, pubescent. Floret callus pilose, disarticulating obliquely, with circular scar.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear or lanceolate, 7.5–9 mm long, 0.75 length of upper glume, membranous, 1-keeled, 1-veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 9.5–11.5 mm long, 0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3-veined. Upper glume primary vein scaberulous. Upper glume apex acute, muticous or mucronate.

Florets. Fertile lemma linear or lanceolate, 13–14.5 mm long, chartaceous, without keel, 3–7-veined, 0–3-veined or more than 3-veined. Lemma lateral veins with distinct primaries but obscure intermediates. Lemma surface puberulous. Lemma apex awned, 1-awned. Principal lemma awn subapical, 5–10 mm long overall. Palea 9.5–10.5 mm long, 0.7–0.75 length of lemma. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3.75 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. Malesia. Lesser Sunda Is.

Bromus tomentellus Boiss. *Diagn. Ser.* 1, 7: 126 (1846).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *Kotschy 344*, 4 May 1842, Iran (MO).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 229), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 21), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (163, Pl. 55).

Derivation (Clifford & Bostock 2007): L. tomentum, stuffing material of a pillow; -ellus, diminutive. Plant invested in part or totally with short hairs.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent, persistent and investing base of culm, with reticulate dead sheaths. Culms erect or geniculately ascending, 30–50 cm long. Leaf-sheaths pubescent or pilose. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 2–6 mm wide. Leaf-blade surface pubescent or pilose.

Inflorescence. Inflorescence a panicle, comprising 5–8 fertile spikelets. Panicle open, ovate, equilateral or nodding, 6–12 cm long, bearing few spikelets. Panicle branches glabrous or pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 6–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or cuneate, laterally compressed, 23–35 mm long, 5–7 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 9–18 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 10–15 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile florets divergent. Fertile lemma lanceolate or oblong, 12–17 mm long, chartaceous, yellow or mid-green, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous to pilose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 11–15 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

N = 21 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia.

Region. Southeastern Europe.

Country /Province /State. : Crete. Caucasus, Western Asia. Iran, Iraq.

TDWG4.

Bromus trinii Schult. *Mant.* 2: 254 (1824).

Regarded by K as a synonym (*B. tomentosus*).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

Illustrations (Books): N.L.Bor, *Gramineae in Flora of Iraq* (1968) (165, Pl. 56), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (82, Fig. 44).

Illustrations (Journals): *Ruizia* (13:138, Fig 14g-h (1993)).

Derivation (Clifford & Bostock 2007): L. -ana, indicating connection. As for *Triniochloa*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms geniculately ascending or decumbent, 10–60 cm long. Culm-internodes distally pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades flat or involute, 7–15 cm long, 2–4 mm wide, glaucous. Leaf-blade surface pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, linear or elliptic, 4–10 cm long, 2–4 cm wide, bearing few spikelets. Primary panicle branches ascending, 1–2 -nate, indistinct the panicle almost racemose, bearing 1 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–9 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate or oblong, laterally compressed, 15–25 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6–8 mm long, 0.75 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 8–10 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate or elliptic, 10–14 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface scaberulous, rough on veins. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, straight or curved, 2–3 mm long overall. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 4–4.5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Southwestern USA. Nevada. Western South America, Southern South America. Bolivia. Argentina South.

TDWG4.

Bromus tunicatus Phil. *Linnaea*, 3: 298 (1865).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *M. Landbeck s.n.*, Jan 1861, Chile: Santiago, Cord. de les Aranas (SG0-PHIL-475; IT: CONC, SGO-37503, SGO-

63460, US-556398 (SGO-PHIL-475 & photo), US-193935 (fragm. ex SGO-37503 & photo)). Ex herb. f. philippi.

Illustrations (Books): M.N. Correa, *Flora Patagonica* Parte III, Gramineae (1978) (82, Fig 42).

Derivation (Clifford & Bostock 2007): L. thin, separable covering; -ata, possessing.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 30–45 cm long. Lateral branches lacking. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1.5–2 mm long, lacerate. Leaf-blades 6–10 cm long, 2.5–5 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 8–12 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 4–6 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, compressed strongly, 12–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 8–10 mm long, 0.75 length of upper glume, membranous, 1-keeled, 5–7 -veined. Lower glume surface scabrous. Lower glume apex acute. Upper glume lanceolate, 10–12 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, 1-keeled, 7–9 -veined. Upper glume surface scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 12–13 mm long, chartaceous, keeled, 9–11 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex muticous or mucronate or awned, 1 -awned. Principal lemma awn subapical, 0–2 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Southern South America. Argentina South, Chile Central, Chile South.

TDWG4. Mendoza, Chubut, Neuquén, Río Negro, Santa Cruz. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Coquimbo, Santiago, O'Higgins, Maule, Biobio, La Araucania. Magellanes.

Bromus turcomanicus H. Scholz. *Willdenowia*, 28:148 (1998).

Accepted by: W.D. Clayton & K. Harman, *GrassBase* (2008) and online.

TYPE from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Turkmenistan, Ashabad: Litwinow 2304 (W holo).

Illustrations (Books): No illustration found (BKS).

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms erect, 15–25 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths pubescent. Ligule an eciliate membrane, 5 mm long, erose. Leaf-blades 20–60 cm long, 1–2 mm wide. Leaf-blade surface scabrous, hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 3–4 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets oblong, laterally compressed, 10–20 mm long, 3–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 4–5 mm long, 0.8–0.9 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex obtuse, mucronate. Upper glume lanceolate, 5–6(–10) mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 5–7 -veined. Upper glume apex obtuse, mucronate.

Florets. Fertile florets with the lowest dissimilar. Lowest fertile lemma awned (1-awned). Fertile lemma elliptic, 7–8 mm long, 3–4 mm wide, coriaceous, without keel, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn subapical, 2–10 mm long overall. Lateral lemma awns present, arising on apex of lobes, 3–4 mm long. Palea 1 length of lemma. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1 mm long. Ovary with a fleshy appendage above style insertion.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia. Tadjhikistan.

Bromus tyttanthus Nevski. *Acta Univ. As. Med. Ser. 8 b, Bot. Fasc. 17, 30* (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Mogoltau: Popov 935 (LE holo).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. tyttos, small; anthos, flower. Inflorescence with few spikelets.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual. Culms slender, 8–20 cm long. Lateral branches lacking. Leaf-sheaths pilose. Ligule an eciliate membrane. Leaf-blades 2 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or oblong, secund, 1–5 cm long, bearing few spikelets. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 12–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume apex acute. Upper glume lanceolate, 4.5 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 8–10 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, with lobes 0.5–1 mm long, awned, 1 -awned. Principal lemma awn subapical, 6–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 0.3–0.6 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, Western Asia, China. Kazakhstan, Kirgizistan, Turkmenistan, Tadjikistan, Uzbekistan. Iran. Xinjiang.

TDWG4.

Bromus tytholepis (Nevski) Nevski. Komarov, *Fl. URSS*, 2: 563 (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Russia. **Basionym or Replaced Name:** *Zerna tytholepis* Nevski, *Acta Univ. As. Med. Ser. 8 b, Bot. Fasc. 17, p. 16* (1934). T:<Type of Basionym>: *vide* TROPICOS and Kew Synonymy Database: Russia, Czimgan Mt.: Baranov & Raikova (LE holo, K).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): Gk. tyttos, small; lepis, scale. Glumes smaller than lemmas.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect or geniculately ascending, 45–90 cm long. Culm-internodes distally pubescent. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 3–5 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle open, linear or lanceolate, 7–15 cm long. Primary panicle branches ascending, 2–6 -nate, bearing 1–2 fertile spikelets on each lower branch. Panicle branches smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–11 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets linear, laterally compressed, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–6 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 7–8 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 8–9 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 2–3 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Middle Asia, China. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan. Xinjiang.

TDWG4.

Bromus variegatus Bieb. *Fl. Taur. Cauc.* 3: 79 (1819).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983) (as *Bromopsis variegata*).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. variegatio*, diversify. Spikelets, leaf-blades or stems variable in color.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Butt sheaths glabrous to pilose, persistent and investing base of culm, with compacted dead sheaths or fibrous dead sheaths. Culms erect or geniculately ascending, 25–70 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths glabrous on surface to pilose. Ligule an eciliate membrane. Leaf-blades 5–15 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy on both sides.

Inflorescence. Inflorescence a panicle, comprising 5–15 fertile spikelets. Panicle open, ovate or globose, dense, 4–9 cm long, 1–5 cm wide, bearing few spikelets. Primary panicle branches bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets elliptic, laterally compressed, 12–20 mm long, 3–4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4–9 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 7–11 mm long, 1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7–12 mm long, chartaceous, mid-green or purple, tipped with last colour, without keel, 5–7 -veined, more than 3-veined. Lemma surface glabrous or pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 2–9 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–4 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

$2n = 14$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Caucasus, Western Asia, China. Afghanistan, Iran, Iraq. Tibet.

TDWG4.

Bromus villosissimus Hitchcock. *Proc. Biol. Soc. Wash.* 6: 195 (1923).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: HT: *J.F. MacBride & W. Featherstone 854*, 21 May 1922, Peru: Casapalaca (F-517382; IT: US-1164647).

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *L. most hairy*. Plant densely hairy overall or in part.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms decumbent, 5–10 cm long. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blades involute, 2–5 cm long, 1–2 mm wide. Leaf-blade surface hirsute, hairy on both sides. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, comprising 3–8 fertile spikelets. Panicle open, linear, dense, 1–3 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–8 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile.

Spikelets laterally compressed, 10–14 mm long, 4–6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, membranous, without keels. Upper glume surface pubescent. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–10 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent or woolly. Lemma apex awned, 1 -awned. Principal lemma awn subapical, 2–3 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. Western South America, Southern South America. Bolivia. Argentina Northwest.

TDWG4. Jujuy.

Bromus vulgaris (Hook.) Shear. *U.S. Dept. Agric. Bull. Agrost.* 23: 43 (1900).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online, W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Canada. **Basionym or Replaced Name:** *Bromus purgans* var. *vulgaris* Hook., *Fl. Bor. Amer.* 2:252 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: ST: *J. Richardson s.n.*, no date, Canada: Goldie (US-865457 (fragm.)).

ST: *Douglas s.n.*, Red River

ST: *Scouler s.n.*, Columbia River (K).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007).

Derivation (Clifford & Bostock 2007): *L. vulgus*, public; -are, pertaining to. Common in the wild or in cultivation.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Perennial. Culms 60–100 cm long, without nodal roots or rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths pilose. Ligule an eciliate membrane, 3–5 mm long, glabrous on abaxial surface or pubescent on abaxial surface, erose. Leaf-blades 5–10 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic or ovate, 10–20 cm long. Primary panicle branches spreading or drooping. Panicle branches terete. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 5–7 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, laterally compressed, 20–28 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5–8 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 1(–3) -veined. Lower glume lateral veins absent or obscure. Lower glume apex acute. Upper glume lanceolate, 7–10 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 3(–5) -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 8–13 mm long, herbaceous, without keel, 7 -veined, more than 3-veined. Lemma surface glabrous or pubescent, hairy below. Lemma margins pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 3–8 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 3–5 mm long. Ovary with a fleshy appendage above style insertion, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex, apex fleshy. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. Western Canada, Northwest USA, Southwestern USA. Alberta, British Columbia. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. California.

Bromus xpseudothominii Philip Smith. *Watsonia*, 6: 330 (1968).

Not on *GrassBase*.

Illustrations (Books): No illustration found (BKS).

Derivation (Clifford & Bostock 2007): *Gk pseudos*, false. Resembling *Bromus thominii*.

Classification. Subfamily Pooideae. Tribe: Bromeae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms erect or geniculately ascending, 30–80 cm long, 5–6 -noded. Culm-nodes pubescent. Leaf-sheaths pubescent. Ligule an eciliate membrane, 1–3 mm long, erose. Leaf-blades 3–13 cm long, 1.5–4.5 mm wide. Leaf-blade surface hirsute, sparsely hairy, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, 5–12 cm long, 1–3 cm wide. Primary panicle branches 2–4 cm long, bearing 1–3 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 7–10 fertile florets, with diminished florets at the apex. Spikelets of 2 or more fertile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets ovate, laterally compressed, compressed slightly, 12–17 mm long, 4–7 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 5.5–7 mm long, 0.7–0.9 length of upper glume, chartaceous, without keels, 3(–5) -veined. Lower glume surface glabrous or pilose. Upper glume ovate, 6.5–8 mm long, without keels, 5–7 -veined. Upper glume surface glabrous or pilose.

Florets. Fertile lemma trullate, 6.5–8.5 mm long, 3–4 mm wide, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface glabrous or puberulous, hairy above. Lemma apex dentate, 2 -fid, with lobes 0.1–0.25 mm long, awned, 1 -awned. Principal lemma awn subapical, 5–9 mm long overall, limb scabrous. Palea 6–7.5 mm long. Palea keels ciliate, adorned sparsely. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 1(–1.5) mm long. Ovary with a fleshy appendage above style insertion. Caryopsis with adherent pericarp, ellipsoid, 6–7.5 mm long, hairy at apex, apex fleshy. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. Europe.

Region. Northern Europe.

Country /Province /State. : Great Britain.

Brylkinia caudata (Munro) F. Schmidt. *Reisen Amurl.* 199. t. 8 (1868).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China* 22 (Poaceae) (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *B. schmidtii*).

TYPE from Japan. **Basionym or Replaced Name:** *Brylkinia schmidtii* Ohwi, nom superfl., *Acta Phytotax. & Geobot.*, Kyoto, 10: 108 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: Japan: Hakodadi, *Chas. Wright* (HT: ?).

Illustrations (Books): N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (815 (539), Pl.10), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (124, Fig 38 as *B. schmidtii*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 293).

Derivation (Clifford & Bostock 2007): *L. cauda*, tail; -ata, possessing. Glumes elongated.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 20–70 cm long, 1–1.5 mm diam., 3–5 -noded. Leaf-sheaths tubular for much of their length, with 1 of their length closed, pubescent, with reflexed hairs. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades 15–30 cm long, (2–)4–10 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, paucilateral, 8–22 cm long, bearing 10–20 fertile spikelets on each. Rhachis angular, scaberulous on margins. Spikelet packing distant. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, linear, 2–7 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets, with a barren rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets cuneate, laterally compressed, compressed strongly, 12–15 mm long, falling entire, deciduous with the pedicel, pedicel base hooked. Rhachilla internodes elongated below proximal fertile floret.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 6–6.5 mm long, 0.8 length of upper glume, herbaceous, 1-keeled, 3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7–7.5 mm long, 0.5 length of adjacent fertile lemma, herbaceous, 1-keeled, 5 -veined. Upper glume apex setaceously acuminate.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret lanceolate, 8–14 mm long, 0.66 length of fertile lemma, coriaceous, 1-keeled, 5 -veined, acuminate. Fertile lemma lanceolate, 13–15 mm long, coriaceous, keeled, 5 -veined, more than 3-veined. Lemma apex

dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 10–15 mm long overall, limb scabrous. Palea keels approximate, ciliolate. Rhachilla extension 0.2 length of fertile floret.

Flower and Fruit. Lodicules 2, oblong, membranous. Anthers 3, 4 mm long. Caryopsis with adherent pericarp, ellipsoid, glabrous, apex umbonate. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian far east, **China, Eastern Asia.** Kuril Is, Sakhalin. China South Central, Manchuria. Japan. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu.

TDWG4. Jilin. Sichuan.

Buergersiochloa bambusoides Pilger. *Engl. Jahrb.* 52: 168 (1914).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), J.F.Veldkamp, *Poaceae ms (Flora Malesiana)*.

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonymy Database: IT: *C. Ledermann* 8276, 11 Aug 1912, Papua New Guinea: New Guinea (US-2877918 (fragm.)).

Recent Synonyms: *Buergersiochloa macrophylla* S. T. Blake, *Blumea*, *Suppl.* 3, 59 (1946).

Illustrations (Journals): *Blumea* (Supp.3 : 61, Fig.2 (1946)as *B. macrophylla*).

Derivation (Clifford & Bostock 2007): Gk. -oides, resembling. Culms wooden resembling those of *Bambusa*..

Classification. Subfamily Bambusoideae. Tribe: Olyreae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 60–100 cm long. Leaves cauline. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 6.5–27 cm long, 14–55 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acute or acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Synflorescence on a separate leafless culm.

Inflorescence a panicle. Panicle contracted, lanceolate, 7–21 cm long. Sexes segregated, on unisexual branches, with male below. Spikelets solitary. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, linear, pubescent.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension. Spikelets of 1 fertile floret with or without additional sterile florets. Spikelets one-many-flowered - if two-flowered then both fertile or the upper sterile. Spikelets lanceolate, dorsally compressed, 4–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 3–7 mm long, 1 length of upper glume, membranous, without keels, 3–7 -veined. Lower glume apex obtuse. Upper glume elliptic, 3–7 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3–7 -veined. Upper glume apex obtuse.

Florets. Fertile florets female. Fertile lemma elliptic, 4–9 mm long, coriaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins convolute, covering most of palea. Lemma apex acute, awned, 1 -awned. Principal lemma awn 5–30 mm long overall. Palea ovate, tightly convolute around flower, 1 length of lemma, coriaceous, without keels. Palea surface pubescent. Palea apex acute.

Flower and Fruit. Lodicules 3. Anthers 2–3, 1.2–4.2 mm long. Filaments united in a tube. Stigmas 2.

Male spikelets distinct from female, 1 flowered, lanceolate, 2.7–4.4 mm long. Male spikelet glumes absent. Male spikelet lemma muticous or awned (0–25mm).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia, Papuasiasia.** New Guinea West Papua (Irian Jaya). New Guinea.