Maclurochloa montana (Ridl.) K.M. Wong. *Kew Bull.,* 48(3): 528: (1993).

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**: *Dinochloa montana* Ridl., *J. Straits Branch Roy. Asiat. Soc.* 44: 210 (1905)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Ridley 10171*, Malay Peninsula: Penang, Penang Hill (SING; IT: K).

ST: *Ridley 7064*, Penang Hill forming dense masses at an altitude of 3,000 ft, in forest

ST: *Ridley 7265*, Penang Hill forming dense masses at an altitute of 3,000 ft, in forest.

Illustrations (Journals): *Kew Bulletin* (48 (3): 529, Fig. 6 (1993)).

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

Derivation (Clifford & Bostock 2007): L. *mons*, mountain; *-ana*, indicating connection. Growing on mountains.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms rambling or leaning or scandent, 20 mm diam., woody, without nodal roots. Culm-internodes terete, thin-walled, 30 cm long, distally pubescent. Lateral branches dendroid. Culm-sheaths present, 15 cm long, brown or red, pubescent, with appressed hairs, with tawny hairs, auriculate, ciliate on shoulders. Culm-sheath ligule 10 mm high, ciliate. Culm-sheath blade lanceolate, reflexed, 8 cm long, 18 mm wide. Leaf-sheath oral hairs scanty or lacking or ciliate. Ligule an eciliate membrane. 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, 5–28 cm long, 10–30 mm wide. Leaf-blade surface glabrous or pubescent, hairy abaxially.

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 1 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 elliptic, laterally compressed, 9–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long.

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

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

Flower and Fruit. Lodicules 3, 2.2 mm long, ciliate. Anthers 6, 4.3 mm long, purple, anther tip smooth. Ovary umbonate.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia**. Malaya.

Maclurolyra tecta C.E.Calderon & Soderstrom. *Smithsonian Contrib. Bot.,* 11: 6 (1973).

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 Panama. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.E. Calderón 2084*, 9 Mar 1968, Panama: Colón: Santa Rita, ca. 25 km antes de Colón por la carretera Transistmica, terminación del camino madero, abundante en el bosque, especialmente en la quebrada y cerca del arroyo, inflorescencias escondidas detrás de las hojas, algunas nacen delante de las mismas pero luego por torción del eje de la inflorescencia y ?del pecíolo de la hoja, ésta queda oculta, hojas gruesas, duras y tiesas, lámina de postición inclinada u horizontal (US-2641981; IT: BAA, F, K, MO-2242463, NY, P, US-2641980).

Illustrations (Books): E.J.Judziewicz et al, *American Bamboos* (1999) (284, Fig. 172).

Illustrations (Journals): *Smithsonian Contributions to Botany* (11: 7 Fig.4; 11, Fig.7 (1973)).

Derivation (Clifford & Bostock 2007): L. *tego*, cover. Covered, usually with leaf-sheaths, as of culms.

Classification. Subfamily Bambusoideae. Tribe: Olyreae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths absent. Culms geniculately ascending, 20–48 cm long. Culm-internodes solid, retrorsely scabrous. Leaves cauline. Ligule an eciliate membrane, 0.5–1.2 mm long. Leaf-blade base broadly rounded, asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades inverted, oblong, 10–21 cm long, 30–50 mm wide. Leaf-blade apex acuminate. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, 2.5–7 cm long. Rhachis angular. Sexes mixed. Spikelets in pairs. Fertile spikelets pedicelled, 1 in the cluster. Male spikelets pedicelled, 1 in a cluster. Pedicels present, filiform (male) or cuneate (female).

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, 9.5–11.5 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 9–11.5 mm long, 1 length of upper glume, coriaceous, without keels, 5–6 -veined. Lower glume lateral veins with cross-veins. Lower glume apex acute. Upper glume ovate, 9.5–11 mm long, 1 length of adjacent fertile lemma, coriaceous, without keels, 5–7 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acute.

Florets. Fertile florets female. Fertile lemma lanceolate, 9.7–11 mm long, indurate, without keel, 5–8 -veined, more than 3-veined. Lemma surface pilose. Lemma margins convolute, covering most of palea. Lemma apex acuminate. Palea tightly convolute around flower, 0.9 length of lemma, indurate, 2–4 -veined, without keels. Palea surface pilose.

Flower and Fruit. Lodicules 3, oblong, 0.7–1 mm long, veined. Anthers 3, 1–1.5 mm long. Stigmas 2, papillose.

Male spikelets distinct from female, 1 flowered, separately deciduous, lanceolate, 4–5.25 mm long, glabrous. Male spikelet glumes absent. Male spikelet lemma 7(–10) -veined, muticous.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**, **Western South America**. Panama. Colombia.

Macrochloa antiatlantica (Barreña et al.) H. Scholz & Valdés. *Willdenowia* 36(2): 663 (2006).

TYPE from Morocco. **Basionym or Replaced Name**: *Stipa antiatlantica* Barreña et al., *Novon* 16(1): 13 (-14) (2006). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Morocco: Agadir. Tizi Mlil, near Tafraoute (Anti Atlas), alt. 1800 m, 29?3'N 8?1'W, 5 Jun 1980, A. Charpin, J. Fernandez Casas, F. Jacquemoud & D. Jeanmonod MAR-275, HT: G; IT: MA.

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Stipeae.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Northern Africa**. Morocco.

Macrochloa tenacissima (L.) Kunth. *Rev. Gram.* i. 59 (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 (as *Stipa*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Stipa*).

TYPE from Spain. **Basionym or Replaced Name**: *Stipa tenacissima* L., *Amoen. Acad.* 6: 266 (1759). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Spain: Loefling inLinn. 97.4 (LINN llecto).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (153).

Derivation (Clifford & Bostock 2007): L. *tenax*, tenacious; *-issima*, most. Foliage persistent.

Classification. Subfamily Pooideae. Tribe: Stipeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 60–150(–200) cm long. Leaf-sheath oral hairs woolly. Leaf-sheath auricles erect, 10–12 mm long. Ligule a ciliate membrane. Leaf-blades convolute, 30–120 cm long, 1–3 mm wide. Leaf-blade venation with continuous uniform subepidermal sclerenchyma layer on the underside. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle contracted, lanceolate, 25–35 cm long. Primary panicle branches 3–6 -nate. Panicle branches scaberulous, bearded in axils. 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, subterete, 25–30 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1–1.5 mm long, pilose, acute.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 25–30 mm long, 1.1 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex attenuate. Upper glume lanceolate, 22–25 mm long, 2.5–3 length of adjacent fertile lemma, membranous, without keels, 3–5 -veined. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, subterete, 10 mm long, scarious, without keel, 5 -veined, more than 3-veined. Lemma surface villous. Lemma margins convolute, covering most of palea. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 40–60 mm long overall, with twisted column. Column of lemma awn 20–25 mm long, hirsute, with 4–6 mm long hairs. Palea linear, 1 length of lemma, scarious, 2 -veined, without keels. Palea surface villous. Palea apex acuminate.

Flower and Fruit. Lodicules 2, membranous. Anthers 3, 10–15 mm long, anther tip penicillate. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, oblong, 7–8 mm long. Embryo 0.15 length of caryopsis. Hilum linear, 1 length of caryopsis.

$2n = 40$ (FNA), or 60 (FNA).

Distribution (TDWG). Continent. Europe, Africa, North America (+).

Region. **Southwestern Europe**.

Country /Province /State. : Baleares, Portugal, Spain. **Northern Africa**, **Macaronesia**. Algeria, Morocco, Tunisia. Canary Is.

Maltebrunia leersioides Kunth. *Rev. Gram.* i. 183. t. 3 (1830).

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

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A. du Petit-Thousars s.n.*, Madagascar (B).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *-oides,* resembling. Resembling *Leersia* in inflorescence form or habit.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 62–67.5 cm long. Ligule an eciliate membrane, 2–3 mm long. Leaf-blade base with a false petiole, petiole 8–12 cm long, petiole glabrous. Leaf-blades lanceolate to elliptic, 10–19 cm long, 10–35 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–21 cm long, 1–1.5 cm wide. Primary panicle branches ascending, 3–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–6 mm long.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets. 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, 1–1.5 mm wide, falling entire.

Glumes. Glumes both absent or obscure.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret linear, 0.5 mm long, chartaceous, acuminate. Lemma of upper sterile floret linear, 1–1.5 mm long, chartaceous, acuminate. Fertile lemma ovate, lanceolate in profile, 4.5 mm long, 1–1.5 mm wide, chartaceous, 5 -veined. Lemma lateral veins ribbed. Palea oblong, 1 length of lemma, 2-keeled.

Flower and Fruit. Lodicules 2. Anthers 6.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian Ocean**. Madagascar.

Maltebrunia letestui (Koechl.) Koechl. *Fl. Gabon, No.* 5, 243 (1962).

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

TYPE from Gabon. **Basionym or Replaced Name**: *Potamophila letestui* Koechlin, *Bull. Soc. Bot. France* 108: 243 (1961)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Gabon, Lastourville: Le Testu 8866.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Georges Marie Patrice Charles le Testu (1877–1967) French plant collector.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 30–100 cm long, 3–5 -noded. Leaf-sheath auricles erect. Ligule an eciliate membrane. Leaf-blade base with a false petiole, petiole 0.5–3 cm long. Leaf-blades elliptic, 8–26 cm long, 30–50 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, effuse, 18–25 cm long, 2–3 cm wide. Primary panicle branches appressed or ascending. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–8 mm long, scaberulous, tip cupuliform.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 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, compressed slightly, 7–10 mm long, falling entire. Rhachilla internodes elongated below proximal fertile floret.

Glumes. Glumes both absent or obscure.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret subulate, 0.5–0.8 mm long, 0.07–0.08 length of fertile lemma. Fertile lemma elliptic or ovate, 7–10 mm long, membranous, keeled, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins involute. Lemma apex acute. Palea elliptic, 1 length of lemma, membranous, 3 -veined, 1-keeled. Palea surface pubescent. Palea apex acuminate.

Flower and Fruit. Lodicules 2, elliptic, 1 mm long, membranous, acute. Anthers 6, 4 mm long. Stigmas 2.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**. Congo, Gabon.

Maltebrunia maroana Aug. DC. *Bull. Herb. Boiss.* Ser. II. 1: 555 (1901).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Madagascar: Maroa 246.

Illustrations: None found.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.

Habit, Vegetative Morphology. Perennial. Culms 50 cm long. Culm-internodes distally glabrous. Leaf-sheaths 10 cm long, keeled, striately veined, puberulous, with reflexed hairs. Ligule an eciliate membrane. Leaf-blade base with a false petiole, petiole 3 cm long. Leaf-blades lanceolate, 25 cm long, 10–12 mm wide, glaucous. Leaf-blade midrib prominent beneath. Leaf-blade venation with 8 secondary veins. Leaf-blade surface scabrous, rough abaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, 6 cm long. Primary panicle branches 1 -nate, 3 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets. 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 mm long, falling entire.

Glumes. Glumes both absent or obscure.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret subulate, 0.5 mm long. Lemma of upper sterile floret subulate. Fertile lemma ovate, 6 mm long, chartaceous, more than 3-veined. Lemma lateral veins ribbed.

Flower and Fruit. Anthers 6, 3 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian Ocean**. Madagascar.

Maltebrunia schliebenii (Pilger) C. E. Hubbard. *Hook. Ic. Pl.* vi. t. 3595, p. 3 (1962).

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

TYPE from Tanzania. **Basionym or Replaced Name**: *Potamophila schliebenii* Pilg., *Notizbl. Bot. Gart. Berlin-Dahlem* 11: 652 (1932)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Schlieben 1995*, 29 Mar 1932, Tanzania: Ulanga Dist.: Sali, south of Mahenge, in mist forest, 990–1100 m (B; IT: K).

Illustrations (Books): R.M.Polhill, F.T.E.A., *Gramineae* (1(1970):32, Fig.11).

Derivation (Clifford & Bostock 2007): in honor of Hans Joachim Schlieben (1902–1975) German plant collector in Tanzania.

Classification. Subfamily Ehrhartoideae. Tribe: Oryzeae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 60–100 cm long. Ligule an eciliate membrane, 2–3 mm long. Leaf-blade base with a false petiole, petiole 0.5–1 cm long. Leaf-blades lanceolate, 11–23 cm long, 15–30 mm wide. Leaf-blade venation with distinct cross veins.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–25 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, smooth, tip cupuliform.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 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, compressed slightly, 8–9 mm long, falling entire. Rhachilla internodes elongated below proximal fertile floret.

Glumes. Glumes both absent or obscure.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret subulate, 1.5–2.5 mm long, 0.2–0.3 length of fertile lemma. Fertile lemma elliptic, 8–9 mm long, chartaceous, keeled, 5 -veined, more than 3-veined. Lemma margins involute. Lemma apex acuminate. Palea elliptic, 1 length of lemma, chartaceous, 3 -veined, 1-keeled. Palea apex acuminate.

Flower and Fruit. Lodicules 2, elliptic, membranous, acute. Anthers 6. Stigmas 2.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **East Tropical Africa**. Tanzania.

Manisuris myuros Linn. *Mant.* ii. 300 (1771).

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 Synonomy Database: India: Herb. Linn. 1215.2 (LINN lecto).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (193, Fig 10), K.M.Matthew, *Flora Palni Hills* (1996) (846, Pl 846).

Derivation (Clifford & Bostock 2007): Gk. *mys*, mouse; *oura*, tail. Inflorescence a spike-like panicle.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms 15–70 cm long. Ligule an eciliate membrane. Leaf-blades 5–15 cm long.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, unilateral, 2–7 cm long. Rhachis fragile at the nodes, subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes cuneate. Rhachis internode tip transverse, crateriform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly.

Sterile Spikelets. Companion sterile spikelets well-developed, oblong, asymmetrical, 4 mm long, longer than fertile, fused to and deciduous with fertile spikelet belonging to segment above. Companion sterile spikelet glumes coriaceous, winged on keels, distinctly veined, truncate, 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 oblong, dorsally compressed, 2.5–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, indurate, 2-keeled, keeled laterally, winged on keel, winged broadly, winged above or below (interrupted by waist). Lower glume surface transversely waisted. Lower glume apex emarginate, muticous. Upper glume oblong, membranous, 1-keeled, 3 -veined.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret hyaline. Fertile lemma elliptic, hyaline, without keel.

Flower and Fruit. n = 8 (3 refs TROPICOS). 2n = 16 (2 refs TROPICOS).

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**. India.

Manipur. Andhra Pradesh, Karnataka. Tamilnadu.

Mayariochloa amphistemon (Wright) Salariato, Morrone & Zuloaga. *Syst. Bot.* 37 (1): 111 (2012).

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

TYPE from Cuba. **Basionym or Replaced Name**: *Panicum amphistemon* C. Wright, *Anales Acad. Ci. Med. Habana* 8: 207 (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C. Wright 3464*, 2 Aug, Cuba: Mayari-abajo, in dense tufts (GH, IT: NY-71091 (fragm. ex GH), US-80455 (fragm. ex GH & photo)).

Recent Synonyms: *Scutachne amphistemon* (Wright) Hitchcock & Chase, *Proc. Biol. Soc. Washington,* 24: 149 (1911).

Illustrations (Journals): *Systematic Botany* (37: 112, Fig. 5 (2012) as *Scutachne*).

Derivation (Clifford & Bostock 2007): Gk. *amphi*, double; *stemon*, thread. Two of thr rhachilla internodes are elongated and thread-like.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 25–40 cm long, wiry. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 10–20 cm long, 2–4 mm wide, coriaceous, stiff. Leaf-blade surface ribbed. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 3–12 cm long, contracted about primary branches. Primary panicle branches appressed, simple, 1–2 cm long, bearing spikelets almost to the base. Spikelets solitary or in pairs. Fertile spikelets pedicelled, 1–2 in the cluster. Pedicels present, angular, unequal.

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, acute, 7–8 mm long, falling entire. Spikelet callus square, incorporating lowest rhachilla internode with adnate lower glume, base obtuse. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.75 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume lateral veins with cross-veins. Lower glume surface pubescent, hairy at apex. Lower glume apex acute or acuminate. Upper glume ovate, chartaceous, without keels, 5 -veined. Upper glume lateral veins with cross-veins. Upper glume surface pubescent, hairy at apex. Upper glume apex acute or acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, chartaceous, 5 -veined, with cross-veins, pubescent, hairy at apex, acute or acuminate. Palea of lower sterile floret 0.25 length of lemma. Fertile lemma ovate, 5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface striate. Lemma margins involute. Lemma apex rostrate, pubescent. Palea 1 length of lemma, coriaceous, 2 -veined.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**. Cuba.

Megalachne berteroniana Steud. *Syn. Pl. Gram.* 237 (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Betero 1440*, Jan-Jun 1830, Chile: Juan Fernández Islands (P (photo, SGO-073157); IT: US-91419 (fragm.)).

Illustrations (Books): E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (292, Fig. 96).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Carlo Guiseppe Bertero (1789–1831) Italian botanist, physician, pharmacist and traveller.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 30–100 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 8–13 mm long, lacerate. Leaf-blades 10–20 cm long, 2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 5–15 cm long. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–3 mm long, glabrous. Floret callus evident, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume linear, 10–12 mm long, 0.66–0.75 length of upper glume, herbaceous, 1-keeled, 3 -veined. Lower glume apex acuminate, awned, 1 -awned, awn 8–17 mm long. Upper glume linear, 13–20 mm long, 1.3 length of adjacent fertile lemma, herbaceous, 1-keeled, 5 -veined. Upper glume apex acuminate, awned, 1 -awned, awn 20–25 mm long.

Florets. Fertile lemma elliptic, 10–15 mm long, herbaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn curved, reflexed, 30–35 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous, 2-toothed. Anthers 3. Ovary unappendaged, pubescent on apex. Caryopsis with adherent pericarp, 6–7 mm long, hairy at apex. Hilum linear, 0.75 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Juan Fernandez Is.

Megalachne masafuerana (Pilger) O.R. Matthei. *Bol. Soc. Biol. Concepcion,* 48: 171 (1974).

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. **Basionym or Replaced Name**: *Bromus masafueranus* Skottsb. & Pilg., *Repert. Spec. Nov. Regni Veg.* 16: 385 (1920)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C. Skottsberg & I. Skottsberg 415*, Feb 1917, Chile: Juan Fernández: Masafuera: Hochland bei Las Torrez, sterile flsen, 1370 m (GB; IT: P, S, UPS, US-865446 (fragm. ex P)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-anus*, indicating location. From Mas Afuera an island close to Juan Fernandez.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 30–100 cm long. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 3–6 mm long, lacerate. Leaf-blades 10–20 cm long, 2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 5–15 cm long. 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 cuneate, laterally compressed, 15–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–3 mm long, glabrous. Floret callus evident, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume linear, 11–22 mm long, 1 length of upper glume, herbaceous, 1-keeled, 3 -veined. Lower glume apex setaceously acuminate, muticous. Upper glume linear, 12–22 mm long, 1.2–1.4 length of adjacent fertile lemma, herbaceous, 1-keeled, 5 -veined. Upper glume apex setaceously acuminate, muticous (without clearly differentiated awn).

Florets. Fertile lemma elliptic, 10–15 mm long, herbaceous, keeled, 5 -veined, more than 3-veined. Lemma midvein scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn curved, reflexed, 10–30 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, membranous, 2-toothed. Anthers 3, 4.5–5 mm long. Ovary unappendaged, pubescent on apex. Caryopsis with adherent pericarp, hairy at apex. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Juan Fernandez Is.

Megaloprotachne albescens C. E. Hubbard. *Kew Bull.* 1929, 321. (1929).

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**: *Megaloprotachne glabrescens* Roiv., *Ann. Bot. Fenn.*, 11(1): 40 (1974). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: South Africa: Bechuanaland: Kuruman, Val Kameel, 25 Mar 1928, *Pole Evans 2075*.

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):132, t. 37), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (422, Fig 351), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (207, Fig 128).

Derivation (Clifford & Bostock 2007): L. *albesco*, become white. Lemmas rendered hoary by hairs.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Incertae Sedis.

Habit, Vegetative Morphology. Annual. Culms 15–100 cm long. Ligule a ciliolate membrane. Leaf-blades 2–8 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2–9, digitate, unilateral, 4–16 cm long. Rhachis angular. Spikelet packing irregular. Spikelets 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 elliptic, dorsally compressed, gibbous, 3–4.5 mm long, falling entire.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 1.2 length of upper glume, 1 length of spikelet, chartaceous, much thinner above, pallid, without keels, 3(–5) -veined. Lower glume apex obtuse. Upper glume elliptic, membranous, without keels, 3 -veined. Upper glume surface pilose, hairy between veins. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, glandular (marginal spots), 5 -veined, glabrous, villous on margins, obtuse. Fertile lemma ovate, cartilaginous, much thinner on margins, dark brown, without keel, 3 -veined, 0–3 -veined. Lemma surface striate. Lemma margins flat, covering most of palea. Lemma apex acuminate. Palea cartilaginous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**, **Southern Africa**. Angola, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Northern Cape.

Megastachya madagascariensis (Lam.) Chase. Chase & Niles*, Ind. Grass Sp.* iii. 146 (1962).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. **Basionym or Replaced Name**: *Poa madagascariensis* Lam., *Illustr.* 1: 185 (1791). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Madagascar: Martin.

Illustrations: None found.

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

Classification. Subfamily Panicoideae. Tribe: Centotheceae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or decumbent, 80–170 cm long. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base amplexicaul. Leaf-blades lanceolate, 12–23 cm long, 10–26 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 13–28 cm long, 8–26 cm wide. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 7–25 mm long, smooth or scaberulous.

Fertile Spikelets. Spikelets comprising 8–14 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, 5–15 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes deciduous, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 1.5–2 mm long, 0.75 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume primary vein smooth. Lower glume apex obtuse, muticous or mucronate. Upper glume ovate, 2–2.5 mm long, 0.8 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume primary vein smooth. Upper glume apex obtuse, muticous or mucronate.

Florets. Fertile lemma elliptic, 1.5–2 mm long, chartaceous, of similar consistency on margins, keeled, 7 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex emarginate, muticous. Palea elliptic, 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian Ocean**. Madagascar.

Megastachya mucronata (Poir.) Beauv. *Agrost.* 74 (1812).

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

TYPE from ?Africa. **Basionym or Replaced Name**: *Poa mucronata* Poir., *Encycl.* 5: 91 (1804). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *P. Beauvois*, Africa (P-JU-2503).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (139, Fig. 6\4), R.M.Polhill, F.T.E.A., *Gramineae* (1(1970):162, Fig. 52), G.V.Pope et al., *Flora Zambesiaca* 10 (1(1971):142, T. 37), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (46, Fig. 15), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (208, Fig. 129).

Derivation (Clifford & Bostock 2007): L. *mucro*, sharp point; *-ata*, possessing. With glumes or lemmas contracted into a short hard point or bifid and shortly awned from between the teeth.

Classification. Subfamily Panicoideae. Tribe: Centotheceae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or decumbent, 40–90 cm long, rooting from lower nodes. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base amplexicaul. Leaf-blades lanceolate, 10–15 cm long, 10–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 15–20 cm long, 10–15 cm wide. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 5–15 mm long, scaberulous.

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 oblong, laterally compressed, 7–14 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 1.5–2.3 mm long, 0.8 length of upper glume, chartaceous, 1-keeled, 3 -veined. Lower glume primary vein scaberulous. Lower glume apex obtuse, muticous or mucronate. Upper glume ovate, 1.8–3 mm long, 0.8 length of adjacent fertile lemma, chartaceous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex obtuse, muticous or mucronate.

Florets. Fertile lemma elliptic, 2.2–3.5 mm long, chartaceous, much thinner on margins, keeled, 7 -veined, more than 3-veined. Lemma midvein scaberulous. Lemma apex emarginate or obtuse, muticous or mucronate. Palea elliptic, 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 0.6–1.4 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, trigonous, 1.2 mm long. Embryo 0.3 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West Tropical Africa**, **West-Central Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Western Indian Ocean**. Ivory Coast, Nigeria, Sierre Leone. Cameroon, Gabon, Annobon, Principe & Sao Tome, Bioko, DRC. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Kwazulu-Natal. Madagascar.

Megathyrsus bivonianus (Brullo et al) Verloove. *Willdenowia* 35: 63 (2005).

TYPE from Sicily. **Basionym or Replaced Name**: *Panicum bivonanum* Brullo et al., *Giorn. Bot. Ital.,* 129(2): 173 (1995). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: : Based on P.compressum Biv. ; Sicily: Bivone (K iso).

Recent Synonyms: *Panicum compressum* Biv., *Stirp. Sic. Manip*. 4 : 6 (1816).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Megathyrsus infestus (Peters) B.K. Simon & S.W.L. Jacobs. *Austrobaileya* 6(3): 573 (2003).

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

TYPE from Mozambique. **Basionym or Replaced Name**: *Panicum infestum* Peters, *Naturw. Reise Mossambique* 2: 546 (1865)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *Peters s.n.*, Mozambique: Querimba (K).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (199, Fig. 82 as *Panicum*).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *Panicum*).

Derivation (Clifford & Bostock 2007): L. hostile. Meaning uncertain but may refer to growing in a hostile environment.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50–200 cm long. Leaf-sheaths wider than blade at the collar, glabrous on surface (rarely) or hispid, with tubercle-based hairs. Ligule a ciliate membrane. Leaf-blades 15–50 cm long, 2–10 mm wide. Leaf-blade surface glabrous (rarely) or pilose, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 7–10, borne along a central axis, 7–12 cm long, simple or secondarily branched, secondary branches racemulose or glomerate. Central inflorescence axis 10–28 cm long. Raceme-bases brief, pubescent or pilose. Spikelets solitary. Fertile spikelets pedicelled. 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 oblong, dorsally compressed, 2.5–4.1 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.25–0.33 length of spikelet, hyaline, without keels, 1–3 -veined. Lower glume apex obtuse. Upper glume oblong, 1 length of spikelet, cartilaginous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, cartilaginous, 5 -veined, sulcate, obtuse. Fertile lemma oblong, dorsally compressed, 2.5–4 mm long, indurate, pallid, without keel, more than 3-veined. Lemma surface rugose. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate. Palea surface rugose.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**. DRC. Ethiopia (inc. Eritrea), Somalia. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe.

Megathyrsus maximus (Jacq.) B.K. Simon & S.W.L. Jacobs. *Austrobaileya* 6(3): 572 (2003).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Urochloa*), W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Panicum*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), D.Sharp, D. & B.K.Simon, *AusGrass* (2002) (as *Panicum*), S-L Chen et al, *Flora of China 22* (Poaceae) (2006) (as *Panicum*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*) (as *Panicum*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Panicum*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Panicum*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Panicum*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010) (as *Panicum*).

TYPE from Lesser Antilles. **Basionym or Replaced Name**: *Panicum maximum* Jacq., *Icon. Pl. Rar.* 1: 2, pl. 13 (1781). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: West Indies: Lesser Antilles: Leeward Islands, Guadeloupe, *N. Jacquin s.n.* (HT: W; IT: BM, P).

Recent Synonyms: *Panicum jumentorum* Pers., *Syn.* 1: 83 (1805).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (335), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *Panicum maximum*), W. Robyns (1929 and 1934). Flora Agrostologique du Congo Belge et du Ruanda-Urundi, I. Maydees et Andropgonees and II. Panicees. Bruxelles, Goemaere (173, Pl. 34), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (430, Fig.440 as *Panicum maximum*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Pl. 10 as *Panicum maximum*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984) (as *Panicum maximum*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (233, Fig. 151 as *Panicum maximum*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (321, Fig. 118 as *Panicum maximum*), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 398 as *Panicum maximum*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (199, Fig. 82 as *Panicum maximum*), L.Boulos, *Flora of Egypt* 4 (2005) (288, Pl. 85 as *Panicum maximum*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (558 as *Panicum maximum*), C-C Hsu,*Taiwan Grasses* (1975) (575, Pl. 1438 as *Panicum maximum*), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (328, Fig. 37 as *Panicum maximum*), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (Pl. 798 as *Panicum maximum*), H.J.Noltie, *The Grasses of Bhutan* (2000) (691, Fig. 38 as *Panicum maximum*), H.B.Gilliland, *Grasses of Malaya* (1971) (as *Panicum maximum*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (101, Fig. 101 as *Panicum maximum*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (463, Fig. 396 as *Panicum maximum*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (298), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (198, Fig. 31 as *Panicum maximum*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002) (as *Panicum maximum*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (as *Panicum maximum*), F.W.Gould, *The Grasses of Texas* (1975) (470, Fig. 251 as *Panicum maximum*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (260, Fig. 214 as *Panicum maximum*), S.A.Renvoize, *The Grasses of Bahia*, 1984 (152, Fig. 54 as *Panicum maximum*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (194, Fig. 140 as *Panicum maximum*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (675, Fig. 143 & 697, Fig. 148 as *Panicum maximum*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (as *Panicum maximum*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (226, Fig 62 as *Panicum maximum*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (as *Panicum maximum*), S-L Chen et al, *Flora of*

China, Illustrations, Poaceae (2007) (Fig. 711 as *Panicum maximum*), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:83(1980) as *Panicum maximum*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 154, as *Panicum*).

Illustrations (Journals): *Darwiniana* (22: 25, Fig.6e-h (1979) as *Panicum maximum*), *Ruizia* (13:321, Fig 39h-j (1993) as *Panicum maximum*).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); (as *Panicum*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005); (as *Panicum*), H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *Panicum*), F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *Panicum*).

Derivation (Clifford & Bostock 2007): L. greatest. Culms very tall.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial or annual (rarely), caespitose. Rhizomes short. Butt sheaths pubescent. Culms erect or geniculately ascending, robust or of moderate stature or slender, (25–)75–200(–450) cm long, without nodal roots or rooting from lower nodes. Culm-internodes distally glabrous or hispid or pilose. Culm-nodes glabrous or bearded. Leaf-sheaths wider than blade at the collar or as wide as blade at the collar. Ligule a ciliate membrane. Leaf-blades linear or lanceolate, (6–)12–40(–100) cm long, (4–)12–35 mm wide. Leaf-blade surface glabrous or pubescent or pilose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or pyramidal, 12–45(–60) cm long. Primary panicle branches ascending or spreading, whorled at lower nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, straight or flexuous, glabrous or bearing a few hairs, hairy at tip.

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 oblong, dorsally compressed, obtuse or acute, (2.5–)3–4.5(–5) mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.33–0.5 length of spikelet, membranous, without keels, 3 -veined. Lower glume surface glabrous or pubescent. Lower glume apex obtuse or acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or pubescent. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, without grooves, glabrous or pubescent, acute. Fertile lemma oblong, dorsally compressed, 2.5–5 mm long, indurate, pallid, without keel, more than 3-veined. Lemma surface rugose. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate. Palea surface rugose.

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

Region. **Northern Europe** (*), **Southeastern Europe**.

Country /Province /State. : GB Aliens (Ryves et al). : Sicily. **Northern Africa**, **Macaronesia**, **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Middle Atlantic Ocean**, **Western Indian Ocean**. Egypt (+). Canary Is, Cape Verde, Madeira. Benin, Ghana, Ivory Coast, Nigeria, Senegal, Sierre Leone. Cameroon, Gabon, Rwanda, DRC. Chad, Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Northern Cape, Western Cape. Ascension, St Helena. Aldabra, Mauritius, Madagascar, Seychelles. **Western Asia**, **Arabian Peninsula**, **China**, **Eastern Asia**. Gulf States, Oman. China Southeast. Japan, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. Eastern Himalaya, India, Pakistan, Sri Lanka. Java, Lesser Sunda Is, Malaya, Philippines, Sulawesi, Sumatra, Singapore. New Guinea (*), Solomon Is (*). **Australia** (*), **New Zealand** (*). Western Australia (*), Northern Territory (*), South Australia (*), Queensland (*), New South Wales (*), Lord Howe-Norfolk Is (*). New Zealand North I. **Southwestern Pacific**, **South-central Pacific**, **Northwestern Pacific**, **North-central Pacific**. Fiji (*), Niue (*), New Caledonia (*), Samoa (*), Tonga (*), Vanuatu (*). Cook Is (*), Easter Is (*), Marquesas (*), Society Is (*), Tuamotu Is (*), Tubuai Is (*). Caroline Is (*), Marianas (*), Marshall Is (*). Hawaii (*). **South-central USA**, **Southeastern USA**, **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Caribbean**, **Northern South America**, **Western South America**, **Brazil**, **Southern South America**. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Bahamas, Bermuda, Cayman Is, Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is, Windward Islands, Puerto Rico,

Trinidad-Tobago, Venezuelan and Netherlands Antilles. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil Northeast, Brazil Southeast. Argentina Northwest, Paraguay.

Guangdong. Bhutan, Sikkim. South-West. Darwin & Gulf. Southern. North, Central, South East, Inland. Coast, Tablelands, Western Slopes, Western Plains. Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo. Distrito Federal (*). Bahia. Paraná, Santa Catarina. Jujuy (*), Salta, Santiago del Estero, Tucuman. Buenos Aires, Chaco, Corrientes, Distrito Federal, Entre Rios, Formosa, Misiones, Santa Fe. Mexico State, Morelos, Puebla. Aguascalientes, Coahuila, Guanajuato, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Sinaloa. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Quintana Roo, Tabasco, Yucatan.

Melanocenchris abyssinica (R. Br. ex Fresen.) Hochst. *Flora,* viii. 274 (1855).

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 Ethiopia. **Basionym or Replaced Name**: *Eutriana abyssinica* R. Br. ex Fresen., *Mus. Senckenb.* 2: 142 (1837). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Ethiopia: Ruppell (FR holo).

Illustrations (Books): S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (179, Fig 74), L.Boulos, *Flora of Egypt* 4 (2005) (283, Pl. 84), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (212, Fig 117).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 10–20(–25) cm long. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a fringe of hairs. Leaf-blades filiform, flat or convolute, 1.5–5 cm long, 1.2–2.5 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5(–6), borne along a central axis, distant, spreading, cuneate, unilateral, 1–1.5 cm long, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Central inflorescence axis 2–5 cm long. Rhachis deciduous from axis, flattened, terminating in a barren extension, extension a forked bristle. Spikelets appressed, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets barren, 2–3 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, dorsally compressed, 7–9 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes collateral, similar, shorter than spikelet. Lower glume linear, 5 mm long, 1 length of upper glume, coriaceous, without keels, 3 -veined. Lower glume surface villous. Lower glume apex awned, 1 -awned, awn 3 mm long. Upper glume linear, 5 mm long, coriaceous, with hyaline margins, without keels, 3 -veined. Upper glume surface villous. Upper glume apex acute, awned, 1 -awned, awn 3 mm long.

Florets. Fertile lemma elliptic, 3 mm long, membranous, much thinner on margins, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 3 -fid, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn 3 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea apex dentate, 2 -fid. Apical sterile florets 2–3 in number, dissimilar. First apical floret male, ovate, muticous. Apical sterile florets barren, cuneate. Apical sterile lemmas truncate.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp.

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

Country /Province /State. **Northern Africa**, **Northeast Tropical Africa**. Egypt. Eritrea, Ethiopia (inc. Eritrea), Somalia, Sudan. **Western Asia**, **Arabian Peninsula**. Iran. Gulf States, Oman, Saudi Arabia. **Indian Subcontinent**. India, Pakistan.

Gujarat. Maharashtra, Punjab, Rajasthan.

Melanocenchris jacquemontii Jaub. & Spach. *Illustr.* iv. 36 (1851).

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 Synonomy Database: India tam cistropica (in provincia Delhi) quam australiori (inter urbes Bombay et Poonah)..., *Jacquemont s.n. (Herb. Mus. Par.)*.

Illustrations (Books): N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (459, Pl. 175), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 229).

Images: G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Pl. 22).

Derivation (Clifford & Bostock 2007): in honor of Victor Jacquemont (1801–1832), French naturalist and traveller.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 6–30 cm long. Ligule a fringe of hairs. Leaf-blades filiform, 2–7 cm long, 1–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 4–10, borne along a central axis, distant, spreading, cuneate, unilateral, 0.8–1 cm long, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Central inflorescence axis 2.5–6 cm long. Rhachis deciduous from axis, flattened, terminating in a barren extension, extension a forked bristle. Spikelets appressed, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets barren, 2–3 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, dorsally compressed, 7–9 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes collateral, similar, shorter than spikelet. Lower glume linear, 2.5–3 mm long, 1 length of upper glume, coriaceous, without keels, 3 -veined. Lower glume surface villous. Lower glume apex awned, 1 -awned, awn 4.5–6 mm long. Upper glume linear, 2.5–3 mm long, 0.3–0.4 length of adjacent fertile lemma, coriaceous, with hyaline margins, without keels, 3 -veined. Upper glume surface villous. Upper glume apex acute, awned, 1 -awned, awn 4.5–6 mm long.

Florets. Fertile lemma elliptic, 5.5–6 mm long, membranous, much thinner on margins, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliolate. Lemma apex lobed, 3 -fid, incised 0.25 of lemma length, awned, 3 -awned. Principal lemma awn 0.5 mm long overall. Lateral lemma awns present, arising on apex of lobes, shorter than principal. Palea 1 length of lemma, 2 -veined. Palea apex dentate, 2 -fid. Apical sterile florets 2–3 in number, dissimilar. First apical floret male, ovate, 2.5–3 mm long, muticous. Apical sterile florets barren, cuneate, 1.2 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp, oblong, 1.7–2 mm long.

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

Country /Province /State. **Northeast Tropical Africa**. Socotra. **Western Asia**. Iraq. **Indian Subcontinent**. India, Pakistan.

Andhra Pradesh, Daman, Karnataka. Madhya Pradesh, Maharashtra, Rajasthan, Uttah Pradesh.

Melanocenchris monoica (Rottl.) C. E. C. Fischer. *Kew Bull.* 1934, 148 (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).

TYPE from India. **Basionym or Replaced Name**: *Pommereulla monoica* Rottl., *Ges. Naturf. Fr. Neue Schr.* 4: 218 (1803). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India, Madras: Rottler (K iso).

Illustrations (Books): K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl.894 & 895).

Derivation (Clifford & Bostock 2007): Gk. *monos*, one; *oikos*, house. Florets hermaphrodite.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms 10–30 cm long. Ligule a fringe of hairs. Leaf-blades 1–3 cm long, 3–4 mm wide, glaucous. Leaf-blade margins tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 4–10, borne along a central axis, distant, spreading, cuneate, unilateral, bearing few fertile spikelets, bearing 1–2 fertile spikelets on each. Central inflorescence axis 3–6 cm long. Rhachis deciduous from axis, flattened, terminating in a barren extension, extension a forked bristle. Spikelets appressed, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets barren, 2–3 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, dorsally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes collateral, similar, reaching apex of florets. Lower glume linear, 3–4 mm long, 1 length of upper glume, coriaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface villous. Lower glume apex awned, 1 -awned, awn 2–3 mm long. Upper glume linear, 3–4 mm long, coriaceous, with hyaline margins, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface villous. Upper glume apex acuminate, awned, 1 -awned, awn 2–3 mm long.

Florets. Fertile lemma elliptic, 2.5 mm long, chartaceous, keeled, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex emarginate or acute, awned, 1 -awned. Principal lemma awn 0.5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex dentate, 2 -fid. Apical sterile florets 1–2 in number, male or barren, separate, oblong (bidentate), 1.2 mm long. Apical sterile lemmas awned, 1 -awned.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**. India, Sri Lanka.

Melica altissima Linn. *Sp. Pl.* 66. (1753).

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 Synonomy Database: LT: (LINN-86.5). LT designated by Cope in Cafferty et al., Taxon 49(2): 252 (2000). ; Russia, Siberia, Gatoziua: Coll?.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (102), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 307).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *altus*, tall; *-issima*, most. Very tall compared with other members of the genus.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous. Ligule an eciliate membrane, 4–5 mm long. Leaf-blades 15–30 cm long, 6–12 mm wide, flaccid. Leaf-blade surface scabrous, rough abaxially.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle open, linear, interrupted (below), 10–17 cm long, 1–2 cm wide. Primary panicle branches ascending. Panicle branches flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 oblong, laterally compressed, 8–10 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or ovate, 7–10 mm long, 1 length of upper glume, membranous, much thinner on margins, purple, without keels, 5 -veined. Lower glume apex acute. Upper glume elliptic or ovate, 7–10 mm long, 1 length of adjacent fertile lemma, membranous, with hyaline margins, purple, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7–10 mm long, chartaceous, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2.5–3 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp, ovoid, 3 mm long. Hilum linear, 0.33 length of caryopsis.

2*n* = 18 (2 refs TROPICOS,FNA).

Distribution (TDWG). Continent. Europe, Temperate Asia, North America.

Region. **Middle Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Austria, Czechoslovakia, Hungary. : Bulgaria, Romania, Yugoslavia. Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia**, **Caucasus**, **Western Asia**, **China**. Altay, Buryatiya, Chita, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran. Xinjiang. **Eastern Canada**, **North-central USA**. Ontario. Oklahoma.

Melica amethystina Pourr. *Mem. Acad. Toul.* 3: 322 (1788).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from France. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: France, St Antoine: Coll?.

Recent Synonyms: *Melica litoralis* Phil*., Anal. Univ. Chil*. 572. (1873).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *amethysteus*, violet; -*ina*, indicating resemblance. Spikelets dark purplish-red.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades flat or convolute, 5–15 cm long, 1–3 mm wide, stiff. Leaf-blade surface scabrous, glabrous or pilose. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 4–20 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

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 cuneate, laterally compressed, 8–10 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 6–8 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 8–10 mm long, 0.9–1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic, 7–9 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma margins ciliate, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 1.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Europe.

Region. **Southwestern Europe**, **Southeastern Europe**.

Country /Province /State. : Baleares, Corsica, France. : Italy.

Tarapaca, Antofagasta, Atacama, Coquimbo.

Melica animarum Muj.-Sall. & M.Marchi. *Novon* 15(2): 339 (fig. 1) (2005).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Uruguay, Sierra de Animas: Mujica 240 (MVFA holo).

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 25 cm long. Lateral branches lacking. Leaf-sheaths retrorsely scabrous. Ligule an eciliate membrane, 0.2–0.8 mm long, lacerate. Leaf-blades (5–)9–10 cm long, 2–2.8 mm wide. Leaf-blade surface scabrous, rough abaxially. Leaf-blade margins ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 7–10 cm long, 1–1.5 cm wide. Primary panicle branches whorled at most nodes, 5 cm long. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate.

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 obovate, laterally compressed, 6–7.7 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 6–7.7 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, purple, without keels, 7 -veined. Lower glume surface smooth or asperulous, rough above. Lower glume apex erose. Upper glume lanceolate, 6–7 mm long, 1.2 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, purple, without keels, 5 -veined. Upper glume surface scabrous. Upper glume apex emarginate.

Florets. Fertile lemma elliptic, 4.8–6 mm long, chartaceous, much thinner above, without keel, more than 3-veined. Lemma lateral veins distinct. Lemma surface scabrous. Lemma margins pilose. Lemma hairs 1–1.2 mm long. Lemma apex dentate, 2 -fid. Palea elliptic, 4.8–5 mm long, 2 -veined. Palea keels ciliate, adorned above, with 0.5–0.75 of their length adorned. Apical sterile florets 1–3 in number, barren, in a clump, cuneate. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.1–1.2 mm long. Stigmas 2. Ovary glabrous.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Uruguay.

Melica argentata E. Desv. C. Gay, *Fl. Chil.* 6: 374 (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>: *fide* TROPICOS and Kew Synonomy Database: ST: *Gay Cat. propr., no 1107*, Chile (LE, US-913112 (fragm. ex LE)).

ST: *Bertero 423*, 1830, Chile: Rancagua (P; IT: SGO- (fragm. ex P), US- (fragm. ex P)).

Recent Synonyms: *Melica nitida* R.Phil., *Anal. Univ. Chil.* 94: 160. (1896).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *argentea*, silvery; *-ata*, possessing. Spikelets silver-white terminally, violet towards the base.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms rambling, straight or zigzag, 40–200 cm long, 2–4 mm diam., 6–10 -noded. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface or puberulous. Ligule an eciliate membrane, 2–10 mm long, scaberulous on abaxial surface, lacerate. Leaf-blades 2–15 cm long, 1.5–5.5 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 10–25 cm long. Primary panicle branches simple. Panicle axis scabrous. Panicle branches secund. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy all along but hairs longer above.

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 elliptic, laterally compressed, 6–10 mm long, falling entire. Rhachilla internodes scaberulous. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 5–8 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–6 -veined. Lower glume primary vein falling short of apex. Lower glume surface asperulous. Lower glume apex emarginate. Upper glume oblong, 5.5–9 mm long, 0.8 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex emarginate.

Florets. Fertile lemma oblong, 6–8.5 mm long, 1.8–2.4 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 11 -veined, more than 3-veined. Lemma lateral veins without cross-veins. Lemma surface scaberulous. Lemma margins ciliate. Lemma hairs 1.5–1.8 mm long. Lemma apex

emarginate. Palea 2 -veined. Palea keels ciliolate, adorned above, with 0.33 of their length adorned. Palea surface papillose. Apical sterile florets barren, in a clump, cuneate, 1.5–2.5 mm long. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, 0.25 mm long, fleshy, truncate. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp, 2.8–3 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Chile Central.

Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule.

Melica argyrea Hack. ex Stuck. *Anal. Mus. Buenos Aires,* xi. 134. (1904).

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 Synonomy Database: HT: *Stuckert herb. 10275*, Argentina (W; IT: US- (fragm. ex W)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (87), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (58, Fig. 13), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (302, Fig. 77), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (267, Fig. 172), B.Rosengurtt, *Gramineas UruguayasI* (1970) (126, Fig. 46), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): Gk. *argyreos*, silver. Pedicels invested in long silver hairs.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Basal innovations extravaginal. Culms erect, 12–70 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface or pilose. Ligule an eciliate membrane, 2.5–7 mm long. Leaf-blades filiform or linear, involute or convolute, 1–15 cm long, 1–2 mm wide, stiff. Leaf-blade surface pilose, hairy adaxially or on both sides. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–27 cm long. Primary panicle branches spreading, simple. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, glabrous.

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 obovate, dorsally compressed, 5–8 mm long, falling entire. Floret callus glabrous.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate or flabellate, 5–8 mm long, 1.4–1.6 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume primary vein falling short of apex. Lower glume apex erose, obtuse. Upper glume lanceolate, 3.5–5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3–5 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 4–5 mm long, 1.5–2 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scabrous. Lemma margins ciliate, hairy in the middle. Lemma hairs 0.5–1 mm long. Lemma apex obtuse. Palea 3.5–4 mm long, 2 -veined. Palea keels ciliolate. Palea surface scaberulous. Apical sterile florets barren, in a clump, cuneate, 1–1.5 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.2–0.3 mm long, fleshy, truncate. Anthers 3, 0.8–1 mm long. Caryopsis with adherent pericarp, obovoid, 1.5–1.8 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear.

$2n = 18$ (1 ref TROPICOS).

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Brazil**, **Southern South America**. Brazil South. Argentina Northeast, Uruguay.

Rio Grande do Sul. San Juan, San Luis. Buenos Aires, Cordoba, Corrientes, Entre Rios, La Pampa, Santa Fe.

Melica aristata Thurb. ex Boland. *Proc. Calif. Acad.* iv. 103. (1870).

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 Synonomy Database: HT: *H.N. Bolander Cat. no. 4861*, 1867, USA: California: Loose soil in open woods near Clark's, 4000 ft (CAS; IT: US-556120). this is the only collection no. cited, though other collections are mentioned.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (96).

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: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, puberulous. Ligule an eciliate membrane, 3–5 mm long, pubescent on abaxial surface, erose, truncate or obtuse. Leaf-blades 2.5–5 mm wide, stiff. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches appressed, 2 -nate, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 10 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 12–13 mm long, 1.1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 11 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 6–10 mm long overall. Palea 2 -veined. Apical sterile florets barren, in a clump, linear, 4–5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 3 mm long. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**. Oregon, Washington. California.

Melica arzivencoi Valls & Barcellos. *Bonplandia,* 3(9): 111 (1973).

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 Synonomy Database: HT: *J.F.M. Valls & Arzivenco 1411*, 30 Dec 1970, Brazil: Rio Grande do Sul: Bom Jesus: Serra da Rocinha, a dereita da estrada Bom Jesus-Ararangua no inicio dos precipicios, na divisa entre Rio Grande do Sul e Santa Catarina (ICN; IT: MVFA, TAES, US-2653013).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (280, Fig. 61), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): in honor of Lzcio Arzivenco (fl. 1970) Brazilian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms decumbent, 50–90 cm long, 0.6 mm diam. Culm-internodes scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous, glabrous on surface. Ligule an eciliate membrane, 0.4–4 mm long. Leaf-blades 2–11 cm long, 1.5–4 mm wide. Leaf-blade surface hispid, hairy abaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 6–10 cm long. Primary panicle branches appressed, simple, 1–3 cm long. Panicle axis dominant. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate.

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 elliptic, laterally compressed, 4–7 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4–4.7 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3–5 -veined. Lower glume apex acute. Upper glume lanceolate, 3.5–4.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3–5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.1 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 2 -veined. Apical sterile florets barren, in a clump, elliptic, 2.2 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp, obovoid, 1.5 mm long, dark brown. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast, Brazil South.

Minas Gerais, Rio de Janeiro, Espirito Santo, Catarina, Rio Grande do Sul. Rio de Janeiro, Sao Paulo. Paraná, Rio Grande do Sul, Santa Catarina.

Melica bauhinii All. *Auct. Pedem.* 43. (1789).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from France. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: France, Nice: Coll?.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Kaspar Bauhin (1560–1624) Swiss botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades flat or convolute, 5–15 cm long, 1–3 mm wide, stiff. Leaf-blade surface scabrous, glabrous or pilose. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 4–20 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

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 cuneate, laterally compressed, 8–10 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 6–8 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 8–10 mm long, 0.9–1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma elliptic, 7–9 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma margins ciliate, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 1.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Europe.

Region. **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**.
Country /Province /State. : Baleares, Corsica, France. : Italy, Yugoslavia.

Melica bocquetii S. Talavera. *Lagascalia,* 14(1): 118 (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.
TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Spain, Pico Labatejo: Devesa & Pastor (SEV holo).
Illustrations: None found.
Derivation (Clifford & Bostock 2007): In honor of Silbert Francois Bocquett (1927–1986) of Zurich, Switzerland.
Classification. Subfamily Pooideae. Tribe: Meliceae.
Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes elongated. Culms erect, 20–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 1–4 mm long, lacerate. Leaf-blades convolute, 11–12 cm long, 0.7–1 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.
Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 5–8 cm long. Primary panicle branches appressed, 3 -nate, 1.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.
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 oblong, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret.
Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–7 mm long, scarious, without keels. Lower glume surface puberulous. Lower glume apex setaceously acuminate. Upper glume lanceolate, 5.5–6.2 mm long, scarious, without keels. Upper glume surface pilose, hairy above. Upper glume apex setaceously acuminate.
Florets. Fertile lemma lanceolate, 4–4.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface villous, hairy all along. Lemma hairs 3–3.5 mm long. Palea elliptic, 3.5 mm long, 2 -veined. Palea surface puberulous. Apical sterile florets barren, in a clump, cuneate.
Flower and Fruit. Lodicules 2, united. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, fusiform, 2.5 mm long.
2*n* = 18 (1 ref TROPICOS).
Distribution (TDWG). Continent. Europe.
Region. **Northern Europe**.
Country /Province /State. : Finland, Sweden.

Melica bonariensis L. Parodi. *Darwiniana,* ix. 358 (1951).

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 Synonomy Database: IT: *L.R. Parodi 13888*, 5 Nov 1940, Argentina: Buenos Aires: Bahia Blanca (SI, US-1815679).
Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (88), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (314, Fig. 80), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (262, Fig. 170).
Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Provincia de Buenos Aries, Argentina.
Classification. Subfamily Pooideae. Tribe: Meliceae.
Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 40–70 cm long. Culm-internodes scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous. Leaf-sheath auricles erect and connate forming a tooth opposite blade. Ligule an eciliate membrane, 6–12 mm long, pubescent on abaxial surface. Leaf-blades filiform, convolute, 5–15 cm long, 1–2.5 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 20–30 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, scaberulous. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

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 orbicular, dorsally compressed, 4–7.5 mm long, falling entire. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma. Lower glume orbicular, 4–7.5 mm long, 1–1.3 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume primary vein falling short of apex. Lower glume apex erose, obtuse. Upper glume lanceolate, 4–5.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3–5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4–5.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma margins ciliate. Lemma hairs 1–1.5 mm long. Lemma apex acute. Palea 3.5–4.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface asperulous. Apical sterile florets barren, in a clump, cuneate, 1–1.3 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, truncate. Anthers 3, 0.6–1 mm long. Caryopsis with adherent pericarp, ellipsoid, 2–2.4 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northeast, Argentina South. Buenos Aires, La Pampa. Río Negro.

Melica brasiliana Ard. *Animad.* 2: 17 (1764).

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 Uruguay. **Basionym or Replaced Name**: *Melica aurantiaca* Desr. ex Lam., Encyc. iv. 70. (1797). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *Commerson s.n.*, Uruguay: "Monte-Video, dans les prairies sabloneuses.".

Recent Synonyms: *Melica aurantiaca* Desr. ex Lam., *Encyc.* 4: 70. (1797).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (89), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (224, Fig. 67), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (293, Fig. 64), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (56, Fig. 12 & 58, Fig 13), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (302, Fig. 77 & as *M. aurantiaca* var. *tandilensis*), B.Rosengurtt, *Gramineas UruguayasI* (1970) (126, Fig. 46 & as *M. aurantiaca*), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating location. From Brazil.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 30–60 cm long. Culm-internodes scaberulous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface or pubescent. Ligule an eciliate membrane, 2–8 mm long. Leaf-blades lanceolate, 3–17 cm long, 3.5–9 mm wide, stiff. Leaf-blade margins scabrous (retrorsely), ciliate. Leaf-blade apex retrorsely scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 8–22 cm long, 2 cm wide. Primary panicle branches appressed, 1–2 -nate, simple. Panicle branches scaberulous. Spikelets spreading or pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate.

Fertile Spikelets. Spikelets comprising (1–)2(–3) 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 obovate, dorsally compressed, 11–17 mm long, falling entire. Rhachilla internodes smooth. Floret callus pubescent.

Glumes. Glumes dissimilar, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 11–17 mm long, 1.3 length of upper glume, chartaceous, much thinner on margins, without keels,

7–9 -veined. Lower glume apex obtuse. Upper glume lanceolate, 8.5–13 mm long, 1.2–1.3 length of adjacent fertile lemma, chartaceous, with hyaline margins, purple, without keels, 5–7(–9) -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7–10 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface scaberulous, rough on veins, pilose, hairy on veins. Lemma hairs 0.7–1.2 mm long. Lemma apex dentate, 2 -fid, obtuse. Palea 0.6–0.7 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets 3–4 in number, barren, in a clump, elliptic, 4 mm long.

Flower and Fruit. Lodicules 2, united, oblong, 0.4 mm long, fleshy, truncate. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, ellipsoid, 3–3.5 mm long, dark brown. Embryo 0.2–0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Argentina Northeast, Uruguay.

Sao Paulo Parana, Catarina, Rio Grande do Sul. Paraná, Rio Grande do Sul, Santa Catarina. Santiago del Estero. Buenos Aires, Cordoba, Entre Rios, La Pampa, Misiones.

Melica brevicoronata Roseng. *Arrill. de Maffei & Izag. de Artucio, Gramin. Urug.* 130 (1970).

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 Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Uruguay: Maldonado: Cerro Pan de Azúcar, 19 Nov 1938, entre rocas, *Rosengurtt B-2711* (HT: MVFA).

Illustrations (Books): B.Rosengurtt, *Gramineas UruguayasI* (1970) (128, Fig. 47), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths pilose. Basal innovations extravaginal. Culms erect or geniculately ascending, 40–110 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 0.5–7 mm long. Leaf-blades 10–20 cm long, 1–3 mm wide. Leaf-blade surface scabrous, pubescent, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear or ovate, 10–25 cm long. Primary panicle branches ascending or spreading, simple. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate.

Fertile Spikelets. Spikelets comprising 2 fertile florets, with a barren rhachilla extension. 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 elliptic, laterally compressed, 8–11 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 8–11 mm long, 1.3–1.5 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7 -veined. Lower glume surface asperulous. Lower glume apex obtuse or acute. Upper glume lanceolate, 6–7 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5–5.5 mm long, 2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 11–13 -veined, more than 3-veined. Lemma surface scaberulous. Lemma margins ciliate. Lemma hairs 1 mm long. Lemma apex obtuse. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous, adorned above. Palea surface scaberulous. Rhachilla extension 4 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp, ellipsoid or obovoid, 3 mm long, dark brown. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Uruguay.

Catarina, Rio Grande do Sul. Rio Grande do Sul.

Melica bulbosa Porter & Coulter. *Fl. Colorado,* 149 (1874).

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 Synonomy Database: LT: *Geyer 11*, USA: rocky ravine, upper Platte (GH; ILT: US-556117 (fragm. ex GH)). LT designated by Piper, Circ. Div. Agrostol. U.S.D.A. 27: 10 (1900).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (92).

Derivation (Clifford & Bostock 2007): L. *bulbus*, onion; *-osa*, abundance. Culm-bases swollen.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 30–60 cm long, swollen at the base, forming an ovoid corm. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 2–5 mm long. Leaf-blades flat or convolute, 10–20 cm long, 2–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 7–18 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

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 lanceolate, laterally compressed, 7–15(–24) mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 5–9 mm long, 0.8–0.9 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex obtuse or acute. Upper glume elliptic, 6–10 mm long, 1 length of adjacent fertile lemma, chartaceous, purple, without keels, 5 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 6–11 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma apex obtuse. Palea 0.7–0.8 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, elliptic, 5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 4 mm long. Caryopsis with adherent pericarp. Hilum linear.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**, **Northwest USA**, **Southwestern USA**, **South-central USA**. British Columbia, Saskatchewan. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. California, Nevada, Utah. Texas.

Melica californica Scribn. *Proc. Acad. Philad.* 46. (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 Synonomy Database: HT: *J.M. Bigelow*, 1853–1854, USA: California: Corte Madera (NY; IT: US- (fragm. ex Columbia College & photo)).

PT: *Bolander 32*,

PT: *Bolander 6120*,

PT: *Kellogg & Harford 1133*,

PT: *Parish & Parish 865*,

PT: *T.C. Porter*, 1871, USA: Wyoming: Upper Yellowston, Mud Springs.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (94).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *-ica,* belonging to. From California, USA.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Butt sheaths herbaceous, not bulbous or thickened and forming a bulb (slightly), persistent and investing base of culm, with fibrous dead sheaths. Culms

decumbent, 60–120 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface or pubescent. Ligule an eciliate membrane. Leaf-blades 1–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 5–6 mm long, 0.75 length of upper glume, membranous, light brown or purple, without keels, 3 -veined. Lower glume apex acute. Upper glume oblong, 7–8 mm long, 1 length of adjacent fertile lemma, membranous, light brown or purple, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 7–8 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma surface scaberulous. Lemma apex emarginate or obtuse. Palea elliptic, 0.9 length of lemma, 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 1.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**. Oregon. California.

Melica canariensis Hempel. *Fedde, Repert.* lxxv. 109 (1967).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Teneriffe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: : Based on M. magnolii var. gigantea ; Tereriffe, Bajamar: Bornmueller 2950 (K iso).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From the Canary Islands.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 80–100 cm long, wiry or woody. Culm-internodes smooth, distally glabrous. Lateral branches ample. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous. Ligule an eciliate membrane, 2–3 mm long, entire or lacerate, obtuse. Leaf-blades flat or involute, 6–17 cm long, 1.5–3 mm wide, stiff. Leaf-blade surface scaberulous, rough adaxially, glabrous or pilose, hairy adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 9–21 cm long. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, ciliate, hairy above.

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.

Glumes. Glumes similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 5–5.5 mm long, 0.9 length of upper glume, membranous, pallid, without keels, 5 -veined. Lower glume primary vein extending to apex. Lower glume apex acute. Upper glume elliptic, 5.5–6 mm long, 1.2 length of adjacent fertile lemma, membranous, pallid, without keels, 5 -veined. Upper glume lateral veins all falling short of apex. Upper glume apex acute or acuminate.

Florets. Fertile lemma ovate, 4.5–5.5 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma midvein extending to apex. Lemma lateral veins stopping well short of apex. Lemma margins ciliate. Lemma apex acute. Palea 3–4 mm long, 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 2–2.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Macaronesia**. Canary Is, Madeira.

Melica cepacea (Phil.) Scribn. *U.S. Dept. Agric. Circ. Agrost.* . 8 (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).

TYPE from Chile. **Basionym or Replaced Name**: *Festuca cepacea* Phil., *Linnaea* 33(3–4): 297 (1864) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.L. Landbeck*, Dec 1860, Chile: prov. Colchagua: Hacienda de La Puerta, ca. 6000 pies (SGO-PHIL-307; IT: BAA (fragm.), SGO-37420, SGO-37421, SGO-63474, US-556556 (fragm. ex SGO-PHIL-307 & photo)).

Recent Synonyms: *Bromelica cepacea* (Philippi) Nicora, *Darwiniana* 181 (1–2): 270 (1973).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (89), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (226, Fig. 68 as *Bromelica cepacea*), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (271, Fig 177 as *Bromelica cepacea*).

Derivation (Clifford & Bostock 2007): L. *cepa*, onion; *-acea*, resembling. Lower internodes of culm swollen.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Butt sheaths thickened and forming a bulb. Culms erect, 20–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, keeled, retrorsely scabrous, glabrous on surface or pubescent. Ligule an eciliate membrane, 1–2 mm long. Leaf-blades 15–25 cm long, 2–3 mm wide. Leaf-blade surface scabrous, glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 6–20 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, straight.

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 oblong, laterally compressed, 12–20 mm long, 3 mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2.5–3.5 mm long, eventually visible between lemmas, scaberulous. Floret callus glabrous.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5–7 mm long, 0.75 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume lateral veins transversely connected at apex. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 6–9 mm long, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 5 -veined. Upper glume lateral veins transversely connected at apex. Upper glume surface asperulous.

Florets. Fertile lemma lanceolate, 7–8 mm long, chartaceous, much thinner above, keeled, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex entire or dentate, 2 -fid, acuminate. Palea 6.5–7.5 mm long, 2 -veined. Palea keels ciliolate, adorned above. Palea surface scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, united, oblong, 0.4 mm long, fleshy, truncate. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, 4.5 mm long, light brown. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina South, Chile Central.

Neuquén. Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. Santiago, O'Higgins, Maule.

Melica chilensis J. & C. Presl. *Rel. Haenk.* i. 270. (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 Chile. **Basionym or Replaced Name**: *Melica adhaerens* Hack*, Fedde, Repert. Nov. Sp*. 6 158 (1908). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Haenke s.n.*, Chile: Cordillera de Chili (PR; IT: US- (fragm. ex PR)). See M. Muñoz Schick, Bol. Mus. Nac. Hist. Nat. Chile 40: 73–74 (1983–84), for discussion. The species has not been collected in Chile, and the type is most likely from Peru.

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (90), S.A.Renvoize, *Gramineas de Bolivia* (1998) (150, Fig 35).

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

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect or geniculately ascending, 30–70 cm long. Culm-internodes distally hispid, with reflexed hairs. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, pubescent, outer margin hairy. Ligule an eciliate membrane, 1.5–3.5 mm long, pubescent on abaxial surface. Leaf-blades filiform or linear, involute, 6–18 cm long, 1.5–2 mm wide, firm or flaccid. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 10–15 cm long. Primary panicle branches appressed or ascending, simple. Panicle axis dominant, retrorsely scabrous. Panicle branches secund, retrorsely scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent.

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 elliptic, laterally compressed, 7.5–8.5 mm long, falling entire. Rhachilla internodes smooth. Floret callus glabrous.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume obovate, 4–6 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume primary vein falling short of apex. Lower glume apex acute. Upper glume obovate, 6.5–8 mm long, 0.8 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 5.5–7 mm long, 2.3–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scaberulous. Lemma apex obtuse. Palea 4–4.5 mm long, 2 -veined. Palea keels ciliolate. Apical sterile florets barren, in a clump, cuneate, 1.5 mm long. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.5–3 mm long, dark brown. Embryo 0.4 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia. Argentina Northwest, Chile North.

Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, Tucuman. La Pampa.

Melica ciliata Linn. *Sp. Pl.* 66. (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).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: (LINN-86.1). LT designated by Cope in Cafferty et al., *Taxon* 49(2): 252 (2000). ; Europe: Herb. Linn. 86.1 (LINN lecto).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (180, Fig 129), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (102), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 298).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *cilium*, eyelid; *-ata*, possessing. Plant hairy overall or in part.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades flat or convolute, 5–15 cm long, 1–3 mm wide, stiff. Leaf-blade surface scabrous, glabrous or pilose. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 4–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

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.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 4–5 mm long, 0.7–0.8 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 4–5 mm long, 0.9–1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 1.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

n = 9 (2 refs TROPICOS). $2n$ = 18 (6 refs TROPICOS, FNA), or 36 (FNA).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, Australasia (*).

Region. **Northern Europe**, **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Finland, GB Aliens (Ryves et al), Sweden. : Austria, Belgium, Czechoslovakia, Germany, Hungary, Switzerland. : Baleares, Corsica, France, Portugal, Sardinia, Spain. : Albania, Bulgaria, Greece, Italy, Crete, Romania, Sicily, Turkey Europe, Yugoslavia. Estonia, Latvia, Lithuania, Baltic States, Krym, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Northern Africa**, **Macaronesia**. Algeria, Morocco, Tunisia. Canary Is, Madeira, Selvagens. **Middle Asia**, **Caucasus**, **Western Asia**, **China**, **Russia**. Kazakhstan, Turkmenistan, Tadzhikistan. Iran. Xinjiang. **Australia** (*). South Australia (*).

Southern.

Melica commersonii Nees ex Steud. *Syn. Pl. Gram.* 290. (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *T. Bridges*, Chile (G?; IT: CGE, US- (fragm. ex DC herb. (G) ex herb. Lindely (CGE) in 1835, & photo)). The notes on the US fragm. seem to agree exactly with Steudel's citation of specimen..

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Philibert Commerson (1727–73) French botanist and physician.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths herbaceous, not bulbous or thickened and forming a bulb, pilose. Culms erect or rambling, 20–120 cm long. Leaves mostly basal. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth or retrorsely scabrous, glabrous on surface or pilose, with reflexed hairs. Ligule an eciliate membrane, 2–7 mm long, lacerate. Leaf-blades 2.5–17 cm long, 1.5–3.5 mm wide. Leaf-blade surface scabrous (retrorsely), pilose, hairy adaxially or on both sides, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 5–18 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy all along but hairs longer above.

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 elliptic, laterally compressed, 6–11 mm long, falling entire. Rhachilla internodes scaberulous. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 6–11 mm long, 1.5–2 length of upper glume, membranous, much thinner above, much thinner on margins, purple, without keels, 7–9 -veined. Lower glume surface asperulous. Lower glume apex erose, obtuse. Upper glume lanceolate, 5.5–7 mm long, 1.1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, mid-green or purple, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex erose, obtuse.

Florets. Fertile lemma oblong, 4.5–6 mm long, 2–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 9–11 -veined, more than 3-veined. Lemma surface scaberulous. Lemma margins eciliate or ciliate, hairy in the middle. Lemma hairs 1–1.2 mm long. Lemma apex erose, emarginate or obtuse. Palea 2 -veined. Palea keels ciliolate. Palea surface scabrous. Apical sterile florets barren, in a clump, cuneate, 1.5–2.5 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.3–0.5 mm long, fleshy, glabrous or ciliate, truncate. Anthers 3, 1.5–2.2 mm long. Caryopsis with adherent pericarp, 3 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Chile Central.

Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso. La Araucania.

Melica cupani Guss. *Suppl. Fl. Sic. Prod.* 17. (1832).

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): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 341 as *M. cupani*).

Derivation (Clifford & Bostock 2007): in honor of Francesco Cupani (1657–1780) Italian botanist, cleric and physician.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms erect, 20–60 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths tubular for much of their length, with 1 of their length closed, without keel, glabrous on surface or pubescent or hirsute, with reflexed hairs. Ligule an eciliate membrane, 5 mm long, lacerate. Leaf-blades flat or involute, 5–10 cm long, 1.5–3 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous to pubescent, hairy adaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, equilateral or secund, 4–8 cm long. Primary panicle branches indistinct the panicle almost racemose. Panicle axis glabrous to pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 5–6 mm long, 0.75 length of upper glume, scarious, much thinner above, much thinner on margins, without keels, 5 -veined. Lower glume apex acuminate. Upper glume lanceolate, 7–8 mm long, 1.2–1.3 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 6 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface pilose, hairy all along, hairy on veins. Lemma hairs 2 mm long. Palea 2 -veined. Rhachilla extension glabrous. Apical sterile florets barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.2–1.6 mm long. Caryopsis with adherent pericarp, 1.7–2.5 mm long, dark brown. Embryo 0.25–0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

n = 9 (2 refs TROPICOS). $2n$ = 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia.

Region. **Southwestern Europe**, **Southeastern Europe**.

Country /Province /State. : Spain. : Italy, Sicily. **Northern Africa**. Algeria, Morocco, Tunisia. **Western Asia**. Lebanon-Syria, Palestine, Israel & Jordan.

Melica decipiens Caro. *Kurtziana,* v. 288 (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).

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Argentina, Sierra Grande, San Javier: Hunziker 9687 (CORD holo).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *decipio*, deceive. Resembling another species, or in some other way deceptive.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 25–70 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 1.5–2.5 mm long, lacerate. Leaf-blades flat or convolute, 5–15 cm long, 2–3 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially or on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 12–20 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, smooth. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy above.

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 obovate, dorsally compressed, 7.5–10 mm long, falling entire. Rhachilla internodes scaberulous. Floret callus glabrous.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 7.5–10 mm long, 1.4–1.5 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7–9 -veined. Lower glume primary vein falling short of apex. Lower glume apex entire, acute. Upper glume elliptic, 5–7 mm long, 1.1–1.2 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4.5–5.5 mm long, 2–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scabrous. Lemma margins eciliate or ciliate, hairy in the middle. Lemma hairs 0.5–1 mm long. Lemma apex entire or dentate, 2 -fid, obtuse. Palea 4.5–5.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface asperulous. Palea apex truncate. Apical sterile florets barren, in a clump, oblong, 2–2.5 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, glabrous, truncate. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp, ellipsoid, 3 mm long, dark brown. Embryo 0.2 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Argentina Northeast, Chile Central, Uruguay.

San Luis. Buenos Aires, Cordoba.

Melica dendroides Lehm. *Pugill.* iii. 39 (1831).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from South Africa. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Africa: Cape Colony, in saxosis montis Stormberg, *Drege*.

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades erect, convolute, 2–20 cm long, 1.5–3.5 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 5–15 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 10–15 mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 4–6 mm long, 0.5 length of upper glume, membranous, purple, without keels, 5 -veined. Lower glume apex

acute. Upper glume elliptic, 9–12 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, purple, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7–10 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface villous. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate. Apical sterile lemmas pilose.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Free State, Lesotho, Northern Cape, Western Cape, Eastern Cape.

Melica eligulata Boiss. *Diagn. Ser.* I. xiii. 56 (1854).

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

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Iran: Kotschy 718 (G holo).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): e-, without; ligula, small tongue; -ata, possessing. Ligule lacking or very much reduced.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 30–50 cm long, 1–1.5 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth, glabrous on surface. Ligule an eciliate membrane or absent, 0–0.5 mm long. Leaf-blades 6–12 cm long, 1–2.5 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle, comprising 5–22 fertile spikelets. Panicle open, linear, dense, nodding, 5–10 cm long. Primary panicle branches ascending, simple or sparsely divided. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–12 mm long.

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 oblong, laterally compressed, 5–7 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 2.5–4.5 mm long, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume oblong, 3.5–6.5 mm long, membranous, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5.5 mm long, chartaceous, without keel, 7(–9) -veined, more than 3-veined. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2–2.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp, 2 mm long. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Western Asia**. Iran, Iraq.

Melica eremophila M. A. Torres. *Fl. Prov. Buenos Aires, Pt. 2, Gramin.,* 308 (1970).

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 Synonomy Database: Argentina: Buenos Aires: Partido Tornquist, Abra de la Ventana, 19 Nov 1968, *Cabrera, Fabris & Sagastegui 19619* (HT: LP).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (91), S.A.Renvoize, *Gramineas de Bolivia* (1998) (150, Fig. 35), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (293, Fig. 64 & 294, Fig. 65), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (310, Fig. 79), B.Rosengurtt, *Gramineas UruguayasI* (1970) (131, Fig. 48 as *M. monantha*), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): Gk. *eremos*, desert; *phileo,* love. Desert species.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 20–60 cm long. Culm-internodes smooth. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, longer than adjacent culm internode, retrorsely scabrous. Ligule an eciliate membrane, 3–6 mm long, pubescent on abaxial surface. Leaf-blades flat or convolute, 1.5–9 cm long, 2–3 mm wide, stiff. Leaf-blade surface scabrous, glabrous. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 4–15 cm long. Primary panicle branches appressed, simple. Panicle axis dominant. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

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 orbicular, dorsally compressed, 7–11 mm long, falling entire. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 7–11 mm long, 1.3–1.4 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7 -veined. Lower glume primary vein falling short of apex. Lower glume apex obtuse. Upper glume cuneate, 5–8.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5–7 mm long, 2.4–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scabrous. Lemma margins ciliate. Lemma hairs 1 mm long. Lemma apex obtuse. Palea 4.5–5.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface puberulous. Apical sterile florets barren, in a clump, cuneate, 2–2.5 mm long. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, 0.3 mm long, fleshy, truncate. Anthers 3, 0.8–1.8 mm long, eventually exserted or retained within floret. Caryopsis with adherent pericarp, ellipsoid, 2.5–3.5 mm long, dark brown. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Brazil**, **Southern South America**. Bolivia. Brazil South. Argentina Northeast, Uruguay.

Catarina, Rio Grande do Sul. Rio Grande do Sul, Santa Catarina. Buenos Aires, Cordoba, Entre Rios.

Melica frutescens Scribn. *Proc. Acad. Philad.* 45. (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 Synonomy Database: HT: *Parry and Lemmon 401*, 1876, USA: Southern California (NY (ex Columbia College); ILT?: US- (fragm. ex Columbia college & photo)). Scribner labeled this collection "type", and it was accepted as that by A.S. Hitchcock, Manual Grass. US. p. 882 (1935)..

ST: *C.G. Pringle*, 20 Apr 1882, USA: California: San Diego Co. mountains

ST: *C.R. Orcutt 513*, May 1883, USA: California: San Diego (GH; IST: US-(fragm. ex GH & photostat)).

ST: *M.E. Jones 3748*, Apr 1882, Near the Tia Juana (US-912988 (possible ST?, Boundary line of Mexico, # 29, 6 Apr 1882)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (94).

Derivation (Clifford & Bostock 2007): L. frutesco, become bushy. Shrubby in habit.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms 75–200 cm long, woody. Lateral branches sparse. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous. Ligule an eciliate membrane. Leaf-blades 2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 12–35 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 12–18 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 7–12 mm long, 0.75 length of upper glume, chartaceous, much thinner on margins, without keels, 5 -veined. Lower glume apex acute. Upper glume elliptic, 9–15 mm long, 1.1–1.4 length of adjacent fertile lemma, chartaceous, with hyaline margins, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 8–11 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma apex acute. Palea 0.5 length of lemma, 2 -veined. Apical sterile florets barren, in a clump, oblong, 4.5–6.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp.

2*n* = 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **Mexico**. Arizona, California.
Baja California, Baja California Sur.

Melica fugax Boland. *Proc. Calif. Acad.* iv. 104. (1870).

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 Synonomy Database: ST: *Kellogg & Co.*, Jun 1862, USA: California: Donner Lake (IT: GH, US- (fragm. ex GH & photo)).

ST: Jun 1869, USA: California: dry hillsides on the road to Lake Tahoe.

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. ephemeral. Short-lived species often from inhospitable habitats.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms 15–40 cm long, swollen at the base, forming an ovoid corm. Culm-internodes distally glabrous or pubescent. Leaf-sheaths tubular for much of their length, with 0.75 of their length closed, scaberulous, glabrous on surface or hirsute. Ligule an eciliate membrane, 1–3 mm long, erose. Leaf-blades 1.5–3 mm wide. Leaf-blade surface scabrous, rough adaxially, glabrous to pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 8–16 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 lanceolate, laterally compressed, 7–15 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes thickened, 2–3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 4–7 mm long, 0.66 length of upper glume, chartaceous, without keels, 3–5 -veined. Lower glume apex obtuse or acute. Upper glume elliptic, 5–9 mm long, 1.1 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 4–7 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, lanceolate, 2–3.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp. Hilum linear.

2*n* = 18 (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**. Idaho, Oregon, Washington. California, Nevada.

Melica geyeri Munro ex Boland. *Proc. Calif. Acad.* iv. 103 (1870).

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 Synonomy Database: HT: *H.N. Bolander (7) 6119 (CAT. NO. 1867)*, no date, USA: California: Mendocino Co. (US-556116; IT: US-556115). HT distributed as Bolander 7.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (94, as var. *geyeri*).

Derivation (Clifford & Bostock 2007): in honor of Carl Andreas Geyer (1809–53) German-born United States botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 70–180 cm long, swollen at the base, forming an ovoid corm. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 2–3.5 mm long, erose, acute. Leaf-blades flat or involute, 2–5 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 10–25 cm long, bearing few spikelets. Primary panicle branches spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 12–22 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 5 mm long, 0.75 length of upper glume, chartaceous, much thinner above, much thinner on margins, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 7 mm long, 0.75 length of adjacent fertile lemma, chartaceous, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 8–10 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface smooth or asperulous. Lemma apex entire or erose, obtuse. Palea 1 length of lemma, 2 -veined. Apical sterile florets barren, in a clump, lanceolate, 5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 3–4 mm long. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**. Oregon. California.

Melica glabrescens (M.A. Torres) M.A. Torres. *Op. Lilloana,* 29: 61: (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).

TYPE from Argentina. **Basionym or Replaced Name**: *Melica violacea* var. *glabrescens* Torres, *Fl. Prov. Buenos Aires* 4(2): 316 (1970)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Argentina: Buenos Aires: Partido Coronel Dorrego, 8 Nov. 1940, *Cabrera 6776* (HT: LP).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (92).

Derivation (Clifford & Bostock 2007): L. *glabresco*, becoming glabrous. Quite glabrous with respect to the whole plant or one or more of its parts.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 20–40 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely

scabrous. Ligule an eciliate membrane, 5–7 mm long. Leaf-blades conduplicate, 2–3 mm wide. Leaf-blade surface scabrous, rough abaxially. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 7–11 cm long. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

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 obovate, dorsally compressed, 7–8.5 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate or flabellate, 7–8.5 mm long, 1.5 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7 -veined. Lower glume primary vein falling short of apex. Lower glume apex erose, obtuse. Upper glume cuneate, 4.5–5.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, 1.8–2 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma margins ciliate, hairy in the middle. Lemma apex acute. Palea 3.5–4 mm long, 2 -veined. Palea keels ciliolate. Palea surface scaberulous. Apical sterile florets barren, in a clump, cuneate, 1.5–1.7 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, ciliate, truncate. Anthers 3, 1–1.3 mm long. Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long, dark brown. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northeast, Argentina South. Buenos Aires. Chubut, Río Negro.

Melica grandiflora Koidzumi.

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. 306).

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 15–70 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 0.3–0.7 mm long, pubescent on abaxial surface, truncate. Collar pubescent. Leaf-blades 4–20 cm long, 2–6 mm wide.

Inflorescence. Inflorescence a panicle, comprising 4–6 fertile spikelets. Panicle open, linear, secund, 3–15 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, puberulous.

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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 4–6 mm long, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume oblong, 4–6 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 6–7.5 mm long, cartilaginous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface scabrous. Lemma apex obtuse. Palea elliptic, 0.9 length of lemma, 2 -veined. Palea keels thickened, winged, narrowly winged, ciliolate. Palea apex entire, obtuse. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–1.8 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian Far East and **China**. Amur, Primorye.

Melica harfordii Boland. *Proc. Calif. Acad.* iv. 102. (1870).

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 Synonomy Database: ST: *H.N. Bolander 53*, Jun 1865, USA: California: near Lexington, Santa Cruz rd., Wooded hill-sides (US-907330). "My number 53 of small sets of grasses".

ST: *6464*, Jun 1867, USA: California: Redwood, on the upper Mattole River (?; IST: MO).

ST: Jun 1866, USA: California: Yosemite Valley, shady debris

ST: Jun 1869, USA: California: Nevada Co., Bear Valley, on rocks and debris, 4500 ft.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (94).

Derivation (Clifford & Bostock 2007): in honor of William George Washington Harford (1825–1911) United States botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–100 cm long, wiry. Culm-internodes thick-walled or solid. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous, glabrous on surface to hirsute. Leaf-sheath auricles erect and connate forming a tooth opposite blade. Ligule an eciliate membrane, 1–3 mm long, pubescent on abaxial surface, erose. Leaf-blades flat or involute, 1–4 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 10–20 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 10–17 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 6–8 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, 8–10 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma oblong, 10 mm long, chartaceous, without keel, 9–11 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent, hairy below. Lemma margins ciliate, hairy below. Lemma apex emarginate or obtuse, mucronate or awned, 1 -awned. Principal lemma awn 0.5–2 mm long overall. Palea 0.66–0.75 length of lemma, 2 -veined. Apical sterile florets barren, in a clump, lanceolate, 4–5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 3 mm long. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**, **Northwest USA**, **Southwestern USA**. Oregon, Washington. California.

Melica hitchcockii B.Boivin. *Phytologia,* 43(1): 105 (1979).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Canada: Alberta: Waterton Lakes Park, in forest ca 1/2 mi E of Cameron Lk., 5600 ft: 7 Aug 1941, *C. L. Hitchcock & L. S. Martin 7931a* (HT: WTU).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Albert Spear Hitchcock (1865–1935), United States agrostologist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb. Culms 20–40 cm long. Leaves cauline. Ligule an eciliate membrane, 3 mm long. Leaf-blades 12–17 cm long, 5–7 mm wide.

Inflorescence. Inflorescence a panicle, comprising 5–8 fertile spikelets. Panicle contracted, linear, 7–12 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.4–4 mm long.

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 above glumes but not between florets. Rhachilla internodes pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 7 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein eciliate or ciliate. Lower glume lateral veins absent. Upper glume lanceolate, 8 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10 mm long, 2–2.5 mm wide, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma midvein pubescent, hairy at base. Lemma margins pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 10 mm long overall. Apical sterile florets 2–3 in number, barren, in a clump, lanceolate, 5 mm long. Apical sterile lemmas awned.

Flower and Fruit. Anthers 3, 2–2.3 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**. Alberta.

Melica hunzikeri E.G. Nicora. *Kurtziana,* 27(2): 361 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Argentina: Misiones: Depto. Candelaria: Ruta provincial 208, 10 km pasando Cerro Cor?hacia Cerro Azul, 21 Oct 1996, *Morrone et al. 1792* (HT: SI).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Armando Teodoro Hunziker (1919-) Argentinian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 50–60 cm long. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, longer than adjacent culm internode, glabrous on surface or puberulous. Ligule an eciliate membrane, 0.5–0.7 mm long, pubescent on abaxial surface, erose, truncate. Leaf-blades 10–18 cm long, 1.5–2.6 mm wide, stiff. Leaf-blade surface scaberulous, rough abaxially, glabrous or pilose, hairy adaxially or on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, lanceolate, 5–16 cm long, contracted about primary branches. Primary panicle branches 3–4 in number, ascending, simple. Panicle axis dominant. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, scaberulous.

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 cuneate, dorsally compressed, 5–6.5 mm long, falling entire. Rhachilla internodes 1 mm long.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume flabellate, 3.5–4 mm long, 0.6–0.7 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3 -veined. Lower glume primary vein falling short of apex. Lower glume apex erose, truncate. Upper glume ovate, 4–4.2 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 1–2 -veined. Upper glume lateral veins absent or obscure. Upper glume apex obtuse.

Florets. Fertile lemma obovate, 4.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 6 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma margins ciliate. Lemma apex truncate. Palea 2.6 mm long, 2 -veined. Rhachilla extension 1.5 mm long. Apical sterile florets barren, in a clump, cuneate, 1.5 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 0.6 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northeast.

Misiones.

Melica hyalina Doell. *Mart. Fl. Bras.* ii. II. 127. (1877).

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 Synonomy Database: HT: *Frid. Mueller s.n.*, Brazil: Habitat in insula S. Catharinae (KR (ex FB); IT: US- (fragm. ex FB)).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (280, Fig. 61 & 290, Fig. 63), B.Rosengurtt, *Gramineas UruguayasI* (1970), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): Gk. *hyalos*, glass; *-ina*, belonging to. Margins of glumes, lemmas and sterile lemmas hyaline.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, robust, 50–100 cm long. Culm-internodes retrorsely scabrous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface or pilose. Leaf-sheath auricles erect and connate forming a tooth opposite blade. Ligule an eciliate membrane, 4.5–9 mm long. Leaf-blades flat or convolute, 4–20 cm long, 3–6 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 6–25 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy above.

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 obovate, dorsally compressed, 7–10 mm long, falling entire. Rhachilla internodes smooth. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume flabellate, 7–10 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7–9 -veined. Lower glume primary vein falling short of apex. Lower glume apex erose, truncate. Upper glume lanceolate, 7–9 mm long, 1.1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5–7 mm long, 2–2.4 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scabrous. Lemma margins ciliate, hairy in the middle. Lemma hairs 1 mm long. Lemma apex obtuse. Palea 4.5–5.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface smooth. Apical sterile florets barren, in a clump, cuneate. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, 0.2–0.3 mm long, fleshy, truncate. Anthers 3, 0.6–1.2 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.5–2.8 mm long, dark brown. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Argentina Northeast, Uruguay.

Catarina, Rio Grande do Sul. Paraná, Rio Grande do Sul, Santa Catarina. Buenos Aires, Entre Rios.

Melica imperfecta Trin. *Bull. Sc. Acad. Petersb.* i. 68. (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *Douglas, Gram. Calif. 6*, USA: California (LE-TRIN-2462.01a).

ST: *Douglas, Gram. Calif. 1*, (LE-TRIN-2462.01b).

Illustrations: None found.

Images: R.Darke, *Ornamental Grasses* (2004);.

Derivation (Clifford & Bostock 2007): L. incomplete. Only one floret of spikelet fertile.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms erect or geniculately ascending, 50–110 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades 1–6 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 10–30 cm long. Primary panicle branches appressed or ascending or spreading, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 oblong, laterally compressed, 3.5–7 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 2.5–6 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic, 2.5–6 mm long, 0.75–0.85 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 3–7 mm long, cartilaginous, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma apex obtuse. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets barren, in a clump, oblong, 0.5–4 mm long. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **Mexico**. California, Nevada.

Baja California.

Melica komarovii Luczn. *Vestn. Dalnevost. Phil. AN SSSR* 31:124 (1938).

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

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia, Suputinka valley: Luchnik (LE holo).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Vladimir Leontievitch Komarov (1869–1946) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 15–70 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 0.3–0.7 mm long, pubescent on abaxial surface, truncate. Collar pubescent. Leaf-blades 4–20 cm long, 2–6 mm wide.

Inflorescence. Inflorescence a panicle, comprising 4–6 fertile spikelets. Panicle open, linear, secund, 3–15 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, puberulous.

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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 4–6 mm long, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex obtuse. Upper glume oblong, 4–6 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 6–7.5 mm long, cartilaginous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface scabrous. Lemma apex obtuse. Palea elliptic, 0.9 length of lemma, 2 -veined. Palea keels thickened, winged, narrowly winged, ciliolate. Palea apex entire, obtuse. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–1.8 mm long. Caryopsis with adherent pericarp. Hilum linear.

2*n* = 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian Far East, **China**, **Eastern Asia**. Manchuria, China North-Central, China Southeast. Japan, Korea.

Shandong, Shanxi. Anhui, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang.

Melica kozlovii Tsvelev. *Akad. Nauk SSSR Bot. Inst. Komarova, Rast. Tsentral. Azii, Fasc*. 4, 125 (1968).

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 Synonomy Database: China, Tsingai, Tsaidam: Ladygin 367 (LE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 310).

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 30–60 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 0.5–3 mm long, truncate. Leaf-blades flat or convolute, 0.8–2.7 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 6–16 cm long, bearing few spikelets. Primary panicle branches bearing 1–5 fertile spikelets on each lower branch. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–6 mm long, pubescent, hairy at tip.

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 oblong, laterally compressed, 6.8–8.3 mm long, breaking up at maturity.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 5.5–7 mm long, 0.75 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 7–8.2 mm long, 1–1.2 length of adjacent fertile lemma, membranous, without keels, 5–9 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 6–8 mm long, coriaceous, much thinner above, without keel, 7–9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex emarginate or obtuse. Palea elliptic, 2 -veined. Palea surface puberulous. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.2–1.8 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**, **Mongolia**. China North-Central, Qinghai. Mongolia.

Gansu, Shanxi.

Melica lilloi Becherer. *Candollea,* vii. 520 (1938).

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 Argentina. **Basionym or Replaced Name**: *Melica decumbens* Papp, *Repert. Spec. Nov. Regni Veg.* 25(7–13): 139, t. 7 (1928). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy

Database: HT: *Lillo [herb. Stuckert 11180] Papp 11*, Argentina: Tucuman: Lara (B; IT: B, US- (fragm. ex B)). Type of *M. laxiflora* fo. *macrior* Hack is at G.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Miguel Lillo (1862–1931) Argentine botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms geniculately ascending or decumbent, 30–50 cm long. Culm-internodes smooth. Lateral branches ample. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blades flat or involute, 8–15 cm long, 1.5 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade margins ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 10–15 cm long. Primary panicle branches ascending. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

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 elliptic, laterally compressed, 6.5–8 mm long, falling entire. Floret callus glabrous.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume obovate, 6.3–7.7 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–6 -veined. Lower glume primary vein falling short of apex. Lower glume apex acute. Upper glume lanceolate, 6–7.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6–7 mm long, 2–2.3 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scaberulous. Lemma apex emarginate. Palea 4–5 mm long, 2 -veined. Palea keels ciliolate. Palea surface puberulous, hairy on back. Palea apex acute. Apical sterile florets barren, in a clump, elliptic, 2 mm long. Apical sterile lemmas pubescent, acute.

Flower and Fruit. Lodicules 2, united, oblong, 0.2–0.3 mm long, fleshy, truncate. Anthers 3, 1.5–1.7 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northwest.

Catamarca, Tucuman.

Melica longiflora Steud. *Syn. Pl. Gram.* 290. (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Bertero herb. 1816*, 1830, Chile: in pascuis declivibus collinum Las Tablas, Valparaiso (P-STEUD-197; IT: US- (fragm. ex P-STEUD-197 & photo)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *longus*, long; *flos*, flower. Having long spikelets.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending or rambling, 15–200 cm long, 2–5 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface or pilose. Ligule an eciliate membrane, 3–7 mm long, pubescent on abaxial surface, lacerate. Leaf-blades 7–22 cm long, 1.5–5 mm wide, aromatic. Leaf-blade surface scabrous (retrorsely), rough on both sides, glabrous or pubescent, hairy adaxially. Leaf-blade margins scabrous, glabrous or ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–30 cm long, contracted about primary branches. Panicle axis smooth or scaberulous. Panicle branches secund. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, scabrous, ciliate, hairy above.

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 elliptic, laterally compressed, 8–13 mm long, falling entire. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 8–13 mm long, 1.1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume primary vein extending to apex or falling short of apex. Lower glume surface asperulous. Lower glume apex erose, obtuse or acute. Upper glume lanceolate, 7–12 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6–8.5 mm long, 1.6–2 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 13–15 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma surface scaberulous. Lemma margins eciliate or ciliate, hairy in the middle. Lemma hairs 1–2 mm long. Lemma apex erose, emarginate or obtuse. Palea 2 -veined. Palea keels ciliolate, adorned above. Palea surface scabrous. Apical sterile florets barren, in a clump, elliptic or cuneate, 1.5–3 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, 0.3–0.4 mm long, fleshy, glabrous or ciliate, truncate. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp, 2.5–3 mm long, dark brown. Embryo 0.25–0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Chile Central.

Tarapaca, Antofagasta, Atacama, Coquimbo. Coquimbo, Valparaiso, Santiago, O'Higgins, Maule, Biobio.

Melica longiligulata Z.L. Wu. *Acta Phytotax. Sin*. 30(2): 171–172, pl. 1, f. 9–16, pl. 2, f. 12 (1992).

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 Synonomy Database: China: Sichuan: Dege, in clivis siccis, 3400 m, 12 July 1977, *P.C Kuo & W.Y. Wang, 21389* (HT: NWBI).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 302).

Derivation (Clifford & Bostock 2007): L. *longus*, long; *ligula*, small tongue; *-ata*, possessing. Ligule long.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes elongated. Butt sheaths purple. Culms 30–60 cm long, 0.7–1 mm diam., wiry, 3–5 -noded. Leaves cauline. Leaf-sheaths tubular for much of their length, with 1 of their length closed, longer than adjacent culm internode, puberulous. Ligule an eciliate membrane, 3.5 mm long, lacerate. Leaf-blades flat or convolute, 8–20 cm long, 2–2.5 mm wide. Leaf-blade surface ribbed, grooved adaxially, scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–18 cm long. Primary panicle branches ascending, 2–4 -nate, 6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, pubescent, hairy above.

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, 5–7 mm long, breaking up at maturity.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong or ovate, 3–3.7 mm long, 0.75 length of upper glume, scarious, purple, without keels. Lower glume apex acute. Upper glume elliptic, 4–5.5 mm long, 0.9–1.1 length of adjacent fertile lemma, scarious, purple, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.3–5 mm long, herbaceous, much thinner above, much thinner on margins, light green, without keel, 7 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliolate, adorned above. Rhachilla extension 2 mm long. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

Sichuan.

Melica macra Nees. *Agrost. Bras.* 486. (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).

TYPE from Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Sellow s.n.*, Uruguay: Habitat ad Monte-Video (W; IT: MO-2112208, US- (fragm. ex W)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (93), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (280, Fig. 61 & 281, Fig. 62), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (56, Fig. 12), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (300, Fig. 76), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (267, Fig. 173), B.Rosengurtt, *Gramineas UruguayasI* (1970) (124, Fig. 45), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. thin. Leaf-blades narrow.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms erect, 20–100 cm long. Culm-internodes scaberulous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, with winged keel, antrorsely scabrous. Leaf-sheath oral hairs pubescent. Leaf-sheath auricles erect and connate forming a tooth opposite blade, 2–4 mm long. Ligule an eciliate membrane, 0.2–0.3 mm long. Leaf-blades flat or involute or convolute, 6–18 cm long, 2–3 mm wide, stiff. Leaf-blade surface scabrous, glabrous. Leaf-blade margins scabrous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear or oblong, 10–15 cm long. Primary panicle branches appressed. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

Fertile Spikelets. Spikelets comprising 1(–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 elliptic, laterally compressed, 11–13 mm long, falling entire. Rhachilla internodes scaberulous. Floret callus pubescent.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5.5–10 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume primary vein extending to apex. Lower glume apex acute. Upper glume lanceolate, 6.5–10 mm long, 0.8–1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 7.5–9.5 mm long, 2.3–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Palea 4.5–5.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface scaberulous, pubescent, hairy on back. Apical sterile florets barren, in a clump, elliptic, 2.5–3 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, 0.3 mm long, fleshy, truncate. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long, dark brown. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Argentina Northeast, Uruguay.

Sao Paulo Parana, Catarina, Rio Grande do Sul. Rio Grande do Sul, Santa Catarina. Catamarca, Santiago del Estero, San Luis, Tucuman. Buenos Aires, Cordoba, Corrientes, Entre Rios, La Pampa, Santa Fe.

Melica minor Hack. ex Boiss. *Fl. Orient.* v. 586. (1884).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia, Caucasus, Lars: Brrotherus 941 (LE lecto).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. smaller, lesser. Plants small in comparison with related species.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 10–20 cm long, 0.75–1 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface. Ligule absent. Leaf-blades 2–5 cm long, 1–2 mm wide. Leaf-blade venation with 9 secondary veins. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 4–8 cm long. Panicle axis smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 oblong, laterally compressed, 4–6 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 3.5 mm long, 0.9 length of upper glume, scarious, much thinner above, much thinner on margins, purple, without keels, 5 -veined. Lower glume apex acute. Upper glume oblong, 4 mm long, 0.9 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, purple, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 4.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma apex acute. Palea 2 -veined. Apical sterile florets barren, in a clump, cuneate. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus**. North Caucasus.

Melica minuta Linn. *Mant.* i. 32. (1767).

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 Italy. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *D. Scopoli*, Italy (LINN-86.3).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 340).

Derivation (Clifford & Bostock 2007): L. very small. Smaller than usual in some respect.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 20–50 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth. Ligule an eciliate membrane, 3.5 mm long. Leaf-blades 1–2 mm wide. Leaf-blade surface glabrous or puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle, comprising 7–30 fertile spikelets. Panicle open, linear, nodding, 3–12 cm long. Primary panicle branches spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 oblong, laterally compressed, 7–9 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 5–7 mm long, 0.8 length of upper glume, membranous, pallid, without keels, 5 -veined. Lower glume apex acute or acuminate. Upper glume oblong, 6.5–8 mm long, 1 length of adjacent fertile lemma, membranous, pallid, without keels, 5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong or ovate, 6.5–8 mm long, chartaceous, without keel, 9–11 -veined, more than 3-veined. Lemma apex acute. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp, oblong or ovoid, 2.5–3 mm long. Hilum linear.

n = 9 (1 ref TROPICOS), or 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia.

Region. **Southwestern Europe**, **Southeastern Europe**.

Country /Province /State. : Baleares, Corsica, France, Portugal, Sardinia, Spain. : Albania, Greece, Italy, Crete, Sicily, Yugoslavia. **Northern Africa**, **Macaronesia**. Algeria, Libya, Morocco, Tunisia. **Western Asia**. Cyprus, East Aegean Is, Palestine, Israel & Jordan, Turkey.

Melica mollis R. Phil. *Anal. Univ. Chil.* xciv. 161. (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *G. Geisse*, 1885, Chile: Carrizal (SGO-PHIL-382; IT: SGO-37567; SGO-68437(?), SGO-72935, US-556614 (fragm. ex SGO-PHIL-382 & photo)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. soft. Softly hairy usually of leaf-blades.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms geniculately ascending, 15–40 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, as wide as blade at the collar, retrorsely scabrous, pubescent, with reflexed hairs. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.3 mm long, erose. Leaf-blades 2–10 cm long, 1.5–2.5 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 6–10 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy all along.

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 elliptic, laterally compressed, 6–10 mm long, falling entire. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 5–8 mm long, 0.9 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3–5 -veined. Lower glume primary vein falling short of apex. Lower glume surface asperulous, puberulous, hairy below. Lower glume apex erose, obtuse. Upper glume ovate, 8–10 mm long, 0.8 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume surface asperulous, puberulous, hairy below. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma lanceolate, 6–8 mm long, 2–3 mm wide, chartaceous, much thinner above, much thinner on margins, mid-green or purple, without keel, 11 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex dentate, 2 -fid, obtuse. Palea 2 -veined. Palea keels ciliolate, adorned above, with 0.5 of their length adorned. Palea surface puberulous, hairy above. Apical sterile florets barren, in a clump, elliptic, 2.5–3.5 mm long. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, truncate. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, dark brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Chile North.

Tarapaca, Antofagasta, Atacama, Coquimbo. Atacama.

Melica montezumae Piper. *Proc. Biol. Soc. Washington,* xviii. 144. (1905).

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>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 430*, 6 Apr 1885, Mexico: Chihuahua, shaded places, Santa Eulalia Mts. (US-691233).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (101).

Derivation (Clifford & Bostock 2007): from Montezuma, Mexico.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous. Ligule an eciliate membrane, 5–10 mm long. Leaf-blades flat or involute, 2–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, 8–16 cm long. Primary panicle branches ascending or spreading, simple. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 7–8 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblong, 7–8 mm long, 1.1 length of upper glume, scarious, much thinner above, much thinner on margins, without keels. Lower glume apex obtuse. Upper glume oblong, 6–7 mm long, 1 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels. Upper glume surface rugose.

Florets. Fertile lemma elliptic, 6–7 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface striate, with tufts of hair on midvein, bearing 1 hair tufts in all. Palea 2 -veined. Palea keels scaberulous. Apical sterile florets barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp.

$2n = 18$ (1 ref TROPICOS, FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA**, **Mexico**. Texas. Northeast Mexico.

Coahuila, Chihuahua, Neuvo Leon.

Melica mutica Walt. *Fl. Carol.* 78. (1788).

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 Synonomy Database: USA, Carolina: Coll?.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (101), F.W.Gould, *The Grasses of Texas* (1975) (62, Fig. 23).

Derivation (Clifford & Bostock 2007): L. blunt. Lacking awns or lemmas and/or glumes truncate.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms 45–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades flat or conduplicate, 2–6 mm wide. Leaf-blade surface smooth or scaberulous, glabrous or puberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 4–16 cm long. Primary panicle branches spreading, indistinct the panicle almost racemose or simple. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 cuneate, laterally compressed, 7–11 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 6–9 mm long, 1 length of upper glume, scarious, much thinner above, much thinner on margins, without keels. Upper glume oblong, 6–9 mm long, 1 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels.

Florets. Fertile florets decreasing in size upwards (reaching same level). Fertile lemma elliptic, 6–10 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma lateral veins ribbed. Lemma surface scaberulous, rugulose. Palea 2 -veined. Palea keels scaberulous, ciliolate, adorned above. Rhachilla extension straight. Apical sterile florets barren, in a clump, cuneate, 2 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, 2–3 mm long.

2*n* = 18 (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**. Illinois, Iowa. Ohio, West Virginia. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

Melica nitens (Scribn.) Nutt. ex Piper. *Bull. Torr. Bot. Club,* 1905 :387. (1905).

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**: *Melica diffusa* var. *nitens* Scribn., *Proc. Acad. Nat. Sci. Philadelphia* 1885: 44 (1885). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Nuttall*, USA: Arkansas: Shady woods of Cedar Prairie, 10 mi. from Fort Smith (PH; IT: US-556102 (fragm. ex BM), US-556101 (fragm. ex PH)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007), F.W.Gould, *The Grasses of Texas* (1975) (63, Fig. 24).

Derivation (Clifford & Bostock 2007): L. *niteo*, shine. Spikelets or lemmas glossy at maturity.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms 50–120 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth or scaberulous, glabrous on surface or puberulous. Ligule an eciliate membrane, 3–6 mm long. Leaf-blades 3–10 mm wide. Leaf-blade surface smooth or scaberulous, glabrous or puberulous.

Inflorescence. Inflorescence a panicle. Panicle open, 10–26 cm long. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising (1–)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, 8–15 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 5–7 mm long, 0.75 length of upper glume, scarious, much thinner above, much thinner on margins, without keels. Lower glume apex obtuse or acute. Upper glume oblong, 7–9 mm long, 0.75 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels. Upper glume apex obtuse or acute.

Florets. Fertile florets all similar in size (second overtopping first). Fertile lemma elliptic, 8–11 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface scabrous or striate, rugulose. Lemma apex obtuse or acute. Palea 2 -veined. Palea keels ciliolate. Rhachilla extension straight. Apical sterile florets barren, in a clump, oblong or cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 3 mm long. Caryopsis with adherent pericarp.

2*n* = 18 (10 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**, **Mexico**. Colorado. Illinois, Iowa, Kansas, Missouri. Pennsylvania. New Mexico, Texas. Alabama, Arkansas, Kentucky, Maryland, Tennessee. Northeast Mexico.

Coahuila, Neuvo Leon, Tamaulipas.

Melica nutans Linn. *Sp. Pl.* 66. (1753).

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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Europe: Coll?.

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (224), T. Cope & A. Gray, Grasses of the British Isles (133), G.Hegi, *Flora von Mitteleuropa* 1 (1909), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (815 (539), Pl.10), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (120, Fig 36), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 307).

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

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 20–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades 4–20 cm long, 2–6 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle, comprising 5–15 fertile spikelets. Panicle open, linear, nodding, 3–15 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets pendulous, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, 3–15 mm long, puberulous, hairy at tip.

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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 4–6 mm long, 1 length of upper glume, membranous, purple, without keels, 5 -veined. Lower glume apex obtuse. Upper glume oblong, 4–6 mm long, 0.8 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5–7 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex obtuse. Palea elliptic, 0.9 length of lemma, 2 -veined. Palea keels thickened, winged, narrowly winged, ciliolate. Palea apex entire, obtuse. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp, ellipsoid, 3 mm long. Embryo 0.2 length of caryopsis. Hilum linear.

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

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. : France, Spain. : Bulgaria, 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, Russian Far East, **Middle Asia**, **Caucasus**, **Western Asia**, **China**, **Mongolia**, **Eastern Asia**. Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Tadzhikistan, Uzbekistan. Iran. Manchuria, Xinjiang. Japan Hokkaido, or Honshu. Japan. **Indian Subcontinent**. Pakistan, West Himalaya.

Jammu Kashmir.

Melica onoei Franch. & Sav. *Enum. Pl. Jap.* ii. 603. (1879).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China 22* (Poaceae) (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan: Ono.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (118, Fig 35), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (348), C-C Hsu,*Taiwan Grasses* (1975) (as *M. onoi*), H.J.Noltie, *The Grasses of Bhutan* (2000) (575, Fig. 21), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 300).

Derivation (Clifford & Bostock 2007): in honor of Motoyoshi Ono (1837–1890) Japanese botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 75–110 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth, glabrous on surface or hispid. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blades flat or convolute, 20–35 cm long, 3.5–11 mm wide. Leaf-blade surface scaberulous, glabrous or hispid.

Inflorescence. Inflorescence a panicle. Panicle open, 30–35 cm long. Primary panicle branches ascending, distant, 7–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 oblong, laterally compressed, 6.5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or elliptic, 2.5–3.3 mm long, 0.66 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate or elliptic, 4–5 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic or oblong, 4.5–5.5 mm long, chartaceous, much thinner above, without keel, 7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface scaberulous. Lemma apex obtuse or acute. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

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

Country /Province /State. **Western Asia**, **China**, **Eastern Asia**. Iran. China South Central, Inner Mongolia, China North-Central, China Southeast, Tibet. Japan Honshu. Japan, Korea, Taiwan. **Indian Subcontinent**. Eastern Himalaya, Pakistan, West Himalaya.

Gansu, Hebei, Shaanxi, Shandong, Shanxi. Anhui, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Bhutan. Jammu Kashmir.

Melica pappiana Hempel. *An. Sti Univ. Al.* I. *Cuza Iasi*, 2, *Biol.*, 17(2): 380 (1971).

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. 307).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Agostino Pappi (fl.1892–1934) sometime collector for the Herbarium at Massawa, Eritrea.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms slender, 40–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface. Ligule an eciliate membrane, 0.5–1.5 mm long. Leaf-blades 6–15 cm long, 1–3 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous or pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle, comprising 3–4 fertile spikelets. Panicle open, linear, equilateral, 5–6 cm long, bearing few spikelets. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 4–15 mm long, pubescent, hairy above.

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 ovate, laterally compressed, 7 mm long, breaking up at maturity.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4.5–5.5 mm long, 0.75 length of upper glume, scarious, purple, without keels. Lower glume apex acute. Upper glume lanceolate, 6.5–7.5 mm long, 1 length of adjacent fertile lemma, scarious, purple, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate or ovate, 6.5 mm long, herbaceous, much thinner above, much thinner on margins, mid-green, without keel, 7 -veined, more than 3-veined. Palea 2 -veined. Palea keels ciliolate, adorned above. Apical sterile florets barren, in a clump, orbicular.

Flower and Fruit. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. Manchuria, China North-Central.

Shanxi.

Melica parodiana M. A. Torres. *Bol. Soc. Argent. Bot.* xii. 202 (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 Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Argentina, Sierra de La Vigilancia: Cabrera, Fabris, Torres & Tur 17124 (LP holo).

Illustrations (Books): A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (306, Fig. 78).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Lorenzo Raimondo Parodi (1895–1966) Argentinian agrostologist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Culms erect or geniculately ascending, 30–50 cm long. Culm-internodes retrorsely scabrous, distally glabrous or pubescent. Leaf-sheaths tubular for much of their length, with 1 of their length closed, pubescent, with reflexed hairs. Ligule an eciliate membrane, 0.5–5 mm long, pubescent on abaxial surface. Leaf-blades flat or involute, 2–12 cm long, 2–3.5 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 10–14 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, smooth. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

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 elliptic, dorsally compressed, 7–8.5 mm long, falling entire. Rhachilla internodes scaberulous. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 7–8.5 mm long, 1.1 length of upper glume, hyaline, without keels, 5–7 -veined. Lower glume primary vein falling short of apex. Lower glume apex obtuse, mucronate. Upper glume lanceolate, 4–6 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 5.5–6.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma margins ciliate, hairy in the middle. Lemma hairs 0.8–1 mm long. Lemma apex obtuse. Palea 4.5–5 mm long, 2 -veined. Palea keels ciliolate, adorned above. Palea surface smooth. Palea apex dentate, 2 -fid. Apical sterile florets barren, in a clump, cuneate, 1.5–2 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, truncate. Anthers 3, 0.6–1.2 mm long. Caryopsis with adherent pericarp, ellipsoid, 3 mm long, dark brown. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northeast, Uruguay.

Buenos Aires.

Melica patagonica L. Parodi. *Darwiniana,* ix. 361 (1951).

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 Synonomy Database: IT: *L. R. Parodi 3194*, 5 Feb 1922, Argentina: Prov Neuquen, Pino Hachado (SI).

Illustrations (Books): M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (271, Fig 174).

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

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms decumbent, 20–40 cm long, rooting from lower nodes. Lateral branches ample. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 2.5–7 mm

long, lacerate. Leaf-blades filiform, convolute, 4–6 cm long, 1 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 6–14 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy above.

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 elliptic, laterally compressed, 5.5–6.5 mm long, falling entire. Rhachilla internodes pubescent. Floret callus pubescent.

Glumes. Glumes similar, with lower wider than upper, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 5.5–6.5 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5 -veined. Lower glume primary vein falling short of apex. Lower glume apex acute. Upper glume lanceolate, 5.5–6.5 mm long, 1.2 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 4.5–5.5 mm long, 2 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma margins ciliate, hairy in the middle. Lemma hairs 0.8–1 mm long. Lemma apex obtuse. Palea oblanceolate, 3.5–4 mm long, 2 -veined. Palea keels ciliolate. Palea apex emarginate or truncate. Apical sterile florets barren, in a clump, elliptic, 1.5–2 mm long. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, 0.2–0.3 mm long, fleshy, truncate. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.5–2.8 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina South.

Chubut, Neuquén, Río Negro.

Melica paulsenii Phil. *Anal. Univ. Chil.* xciv. 159. (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Philippi*, Nov 1874, Chile: Quillota (SGO-PHIL-379; IT: SGO-63476, US-556616 (fragm. ex SGO-PHIL-379 & photo)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Ove Vilhelm Paulsen (1874–1947) Danish botanist and traveller.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms rambling, 200–300 cm long. Lateral branches ample. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface or pubescent. Ligule an eciliate membrane, 0.5–1 mm long, erose, truncate. Leaf-blades 10–20 cm long, 1.5–3 mm wide. Leaf-blade surface scabrous (retrorsely), rough adaxially or on both sides. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted or spiciform, oblong, 7–14 cm long, 2–3 cm wide. Primary panicle branches appressed. Panicle axis scabrous. Panicle branches scabrous. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, scabrous, pubescent, hairy above.

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, 7–9 mm long, falling entire. Rhachilla internodes elongated between glumes. Rhachilla elongation 0.3–0.6 mm long, pilose. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 6–8 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3–5 -veined. Lower glume

primary vein extending to apex. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 7–8 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 4–5 -veined. Upper glume surface asperulous. Upper glume apex emarginate or acute.

Florets. Fertile lemma lanceolate, 6–7 mm long, 1.6–2 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma margins ciliate. Lemma hairs 1–1.2 mm long. Lemma apex entire or dentate, 2 -fid, obtuse. Palea 3.5–4.5 mm long, 2 -veined. Palea keels ciliolate, adorned above, with 0.33 of their length adorned. Palea surface scabrous. Apical sterile florets barren, in a clump, elliptic, 1–2.5 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, 0.3 mm long, fleshy, truncate. Anthers 3, 1.2–1.8 mm long. Caryopsis with adherent pericarp, 2–2.5 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Chile Central.

Coquimbo, Valparaiso, Santiago, O'Higgins.

Melica penicillaris Boiss. & Bal. *Diagn. Ser.* II. iv. 132. (1859).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Turkey. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Turkey, Kayseri: Balansa (G holo).

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth. Ligule an eciliate membrane, 2.5–5 mm long, truncate. Leaf-blades flat or convolute, 10–20 cm long, 3–12 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle, comprising 30–90 fertile spikelets. Panicle open, linear, secund, 8–22 cm long, 1.5–3 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 9–13 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong or ovate, 6–9 mm long, 0.75 length of upper glume, membranous, without keels, 7 -veined. Lower glume apex obtuse. Upper glume oblong or ovate, 8–12 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 8–10 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface pilose, hairy on veins. Lemma hairs white or yellow. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus**, **Western Asia**. Iran.

Melica persica Kunth. *Rev. Gram.* i. 351 (1830).

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 *M.jacquemontii*).

TYPE from Iran. **Basionym or Replaced Name**: , . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Iran, Kermachan to Amadan: Coll? (G holo).

Recent Synonyms: *Melica inaequiglumis* Boiss., *Diagn. Ser.* 1,7: 124 (1846). *Melica canescens* (Regel) Lavrenko ex Nevski, *Acta Univ. As. Med. Ser.* VIII b, *Bot. Fasc.* 17, 10 (1934).

Melica jacquemontii Decne in *Jacquem. Voy. Bot.* 174. t. 175 (1844).

Melica hohenackeri Boiss., Diagn. Ser. I. 13:. 54 (1854).

Illustrations (Books): 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. 38), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (273 & 275, Pl. 95 & 96 as *M. jacquemontii*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (447, Fig 47), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig.298 as ssp *canescens*).

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

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect or geniculately ascending, 15–50 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth or scaberulous, glabrous on surface or pubescent. Ligule an eciliate membrane, 0.5–3 mm long, truncate or obtuse. Leaf-blades flat or involute, 5–15 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, equilateral or secund, 3.5–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 5.5–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume ovate, 2.5–6.5 mm long, 0.33–0.75 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 5.5–10 mm long, 1.3 length of adjacent fertile lemma, membranous, without keels, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–7.5 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface villous, with tubercle-based hairs. Lemma hairs 4–5 mm long. Lemma apex acute. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

n = 9 (1 ref TROPICOS).

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

Country /Province /State. **Northern Africa**. Egypt. **Middle Asia**, **Caucasus**, **Western Asia**, **China**. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran, Iraq, Turkey. China South Central, Manchuria, China North-Central, Tibet. **Indian Subcontinent**. Pakistan, West Himalaya.

Gansu. Sichuan. Himachal Pradesh, Jammu Kashmir.

Melica picta C. Koch. *Linnaea,* xxi. 895. (1848).

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 *M. canescens, M. hohenackeri, M.jacquemontii*), 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 Synonomy Database: Russia, Georgia, Lori: Koch (LE lecto).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. painted. Glumes and/or lemmas with conspicuous pigmented veins or margins.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–80 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 1–2.5 mm long. Leaf-blades 8–16 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough on both sides, pilose, sparsely hairy, hairy adaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 6–12 cm long. Panicle branches bearing distant spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 oblong, laterally compressed, 8–10 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 7 mm long, 1 length of upper glume, membranous, grey or red, without keels, 5 -veined. Lower glume apex obtuse. Upper glume elliptic, 7 mm long, 0.8 length of adjacent fertile lemma, membranous, grey or red, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 8–9 mm long, chartaceous, shiny, without keel, 3 -veined, 0–3 -veined. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp, 2 mm long. Hilum linear.

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

Region. **Northern Europe**, **Middle Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Finland. : Austria, Czechoslovakia, Germany, Hungary, Poland. : Bulgaria, Romania, Yugoslavia. Belarus, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. **Caucasus**, **Western Asia**. Iran.

Melica poecilantha E. Desv. *C. Gay, Fl. Chil.* vi. 379. (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>: *fide* TROPICOS and Kew Synonomy Database: Chile, Coquimbo Prov.: Gay 212 (P holo, K).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *poikilos*, variable; *anthos*, flower. Spikelets variable with respect to their numbers of sterile and fertile florets.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms geniculately ascending, 10–55 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, pubescent. Ligule an eciliate membrane, 0.2–1.5 mm long, pubescent on abaxial surface, truncate. Leaf-blades 5–12 cm long, 1–3 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous or pubescent, hairy adaxially. Leaf-blade margins scabrous, glabrous or ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 5–15 cm long. Primary panicle branches appressed, simple. Panicle axis dominant, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy all along but hairs longer above, with 0.3 mm long hairs.

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 elliptic, laterally compressed, 10–15 mm long, falling entire. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 7–10 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3–5 -veined. Lower glume primary vein extending to apex. Lower glume surface asperulous. Lower glume apex emarginate. Upper glume elliptic, 10–13 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3–5 -veined. Upper glume surface asperulous. Upper glume apex dentate, 2 -fid.

Florets. Fertile lemma lanceolate, 9–11 mm long, 2–3 mm wide, chartaceous, much thinner above, much thinner on margins, mid-green or purple, without keel, 11–13 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex dentate, 2 -fid, obtuse. Palea 2 -veined. Palea keels ciliolate, adorned above, with 0.33 of their length adorned. Palea surface scaberulous. Apical sterile florets barren, in a clump, elliptic, 1.8–3 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, 0.5 mm long, fleshy, truncate. Anthers 3, 2–2.5 mm long, yellow. Caryopsis with adherent pericarp, 3–3.6 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Chile Central.

Coquimbo.

Melica porteri Scribn. *Proc. Acad. Philad.* 44 (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. **Basionym or Replaced Name**: *Melica mutica* var. *parviflora* Porter, Porter & Coult., *Syn. Fl. Colo.* :149 (1874). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: : Based on M. mutica var. parviflora ; USA, Colorado, Sierra Madre: Coulter ; USA, Colorado, Glen Eyrie: Porter (GH syn).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (99, as var. *porteri* & var. *laxa*), F.W.Gould, *The Grasses of Texas* (1975) (64, Fig. 25).

Derivation (Clifford & Bostock 2007): in honor of Thomas Conrad Porter (1822–1901) United States botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Culms slender, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 3–7 mm long, glabrous on abaxial surface or pubescent on abaxial surface. Leaf-blades 2–5 mm wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, nodding, 13–25 cm long. Primary panicle branches appressed. Spikelets deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 oblong, laterally compressed, 8–15 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 4–8 mm long, 1 length of upper glume, scarious, much thinner above, much thinner on margins, without keels. Upper glume oblong, 4–8 mm long, 0.5–1 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels.

Florets. Fertile lemma elliptic, 6–8 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface rugulose. Lemma apex obtuse or acute. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets barren, in a clump, elliptic, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, 2–3 mm long.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona. New Mexico, Texas. Northeast Mexico.

Coahuila, Chihuahua.

Melica przewalskyi Roshev. *Not. Syst. Herb. Hort. Petrop.* ii. 25 (1921).

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 Synonomy Database: China, Tangut: Przewalsky (LE lecto).

Recent Synonyms: *Melica polyantha* Keng, *Sunyatsenia,* vi. 77 (1941). *Melica polyantha* Keng, *Sunyatsenia* 6:. 77 (1941).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 301).

Derivation (Clifford & Bostock 2007): in honor of Nikolai Michailowicz Przewalsky (1839–1888) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 30–75 cm long. Culm-internodes scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane or absent. Leaf-blades 10–18 cm long, 6 mm wide. Leaf-blade venation prominent. Leaf-blade surface scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, nodding, 10–20 cm long. Primary panicle branches 2–3 -nate, 1–5 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous, hairy at tip.

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, 5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–2.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2.5–3.5 mm long, 0.75 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, 3.5–4.5 mm long, 0.9–1 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.5–5.5 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface scabrous, rough on veins. Palea 0.75 length of lemma, hyaline, 2 -veined. Palea keels scaberulous. Apical sterile florets 1 in number, barren, oblong or orbicular, 0–2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1 mm long, brown. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet.

Gansu, Shaanxi. Guizhou, Hubei, Sichuan.

Melica racemosa Thunb. *Prod. Pl. Cap.* 21. (1794).

Accepted by: 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 Synonomy Database: USA, Carolina: Coll? (PH holo).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (209, Fig 130).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

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: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades erect, flat or convolute, 4–30 cm long, 1.5–5 mm wide. Leaf-blade surface smooth or scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 7–20 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 5–9(–11) mm long, falling entire.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 4–8 mm long, 0.8 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume elliptic, 5–9 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 4–8 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma margins ciliate. Lemma hairs 2 mm long. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate. Apical sterile lemmas glabrous.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

n = 9 (2 refs TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Gauteng (*), Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape.

Melica radula Franch. *Pl. Davidian.* 1: 336 (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).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China, Chensi: David.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 309).

Derivation (Clifford & Bostock 2007): L. scraper. Rough to the touch. Leaf-blades or other parts asperous.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–45 cm long, 1–2 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth or retrorsely scabrous. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades convolute, 5–12 cm long, 0.8–2 mm wide. Leaf-blade surface scabrous, rough abaxially, pubescent, densely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 6–15 cm long. Primary panicle branches appressed, 1 -nate, bearing 3–6 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, pubescent, hairy above.

Fertile Spikelets. Spikelets comprising (1–)2(–3) 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 ovate, laterally compressed, 5–8 mm long, breaking up at maturity.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 4–7 mm long, 1 length of upper glume, scarious, light green, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acute. Upper glume linear or oblong, 4–7 mm long, 1 length of adjacent fertile lemma, scarious, light green, 1-keeled, 3–5 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate or oblong, 4.5–7 mm long, herbaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface scabrous and tuberculate. Lemma apex obtuse. Palea 0.66 length of lemma, 2 -veined. Palea keels ciliolate, adorned above. Apical sterile florets barren, in a clump, orbicular.

Flower and Fruit. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. China South Central, Inner Mongolia, China North-Central, China Southeast.

Gansu, Hebei, Shaanxi, Shandong, Shanxi. Henan. Hubei, Sichuan, Yunnan.

Melica rectiflora Boiss. & Heldr. *Diagn. Ser.* I. xiii. 56. (1854).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, T.G.Tutin et al, *Flora Europaea* 5 (1980).

TYPE from Crete. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Crete, Sphakia: Heldreich.

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms 20–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous, glabrous on surface or pilose, with reflexed hairs. Ligule an eciliate membrane, truncate. Leaf-blades 5–20 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough abaxially, glabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 6–22 cm long. Primary panicle branches indistinct the panicle almost racemose. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, straight, 0.25–0.9 length of fertile spikelet.

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 oblong, laterally compressed, 4–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 3–6 mm long, 0.9–1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acute. Upper glume oblong, 4–7 mm long, 1–1.1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5–7 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface smooth. Lemma apex obtuse. Palea elliptic, 1 length of lemma, 2 -veined. Palea keels thickened, winged, narrowly winged, ciliolate. Palea apex entire, obtuse. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 2–3 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–2.3 mm long. Caryopsis with adherent pericarp, ellipsoid, 3.5 mm long. Embryo 0.2 length of caryopsis. Hilum linear.

2*n* = 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. **Southeastern Europe**.

Country /Province /State. : Greece, Crete.

Melica rigida Cav. *Ic. v.* 47. t. 473. f. 1. (1799).

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 Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: Uruguay: Habitat in Montevideo haud procul ab Almacem de los negros.

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (95), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (297, Fig. 66), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (275, Fig 178), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 20–75 cm long. Culm-internodes smooth. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 0.5–5 mm long, pubescent on abaxial surface, lacerate. Leaf-blades flat or involute, 3–9 cm long, 2–2.5 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially, glabrous or puberulous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, linear, 6–20 cm long, 1–2 cm wide. Primary panicle branches appressed, simple. Panicle axis dominant, scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, scabrous, pubescent, hairy above.

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 elliptic, dorsally compressed, 8–11 mm long, falling entire. Rhachilla internodes scaberulous. Floret callus pubescent. Floret callus hairs 0.1–0.3 mm long.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 8–11 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7–9 -veined. Lower glume apex obtuse. Upper glume lanceolate, 4–6 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5.5–8.5 mm long, 2–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma lateral veins obscure. Lemma surface scaberulous. Lemma margins ciliate. Lemma hairs 0.5 mm long. Lemma apex acute. Palea oblanceolate, 5–6 mm long, 2 -veined. Palea keels ciliolate. Palea surface smooth. Palea apex dentate, 2 -fid. Apical sterile florets barren, in a clump, cuneate, 1.5–3 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.3–0.5 mm long, fleshy, truncate. Anthers 3, 1–1.5 mm long, eventually exserted or retained within floret. Caryopsis with adherent pericarp, ellipsoid, 2.5–3 mm long, dark brown. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Argentina South, Uruguay. Rio Grande do Sul, Santa Catarina. Buenos Aires, Entre Rios, Santa Fe. Río Negro.

Melica riograndensis H.M. Longhi & J.F.M. Valls. *Rev. Brasil. Biol.,* 37(3): 573 (1977).

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 Synonomy Database: Brazil: Rio Grande do Sul: Uruguaiana (Estância Caiboat?, sobre solo aluvional, raso e fértil, 14 Nov 1963, *V. Simas 73* (HT: BLA; IT: ICN).

Illustrations (Books): H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): L. -*ensis*, denoting origin. From Rio Grande de Sul, Brazil.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 16–30 cm long. Culm-internodes distally glabrous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface. Ligule an eciliate membrane, 2.5–3.2 mm long. Leaf-blades 12–57 cm long, 1.3–1.5 mm wide. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5–8 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets spreading or deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 oblong, laterally compressed or dorsally compressed, 7.2–9.8 mm long, 2–3.8 mm wide, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume obovate, clasping, 5.8–6.3 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7 -veined. Lower glume apex erose, obtuse. Upper glume lanceolate, 7–9 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 7 -veined. Upper glume apex erose, obtuse.

Florets. Fertile lemma lanceolate, 7–7.2 mm long, 2–4 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface papillose, rough on veins. Lemma apex acute. Palea 5.5 mm long, 2 -veined. Palea surface papillose. Palea apex dentate, 2 -fid. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2–3 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 0.7–1.2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Rio Grande do Sul.

Melica sarmentosa Nees. *Agrost. Bras.* 485. (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).

TYPE from Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Uruguay, Montevideo: Sellow (B holo, LE, W).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (95 & 96), S.A.Renvoize, *Gramineas de Bolivia* (1998) (150, Fig. 35), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (280 & 281, Fig. 61 & 62), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (56, Fig. 12), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (300, Fig. 76 as var. *glabrior*), B.Rosengurtt, *Gramineas UruguayasI* (1970) (124, Fig. 45), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): L. *sarmentum*, small branch; *-osa*, abundance. Culms much branched.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms scandent, 150–400 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth, glabrous on surface. Leaf-sheath auricles erect and connate forming a tooth opposite blade, (1–)2–3.5 mm long. Ligule an eciliate membrane, (1–)1.5–3 mm long, entire or lacerate. Leaf-blades 6–20 cm long, 1.5–6 mm wide. Leaf-blade surface scabrous, glabrous or pilose, hairy adaxially. Leaf-blade margins scabrous (retrorsely). Leaf-blade apex attenuate, filiform, retrorsely scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 10–22 cm long. Primary panicle branches appressed or ascending. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy above.

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 cuneate, laterally compressed, 6–8 mm long, falling entire. Rhachilla internodes elongated between glumes, scaberulous.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 6–8 mm long, 1 length of upper glume, chartaceous, much thinner on margins, purple, without keels, 4–7 -veined. Lower glume apex dentate, 2 -fid, acute. Upper glume oblong, 6–9 mm long, 1 length of adjacent fertile lemma, chartaceous, with hyaline margins, purple, without keels, 4–5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 6.5–9 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma surface asperulous. Lemma apex truncate or acute. Palea 0.6–0.7 length of lemma, 2 -veined. Palea keels ciliolate. Palea surface pubescent, hairy on back. Apical sterile florets 2–3 in number, barren, in a clump, elliptic or cuneate, 1 mm long.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, truncate. Anthers 3, 1–1.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Brazil**, **Southern South America**. Bolivia. Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Paraguay, Uruguay.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Sao Paulo. Paraná, Rio Grande do Sul, Santa Catarina. Catamarca, Jujuy, Salta, Tucuman. Buenos Aires, Chaco, Corrientes, Entre Rios, Misiones, Santa Fe.

Melica scaberrima (Steud.) Hook. f. *Fl. Brit. Ind.* vii. 330. (1896).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China 22* (Poaceae) (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from India. **Basionym or Replaced Name**: *Glyceria scaberrima* Nees ex Steud., *Syn. Pl. Gram.* 287 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India: Royle 376 (K iso).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 299).

Derivation (Clifford & Bostock 2007): L. *scaber*, rough; *-rima*, most. Leaf-blades very scabrous.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect or geniculately ascending, 50–150 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous, glabrous on surface or hispid. Ligule an eciliate membrane, 1–2 mm long, truncate. Leaf-blades flat or convolute, 15–35 cm long, 3–5.5 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, effuse, 20–40 cm long. Primary panicle branches spreading or reflexed, distant, 6–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–6 mm long.

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 oblong, laterally compressed, 8.5–13 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–2.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate or elliptic, 3.5–4.5 mm long, 0.75 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate or elliptic, 4.8–6.3 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic or oblong, 7–8.5 mm long, chartaceous, much thinner above, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface scaberulous. Lemma apex acute. Palea 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

n = 9 (1 ref TROPICOS).

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

Country /Province /State. **Western Asia**, **China**. Iran. China South Central, Tibet. **Indian Subcontinent**. Nepal, Pakistan.

Yunnan. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

Melica scabra H. B. & K. *Nov. Gen. et Sp.* i. 164. (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>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n. [3249 on both US fragms.]*, Jul, Ecuador: Chimborazo, Andes Assuensium .. Pomallacta & Cerro de Sitzan: 2700–3360 m (P; IT: B-W-1871, LE-TRIN-2475.01 (fragm. & illustr. no. 200 ex hb. Bonpl.-Kunth), US- (fragm. ex P-HBK), US- (fragm. ex P-HBK)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (Fig. 35).

Illustrations (Journals): *Ruizia* (13:146, Fig15g-i (1993)).

Derivation (Clifford & Bostock 2007): L. rough or gritty to the touch. Plants with rough leaf-blades, spikelets or stems.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–80 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 2.5–4 mm long, erose. Leaf-blades 5–10 cm long, 2.5–7 mm wide. Leaf-blade surface scabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–18 cm long, contracted about primary branches. Primary panicle branches ascending or spreading. Panicle branches secund. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved.

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 cuneate, laterally compressed, 8–12 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–18 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3–5 -veined. Lower glume apex obtuse or acute. Upper glume lanceolate, 5–18 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3–4 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 6.5–8 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 6–8 -veined, more than 3-veined. Lemma surface scabrous, rough below. Palea 2 -veined. Apical sterile florets barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Bolivia, Colombia, Ecuador, Peru.

Melica scabrosa Trin. *Mem. Acad. Petersb. Ser.* VI. iii. II. 59. (1838).

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.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China, Peking: Bunge.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 308).

Derivation (Clifford & Bostock 2007): L. *scaber*, rough; -osa, abundance. Leaf-blades distinctly scabrous.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms geniculately ascending, 30–70 cm long, 1.5–2.5 mm diam., 12–16 -noded. Culm-internodes 1–10 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth or scaberulous. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 6–15 cm long, 2–7 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or oblong, continuous or interrupted, dense, 7–15 cm long, 1–2 cm wide. Primary panicle branches appressed or ascending, 4–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, pubescent, hairy above.

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 ovate, laterally compressed, 5–7 mm long, 3–4 mm wide, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4–6 mm long, 1 length of upper glume, scarious, much thinner above, much thinner on margins, without keels, 3–5 -veined. Lower glume primary vein ciliate. Lower glume apex acute. Upper glume lanceolate, 4–6 mm long, 1 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels, 3–5 -veined. Upper glume primary vein ciliate. Upper glume apex acute.

Florets. Fertile lemma oblong or obovate, 4–6 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma midvein scabrous. Lemma lateral veins prominent. Lemma apex obtuse or acute. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets barren, in a clump, cuneate, 1 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.3 mm long. Caryopsis with adherent pericarp, oblong, 1.5 mm long. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**, **Mongolia**, **Eastern Asia**. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet. Mongolia. Korea.

Hebei, Shaanxi, Shandong, Shanxi. Anhui, Henan, Jiangsu. Hubei, Sichuan.

Melica schafkatii Bondarenko. *Opred. Rast. Sred. Azii,* i. 123, 200 (1968).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia, Tianshan, Galavasai: Bonarenko & Kamalov.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Schafkat.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 30–100 cm long, 5–6 -noded. Culm-internodes smooth. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, truncate. Leaf-blades 10–18 cm long, 3–10 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle contracted, lanceolate, 8–15 cm long. Primary panicle branches ascending or spreading, 0.5–1 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent.

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 elliptic, laterally compressed, 10–15 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong or ovate, 6.5–9 mm long, 0.9 length of upper glume, scarious, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume oblong or ovate, 6.5–9 mm long, 0.66–0.75 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 7.5–11 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma surface pilose. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets barren, in a clump, ovate, 2 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 2.5–3.5 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Middle Asia**. Kirgizistan.

Melica schischkinii Iljinsk. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS,* xii. 29 (1950).

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

TYPE from Caucasus. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.A.Grossheim, I.A.Il'inskaya, M.I.Kirpichnikov s.n.*, 4 Jun 1947, [Caucasus]: Azerbaijan: Nakhichevan: Dist. Norashen: Mt. Kabakh-yal (LE; IT: LE, LE, LE, US-2043213). Orig. label: Azerbaijan, Nakhichevanskaya ASSR, Norashenskij rajon, otrogi g. Kabakh-yal, bliz r. Arpa-chaj, okolo 900 m, na osypi..

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Boris Konstantinovich Shishkin (1886–1963) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 40–50 cm long. Culm-internodes smooth, distally glabrous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, glabrous on surface. Ligule an eciliate membrane, 3–4 mm long, truncate or obtuse. Leaf-blades flat or involute, 6–12 cm long, 1–2 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, equilateral or secund, 10–12 cm long. Panicle axis angular, scaberulous, glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, 10 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 ovate, 5–6 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 9–11 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5–7.5 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma lateral veins prominent. Lemma surface villous, with tubercle-based hairs. Lemma hairs 4–5 mm long. Lemma apex acute. Palea 5 mm long, 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus**, **Western Asia**. Iran.

Melica schuetzeana Hempel. *Feddes Repert.* 83(1–2): 4 (1972).

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 Synonomy Database: China: Xizang: forest margins, 3200–3500 m,.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 299).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Schuetze.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms erect, 70–110 cm long, 1.2–2.5 mm diam. Culm-internodes smooth, distally glabrous. Leaves cauline, 8 per branch. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 1–1.5 mm long, scaberulous on abaxial surface, truncate. Leaf-blades 18–30 cm long, 3–6 mm wide, stiff. Leaf-blade venation with 13–35 secondary veins. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 24 cm long. Primary panicle branches ascending. Panicle axis smooth or scabrous. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2.5–3.5 mm long, scabrous, ciliate, hairy at tip.

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 oblong, laterally compressed, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2–2.4 mm long, scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.5–3.8 mm long, 0.75 length of upper glume, hyaline, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 5–5.2 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5.5–5.8 mm long, chartaceous, much thinner above, purple, without keel, 7 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex emarginate. Palea 4.4–4.8 mm long, 2 -veined. Palea apex ciliate. Apical sterile florets 1 in number, barren, lanceolate, 2.5–3 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

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

Country /Province /State. **China**. China South Central, Qinghai, Tibet. **Indian Subcontinent**. Eastern Himalaya.

Sichuan, Yunnan.

Melica secunda Regel. *Act. Hort. Petrop.* vii. 629. (1880).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, 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 Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia, Karakasuk to Shahimardan: Fedtschenko (LE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 307).

Derivation (Clifford & Bostock 2007): L. bent to one side. Branches restricted to one side of inflorescence.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms erect, 30–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth, glabrous on surface. Ligule an eciliate membrane, 3.5–5 mm long, bilobed. Leaf-blades flat or convolute, 7–17 cm long, 1.5–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, secund, 7–15 cm long. Primary panicle branches indistinct the panicle almost racemose or simple, 1–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 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, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 2 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 5.5 mm long, 0.8–0.9 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5 -veined. Lower glume apex acute. Upper glume elliptic, 6–6.5 mm long, 1.2

length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic or oblong, 5–5.5 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface scaberulous. Lemma apex obtuse or acute. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

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

Country /Province /State. **Middle Asia**, **Western Asia**, **China**. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Afghanistan, Iran. China South Central, China North-Central, Tibet, Xinjiang. **Indian Subcontinent**. Pakistan, West Himalaya.

Gansu. Sichuan. Jammu Kashmir.

Melica serrana Muj.-Sall. & M.Marchi. *Novon* 15(2): 339 (341–343; fig. 2) (2005).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Uruguay, Sierra de Animas: Marchi, Mujica & Brescia 1464 (MVFA holo).

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms geniculately ascending, 25–65 cm long. Lateral branches lacking. Leaf-sheaths antrorsely scabrous. Ligule an eciliate membrane, 0.5–3 mm long, entire or lacerate, obtuse. Leaf-blades involute, 5–15 cm long, 1–3 mm wide. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–22 cm long, 1.5–4 cm wide, bearing few spikelets. Primary panicle branches ascending, whorled at most nodes, 6 cm long. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate.

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 obovate, dorsally compressed, 5–8 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 6–8 mm long, 1 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7–9 -veined. Lower glume apex emarginate. Upper glume lanceolate, 6.5–7.2 mm long, 1.3–1.4 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume surface glabrous or puberulous, hairy above. Upper glume apex erose, obtuse.

Florets. Fertile lemma elliptic, 4.6–5.5 mm long, chartaceous, without keel, more than 3-veined. Lemma lateral veins prominent. Lemma surface asperulous, pubescent, hairy on veins. Lemma hairs 0.7 mm long. Lemma apex erose. Palea elliptic, 4.5 mm long, 2 -veined. Palea keels ciliolate, adorned above. Apical sterile florets 1–3 in number, barren, in a clump, cuneate. Apical sterile lemmas obtuse.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 0.6 mm long, retained within floret. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 2.7–3 mm long, dark brown. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Uruguay.

Melica smirnovii Tzvelev. *Bot. Zhurn.* (Moscow & Leningrad) 97: 254 (2012).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Prov. Mosqua, distr. Luchovitzy, prope pag. Beloomut, in pratulo substepposo in quereto, terrassa supra vallem inundatum fl. Oka sita, 28 V 1969, Herb Fl.Ross. N 5263, leg *V. Tichomirov, I.Gubanova* a. al - LE, cum isotypo.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 25–70 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 1–3.5

mm long. Leaf-blades 8–16 cm long, 2–3.5 mm wide. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, equilateral. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 oblong, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 4.5–4.7 mm long, 0.8 length of upper glume, membranous, without keels. Upper glume elliptic, 5.4–5.7 mm long, 0.9–1.1 length of adjacent fertile lemma, membranous, without keels.

Florets. Fertile lemma elliptic, 4.8–6.5 mm long, chartaceous, dull, without keel. Lemma surface papillose. Palea apex papillose. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Anthers 3, 1.5–1.8 mm long.

Distribution (TDWG). Continent. Europe.

Region. **Eastern Europe**.

Country /Province /State. Central European Russia.

Melica smithii (Porter) Vasey. *Bull. Torrey Bot. Club,* xv. 294 (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).

TYPE from USA. **Basionym or Replaced Name**: *Avena smithii* Porter ex A. Gray, *Manual (ed. 5)* 640 (1867)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *C.E. Smith s.n.*, Jul 1865, USA: Michigan: woods near Sault Ste. Marie (PH; IST: US-A865577 (fragm. ex PH & photo)).

ST: *Robbins s.n.*, USA: Michigan: Lake Superior, Isle Royale, Keweenaw Point (?; IST: MO).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (96).

Derivation (Clifford & Bostock 2007): in honor of Charles Eastwick Smith (1820–1900) United States engineer and amateur botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Culms 60–120 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 6–12 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 12–25 cm long. Primary panicle branches spreading, 1 -nate, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, glabrous.

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 lanceolate, laterally compressed, 18–20 mm long, breaking up at maturity, disarticulating above glumes but not between florets.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–6 mm long, 0.8 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume apex acute. Upper glume lanceolate, 4–7 mm long, 0.5–0.6 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 6–11 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn subapical, 3–5 mm long overall. Palea 0.66 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, lanceolate, 4 mm long. Apical sterile lemmas awned.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**, **Eastern Canada**, **Northwest USA**, **Southwestern USA**. Alberta, British Columbia. Idaho, Montana, Oregon, Washington, Wyoming. Utah.

Melica spartinoides L.B. Smith. *Phytologia.* 22(2); 89 (1971).

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 Synonomy Database: HT: *L.B. Smith & R. Klein 11954*, 28 Feb 1957, Brazil: Santa Catarina: Mun. de Capinzal (US-2433829; IT: HBR).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (280, Fig. 61), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Superficially similar to *Spartina*.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short, hairy. Culms erect, 50–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, keeled. Ligule an eciliate membrane. Leaf-blades 12 cm long, 5 mm wide. Leaf-blade surface scaberulous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, oblong, 22 cm long. Primary panicle branches appressed, simple, 4–9 cm long. Panicle branches secund. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved.

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 oblong, laterally compressed, 10 mm long, falling entire.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume obovate, 4 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5 -veined. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 5.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 7 -veined. Upper glume surface asperulous.

Florets. Fertile lemma lanceolate, 5–6 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 9 -veined, more than 3-veined. Lemma surface scaberulous. Lemma margins ciliate. Lemma apex acute. Palea 4 mm long, 2 -veined. Apical sterile florets barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, 2.5 mm long. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Catarina, Rio Grande do Sul. Rio Grande do Sul, Santa Catarina.

Melica spectabilis Scribn. *Proc. Acad. Philad.* 45. (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 Synonomy Database: ST: *F.L. Scribner 385*, 29 Jun 1883, USA: Montana: [Crow Creek Mts.] rocky mountain sides, 6000 ft (US-133309).

ST: *Watson 1303*, USA: Utah: Cottonwood Canyon, 10000 ft

ST: *Wm. M. Canby 368*, USA: Montana: Bozman Pass

ST: *T. C. Porter*, 1872, USA: Colorado: Twin Lakes, Upper Arkansas, and Plains near Ogden

ST: *C.C. Parry 295*, USA: Wyoming: Yellowstone Park

ST: *S. Watson 455*, USA: Idaho: Beaver Canyon.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (92).

Derivation (Clifford & Bostock 2007): L. showy. Attractive or outstanding in some respect such as height.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms 30–80 cm long, swollen at the base, forming an ovoid corm. Leaf-sheaths tubular for much of their length, with 0.9–1 of their length closed, scaberulous. Ligule an eciliate membrane, 1–3 mm long, glabrous on abaxial surface, erose or lacerate. Leaf-blades flat or involute, 2–4 mm wide. Leaf-blade surface glabrous to pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 7–15 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

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 ovate, laterally compressed, 9–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, 1.5–2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 4–6 mm long, 0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3(–5) -veined. Lower glume lateral veins prominent. Lower glume apex acute. Upper glume oblong, 6–7 mm long, 0.9–1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5(–7) -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 6–8 mm long, chartaceous, much thinner on margins, without keel, 7–11 -veined, more than 3-veined. Lemma lateral veins distinct. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets barren, in a clump, ovate, 2.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp.

$2n = 18$.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Western Canada**, **Northwest USA**, **Southwestern USA**. British Columbia. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. California, Nevada. **Western South America**. Colombia.

Melica stricta Boland. *Proc. Calif. Acad.* iii. 4 (1863).

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 Synonomy Database: HT: *G.W. Dunn*, USA: Nevada Territory: Silver City (IT: GH, US- (fragm. ex GH & photo)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (99, as var. *stricta* & var. *albicaulis*).

Derivation (Clifford & Bostock 2007): L. erect. Inflorescence branches erect.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 15–60 cm long. Leaf-sheaths tubular for much of their length, scaberulous, glabrous on surface to pubescent. Ligule an eciliate membrane. Leaf-blades 1–3 mm wide. Leaf-blade surface scabrous, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5–15 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 cuneate, laterally compressed, 12–16 mm long, falling entire.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma, shiny. Lower glume elliptic, 10–14 mm long, 1 length of upper glume, hyaline, much thinner above, much thinner on margins, without keels, 7–9 -veined. Lower glume apex obtuse. Upper glume elliptic, 10–14 mm long, 1.4 length of adjacent fertile lemma, hyaline, much thinner above, with hyaline margins, without keels, 7–9 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 7–10 mm long, chartaceous, much thinner above, without keel, 5 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets barren, in a clump, ovate, 1 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**. Oregon. Arizona, California, Nevada, Utah.

Melica stuckertii Hack. ex Stuck. *Anal. Mus. Buenos Aires,* xi. 135. (1904).

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 Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *T. Stuckert 12748*, 13 Feb 1903, Argentina: Prov. Cordoba, Inebrada de Alta Gracia, Rio II (W; IT: SI, US (ex W)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (96).

Derivation (Clifford & Bostock 2007): in honor of Teodoro Juan Vicente Stuckert (1852–1932) Swiss-born Argentinian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 50–70 cm long. Culm-internodes smooth or scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, retrorsely scabrous. Ligule an eciliate membrane, 0.5–5 mm long, lacerate. Leaf-blades flat or convolute, 1.5–15 cm long, 1.5–3 mm wide, stiff. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–25 cm long. Panicle axis scaberulous. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy above.

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 obovate, dorsally compressed, 7–11 mm long, falling entire. Floret callus glabrous.

Glumes. Glumes dissimilar, with lower wider than upper, exceeding apex of florets, thinner than fertile lemma. Lower glume obovate, 7–11 mm long, 1.3–1.4 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 7–11 -veined. Lower glume primary vein falling short of apex. Lower glume apex entire, acute. Upper glume lanceolate, 5–8 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 5–7 mm long, 2–2.5 mm wide, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma margins ciliate, hairy in the middle. Lemma apex entire or dentate, 2 -fid, acute. Palea 3.5–6 mm long, 2 -veined. Palea keels ciliolate. Palea surface asperulous. Palea apex acute. Apical sterile florets barren, in a clump, oblong, 2–2.5 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.2 mm long, fleshy, glabrous, truncate. Anthers 3, 1.5–2.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.8–3.5 mm long, dark brown. Embryo 0.25 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia. Argentina Northeast.

Catamarca, La Rioja, Mendoza, Santiago del Estero, San Luis. Buenos Aires, Cordoba.

Melica subflava Z.L. Wu. *Fl. Reipubl. Popularis Sin*. 9(2): 314–316, pl. 37, f. 7–13 (2002).

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**: *Melica flava* Z.L. Wu, non Steud.(1854), *Acta Phytotax. Sin.,* 30(2): 171 (1992). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: : Based on M. flava Wu ; China, Maqen: Exped. Maqen 415 (NWBI holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 310).

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, 50–80 cm long, 2–4 mm diam., 3–5 -noded. Leaf-sheaths tubular for much of their length, with 1 of their length closed, keeled, retrorsely scabrous. Ligule an eciliate membrane, 2–4 mm long, pubescent

on abaxial surface, truncate. Leaf-blades flat or conduplicate, 10–22 cm long, 3–6 mm wide. Leaf-blade surface scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle contracted, linear, interrupted, secund, 6–12 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, pubescent, hairy above.

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 ovate, laterally compressed, 8–11 mm long, breaking up at maturity.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 6–8 mm long, 0.9 length of upper glume, scarious, yellow, without keels, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex acute. Upper glume oblong, 7–11 mm long, 1.3–1.5 length of adjacent fertile lemma, scarious, yellow, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma obovate, 5.5–7 mm long, herbaceous, much thinner above, much thinner on margins, without keel, 5–7 -veined, more than 3-veined. Lemma apex lobed, 2 -fid, obtuse. Palea 2 -veined. Palea keels ciliolate, adorned above. Apical sterile florets barren, in a clump, orbicular.

Flower and Fruit. Anthers 3, 1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. Qinghai.

Melica subulata (Griseb.) Scribn. *Proc. Acad. Philad.* 47 (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), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: USA: Alaska: Hab. in insula Unalaschka, *Eschscholtz s.n.*.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (96).

Derivation (Clifford & Bostock 2007): L. *subulus*, a fine point; *-ata*, possessing. Glumes, lemmas or calluses sharply tapered.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–80 cm long, swollen at the base, forming an ovoid corm. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous, glabrous on surface to puberulous. Ligule an eciliate membrane, 1–5 mm long, glabrous on abaxial surface, erose or lacerate. Leaf-blades 2–7 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous to hirsute, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches appressed or ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 oblong, laterally compressed, 12–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes terete, 2.5–3 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 5–6.5 mm long, 0.66–0.75 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 3 -veined. Lower glume lateral veins obscure. Lower glume apex acute or acuminate. Upper glume elliptic, 7.5–9 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 7 -veined. Upper glume lateral veins obscure. Upper glume apex acute or acuminate.

Florets. Fertile lemma oblong, 9–13 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface pubescent, hairy below, hairy on veins. Lemma margins ciliate, hairy below. Lemma apex acuminate. Palea 0.66–0.75 length of lemma, 2 -veined. Apical sterile florets barren, in a clump, lanceolate, 5–8 mm long. Apical sterile lemmas acuminate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp.

$2n = 18$ (1 ref TROPICOS).

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

Country /Province /State. Russian Far East. Kamchatka. **Western Canada**, **Northwest USA**, **Southwestern USA**. British Columbia. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. California, Nevada.

Melica tangutorum Tsvelev. *Akad. Nauk SSSR Bot. Inst. Komarova, Rast. Tsentral. Azii, Fasc.* 4, 12 (1968).

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 Synonomy Database: China, Tanguta: Przewalsky (LE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 310).

Derivation (Clifford & Bostock 2007): of the Tangutes the inhabitants of north-eastern Tibet. From Tibet.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 30–80 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 2.5–6.5 mm long, glabrous on abaxial surface. Leaf-blades flat or convolute, 1–3.5 mm wide. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, linear, interrupted, dense, secund, 10–20 cm long. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 1–7 mm long, ciliate, hairy at tip.

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 oblong, laterally compressed, 4–7 mm long, breaking up at maturity.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 2.7–4 mm long, 0.9 length of upper glume, membranous, without keels, 3–5 -veined. Lower glume apex acute. Upper glume elliptic, 3–4.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong or ovate, 3–4.5 mm long, coriaceous, much thinner above, without keel, 7–9 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex emarginate. Palea elliptic, 2 -veined. Palea surface scabrous. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 0.7–1 mm long. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**, **Mongolia**. China South Central, China North-Central, Qinghai. Mongolia.

Gansu. Sichuan.

Melica taylorii W. Hempel. *Feddes Repert.* 83(1–2): 2–4, f. 1.. 1972.

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

TYPE from Tibet. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Tibet, Kyimpu: *Ludlow, Sheriff & Taylor 6397* (E holo, BM, UPS).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of George Taylor (1904-) British botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 60–65 cm long, 0.5–1.2 mm diam. Culm-internodes smooth, distally glabrous. Leaves cauline, 6 per branch. Leaf-sheaths tubular for much of their length, with 1 of their length closed, smooth, glabrous on surface. Ligule an eciliate membrane, 1–1.5 mm long, truncate. Leaf-blades 12–18 cm long, 3–6 mm wide. Leaf-blade venation with 17–23 secondary veins. Leaf-blade surface scabrous, rough adaxially, pilose, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle, comprising 18–25 fertile spikelets. Panicle open, lanceolate, 14 cm long, bearing few spikelets. Primary panicle branches appressed, bearing 1–2 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–4 mm long, scabrous, ciliate, hairy at tip.

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 elliptic, laterally compressed, 6.8–7.5 mm long, breaking up at maturity. Rhachilla internodes 2.2–2.5 mm long, scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.5–4.2 mm long, 0.75 length of upper glume, hyaline, without keels, 5 -veined. Lower glume apex acute. Upper glume lanceolate, 4.8–5 mm long, 0.8–0.9 length of adjacent fertile lemma, hyaline, without keels, 3–5 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5.2–6 mm long, chartaceous, much thinner above, purple, without keel, 5–7 -veined, more than 3-veined. Lemma surface scabrous. Lemma apex emarginate. Palea 4.2–4.8 mm long, 2 -veined. Palea apex ciliate. Apical sterile florets 1 in number, barren, oblong, 1.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. Tibet.

Melica teneriffae Hack. ex Christ. *Bot. Jahrb.* ix. 153. (1888).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Teneriffe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Teneriffe: Hilleb.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): growing on Teneriffe, one of the Canary Islands.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 80–100 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane. Leaf-blades 10–20 cm long, 2–4 mm wide, stiff. Leaf-blade surface scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, comprising 60–120 fertile spikelets. Peduncle 5–10 cm long, glabrous. Panicle open, pyramidal, 15–20 cm long, contracted about primary branches. Primary panicle branches spreading, 2–4 -nate, whorled at most nodes, 3–8 cm long. Panicle axis 3–4 noded. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 oblong, laterally compressed, 7–10 mm long, falling entire or breaking up at maturity.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 4–5 mm long, 0.75–1 length of upper glume, membranous, pallid or purple, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 5–6 mm long, 0.9–1 length of adjacent fertile lemma, membranous, pallid or purple, without keels, 5 -veined. Upper glume apex acute or acuminate.

Florets. Fertile lemma ovate, 6 mm long, chartaceous, pallid, without keel, 7 -veined, more than 3-veined. Lemma surface asperulous. Lemma margins ciliate, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 2 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Macaronesia**. Canary Is.

Melica tenuis Arech. *An. Mus. Montevideo,* i. 450 (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).

TYPE from Uruguay. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Uruguay, Montevideo: Arechavaleta (W holo, US).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, Flora Argentina 3 – 2 Pooideae (2012) (97), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (280, Fig. 55), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969), B.Rosengurtt, *Gramineas UruguayasI* (1970) (126, Fig. 46), H.M. Longhi-Wagner, *Flora Ilustrada do Rio Grande do Sul, Gramineae, Poeae* (1987).

Derivation (Clifford & Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 30–150 cm long. Culm-internodes retrorsely scabrous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, longer than adjacent culm internode, retrorsely scabrous, glabrous on surface or pubescent. Ligule an eciliate membrane or absent, 0–0.3 mm long. Leaf-blades flat or involute, 10–15 cm long, 1.5–2 mm wide, stiff. Leaf-blade surface scaberulous, rough abaxially, hispid, hairy adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted or spiciform, linear, 8–18 cm long, 1–1.5 cm wide. Primary panicle branches appressed, simple. Panicle axis dominant, scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, pubescent, hairy all along but hairs longer above.

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 cuneate, dorsally compressed, 7.5–9 mm long, falling entire. Rhachilla internodes glabrous or pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume obovate or flabellate, 4–5.5 mm long, 0.8–0.9 length of upper glume, membranous, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume primary vein falling short of apex. Lower glume apex erose, obtuse. Upper glume lanceolate, 5–5.5 mm long, 1 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 5–5.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, more than 3-veined. Lemma surface asperulous. Lemma margins ciliate. Lemma apex obtuse or acute. Palea 3–3.5 mm long, 2 -veined. Palea keels ciliolate. Palea surface scaberulous. Apical sterile florets barren, in a clump, cuneate. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.3 mm long, fleshy, truncate. Anthers 3, 1–1.3 mm long. Caryopsis with adherent pericarp, ellipsoid, 1.8–2 mm long, dark brown. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Uruguay.

Catarina, Rio Grande do Sul. Paraná, Rio Grande do Sul, Santa Catarina. Entre Rios, Misiones.

Melica tibetica Roshev. *Not. Syst. Herb. Hort. Petrop.* ii. 27 (1921).

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 Synonomy Database: China, Tibet, Kabtschi-kamba: Ladygin 338 (LE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 311).

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

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 25–40 cm long. Culm-internodes scaberulous. Lateral branches lacking. Leaf-sheaths tubular for much of their length, with 1 of their length closed, antrorsely scabrous. Ligule an eciliate membrane, 1 mm long. Leaf-blades 8–13 cm long, 5 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 6–12 cm long, 1.5 cm wide. Panicle axis scabrous. Panicle branches smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, puberulous.

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 oblong, laterally compressed, 7–8 mm long, falling entire. Rhachilla internodes 2 mm long.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 5 mm long, 0.75 length of upper glume, scarious, much thinner above, much thinner on margins, without keels, 1 -veined. Lower glume lateral veins absent. Upper glume obovate, 6–7 mm long, 1.3 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels, 3 -veined.

Florets. Fertile lemma elliptic, 5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma apex dentate, 2 -fid. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets 1–2 in number, barren, in a clump, orbicular, 1 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1 mm long. Caryopsis with adherent pericarp. Hilum linear, 0.75 length of caryopsis.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. China South Central, Inner Mongolia, Qinghai, Tibet. Sichuan.

Melica torreyana Scribn. *Proc. Acad. Philad.* 43. (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 Synonomy Database: USA, California: Bigelow (NY holo, GH).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (92).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of John Torrey (1796–1873) United States botanist, chemist and physician.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 30–100 cm long. Leaf-sheaths tubular for much of their length. Ligule an eciliate membrane. Leaf-blades 1–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, 8–20 cm long. Primary panicle branches appressed or ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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 elliptic, laterally compressed, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 3–5 mm long, 0.75 length of upper glume, hyaline, much thinner above, much thinner on margins, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 4–6 mm long, 1.1 length of adjacent fertile lemma, hyaline, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3.5–5.5 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea 2 -veined. Apical sterile florets barren, in a clump, ovate, 1–1.5 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp.

$2n = 18$ (FNA).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**. California.

Melica transsilvanica Schur. *Verh. Siebenb. Ver. Naturw.* iv. 86 (1853).

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 Rumania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Rumania, Hermannstadt: Coll?.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 298).

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

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 40–90 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades convolute, 10–15 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 4–7 cm long, 1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–5 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 oblong, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma. Lower glume oblong, 2–3 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex erose, obtuse. Upper glume oblong, 5–6 mm long, 1–1.1 length of adjacent fertile lemma, membranous, without keels, 5 -veined. Upper glume apex erose, obtuse.

Florets. Fertile lemma elliptic, 5 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined. Apical sterile florets 2–3 in number, barren, in a clump, cuneate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3. Caryopsis with adherent pericarp. Hilum linear.

$2n = 18$ (6 refs TROPICOS).

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

Region. **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Austria, Czechoslovakia, Germany, Hungary, Poland, Switzerland. : France. : Albania, Bulgaria, Greece, Italy, Romania, Yugoslavia. Krym, Central European Russia, East European Russia, South European Russia, Northwest European Russia, Ukraine. Siberia, **Middle Asia**, **Caucasus**, **Western Asia**, **China**, **Russia**. Altay, Irkutsk, Tuva. Kazakhstan, Kirgizistan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran. Xinjiang.

Melica turczaninowiana Ohwi. *Acta Phytotax. & Geobot.* 1932, 1: 142 (1932).

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).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia, Charatzai: Turczaninov (LE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 305).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Porphir Kiril Nicolas Stepanovich Turczaninov (1796–1864) Russian botanist.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 50–80 cm long, 5–6 -noded. Culm-internodes smooth. Leaves cauline. Leaf-sheaths tubular for much of their length, with 1 of their length closed. Ligule an eciliate membrane, 2–4 mm long, truncate. Leaf-blades 10–18 cm long, 3–6 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle open, lanceolate or ovate, 9–18 cm long, 3.5–6 cm wide. Primary panicle branches ascending or spreading, 2–3 -nate, 7–8 cm long.

Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, 3–7 mm long.

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 elliptic, laterally compressed, 8–12 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong or ovate, 8–11 mm long, 1 length of upper glume, scarious, much thinner above, much thinner on margins, without keels, 5–7 -veined. Lower glume apex obtuse. Upper glume oblong or ovate, 8–11 mm long, 1 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels, 5–7 -veined. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 9–11 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7–9 -veined, more than 3-veined. Lemma surface hispid, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels eciliate or ciliolate. Apical sterile florets barren, in a clump, ovate, 2 mm long. Apical sterile lemmas acute.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–2 mm long. Caryopsis with adherent pericarp. Hilum linear, 0.66–0.75 length of caryopsis.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Siberia, Russian Far East, **China**, **Mongolia**, **Eastern Asia**, **Russia**. Buryatiya, Chita, Tuva. Amur, Primorye. Inner Mongolia, Manchuria, China North-Central, China Southeast. Mongolia. Korea.

Hebei, Shanxi. Henan.

Melica uniflora Retz. *Obs.* i. 10. (1779).

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).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Europe: Retzius (LD holo).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (226 & 374), T. Cope & A. Gray, Grasses of the British Isles (132), G.Hegi, *Flora von Mitteleuropa* 1 (1909).

Derivation (Clifford & Bostock 2007): L. *unus*, one; *flos*, flower. Spikelets with one fertile floret.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 20–60 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, scaberulous, glabrous on surface or pilose, with reflexed hairs. Leaf-sheath auricles erect and connate forming a tooth opposite blade, 1–4 mm long. Ligule an eciliate membrane. Leaf-blades 5–20 cm long, 3–7 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, effuse, equilateral or nodding, 6–22 cm long, 1–12 cm wide. Primary panicle branches bearing 1–6 fertile spikelets on each lower branch. Panicle branches scaberulous. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, straight, 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 oblong, laterally compressed, 4–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 3–6 mm long, 0.9–1 length of upper glume, membranous, purple, without keels, 3 -veined. Lower glume apex acute. Upper glume elliptic, 4–7 mm long, 1–1.1 length of adjacent fertile lemma, membranous, purple, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 5–7 mm long, chartaceous, without keel, 7 -veined, more than 3-veined. Lemma surface smooth. Lemma apex obtuse. Palea elliptic, 1 length of lemma, 2 -veined. Palea keels thickened, winged, narrowly winged, ciliolate. Palea apex entire, obtuse. Apical sterile florets 2–3 in number, barren, in a clump, oblong, 2–3 mm long.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1.5–2.3 mm long. Caryopsis with adherent pericarp, ellipsoid, 3.5 mm long. Embryo 0.2 length of caryopsis. Hilum linear.

2*n* = 18 (8 refs TROPICOS), or 54 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia.

Region. **Northern Europe**, **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Denmark, Finland, Great Britain, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechstenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Baleares. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kalingrad, Latvia, Lithuania, Baltic States, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa**, **Macaronesia**. Algeria, Morocco, Tunisia. Azores. **Caucasus**, **Western Asia**. Iran.

Melica violacea Cav. *Ic*. 5: 47 (1799).

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 Synonomy Database: IT: *Née*, Chile: ex Talcahuano in Chile Née didit; Melica, De Cuchacuha Née inter (MA; IT: SGO (fragm. ex MA & photo)).

Illustrations (Books): A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (310, Fig. 79 as var. *glabrescens*), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (271, Fig. 175 as var. *glabrescens*).

Derivation (Clifford & Bostock 2007): L. violet. Spikelets, stigmas or anthers violet-colored.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb, pilose, persistent and investing base of culm. Culms erect, 20–70 cm long. Leaf-sheaths tubular for much of their length, with 1 of their length closed, pilose, with simple hairs or reflexed hairs. Ligule an eciliate membrane, 2–6 mm long, lacerate. Leaf-blades 2.5–12.5 cm long, 1.8–3 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, secund, 5–18 cm long, bearing few spikelets. Primary panicle branches appressed, simple. Panicle axis dominant. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, curved, ciliate, hairy all along but hairs longer above.

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 elliptic, laterally compressed, 8–11 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes dissimilar, with lower wider than upper, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume obovate, 8–12 mm long, 1.3–1.6 length of upper glume, membranous, much thinner above, much thinner on margins, purple, without keels, 7–9 -veined. Lower glume surface asperulous. Lower glume apex erose, obtuse. Upper glume obovate, 5–9 mm long, 0.9 length of adjacent fertile lemma, membranous, much thinner above, with hyaline margins, purple, without keels, 5–7 -veined. Upper glume surface puberulous. Upper glume apex erose, obtuse.

Florets. Fertile lemma oblanceolate, 4.5–8 mm long, 2–3.2 mm wide, chartaceous, much thinner above, much thinner on margins, dark brown or purple, without keel, 11–13 -veined, more than 3-veined. Lemma surface scaberulous. Lemma margins ciliate. Lemma hairs 1.2–2 mm long. Lemma apex dentate, 2 -fid, obtuse. Palea lanceolate, 2 -veined. Palea keels ciliolate. Palea surface scabrous. Apical sterile florets barren, in a clump, cuneate, 1.5–2.5 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, 0.1–0.3 mm long, fleshy, truncate. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp, 3 mm long, light brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. Europe, South America.

Region. **Northern Europe**.

Country /Province /State. : GB Aliens (Ryves et al). **Southern South America**. Argentina Northeast, Argentina South, Chile Central, Chile South.

Buenos Aires. Chubut, Río Negro. Tarapaca, Antofagasta, Atacama, Coquimbo, Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso, Chiloe, Aisen, Magellanes. Valparaiso, O'Higgins, Maule, Biobio, La Araucania. Los Lagos.

Melica virgata Turcz. ex Trin. *Mem. Acad. Petersb. Ser.* VI. i. 369. (1831).

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).

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia: V. Spp. transbaical, ; Russia, Transbaical, Charatzai: Turczaninov (LE holo, K).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 304).

Derivation (Clifford & Bostock 2007): L. *virga*, broom; *-ata,* possessing. Inflorescence arms or culms held erect.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 45–75 cm long, 0.75–1 mm diam. Leaf-sheaths tubular for much of their length, with 1 of their length closed, mostly shorter than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades 12–21 cm long, 2–4 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 12–25 cm long. Panicle axis smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 1–3 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 ovate, laterally compressed, 3.5–4.5 mm long, falling entire.

Glumes. Glumes similar, with lower wider than upper, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 2.5 mm long, 0.75 length of upper glume, scarious, much thinner above, much thinner on margins, without keels, 5 -veined. Lower glume apex acute. Upper glume oblong, 3 mm long, 0.85 length of adjacent fertile lemma, scarious, much thinner above, with hyaline margins, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, 3.5 mm long, chartaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface pubescent, hairy below. Lemma apex obtuse. Palea 2 -veined. Palea keels ciliolate. Apical sterile florets barren, in a clump, cuneate, 1 mm long. Apical sterile lemmas truncate.

Flower and Fruit. Lodicules 2, united, oblong, fleshy, truncate. Anthers 3, 1–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Siberia, **China**, **Mongolia**. Buryatiya, Chita, Irkutsk, Tuva. China South Central, Inner Mongolia, China North-Central, Qinghai, Tibet. Mongolia.

Gansu, Hebei. Sichuan.

Melica yajiangensis Z.L. Wu. *Acta Phytotax. Sin.* 30(2): 172–174, pl. 2, f. 1–8 (1992).

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 Synonomy Database: China: Sichuan: Yajiang, in clivis, 2700 m, 10 Sept. 1977, *P.C. Kuo & W.Y. Wang 23635* (HT: NWBI).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 303).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Yajiang, China.

Classification. Subfamily Pooideae. Tribe: Meliceae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes absent. Culms 55–75 cm long, 1–2 mm diam., 4–5 -noded. Leaf-sheaths tubular for much of their length, with 1 of their length closed, subequal to internodes, glabrous on surface or pilose. Ligule an eciliate membrane, 0.3–0.5 mm long. Leaf-blades 15–27 cm long, 2–3 mm wide. Leaf-blade surface ribbed, grooved adaxially, scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 15–25 cm long. Primary panicle branches spreading, 2 -nate, branching divaricately, 6–12 cm long. Panicle branches capillary, bearing distant spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10–20 mm long, pubescent, hairy above.

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 ovate, laterally compressed, 5–8 mm long, breaking up at maturity.

Glumes. Glumes similar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume lanceolate, 5–8 mm long, 1 length of upper glume, scarious, grey, without keels. Lower glume apex acuminate. Upper glume lanceolate, 5–8 mm long, 1.5–1.6 length of adjacent fertile lemma, scarious, grey, without keels. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate or oblong, 4–5 mm long, herbaceous, much thinner above, much thinner on margins, without keel, 7 -veined, more than 3-veined. Lemma surface asperulous. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Palea keels scabrous, ciliolate, adorned above. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 1.8–2 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Temperate Asia.

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

Sichuan.

Melinis ambigua Hack. *Oesterr. Bot. Zeitschr.* 1901, 462. (1901).

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

TYPE from Ethiopia. **Basionym or Replaced Name**: *Melinis pallida* Stapf & C.E.Hubb., *Kew Bull.* 1926, 442. (1926). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Schimper 800*, 1862, Ethiopia: in monte Amba Harres, 2300 m (W; ILT: B, US-1720189 (ex B hb Mez I. 2069), US-945418 (ex B ex BM)). LT designated by Zizka, Biblioth. Bot. 138: 88, 90 (1988).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):122, t. 32), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (188, Fig 78 as subsp. *ambigua*).

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 Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 40–120 cm long, (0.6–)0.8–2.1 mm diam. Leaf-sheaths viscid, pilose, with tubercle-based hairs. Ligule a fringe of hairs, 0.5–1.2 mm long. Leaf-blades flat or involute, 5–20 cm long, 2–10 mm wide, viscid. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 5–30 cm long, 1.5–6(–8) cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy above.

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 oblong, laterally compressed, compressed slightly, symmetrical, (2–)2.4–4.4(–5.2) mm long, with hairs extending 1–4 mm beyond apex, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5–1 mm long, 0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, not gibbous, chartaceous, much thinner above, without keels, 7 -veined. Upper glume lateral veins without ribs or ribbed. Upper glume surface pubescent or pilose. Upper glume hairs white or purple. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 1–8 mm long.

Florets. Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, distinctly veined or without lateral veins, pubescent or pilose, bearing white hairs or purple hairs, lobed, 2 -fid, awned. Awn of lower sterile floret 1–12 mm long. Palea of lower sterile floret scabrous. Fertile lemma ovate, laterally compressed, 2–2.5 mm long, cartilaginous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**. Burundi, Rwanda, DRC. Ethiopia (inc. Eritrea). Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia.

Melinis amethystea (Franchet) G. Zizka. *Biblioth. Bot.,* 138: 116: (1988).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from DRC. **Basionym or Replaced Name**: *Tricholaena amethystea* Franch., *Bull. Soc. Hist. Nat. Autun* 8: 356 (1895)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Brazza & Tholle 225*, Congo: Osika (Bateke) (P). LT designated by Zizka, Biblioth. Bot. 138: 116 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *amethysteus*, violet. Spikelets violet.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pubescent or pilose, persistent and investing base of culm, with fibrous dead sheaths. Basal innovations intravaginal. Culms erect, 28–100 cm long, 0.7–2(–2.5) mm diam., 1–3 -noded. Culm-nodes bearded. Ligule a fringe of hairs, 0.2–0.3(–0.6) mm long. Leaf-blades conduplicate or involute, (7–)15–70 cm long, 3–7 mm wide, stiff.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 5–27 cm long, 1.8–5 cm wide. Panicle branches capillary, scaberulous, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy at tip.

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, laterally compressed, gibbous, 3.3–5.5 mm long, with hairs extending 2 mm beyond apex, falling entire. Rhachilla internodes elongated between glumes (0.2–0.4mm).

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, (0.2–)0.5–1 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of spikelet, chartaceous, much thinner above, without keels, 5–7 -veined. Upper glume surface villous, hairy below. Upper glume apex acute or rostrate, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5–7 -veined, villous, hairy below, rostrate, mucronate. Palea of lower sterile floret pilose. Fertile lemma oblong, laterally compressed, 2.5 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat, ciliate. Lemma apex obtuse or acute. Palea 1 length of lemma, cartilaginous, without keels. Palea surface pilose (above).

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **South Tropical Africa**. Gabon, DRC. Angola.

Melinis angolensis Rendle. *Cat. Welw. Afr. Pl.* ii. 200. (1899).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 2819*, Angola: Pungo Adongo, bei Pedra Cabondo (BM; ILT: COI, K). LT designated by Zizka, *Biblioth. Bot.* 138: 129 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Angola.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 100 cm long. Culm-nodes bearded. Leaf-sheaths hispid. Ligule a fringe of hairs, 1.3 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 5–11 cm long, 7–13 mm wide. Leaf-blade margins tuberculate-ciliate.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 13 cm long, 2.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous, bearing a few hairs, hairy at tip.

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 oblong, laterally compressed, compressed slightly, symmetrical, 2.7–2.8 mm long, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex lobed, 2 -fid, obtuse, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 7 -veined, glabrous, ciliolate on margins, lobed, 2 -fid, obtuse, muticous or mucronate. Palea of lower sterile floret smooth. Fertile lemma ovate, laterally compressed, 2 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Palea 1 length of lemma, cartilaginous, without keels.

Flower and Fruit. Anthers 3, 2 mm long. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis ascendens Mez. *Engl. Jahrb*. lvii. 198 (1921).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Dekindt 415*, Angola: Huila (B; ILT: LISC). LT designated by Zizka, *Biblioth. Bot.* 138: 78 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *ascendo*, climb. Scramblers.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, slender, (28–)35–55 cm long, (0.7–)1–1.5 mm diam., wiry. Culm-nodes bearded. Ligule a fringe of hairs, 0.4–1 mm long. Leaf-blades 2–7(–9.5) cm long, (1–)1.8–4.5 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, nodding, 2.5–7 cm long, 0.5–1.5(–3) cm wide. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. 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 oblong, laterally compressed, gibbous, 3–4.5(–5.2) mm long, with hairs extending (0.5–)1 mm beyond apex, falling entire. Rhachilla internodes brief up to lowest fertile floret.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.3–0.8 mm long, 0.1–0.2 length of spikelet, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex emarginate or truncate. Upper glume oblong, gibbous, 1 length of spikelet, chartaceous, much thinner above, without keels, 5 -veined. Upper glume surface pilose, hairy below, with tubercle-based hairs. Upper glume margins ciliate. Upper glume hairs white or purple. Upper glume apex lobed, 2 -fid, muticous or awned, 1 -awned, awn 0–2.5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, pilose, hairy below, emarginate, muticous or awned. Awn of lower sterile floret 0–4(–9) mm long. Palea of lower sterile floret scabrous. Fertile lemma oblong, laterally compressed, 3 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Anthers 3, 2 mm long. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis biaristata (Rendle) Stapf & C. E. Hubbard. *Kew Bull.* 1926, 442 (1926).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. **Basionym or Replaced Name**: *Melinis minutiflora* var. *biaristata* Rendle, *Cat. Afr. Pl.* 2(1): 200 (1899)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 2830*, Angola: Pungo Adongo, nahe der Quilanga-Strasse (BM; ILT: COIM). LT designated by Zizka, *Biblioth. Bot.* 138: 103 (1988).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (316, Fig 35).

Derivation (Clifford & Bostock 2007): L. bi-, two; *arista*, bristle; *-atum*, possessing. Upper glume and sterile lemma awned.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 14 cm long, 1.6 mm diam., rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths viscid, pilose, with tubercle-based hairs. Ligule a fringe of hairs, 1 mm long. Leaf-blades 8–15 cm long, (3–)5–9 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, linear, dense, 24 cm long, 4 cm wide. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy at tip.

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 oblong, laterally compressed, compressed slightly, symmetrical, 2.4–2.7 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.1–0.2 mm long, 0.05–0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume surface pubescent, hairy below. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 6 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, 5 -veined, pubescent, hairy below, lobed, 2 -fid, awned. Awn of lower sterile floret 20–30 mm long. Fertile lemma ovate, laterally compressed, 2 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis drakensbergensis (C.E. Hubbard & Schweick.) W.D.Clayton. *Kew Bull.,* 33(1): 22 (1978).

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**: *Rhynchelytrum drakensbergense* C.E. Hubb. & Schweick., *Bull. Misc. Inform. Kew* 1936(5): 323–324 (1936). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Pole-Evans & van Rensburg s.n.*, South Africa: cult. at Reitondale Pasture Experimental Experiment Station (origin Transvaal, Sabie Camp) (K; IT: PRE-19797).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Drakensberg, a range of mountains in South Africa.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations intravaginal. Culms decumbent, 50–55 cm long, 1.1–1.7 mm diam., rooting from lower nodes. Leaf-sheaths longer than adjacent culm internode, pilose, with tubercle-based hairs. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades convolute, 5–12 cm long, 2–4.5 mm wide. Leaf-blade surface pilose, hairy abaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 7–8 cm long, 1.5–2 cm wide. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

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 oblong, laterally compressed, compressed slightly, symmetrical, 2.3–2.6 mm long, with hairs extending 0.5–1 mm beyond apex, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.3–0.4 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex emarginate, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 5 -veined, pilose, ciliate on midvein, emarginate, awned. Awn of lower sterile floret 2.2 mm long. Palea of lower sterile floret pilose. Fertile lemma ovate, laterally compressed, 2 mm long, cartilaginous, without keel. Lemma margins flat. Palea 0.8 length of lemma, cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Mpumalanga.

Melinis effusa (Rendle) Stapf, Stapf & C. E. Hubbard. *Kew Bull.* 1926, 444 (1926).

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

TYPE from Angola. **Basionym or Replaced Name**: *Melinis minutiflora* var. *effusa* Rendle, *Cat. Afr. Pl.* 2(1): 200 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 2958*, Angola: Golungo Alto, Cambondo (LISU; ILT: BM, K). LT designated by Zizka, *Biblioth. Bot.* 138: 97 (1988)..

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. spread out. Inflorescence an open panicle.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 25–60 cm long, 0.9–1.8 mm diam., 10–15 -noded. Culm-nodes bearded. Leaf-sheaths viscid, pilose, with tubercle-based hairs. Ligule a fringe of hairs, (0.4–)0.6–1 mm long. Leaf-blades 5–12 cm long, 3–9 mm wide, viscid. Leaf-blade surface pubescent. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6–20 cm long, 2–6 cm wide. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous, bearing a few hairs, hairy at tip.

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 oblong, laterally compressed, compressed slightly, symmetrical, 1.3–1.8 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.2–0.4 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume surface glabrous or pubescent. Upper glume margins ciliate. Upper glume apex lobed, 2 -fid, obtuse, muticous or mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 5 -veined, glabrous or pubescent, ciliate on margins, dentate, 2 -fid, muticous or awned. Awn of lower sterile floret 0–15 mm long. Fertile lemma ovate, laterally compressed, 1.2 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Palea 1 length of lemma, cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**. Ghana, Nigeria. Cameroon, DRC. Ethiopia (inc. Eritrea). Kenya, Uganda. Angola, Malawi, Zambia, Zimbabwe.

Melinis gossweileri C.E.Hubb. *Kew Bull.* 1934, 113. (1934).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *J. Gossweiler 9408*, 1931, Angola: Mossamedes, Huilla (K; ILT: BM, COIM, US-1526540). LT designated by Zizka, *Biblioth. Bot.* 138: 104 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): In honor of John Gossweiler (1873–1952) Swiss-born Angolan botanist.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 40–80 cm long, 8–10 -noded. Culm-internodes terete, smooth. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, smooth, glabrous on surface. Leaf-sheath oral hairs lacking or pubescent. Ligule a fringe of hairs. Leaf-blades 4–10 cm long, 4–7 mm wide. Leaf-blade surface smooth, glabrous to pubescent, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle glabrous or pubescent above. Panicle contracted, linear or lanceolate, 9–10 cm long, 1–1.5 cm wide. Primary panicle branches appressed or ascending, 1 -nate, 2–5 cm long. Panicle axis hirsute. Panicle branches capillary, hirsute. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3–1.5 mm long, ciliate.

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, laterally compressed, compressed slightly, gibbous, 2.3–2.5 mm long, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume elliptic, gibbous, 1 length of spikelet, membranous, without keels, 9 -veined. Upper glume surface with transverse tufts of hair. Upper glume margins ciliate. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 2–4.5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 2 mm long, membranous, 3 -veined, ciliate on midvein, ciliate on margins, obtuse. Palea of lower sterile floret 1 length of lemma, pilose, adorned on keels. Fertile lemma lanceolate or ovate, laterally compressed, 1.8–2 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Lemma apex acute. Palea cartilaginous, without keels.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis kallimorpha (W.D. Clayton) G. Zizka. *Bibl. Bot.* 138:64 (1988).

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

TYPE from Zambia. **Basionym or Replaced Name**: *Rhynchelytrum kallimorphon* Clayton, *Kew Bull.* 33(1): 22 (1978). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *McCallum-Webster A289*, Zambia: Mbala (Abercorn) (K).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *kallion*, more beautiful; *morphe*, appearance. Attractive to look at.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, slender, 30–100 cm long, (0.5–)0.7–1.4(–1.8) mm diam., rooting from lower nodes. Culm-nodes glabrous or pubescent. Ligule a fringe of hairs, 0.6–1.1(–1.4) mm long. Leaf-blades 3–15 cm long, 1–3(–5) mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 5–12 cm long, 1–2(–3) cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 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 oblong or ovate, laterally compressed, gibbous, 3–5 mm long, falling entire. Rhachilla internodes elongated between glumes (0.4–0.8mm).

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5–1.5 mm long, 0.15–0.3 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume apex emarginate or truncate. Upper

glume oblong, gibbous, 1 length of spikelet, coriaceous, of similar consistency above, dark brown, without keels, 5 -veined. Upper glume surface glabrous or pubescent, hairy below, without hair tufts or with a dorsal tuft of hair. Upper glume margins eciliate or ciliate. Upper glume hairs white or purple. Upper glume apex emarginate or rostrate, muticous (rarely) or awned, 1 -awned, awn 3–10 mm long.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, coriaceous, of similar consistency above, 5 -veined, glabrous or pubescent, hairy below, emarginate, muticous or awned. Awn of lower sterile floret 3–10 mm long. Palea of lower sterile floret pilose. Fertile lemma oblong, laterally compressed, 2.5 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**. Kenya, Tanzania. Angola, Zambia, Zimbabwe. Namibia, Botswana.

Melinis longiseta (A. Richard) G. Zizka. *Bibl. Bot.* 138:73 (1988).

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

TYPE from Ethiopia. **Basionym or Replaced Name**: *Tricholaena longiseta* A. Rich., *Tent. Fl. Abyss.* 2: 446 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Dillon s.n.*, Ethiopia: Chire (P; ILT: W). LT designated by Zizka, *Biblioth. Bot.* 138: 73, 75 (1988).

Recent Synonyms: *Rhynchelytrum bellespicatum* (Rendle) Stapf & C.E.Hubb. in Prain, *Fl. Trop. Afr.* ix. 900 (1930). *Rhynchyletrum longisetum* (A. Rich.) Stapf & C.E.Hubb. in Prain, *Fl. Trop. Afr.* 9: 902 (1930).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (432, Fig 358 as *Rhynchelytrum bellespicatum*).

Derivation (Clifford & Bostock 2007): L. *longus,* long; *seta*, bristle. Glumes or lemmas long awned.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 30–100 cm long, 1.4–2.4 mm diam. Culm-nodes bearded. Leaf-sheaths hispid, with tubercle-based hairs. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades 3–15 cm long, 3–8 mm wide. Leaf-blade surface hispid, hairy on both sides, with tubercle-based hairs. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 7–20 cm long, 1–3(–4) cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy above.

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 oblong, laterally compressed, gibbous, 2.5–3.5 mm long, with hairs extending 2–4 mm beyond apex, falling entire. Rhachilla internodes brief up to lowest fertile floret or elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma, shiny. Lower glume oblong, 0.5–1 mm long, 0.2–0.3 length of spikelet, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous. Lower glume apex emarginate or truncate. Upper glume oblong, gibbous, 1 length of spikelet, coriaceous, much thinner above, without keels, 5 -veined. Upper glume surface pilose, hairy below, without hair tufts or with a dorsal tuft of hair. Upper glume margins ciliate. Upper glume hairs white or purple. Upper glume apex emarginate, awned, 1 -awned, awn 2–6 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, coriaceous, much thinner above, 5 -veined, pilose, hairy below, ciliate on margins, emarginate, awned. Awn of lower sterile floret 5–10 mm long. Palea of lower sterile floret scabrous. Fertile lemma oblong, laterally compressed, 2 mm long, cartilaginous, shiny, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

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**. Nigeria. Cameroon.

Ethiopia (inc. Eritrea), Sudan. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, Mpumalanga.

Melinis macrochaeta Stapf & C. E. Hubbard. *Kew Bull.* 1926, 443. (1926).

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

TYPE from Nigeria. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Lely 785*, Nigeria (K).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (250, Fig. 180), G.V.Pope et al., *Flora Zambesiaca* 10 (3(1989):125, t. 33), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (429, Fig 356), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (212, Fig 132), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (190, Fig 79).

Derivation (Clifford & Bostock 2007): Gk. *makros*, large; *chaete*, bristle. Lemmas long-awned.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 25–120 cm long, (1–)1.5–2.5(–3) mm diam., rooting from lower nodes. Leaf-sheaths viscid. Ligule a fringe of hairs, (0.8–)1.1–1.6 mm long. Leaf-blades 5–20 cm long, 4–14 mm wide, viscid. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 5–25 cm long, 2–7 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous, glabrous or bearing a few hairs, hairy above.

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 oblong, laterally compressed, compressed slightly, symmetrical, 1.5–2 mm long, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume surface glabrous or pubescent. Upper glume apex lobed, 2 -fid, muticous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 3(–5) -veined, glabrous or pubescent, lobed, 2 -fid (0.25 its length), awned. Awn of lower sterile floret 5–20 mm long. Fertile lemma ovate, laterally compressed, 1.3 mm long, cartilaginous, without keel, 3(–5) -veined, 0–3 -veined or more than 3-veined. Lemma margins flat. Palea 1.2 length of lemma, cartilaginous, without keels.

Flower and Fruit. Anthers 3, 1–1.3 mm long. Stigmas laterally exserted.

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**. Ivory Coast, Nigeria. DRC. Ethiopia (inc. Eritrea), Sudan. Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, Swaziland, Free State.

Melinis minutiflora Beauv. *Agrost.* 54. t. 11. f. 4. (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), 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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Brazil: probably at Rio de Janeiro, *de Jussieu s.n.* (HT: G).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (336), F.N.Hepper, *F.W.T.A.* 3(2) (1972) (456, Fig.445), W. Robyns (1929 and 1934). Flora Agrostologique du Congo Belge et du Ruanda-Urundi, I. Maydees et Andropgonees and II. Panicees. Bruxelles, Goemaere (319, Pl.48), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):507, Fig.124), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (428, Fig. 355 as *M. tenuinervis*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (207, Fig. 74), C-C Hsu, *Flora of Taiwan*,

Vol 5 (1978) (542), C-C Hsu,*Taiwan Grasses* (1975), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960), H.J.Noltie, *The Grasses of Bhutan* (2000) (711, Fig. 41), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (275, Pl. 79), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (299), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (304), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (248, Fig. 38), 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) (1559, Pl. 231), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (491), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (160, Fig. 102), S.A.Renvoize, *Gramineas de Bolivia* (1998) (528, Fig. 119), S.A.Renvoize, *The Grasses of Bahia*, 1984 (257, Fig. 96), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (151, Fig. 108), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (470, Fig. 168), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (593, Fig. 129 & 607, Fig. 132), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (320, Fig. 117), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (199, Fig. 55), G.Harling & C.Persson, *Flora of Ecuador* (2006), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (327, Fig. 59), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (99, Fig. 60), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 751).

Illustrations (Journals): *Ruizia* (13:391 Fig 52i-k (1993)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. *minutus*, very small; *flos*, flower. Spikelets or florets very small.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms geniculately ascending, 60–100 cm long. Culm-nodes bearded. Leaf-sheaths viscid, pilose. Ligule a fringe of hairs. Leaf-blades 5–20 cm long, 3–11 mm wide, viscid, aromatic. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 10–30 cm long. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.5–2 mm long, scaberulous, glabrous or bearing a few hairs.

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 oblong, laterally compressed, compressed slightly, symmetrical, 1.5–2(–2.4) mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong or ovate, 0.2–0.5 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume lateral veins ribbed. Upper glume apex lobed, 2 -fid, obtuse, muticous or mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, not gibbous, 1 length of spikelet, membranous, 5 -veined, ribbed, lobed, 2 -fid, acute, muticous (rarely) or awned. Awn of lower sterile floret 0–15 mm long. Fertile lemma ovate, laterally compressed, 1.2–1.5 mm long, cartilaginous, without keel, 1–3 -veined, 0–3 -veined. Lemma margins flat. Lemma apex dentate, 2 -fid. Palea 1 length of lemma, cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

n = 18 (1 ref TROPICOS). $2n$ = 36 (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**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Middle Atlantic Ocean**, **Western Indian Ocean**. Egypt. Madeira. Nigeria, Sierre Leone. Cameroon, Gabon, Rwanda, DRC. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo, Mpumalanga, Swaziland, Kwazulu-Natal. Ascension. Madagascar. **China**, **Eastern Asia**. China South Central (*), China Southeast (*). Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. Eastern Himalaya. Vietnam. Borneo, Java, Malaya, Philippines, Sumatra. New Guinea, Solomon Is (*). **Australia** (*). Western Australia (*), Queensland (*), New South Wales (*), Lord Howe-Norfolk Is (*). **Southwestern Pacific**, **South-central**

Pacific, **Northwestern Pacific**. Fiji (*), Niue (*), New Caledonia (*), Samoa (*), Tonga (*). Easter Is (*), Marquesas (*), Society Is (*). Caroline Is (*). Hawaii (*). **Southeastern USA**, **Mexico**. Florida. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Caribbean**, **Northern South America**, **Western South America**, **Brazil**, **Southern South America**. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Dominican Republic, Haiti, Jamaica (*), Leeward Is, Puerto Rico. Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Galapagos, Peru. Brazil Northeast, Brazil Southeast. Chile Central, Paraguay.

Hong Kong. Yunnan. Bhutan. West Bengal. Kimberley, South-West. North, Central, South East. Coast. Distrito Federal (*). Bahia. Paraná, Santa Catarina. Corrientes, Misiones. Mexico State, Morelos, Puebla, Tlaxcala. Durango, Guanajuato, Hidalgo, Neuvo Leon. Baja California Sur, Sonora. Colima, Guerrero, Jalisco. Campeche, Chiapas, Tabasco.

Melinis nerviglumis (Franchet) G. Zizka. *Biblioth. Bot.*, 138: 111: (1988).

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

TYPE from DRC. **Basionym or Replaced Name**: *Tricholaena nerviglumis* Franch., *Bull. Soc. Hist. Nat. Autun* 8: 357 (1895). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Brazza & Thollon 380*, Congo: Brazzaville: Alima River (P). LT designated by Zizka, *Biblioth. Bot.* 138: 111 (1988).

ST: *Thollon 897*, Congo Francais: bords de la rivière Alima.

Recent Synonyms: *Tricholaena chevalieri* A.Camus, *Bull. Mus. Hist. Nat. Paris,* 25: 202. (1919). *Rhyncheytrum setifolium* (Stapf) Chiov., *Ann. Ist. Bot. Roma* 8:. 310 (1908).

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (307, Fig 113 as *Rhynchelytrum setifolium*).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. *nervus*, nerve; *gluma*, husk. The glume(s) are conspicuously nerved.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous or pubescent. Basal innovations intravaginal. Culms erect, 15–120 cm long, (0.7–)1–2(–2.4) mm diam., 4–6 -noded. Culm-nodes glabrous or pubescent. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs. Ligule a fringe of hairs, (0.3–)0.4–0.7(–1.5) mm long. Leaf-blades filiform, involute or convolute, 5–30 cm long, 2–3(–4.5) mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, dense, 4–30 cm long, 1.5–5(–11) cm wide. Panicle branches capillary, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glabrous or bearing a few hairs, hairy above.

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 oblong or ovate, laterally compressed, gibbous, (3–)4–5 mm long, with hairs extending 1–4 mm beyond apex, falling entire. Rhachilla internodes elongated below basal sterile floret.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong or ovate, 0.5–1 mm long, 0.2–0.25 length of spikelet, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface villous. Lower glume apex acute. Upper glume oblong, gibbous, 1 length of spikelet, chartaceous, much thinner above, without keels, 5(–7) -veined. Upper glume surface villous, hairy below. Upper glume margins ciliate. Upper glume hairs white or purple. Upper glume apex lobed, 2 -fid, mucronate or awned, 1 -awned, awn 1–3 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, glabrous or villous, hairy below, bearing white hairs or purple hairs, emarginate, awned. Awn of lower sterile floret 2–6 mm long. Palea of lower sterile floret pilose. Fertile lemma oblong, laterally compressed, 2–2.5 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

$2n = 36$ (1 ref TROPICOS).

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

Country /Province /State. **West-Central Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Western Indian Ocean**. Congo, Gabon, DRC. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Western Cape, Eastern Cape. Madagascar. **Indo-China**. Thailand, Vietnam. **North-central Pacific**. Hawaii.

Melinis repens (Willdenow) G. Zizka. *Bibl. Bot.* 138:55 (1988).

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 *Rhynchelytrum repens, R. villosum*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Rhynchelytrum repens*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Ghana. **Basionym or Replaced Name**: *Saccharum repens* Willd., *Sp. Pl.* 1(1): 322 (1797). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Africa: Ghana:, *Isert s.n. [Thonning and other Danish Botanists]* (HT: B-W-1499).

Recent Synonyms: *Rhynchelytrum repens* (Willd.) C.E.Hubb., *Kew Bull.* 1934, 110 (1934). *Rhynchelytrum villosum* Parl. in *Hook. Niger Fl.* 191 (1849).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (337), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (251, Fig. 181 as *Rhynchelytrum*), W. Robyns (1929 and 1934). Flora Agrostologique du Congo Belge et du Ruanda-Urundi, I. Maydees et Andropgonees and II. Panicees. Bruxelles, Goemaere (310, Pl 47, as *Rhynchelytrum roseum*), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):516, Fig. 125 as *Rhynchelytrum*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Pl. 12 & 431, Fig. 357 as *Rhynchelytrum brevipilum*), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984) (as *Rhynchelytrum* & as *R. villosum*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (210, Fig. 131), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (305, Fig. 112 as *Rhynchelytrum*), L.Boulos, *Flora of Egypt* 4 (2005) (306, Pl. 90), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (238, Fig. 138 as subsp. *repens*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (608 as *Rhynchelytrum*), C-C Hsu,*Taiwan Grasses* (1975) (as *Rhynchelytrum*), K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl. 924 & 925 as *Rhynchelytrum*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (91, Fig. 89), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (161, Pl. 62 as *Rhynchelytrum*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (455, Fig. 387), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (275, Pl. 79 as *Rhynchelytrum*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (300), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (362 as *Rhynchelytrum*), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (248, Fig. 38 as *Rhynchelytrum*), W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1586, Pl. 235 as *Rhynchelytrum*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (491), F.W.Gould, *The Grasses of Texas* (1975) (as *Rhynchelytrum*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (333, Fig. 304 as *Tricholaena*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (528, Fig. 119), S.A.Renvoize, *The Grasses of Bahia*, 1984 (257, Fig. 96 as *Rhynchelytrum*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (254, Fig. 206 as *Rhynchelytrum*), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (468, Fig. 167 as *Rhynchelytrum*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (593, Fig. 129 as *Rhynchelytrum*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (325, Fig. 133 as *Rhynchelytrum*), B.Rosengurtt, *Gramineas UruguayasI* (1970) (386, Fig. 171 as *Rhynchelytrum*), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 83, Fig. 4 (2006)), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (Fig. 87as *Rhynchelytrum*), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (97, Fig. 59as *Rhynchelytrum grandiflorum*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 752), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:118(1980) as *Rhynchelytrum repens*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 175, as *Rhynchelytrum*).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2374 (1895)), *Ruizia* (13:391 Fig 52g-h (1993) as *Rhynchelytrum*).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005);, H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *Rynchelytrum*), R.Darke, *Ornamental Grasses* (2004); (as *Rynchelytrum*), R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);, F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012)

(Pl. 25 asa Rhenchelytrum).

Derivation (Clifford & Bostock 2007): L. *repo*, crawl. Rhizome well developed.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose. Culms erect or geniculately ascending, 20–150 cm long, rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 5–30 cm long, 2–10 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 5–20 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, sinuous, glabrous or ciliate.

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, laterally compressed, gibbous, 2–12 mm long, falling entire, readily shedding fertile florets. Rhachilla internodes elongated between glumes (0.2–1.7 mm long).

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, (0.3–)0.6–3(–4.3) mm long, 0.1–0.4 length of spikelet, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface villous. Lower glume hairs white or purple. Lower glume apex emarginate or truncate. Upper glume ovate, gibbous, 1 length of spikelet, chartaceous, much thinner above, without keels, 5 -veined. Upper glume surface glabrous or villous, hairy below. Upper glume margins eciliate or ciliate. Upper glume hairs white or purple. Upper glume apex lobed, 2 -fid, rostrate, mucronate or awned, 1 -awned, awn 0–7(–10) mm long.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, gibbous, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, glabrous or villous, hairy below, ciliate on margins, bearing white hairs or purple hairs, bearing hairs 2–6 mm long, lobed, 2 -fid, rostrate, mucronate or awned. Awn of lower sterile floret 0–7(–10) mm long. Palea of lower sterile floret pilose. Fertile lemma oblong, laterally compressed, 2–2.5 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex emarginate. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

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

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Northern Africa**, **Macaronesia**, **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Western Indian Ocean**. Egypt (as subsp. *grandiflora*), Morocco. Cape Verde. Benin, Burkina, Ghana, Ivory Coast, Nigeria, Sierre Leone, Togo, Niger. Cameroon, 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, Lesotho, Northern Cape, Western Cape, Eastern Cape. Mauritius (*), Madagascar, Rodrigues, Seychelles. **Arabian Peninsula**, **China**, **Eastern Asia**. Kuwait, Oman. China Southeast. Kazan-retto, Nansei-Shoto, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. India, Pakistan, Sri Lanka. Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Christmas I. New Guinea West Papua (Irian Jaya). New Guinea, Solomon Is (*). **Australia** (*), **New Zealand**. Western Australia (*), Northern Territory (*), South Australia (*), Queensland (*), New South Wales (*), Victoria (*), Lord Howe-Norfolk Is (*). New Zealand North I. **Southwestern Pacific**, **South-central Pacific**, **Northwestern Pacific**, **North-central Pacific**. Fiji (*), Gilbert Is (*), Nauru (*), Niue (*), New Caledonia (*), Tonga (*), Wallis-Futuna Is (*). Cook Is (*), Easter Is (*), Marquesas (*), Tuamotu Is (*). Marianas (*), Marshall Is (*). Hawaii (*). **Southwestern USA**, **South-central USA**, **Southeastern USA**, **Mexico**. Arizona. Texas. Florida. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Caribbean**, **Northern South America**, **Western South America**, **Brazil**, **Southern South America**. Belize, Costa Rica, El Salvador,

Guatemala, Honduras, Nicaragua, Panama. Cayman Is (as *Rhynchelytrum*), Cuba, Dominican Republic, Haiti, Jamaica (as *Rhynchelytrum*), Leeward Is, Windward Islands (as *Rhynchelytrum*), Puerto Rico, Trinidad-Tobago. Guyana, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil Northeast, Brazil Southeast. Argentina Northwest, Paraguay, Uruguay.

Fujian, Guangdong. Kerala. Madhya Pradesh, Rajasthan, Tamilnadu. South-West. Darwin & Gulf, Central Australia. Southern. North, Central, South East, Inland. Coast, Western Slopes, Western Plains. Distrito Federal (*). Bahia. Paraná, Santa Catarina. Jujuy, Salta. Cordoba, Corrientes, Entre Rios, Misiones. Distrito Federal. Aguascalientes, Coahuila, Guanajuato, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Sinaloa. Colima, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Melinis reynaudioides (C.E. Hubbard) G. Zizka. *Biblioth. Bot.*, 138: 108: (1988).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Annobon Island. **Basionym or Replaced Name**: *Rhynchelytrum reynaudioides* C.E.Hubb., *Kew Bull* 1939:649 (1940). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Annobon Is.: *Mildbraed 6762* (B iso).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Resembling *Reynaudia*.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Caespitose. Culms decumbent, 20–30 cm long, 0.8 mm diam. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.8 mm long. Leaf-blades 2.5–9 cm long, 2.2–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, dense, 2–2.7 cm long, 1 cm wide. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

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, laterally compressed, compressed slightly, symmetrical, 2.3–2.6 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.2–0.6 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, not gibbous, membranous, without keels, 5 -veined. Upper glume surface pilose. Upper glume margins ciliate. Upper glume apex emarginate, awned, 1 -awned, awn 4.3–6.3 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 7(–9) -veined, pilose, ciliate on midvein, emarginate, awned. Awn of lower sterile floret 4.7–7 mm long. Palea of lower sterile floret scabrous. Fertile lemma ovate, laterally compressed, 2 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn from a sinus, 1.3–5.3 mm long overall. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**. Annobon, Principe & Sao Tome.

Melinis rupicola (Rendle) G. Zizka. *Biblioth. Bot.,* 138: 124: (1988).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. **Basionym or Replaced Name**: *Tricholaena rupicola* Rendle, *Cat. Afr. Pl.* 2(1): 197 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 7393*, Angola: Pungo Adongo (BM; ILT: K). LT designated by Zizka, *Biblioth. Bot.* 138: 124 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *rupes*, rock; *-cola*, dweller. Growing on rocky slopes.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 25–50 cm long, 0.9 mm diam. Lateral branches ample. Leaves cauline. Leaf-sheaths pilose. Ligule a fringe of hairs, 0.3 mm long. Leaf-blades 1.5–3.5 cm long, 1.5–3 mm wide. Leaf-blade margins ciliate.

Inflorescence. Inflorescence a panicle, comprising 12–24 fertile spikelets. Panicle open, oblong, 5–6.5 cm long, 2–2.5 cm wide, bearing few spikelets. Primary panicle branches simple, bearing 1–3 fertile spikelets on each lower branch. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, ciliate, hairy above.

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 oblong, laterally compressed, gibbous, 3.8–4.7 mm long, falling entire. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.3–0.7 mm long, 0.05–0.1 length of spikelet, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex obtuse. Upper glume oblong, gibbous, 1 length of spikelet, chartaceous, much thinner above, without keels, 5 -veined. Upper glume surface pilose, hairy below. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 2–5 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, pilose, hairy below, lobed, 2 -fid, muticous or mucronate. Palea of lower sterile floret winged on keels, pilose. Fertile lemma oblong, laterally compressed, 3 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Anthers 3, 2.5 mm long. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis scabrida (K. Schum.) Hackel. *Osterr. Bot. Zeitschr.* li. 464 (1901).

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

TYPE from Tanzania. **Basionym or Replaced Name**: *Tricholaena scabrida* K. Schum., *Pflanzenw. Ost-Afrikas* 104 (1895)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Volkens 1814*, Tanzania: Muika-Landschaft (Moshi Dist.) (B). LT designated by Zizka, *Biblioth. Bot.* 138: 80 (1988).

Recent Synonyms: *Rhynchelytrum scabridum* (K. Schum.) Chiov., *Ann. 1st. Bot. Roma* 8: 310 (1908).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. rough. Plants in part or totally rough to the touch.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 40–100 cm long, 1–1.2 mm diam. Culm-nodes bearded. Leaf-sheaths pilose. Ligule a fringe of hairs, 0.8–1.2 mm long. Leaf-blades 2–15 cm long, 2–6.5 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 7–20 cm long, 2–4 cm wide. Panicle branches capillary, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, bearing a few hairs, hairy above.

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 oblong, laterally compressed, gibbous, 2.4–2.8(–3.2) mm long, with hairs extending 0.5–1.5 mm beyond apex, falling entire. Rhachilla internodes brief up to lowest fertile floret.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.2–0.8 mm long, 0.1–0.25 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pilose. Lower glume apex emarginate or truncate. Upper glume oblong, gibbous, 1 length of spikelet, chartaceous, much thinner above, without keels, 5(–7) -veined. Upper glume surface glabrous or pubescent, hairy below. Upper glume margins scaberulous, eciliate or ciliate. Upper glume hairs white or purple. Upper glume apex emarginate, muticous or awned, 1 -awned, awn 0–2 mm long.

Florets. Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, pubescent or pilose, hairy below, emarginate, mucronate or awned. Awn of lower sterile floret 1–2.4 mm

long. Palea of lower sterile floret scabrous. Fertile lemma oblong, laterally compressed, 2 mm long, cartilaginous, shiny, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Anthers 3, 1.5 mm long. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **East Tropical Africa**, **Southern Africa**. Kenya, Tanzania. Limpopo.

Melinis subglabra Mez. *Engl. Jahrb.* lvii. 197 (1921).

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

TYPE from Tanzania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Stolz 1298*, Tanzania: nord. Nyassaland (Rungwe Dist.) (B; ILT: M, US-1720191 (ex B hb Mez I. 2030 "Typus")). LT designated by Zizka, *Biblioth. Bot. 1*38: 67 (1988).

ILT: *A. Stolz 1298*, 18 May 1912, Malawi: Kyimbala, 1,000 m (WAG).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *sub*, approaching; *glaber*, without hairs. Having few hairs on the glumes and/or sterile lemmas.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms geniculately ascending, 60–120 cm long, (0.7–)1–2 mm diam., wiry. Culm-nodes glabrous or pubescent. Ligule a fringe of hairs, 0.7–1.1(–1.5) mm long. Leaf-blades 5–15 cm long, 2–7 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 7–15 cm long, 2–6 cm wide. Panicle branches capillary, glabrous, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, bearing a few hairs, hairy above.

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 oblong, laterally compressed, gibbous, 3–5 mm long, with hairs extending 1–2.5 mm beyond apex, falling entire. Rhachilla internodes elongated between glumes (0.2–0.6mm).

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.5–1 mm long, 0.15–0.2 length of spikelet, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume margins ciliate. Lower glume apex emarginate or truncate. Upper glume oblong, gibbous, 1 length of spikelet, coriaceous, much thinner above, dark brown, without keels, 5 -veined. Upper glume surface glabrous or pubescent, hairy below, with a dorsal tuft of hair. Upper glume margins ciliate. Upper glume hairs white or purple. Upper glume apex emarginate, mucronate or awned, 1 -awned, awn 0–1(–5) mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, chartaceous, much thinner above, 5 -veined, glabrous or pubescent, hairy below, ciliate on margins, emarginate, muticous or awned. Awn of lower sterile floret 0–3 mm long. Palea of lower sterile floret pilose. Fertile lemma oblong, laterally compressed, 2.5 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Palea cartilaginous, without keels.

Flower and Fruit. Anthers 3, 2 mm long. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Northern Africa**, **West-Central Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**. Morocco. DRC. Kenya, Tanzania. Angola, Malawi, Zambia, Zimbabwe. Namibia (?), Mpumalanga.

Melinis tanatricha (Rendle) G. Zizka. *Biblioth. Bot.,* 138: 122: (1988).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. **Basionym or Replaced Name**: *Tricholaena tanatricha* Rendle, *Cat. Afr. Pl.* 2(1): 197 (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 7413*, Angola: Pungo Adongo, zwischen Caghuey und Sansamanda (BM; ILT: K). LT designated by Zizka, *Biblioth. Bot.* 138: 122 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *tanos*, long; *thrix*, hair. Upper glume long-awned.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 30–90 cm long, 1.2–1.5 mm diam., 3 -noded. Leaf-sheaths glabrous on surface or pubescent. Ligule a fringe of hairs, 1 mm long. Leaf-blades 3.5–7.5 cm long, 2.5–5 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 5–8, borne along a central axis, unilateral, 1–2.5 cm long. Central inflorescence axis 10–12 cm long. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, gibbous, 3.4–4.5 mm long, falling entire. Rhachilla internodes elongated between glumes.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 0.2–0.4 mm long, 0.05–0.1 length of spikelet, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume oblong, gibbous, 1 length of spikelet, coriaceous, without keels, 5 -veined. Upper glume surface scabrous, glabrous or pilose. Upper glume margins ciliate. Upper glume apex lobed, 2 -fid, awned, 1 -awned, awn 30–50 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, coriaceous, 5 -veined, scaberulous, glabrous or pilose, ciliate on margins, lobed, 2 -fid, mucronate or awned. Awn of lower sterile floret 0.7–19 mm long. Palea of lower sterile floret pilose. Fertile lemma oblong, laterally compressed, 2 mm long, cartilaginous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins flat, ciliate. Palea cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis tenuissima Stapf. *Hook. Ic. Pl.* t. 2660. (1900).

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

TYPE from Malawi. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Cameron 33*, Malawi: Namasi (K).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.2660 (1900)).

Derivation (Clifford & Bostock 2007): L. slender; -*issima*, most. Inflorescence slender.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 30–100 cm long, 0.6–1.2 mm diam., 4–10(–12) -noded. Ligule a fringe of hairs, 0.2–0.4 mm long. Leaf-blades 2–10 cm long, 2–9 mm wide, without exudate. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 5–20 cm long, (3–)4–8(–11) cm wide. Panicle branches capillary, smooth. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, smooth, bearing a few hairs, hairy at tip.

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 oblong, laterally compressed, compressed slightly, symmetrical, 1–1.5 mm long, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume oblong, not gibbous, membranous, without keels, 5 -veined. Upper glume surface glabrous or pubescent. Upper glume apex emarginate or truncate, muticous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 3 -veined, glabrous or pubescent, dentate, 2 -fid, muticous or awned. Awn of lower sterile floret 0–8 mm long. Fertile lemma ovate, laterally compressed, 1 mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma margins flat. Palea 1.5 length of lemma, cartilaginous, without keels.

Flower and Fruit. Anthers 3, 1–1.5 mm long. Stigmas laterally exserted.

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**. Ghana, Ivory Coast, Nigeria. Cameroon, Rwanda, DRC. Ethiopia (inc. Eritrea). Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Limpopo.

Melinis tomentosa Rendle. *Cat. Welw. Afr. Pl.* ii. 201. (1899).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 2727*, Angola: Pungo Adongo, Pedra Cabondo (BM; ILT: COI, K).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *tomentum*, stuffing material of a pillow; *-osa*, abundance. Plant invested in part or totally with short hairs.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, slender, 60 cm long. Culm-nodes pubescent. Leaf-sheaths hirsute. Ligule a fringe of hairs, 0.7–1.3 mm long. Leaf-blade base cordate. Leaf-blades lanceolate, 3–6 cm long, 5–9 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, dense, 6–7 cm long, 1–2 cm wide. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, pubescent, hairy at tip.

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 oblong, laterally compressed, compressed slightly, symmetrical, 2.7–2.9 mm long, with hairs extending 0–0.3 mm beyond apex, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume elliptic, not gibbous, membranous, without keels, 7 -veined. Upper glume surface pubescent. Upper glume apex lobed, 2 -fid, obtuse, awned, 1 -awned, awn 3–6 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of spikelet, membranous, 5 -veined, pubescent, lobed, 2 -fid, obtuse, mucronate. Palea of lower sterile floret smooth. Fertile lemma ovate, laterally compressed, 2 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex obtuse. Palea 1 length of lemma, cartilaginous, without keels.

Flower and Fruit. Anthers 3, 2 mm long. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melinis welwitschii Rendle. *Cat. Welw. Afr. Pl.* ii. 201 (1899).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Welwitsch 7390*, Angola: Pungo Adongo BM.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Friedrich Martin Josef Welwitsch (1806–72) Austrian-born botanist, physician and traveller.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, slender, 50–60 cm long, wiry. Culm-internodes distally pubescent. Leaf-sheaths pubescent. Ligule a fringe of hairs, 1 mm long. Leaf-blades 3–5 cm long, 3–7 mm wide. Leaf-blade surface pubescent or pilose.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 6–7.5 cm long, 2–2.2 cm wide. Panicle branches pilose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate, hairy all along but hairs longer above.

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 oblong, laterally compressed, compressed slightly, symmetrical, 3.2–3.6 mm long, falling entire.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, thinner than fertile lemma. Upper glume oblong, not gibbous, membranous, without keels, 7 -veined. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex lobed, 2 -fid, obtuse, awned, 1 -awned, awn 5–7.5 mm long.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, (5–)7 -veined, glabrous, ciliolate on margins, lobed, 2 -fid, obtuse, muticous. Palea of lower sterile floret smooth. Fertile lemma ovate, laterally compressed, 2 mm long, cartilaginous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex truncate. Palea 1 length of lemma, cartilaginous, without keels.

Flower and Fruit. Stigmas laterally exserted.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Melocalamus arrectus T.P. Yi. *Acta Bot. Yunnanica,* 10(4): 440 (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 Synonomy Database: China: Yunnan: Lancang Xian, secondary forests, 1900 m, 20 Feb. 1987, *T.P. Yi 87019* (HT: SFS).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figures 48 & 49).

Derivation (Clifford & Bostock 2007): L. pointing upwards. Panicle branches held erect.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1000–1500 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 15–60 cm long, scaberulous, distally glabrous or pubescent. Culm-nodes swollen, glabrous or pubescent. Lateral branches dendroid. Bud complement 1. Branch complement one or two or three. Culm-sheaths present, deciduous, 10–14 cm long, 1.6 times as long as wide, coriaceous, pubescent, with appressed hairs, glabrous on margins, truncate at apex, without auricles, ciliate on shoulders. Culm-sheath ligule 1 mm high, ciliate. Culm-sheath blade triangular, erect, 1.6–14 cm long, 17–40 mm wide, pubescent (at base). Leaves 5–8 per branch. Leaf-sheaths 5–12 cm long, keeled, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs scanty or lacking, 1–1.5 mm long. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.2 cm long, petiole glabrous. Leaf-blades lanceolate, 12–22 cm long, 22–40 mm wide. Leaf-blade venation with 12–18 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 globose clusters, dense, pubescent on internodes, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between branches.

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 obovate, laterally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, shiny. Lower glume ovate, 1.5–2 mm long, chartaceous, without keels. Lower glume apex obtuse. Upper glume ovate, 1.5–2 mm long, chartaceous, without keels. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 2 mm long, chartaceous, without keel. Lemma apex obtuse. Palea 1 length of lemma. Palea keels ciliolate, adorned below. Palea surface pubescent, hairy on flanks. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 1–1.5 mm long, ciliate. Anthers 6, 1 mm long. Stigmas 2. Caryopsis with fleshy pericarp, orbicular, isodiametric. Endosperm evanescent.

Vivipary occurs.

Distribution (TDWG). Continent. Temperate Asia.

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

Yunnan.

Melocalamus blaoensis H.N. Nguyen & V.T. Tran. *Blumea* 55(2): 131, f. 1. 2010. (16 Aug 2010).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Lam Dong Province, Bao Lam District, Loc Bac Commune, 8 Apr 2003, *HN-LN 0423,* HT: HN-LN.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, curved, 1500–2000 cm long, 10–15 mm diam., woody. Culm-internodes terete, 35–40 cm long, distally hispid. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, 13–15 cm long, 1.5–2 times as long as wide, purple, convex at apex, auriculate, with 405 mm high auricles, with 15–20 mm wide auricles. Culm-sheath blade triangular, narrower than sheath, reflexed, 11–13 cm long, 25–30 mm wide. Leaves 4 per branch. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long, petiole pubescent. Leaf-blades lanceolate or elliptic, 16–17 cm long, 15–80 mm wide. Leaf-blade venation with 10–12 secondary veins. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, glabrous on internodes, 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 2 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 obovate, laterally compressed, obtuse, 2.5–3 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume oblate, 1.8–2 mm long, 0.8 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 2–2.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex obtuse. Palea tightly convolute around flower, 2–2.2 mm long. Palea surface pubescent, hairy on flanks.

Flower and Fruit. Lodicules 3, 1.5–1.8 mm long, ciliate. Anthers 6, 2 mm long. Stigmas 3. Caryopsis with fleshy pericarp, orbicular, isodiametric.

Distribution (TDWG). Continent. Tropical Asia.

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

Melocalamus compactiflorus (Kurz) Benth. *Journ. Linn. Soc.* xix. 134. (1881).

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 Myanmar. **Basionym or Replaced Name**: *Pseudostachyum compactiflorum* Kurz, *Journ. As. Soc. Beng*. 42. II. 252 (1873). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Burma, Martaban: Coll?.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 48 as *M. compactiflorus* var. *fimbriatus*).

Derivation (Clifford & Bostock 2007): L. *compactus*, dense; *flos*, flower. Inflorescences congested.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 500–850 cm long, 15–25 mm diam., woody. Culm-internodes terete, thin-walled, 30–60 cm long. Lateral branches dendroid. Bud complement 1. Branch complement several, in a horizontal line, with 1 branch dominant. Culm-sheaths present, persistent, glabrous or pubescent. Culm-sheath blade lanceolate or ovate, reflexed, 5–15 cm long. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades oblong, 15–25 cm long, 25–50 mm wide. Leaf-blade venation with obscure cross veins. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, 0.7–1.2 cm long, 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 2 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 obovate, laterally compressed, obtuse, 2.5–3 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblate, 1–1.5 mm long, 0.7–0.8 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume margins ciliate. Lower glume apex obtuse. Upper glume oblate, 1.5–2 mm long, 0.7–0.8 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume margins ciliate. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 2–2.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex obtuse. Palea 6 -veined. Palea surface pubescent, hairy on flanks. Rhachilla extension 1 length of fertile floret.

Flower and Fruit. Lodicules 3, ciliate. Anthers 6. Stigmas 2–3. Ovary umbonate, glabrous. Caryopsis with fleshy pericarp, orbicular, isodiametric, 15–20 mm long. Endosperm evanescent.

Vivipary occurs.

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

Country /Province /State. **China**. China South Central. **Indian Subcontinent**, **Indo-China**. Bangladesh, India. Myanmar, Thailand, Vietnam.

Yunnan.

Melocalamus cucphuongensis H.N. Nguyen & V.T. Tran. *Blumea* 55(2): 131–132, 134–135, f. 2. 2010. (16 Aug 2010).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Ninh Binh Province, Nho Quan District, Cuc Phuong National Park, 1 Sept 2005, *HN-LN 0421,* HT: HN-LN.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, zigzag, 1500–2000 cm long, 35–40 mm diam., woody. Culm-internodes terete, solid, 20–55 cm long, distally pubescent. Lateral branches dendroid. Branch complement several, with 1 branch dominant. Culm-sheaths present, 17–18 cm long, 2 times as long as wide. Culm-sheath ligule 2 mm high. Culm-sheath blade ovate, narrower than sheath, reflexed, acute. Leaves 3 per branch. Leaf-sheaths striately veined. Ligule an eciliate membrane, 1.5 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long. Leaf-blades lanceolate or ovate, 17–20 cm long, 32–34 mm wide. Leaf-blade apex filiform.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, pubescent on internodes, 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 2 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 obovate, laterally compressed, obtuse, 3 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume oblate, 2–2.5 mm long, 0.66 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 3 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pilose. Lemma apex obtuse. Palea tightly convolute around flower, 2–2.5 mm long. Palea surface pubescent, hairy on flanks.

Flower and Fruit. Lodicules 3, 1 mm long, ciliate. Anthers 6, 1.8–2 mm long. Stigmas 3. Caryopsis with fleshy pericarp, orbicular, isodiametric.

Distribution (TDWG). Continent. Tropical Asia.

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

Melocalamus elevatissimus C.J.Hsueh & T.P.Yi. *J. Bamboo Res.,* 2(1): 28 (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).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China, Medog xian: Yi 77183.

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 49).

Derivation (Clifford & Bostock 2007): L. *elevo*, raise up; *-issimus*, most. Sheaths of culm leaves elongated.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 2000 cm long, 15–30 mm diam., woody. Culm-internodes terete, thick-walled, 40–120 cm long, distally pubescent. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, tardily deciduous, 24–38 cm long, 3 times as long as wide, coriaceous, hispid, with tawny hairs, without auricles. Culm-sheath ligule 1 mm high, ciliolate. Culm-sheath blade lanceolate, erect, 8–30 cm long, 6–15 mm wide, pubescent. Leaves 4–8 per branch. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.6–1 cm long. Leaf-blades oblong, 20–40 cm long, 30–90 mm wide, fleshy. Leaf-blade venation with 16–24 secondary veins, with obscure cross veins. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. Tibet.

Melocalamus indicus R.B. Majumdar. *Bull. Bot. Surv. India,* 25(4): 236 (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 Synonomy Database: India, Cachar, Buban Hill: *Majumdar 73083* (CAL holo).

Illustrations: None found.

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, pendulous at the tip, 600–3000 cm long, 100–200 mm diam., woody. Culm-internodes terete, solid, 40–50 cm long, distally mealy. Lateral branches dendroid. Branch complement several, with 1 branch dominant, as thick as stem. Culm-sheaths present, deciduous but leaving a persistent girdle, 20–25 cm long, 4–6 times as long as wide. Culm-sheath blade linear, reflexed. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, 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 1 basal sterile florets, 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 orbicular, laterally compressed, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 2 mm long, chartaceous, without keels. Lower glume apex obtuse. Upper glume orbicular, 2 mm long, chartaceous, without keels. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret orbicular, 2–2.5 mm long, chartaceous, obtuse. Fertile lemma orbicular, 2.5 mm long, without keel, 4 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma margins ciliate. Lemma apex obtuse. Palea without keels.

Flower and Fruit. Lodicules 3, ciliate. Anthers 6.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. **Indian Subcontinent**. Assam.

Melocalamus kbangensis H.N. Nguyen & V.T. Tran. *Blumea* 55(2): 135, f. 3. 2010. (16 Aug 2010).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Gia Lai Province, Kbang District, Kon Ha Nung Forest Station, 18 Oct 2006, *HN-LN 0426,* HT: HN-LN.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1500 cm long, 20–25 mm diam., woody. Culm-internodes terete, solid, 55–58 cm long, grey. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 14–16 cm long, 2–3 times as long as wide, pubescent, with appressed hairs, with white hairs, auriculate, with 2–2.5 mm high auricles. Culm-sheath blade ovate, reflexed, 12–16 cm long, 20–28 mm wide, pubescent (adaxially at base). Leaves 4–5 per branch. Leaf-sheaths pubescent, hairs white, outer margin hairy. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.4–0.6 cm long, petiole pubescent. Leaf-blades linear, 28–30 cm long, 45 mm wide. Leaf-blade venation with 18–20 secondary veins. Leaf-blade margins scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, pubescent on internodes, 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 2 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 obovate, laterally compressed, obtuse, 2 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume oblate, 2–2.5 mm long, 0.8 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 2.5–3 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma margins ciliolate. Lemma apex obtuse. Palea tightly convolute around flower, 2–3.5 mm long. Palea surface pubescent, hairy on flanks.

Flower and Fruit. Lodicules 3, 2–3 mm long, ciliate. Anthers 6, 2 mm long. Stigmas 3. Caryopsis with fleshy pericarp, orbicular, isodiametric.

Distribution (TDWG). Continent. Tropical Asia.
Country /Province /State. **Indo-China**.

Melocalamus mastersii (Munro) R.B. Majumdar. *S. Karthikeyan et al., Fl. Ind. Enumerat. - Monocot.*: 278: (1989).

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

TYPE from India. **Basionym or Replaced Name**: *Bambusa mastersii* Munro, *Trans. Linn. Soc*. 26: 113 (1868). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India, Dibreeghur: *Masters 1123* (K holo).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of John W. Masters (c. 1792–1873) gardener, Calcutta Botanic Gardens.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 500–850 cm long, 15–25 mm diam., woody. Culm-internodes terete. Lateral branches dendroid. Branch complement several. Culm-sheaths present, persistent. Leaves 6–9 per branch. Leaf-sheaths striately veined, outer margin hairy. Leaf-sheath oral hairs setose, 1–6 mm long. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.5 mm long. Leaf-blade base with a brief petiole-like

connection to sheath, petiole 0.4 cm long, petiole glabrous or pubescent. Leaf-blades oblong, 20–26 cm long, 30–40 mm wide, fleshy, mid-green and glaucous, discolorous with last colour beneath. Leaf-blade venation with 20–24 secondary veins, without cross veins. Leaf-blade surface puberulous, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. Tropical Asia.

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

Assam.

Melocalamus pacoensis H.N. Nguyen & V.T. Tran. *Blumea* 55(2): 135, f. 4. 2010. (16 Aug 2010).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Hoa Binh Province, Mai Chau District, Hang Kia-Pa Co Nature Reserve, 4 Apr 2005, *HN-LN 0424,* HT: HN-LN.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1000 cm long, 18–23 mm diam., woody. Culm-internodes terete, thick-walled, 80–85 cm long, grey. Culm-nodes pubescent. Lateral branches dendroid. Branch complement several, with 1 branch dominant, as thick as stem. Culm-sheaths present, 22–30 cm long, 1.5 times as long as wide, hispid, with black hairs, auriculate, with 5–6 mm high auricles, setose on shoulders, shoulders with straight hairs, shoulders with 25 mm long hairs. Culm-sheath blade ovate, narrower than sheath, reflexed, 13–19 cm long, 45–65 mm wide. Leaves 3 per branch. Leaf-sheath oral hairs setose, 25 mm long. Leaf-sheath auricles erect, 2 mm long. Ligule an eciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long. Leaf-blades elliptic, 30–36 cm long, 60–70 mm wide. Leaf-blade venation with 20–24 secondary veins.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, pubescent on internodes, 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 2 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 obovate, laterally compressed, obtuse, 2.5–3 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume oblate, 2 mm long, 1 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface pubescent. Upper glume margins ciliolate. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 2–2.5 mm long, chartaceous, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex obtuse. Palea not rolled, 2–2.5 mm long. Palea surface pubescent, hairy on flanks.

Flower and Fruit. Lodicules 3, 1–1.2 mm long, ciliate. Anthers 6. Stigmas 2. Caryopsis with fleshy pericarp, orbicular, isodiametric.

Distribution (TDWG). Continent. Tropical Asia.

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

Melocalamus scandens J.R. Xue & C.M. Hui. *Acta Phytotax. Sin*. 30(2): 166–167, pl. 1, f. 1–4. (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>: *fide* TROPICOS and Kew Synonomy Database: China, Yunnan, Jiangchen: *Zhao & Hui 88027* (SWFC holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 48).

Derivation (Clifford & Bostock 2007): L. *scando*, climb up. Of scrambling habit.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 2000 cm long, 20–40 mm diam., woody. Culm-internodes terete, thin-walled, 45–50 cm long. Culm-nodes flush with internodes, pubescent. Lateral branches dendroid. Branch complement several. Culm-sheaths present, coriaceous, brown, auriculate, with unequal auricles, setose on shoulders. Culm-sheath ligule 1 mm high, entire. Culm-sheath blade triangular, as wide as sheath at base, erect. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, 1 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 15–25 cm long, 15–25 mm wide. Leaf-blade venation with obscure cross veins. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

Yunnan.

Melocalamus truongsonensis H.N. Nguyen & V.T. Tran. *Blumea* 55(2): 135–136, 138, f. 5. 2010. (16 Aug 2010).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Quang Nam Province, Song Thanh Nature Reserve, 28 Aug 2005, *HN-LN 0425,* HT: HN-LN.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, curved, drooping at the tip, 1500–2000 cm long, 20–30 mm diam., woody. Culm-internodes terete, solid, 58–60 cm long. Culm-nodes swollen. Lateral branches dendroid. Branch complement many, with 1 branch dominant. Culm-sheaths present, 16–17 cm long, 1.3 times as long as wide, pilose, with appressed hairs, with black hairs. Culm-sheath blade ovate, spreading, 4–7 cm long, 8 mm wide. Leaves 5 per branch. Leaf-sheath oral hairs setose, 15 mm long. Leaf-sheath auricles erect, 1 mm long. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long. Leaf-blades oblong, 20–23 cm long, 30–35 mm wide. Leaf-blade venation with 14–16 secondary veins. Leaf-blade apex attenuate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, pubescent on internodes, 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 2 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 obovate, laterally compressed, obtuse, 3 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume oblate, 2–2.2 mm long, 0.6 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 3.5–4 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins pubescent. Lemma apex obtuse. Palea tightly convolute around flower, 3 mm long. Palea surface pubescent, hairy on flanks.

Flower and Fruit. Lodicules 3, 0.5 mm long, ciliate. Anthers 6, 1 mm long. Stigmas 2. Caryopsis with fleshy pericarp, orbicular, isodiametric.

Distribution (TDWG). Continent. Tropical Asia.

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

Melocalamus yenbaiensis H.N. Nguyen & V.T. Tran. *Blumea* 55(2): 138, f. 6. 2010. (16 Aug 2010).

TYPE from Vietnam. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Yen Bai Province, Tran Yen District, Luong Thinh Commune, 14 Sept 2004, *HN-LN 0420,* HT: HN-LN.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 1500 cm long, 25–30 mm diam., woody. Culm-internodes terete,

solid, 50–70 cm long, grey. Lateral branches dendroid. Branch complement many. Culm-sheaths present, 16–17 cm long, 2 times as long as wide, pubescent, with appressed hairs, with white hairs, auriculate, with 6–7 mm high auricles, setose on shoulders, shoulders with 22 mm long hairs. Culm-sheath ligule 2 mm high. Culm-sheath blade triangular, narrower than sheath, reflexed, 11–15 cm long, 45–50 mm wide, acute. Leaves 4 per branch. Ligule an eciliate membrane, 2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 1 cm long. Leaf-blades elliptic, 28–32 cm long, 45–50 mm wide. Leaf-blade venation with 16–18 secondary veins.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in globose clusters, dense, pubescent on internodes, 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 2 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 obovate, laterally compressed, obtuse, 3–4 mm long, breaking up at maturity, disarticulating above glumes but not between florets. Rhachilla internodes suppressed between florets.

Glumes. Glumes several, 2–3 empty glumes, persistent, similar, shorter than spikelet. Upper glume oblate, 3 mm long, 1 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins prominent. Upper glume surface pilose. Upper glume apex obtuse.

Florets. Fertile lemma oblate, 3–3.5 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex obtuse. Palea tightly convolute around flower, 3 mm long. Palea surface pubescent, hairy on flanks.

Flower and Fruit. Lodicules 3, 2 mm long, ciliate. Anthers 6, 3 mm long. Stigmas 3. Caryopsis with fleshy pericarp, orbicular, isodiametric, 15–20 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Melocalamus yunnanensis (T.H. Wen) T.P. Yi. *J. Sichuan For. Sci. & Techn*. 28(3): 18 (2007).

TYPE from China. **Basionym or Replaced Name**: *Racemobambos yunnanensis* T.H. Wen, *J. Bamboo Res.* 5(2): 11 (1986). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Yunnan: Jinping, *W.W. Chou ZP 83311*, HT: ZJFI.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, pluricaespitose. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms scandent, 1500 cm long, 10 mm diam., woody. Culm-internodes terete, solid, 60 cm long, distally pubescent. Lateral branches dendroid. Branch complement many. Culm-sheaths present, deciduous, pubescent, with tawny hairs, glabrous on margins, without auricles, glabrous on shoulders. Culm-sheath ligule 1–3 mm high, ciliate. Culm-sheath blade inconspicuous or linear, reflexed. Leaves cauline, 3–4 per branch. Leaf-sheaths 20–35 cm long, pubescent. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–7 cm long, 8–13 mm wide. Leaf-blade venation with 8 secondary veins, without cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform. Flowering specimens unknown.

Distribution (TDWG). Continent. Temperate Asia.

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

Melocanna arundina C.E.Parkinson. *Indian Forester,* lxi. 326 (1935).

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

Basionym or Replaced Name: *Melocanna humilis* Kurz, *Forest Fl. Burma* 2: 569 (1877)

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Recent Synonyms: *Melocanna humilis* Kurz, non Trin.(1822), in *Journ. As. Soc. Beng.* 42:.2. 251. (1873).

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms erect, 240–450 cm long, 2.5 mm diam., woody. Culm-internodes terete, thin-walled, 30 cm long. Culm-nodes flush with internodes. Lateral branches dendroid. Branch complement several. Culm-sheaths present, deciduous, pubescent, with appressed hairs, without auricles. Culm-sheath ligule 0.5 mm high, dentate. Culm-sheath blade linear, erect. Leaves cauline. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles absent. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 10–15 cm long, 17–25 mm wide, mid-green and glaucous, discolorous with last colour beneath. Leaf-blade venation indistinct, with 16–20 secondary veins. Leaf-blade surface puberulous, hairy abaxially. Flowering specimens unknown.

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

Country /Province /State. **China**, **Eastern Asia**. China Southeast. Taiwan (+). **Indo-China**. Myanmar.

Guangdong (+), Guangxi (+).

Melocanna baccifera (Roxb.) Kurz. *Prelim. Rep. For. Veg. Pegu, App. B.* 94 (1875).

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**: *Bambusa baccifera* Roxb., *Pl. Coromandel* 3: 37, t. 243 (1819). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Roxb., Icones 1401*, (K). LT designated by Stapleton, *Edin. J. Bot.* 51: 27 (1994).

Illustrations (Books): C-C Hsu,*Taiwan Grasses* (1975) (782, Pl. 1520), H.J.Noltie, *The Grasses of Bhutan* (2000) (494, Fig. 3), D.Farrelly, *The Book of Bamboo* (1984) (194), S.Dransfield, & E.A. Widjaja, *Plant Resources of South-East Asia No*. 7, Bamboos (1995).

Derivation (Clifford & Bostock 2007): L. *baccus,* berry; *fero*, carry. Fruits fleshy.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, culms solitary. Rhizomes elongated, pachymorph. Butt sheaths absent. Culms erect, 1000–2000 cm long, 50–90 mm diam., woody. Culm-internodes terete, thin-walled, 30–60 cm long. Lateral branches dendroid. Branch complement many, with subequal branches. Culm-sheaths present, persistent, coriaceous, pubescent, hairy throughout, with yellow hairs, without auricles. Culm-sheath blade linear, reflexed. Leaves cauline, 5–15 per branch. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 18–42 cm long, 20–90 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade margins scabrous.

Inflorescence. Synflorescence bractiferous, clustered at the nodes (of raceme-like secondary branches), in oblong clusters, 1–1.5 cm long, dense, with spathaceous subtending bracts, bracts 1–1.5 mm long, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters.

Fertile spikelets sessile.

Fertile Spikelets. Spikelets comprising 5–6 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, laterally compressed, 15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Upper glume lanceolate.

Florets. Fertile lemma lanceolate, 5–7 mm long, chartaceous, without keel, 5–9 -veined, more than 3-veined. Lemma apex rostrate, mucronate. Palea without keels. Rhachilla extension 0.1–0.2 length of fertile floret.

Flower and Fruit. Lodicules 2, veined, ciliate. Anthers 5–7. Stigmas 2–4. Ovary with a steeple-like appendage, glabrous. Caryopsis with fleshy pericarp, ovoid, isodiametric, 75–125 mm long. Endosperm farinose (small).

Vivipary occurs.

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

Country /Province /State. **Western Indian Ocean**. Mauritius (+). **China**, **Eastern Asia**. China Southeast. Taiwan. **Indian Subcontinent**, **Indo-China**. Bangladesh, Eastern Himalaya, India. Myanmar. Hawaii (*). **Mesoamerica**, **Caribbean**, **Western South America**, **Brazil**. Costa Rica. Colombia, Ecuador. Brazil Southeast.

Guangdong, Hong Kong. Sikkim. Meghalaya. West Bengal. Sao Paulo.

Merostachys abadiana T. Sendulsky. *Novon,* 5(1): 77 (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 Synonomy Database: Brazil: Estado do São Paulo: Municipio Itatinga, Abadia, 26 Sep. 1978 (fl)., *Campos Neto s.n.* (HT: SP-154498).

Illustrations (Journals): *Novon* (5:78, Fig.1 (1995)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. From Abadia, Brazil.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200 cm long, woody. Culm-internodes terete, thin-walled, yellow, smooth. Culm-nodes without obvious supra-nodal ridge. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Leaves 4–5 per branch. Leaf-sheaths tight, puberulous, outer margin glabrous. Leaf-sheath oral hairs setose, curly, 2–3 mm long. Ligule a ciliolate membrane, 1 mm long, pubescent on abaxial surface. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2 cm long, petiole pilose. Leaf-blades ovate, 4–12 cm long, 15–20 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface scabrous, rough adaxially, puberulous, hairy abaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–4 cm long, bearing 4–15 fertile spikelets on each. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 11–13 mm long, 3–4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume elliptic, 3 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 8.5 mm long, chartaceous, 11–13 -veined. Upper glume surface puberulous. Upper glume apex acute.

Florets. Fertile lemma ovate, 9 mm long, 6 mm wide, chartaceous, dark brown and light brown, mottled with last colour, shiny, without keel, 15–16 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins ciliate. Lemma hairs red. Palea lanceolate, 9 mm long, 1 length of lemma, chartaceous, 10 -veined. Palea keels contiguous above a sulcus, ciliolate. Palea surface puberulous, hairy on back, hairy above. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, ovoid, 4.5 mm long, yellow, cuspidate.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo.

Merostachys annulifera T. Sendulsky. *Novon,* 7(3): 286 (1997).

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 Synonomy Database: HT: *T.S. dos Santos 3906*, 20 October 1983, Brazil: Bahia: Mun. Uruçuca, Estrada Serra Grande-Ilheus, km 2 (Mata de restinga) (SP; IT: MO-3705603, MO-3705566).

Illustrations (Journals): *Novon* (7: 288 Fig. 1 (1997)).

Derivation (Clifford & Bostock 2007): L. *annulus*, ring; *fero*, carry or bear. Culm nodes thick, black and tyre-like.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 1000–1500 cm long, 10–25 mm diam., woody. Culm-internodes terete, thin-walled, 57–95 cm long, retrorsely scabrous. Culm-nodes swollen, black. Lateral branches dendroid. Branch complement many (20), flabellate. Culm-sheaths present, deciduous, 30 cm long, 3 times as long as wide, antrorsely scabrous, glabrous, setose on shoulders, shoulders with 5 mm long hairs. Culm-sheath blade lanceolate, reflexed, 14–15 cm long, 20–25 mm wide. Leaves 3–8 per branch. Leaf-sheaths tight, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, spreading or curly, 10 mm long. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long, petiole pubescent. Leaf-blades oblong, 7–12 cm long, 22–35 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–7 cm long, bearing 12–22 fertile spikelets on each. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, crowded. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 14 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4 mm long, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acute. Upper glume lanceolate, 10 mm long, membranous, 1-keeled, 9 -veined. Upper glume surface puberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 11 mm long, 6 mm wide, coriaceous, without keel, 15 -veined, more than 3-veined. Lemma surface puberulous. Lemma apex acute. Palea 10 mm long, coriaceous, 12 -veined. Palea keels ciliolate. Palea surface puberulous, hairy above. Rhachilla extension 10–11 mm long, pubescent.

Flower and Fruit. Lodicules 3, 2 mm long. Anthers 3, 5 mm long, purple. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys argentea T. Sendulsky. *Novon,* 7(3): 287 (1997).

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 Synonomy Database: Brazil: Bahia: Mun. Porto Seguro, forest slopes of "morro" on Fazenda Carvalho, ca. 26 km W of town of Monte Pascoal, from 380 to 460 m, 15 May 1976 (st), *Soderstrom, Russell & Hage 2213* (HT: CEPEC; IT: SP, US).

Illustrations (Journals): *Novon* (7: 289 Fig. 2 (1997)).

Derivation (Clifford & Bostock 2007): L. silvery. Glumes or lemmas silvery.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1500–1600 cm long, 23–26 mm diam., woody. Culm-internodes terete, thin-walled, smooth or scaberulous. Culm-nodes swollen. Lateral branches dendroid. Branch complement many, flabellate, with subequal branches. Culm-sheaths present, deciduous, 18–19 cm long, 2 times as long as wide, yellow, retrorsely scabrous, setose on shoulders, shoulders with curved hairs, shoulders with 30 mm long hairs. Culm-sheath ligule 1 mm high. Culm-sheath blade linear, deciduous, reflexed, 7–9 cm long, 5–6 mm wide, attenuate. Leaves 7–13 per branch. Leaf-sheaths outer margin hairy. Leaf-sheath oral hairs setose, erect, 10 mm long, pale. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole pubescent. Leaf-blades lanceolate, 8–10 cm long, 7–8 mm wide, dark green. Leaf-blade venation with 4–6 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. South America.
Country /Province /State. **Brazil**. Brazil Northeast.
Bahia.

Merostachys argyronema Lindm. *Svensk. Vet.-Akad. Handl.* iv. no. 6, 22. (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 Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.W.H. Mósen 3726*, Mar 1875, Brazil: São Paulo (S; IT: US-79097).

Illustrations (Journals): Hoehnea (40: 323, fig. 4 (2013)).

Derivation (Clifford & Bostock 2007): Gk. *argyreos,* silver; *nema*, thread. Hairs associated with ligule long and silvery.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 10 mm diam., woody. Culm-internodes terete, thin-walled, light green and dark green, striped or mottled, distally hispid, with reflexed hairs. Lateral branches dendroid. Branch complement many, flabellate. Culm-sheaths present. Leaves 7–8 per branch. Leaf-sheaths striately veined, outer margin hairy. Leaf-sheath oral hairs ciliate, 5 mm long. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4 cm long, petiole glabrous. Leaf-blades lanceolate, 9–12 cm long, 12–16 mm wide, glaucous. Leaf-blade venation with 10–12 secondary veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 5 cm long. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 2 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, laterally compressed, 10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 3 mm long. Lower glume apex acute. Upper glume ovate, 7 mm long, membranous, 7 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 9 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex acute.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2.

Distribution (TDWG). Continent. South America.
Country /Province /State. **Mesoamerica**, **Brazil**. Brazil Southeast.
Sao Paulo.

Merostachys bifurcata T. Sendulsky. *Novon,* 7(3): 290 (1997).

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 Synonomy Database: Brazil: Bahia: Mun. Porto Seguro, Parque Nacional Monte Pascoal, 14 km E of Br 101 at a point 13 km N of Itamaraj? 110 m, 12 May 1976 (st), *T.R. Soderstrom, Russell & Hage 2202* (HT: US; IT: CEPEC, SP).

Illustrations (Journals): *Novon* (7: 291 Fig.3 (1997)).

Derivation (Clifford & Bostock 2007): L. *bis,* twice; *furca*, fork; *-ata*, possessing. Inner ligule bifurcate.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, drooping at the tip, 1000 cm long, 7.5–12.5 mm diam., woody. Culm-internodes terete, thin-walled, grey and light green, striped, scaberulous. Culm-nodes swollen. Lateral branches dendroid. Branch complement many, flabellate, with subequal branches. Culm-sheaths present,

deciduous, 20–25 cm long, 4 times as long as wide, chartaceous, antrorsely scabrous, setose on shoulders, shoulders with straight hairs, shoulders with 6–8 mm long hairs. Culm-sheath ligule 6 mm high, dentate. Culm-sheath blade lanceolate, erect or spreading or reflexed, 6–7 cm long, 3–4 mm wide. Leaves 12–14 per branch. Leaf-sheaths retrorsely scabrous, outer margin hairy. Leaf-sheath oral hairs setose, erect, 3–6 mm long, pale. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 3–13 cm long, 4–8 mm wide, grey-green. Leaf-blade surface scabrous. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys bradei Pilger. *Notizbl. Bot. Gart. Berlin,* x. 114 (1927).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online.

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.C. Brade 8462*, no date, Brazil: São Paulo (B; IT: US-79096).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Alexander Curt Brade (1881–1971) German-born Brazilian botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo.

Merostachys brevigluma Send. *Kew Bull.* 56(3): 629 (2001).

Accepted by: 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 Synonomy Database: Brazil: State of Minas Gerais: São Francisco dos Campos, Delfim Moreira, Fazenda São Francisco, 8 June 1950, *Kuhlmann 2453* (HT: SP).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis*, short; *gluma*, husk. One or both glumes short with respect to the length of the spikelet.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Butt sheaths absent. Culms woody. Culm-internodes terete, light green, striate, smooth, distally glabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaves 4–5 per branch. Leaf-sheaths tight, transversely wrinkled, glabrous on surface. Leaf-sheath oral hairs setose, deciduous, 3–4 mm long. Ligule an eciliate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate or oblong, 6–13 cm long, 20–25 mm wide. Leaf-blade surface scaberulous (above) or papillose (below). Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 16–17 cm long, 7–8 mm wide, bearing 25–30 fertile spikelets on each. Rhachis glabrous on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 15–16 mm long, 4–5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 4 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous, hairy at base. Lower glume apex acuminate. Upper glume elliptic, 10–11.5 mm long, chartaceous, 11 -veined. Upper glume

lateral veins with cross-veins. Upper glume surface pubescent. Upper glume apex attenuate, awned, 1 -awned, awn 1.5 mm long.

Florets. Fertile lemma ovate, 13 mm long, 7–8 mm wide, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma surface pubescent. Lemma hairs dark brown. Lemma apex acute. Palea 1 length of lemma, chartaceous, 12 -veined. Palea keels contiguous above a sulcus, ciliolate. Palea surface glabrous. Rhachilla extension pubescent. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 2.5 mm long, ciliate. Anthers 3, 9 mm long. Stigmas 2. Caryopsis with free brittle pericarp, ovoid, 7 mm long, light brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Minas Gerais, Sao Paulo.

Merostachys brevispica Munro. *Trans. Linn. Soc.* xxvi. 49. (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).

TYPE from Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. Spruce s.n.*, 1855–1856, Peru: San Martin (K(fragm., US-1126707)).

Illustrations (Journals): *Ruizia* (13:35, Fig.2d-f (1993)).

Derivation (Clifford & Bostock 2007): L. *brevis*, short; *spica*, thorn. Spikelets short.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 150–400 cm long, woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Bud complement 1. Branch complement many, flabellate. Culm-sheaths present. Leaf-sheaths pubescent. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 7–10 cm long, 10–15 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 4 cm long. Rhachis terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular, 2 -rowed. Spikelets pectinate. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 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 elliptic, laterally compressed, compressed slightly, 11–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 3.5–4 mm long, 0.33 length of adjacent fertile lemma, chartaceous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret ovate, 6–7 mm long, 0.5 length of fertile lemma, chartaceous, pubescent, acute. Fertile lemma ovate, 11–12 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Rhachilla extension 11–12 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Peru.

Merostachys burmanii T. Sendulsky. *Novon,* 2(2): 111 (1992).

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 Synonomy Database: Brazil: São Paulo, Jardim Botánico, 25 Mar 1944, *Kuhlmann s.n.* (HT: SP-79757; IT: MO-2227246, US-2678539).

Illustrations (Journals): *Novon* (2: 112, Fig. 1 (1992)), Hoehnea (40: 325, fig. 5 (2013)).

Derivation (Clifford & Bostock 2007): in honor of Alisdair Graham Burman (1942-), English-born Brazilian botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1500 cm long, 40 mm diam., woody. Culm-internodes terete, thin-walled, 38–40 cm long, yellow or mid-green, retrorsely scabrous. Culm-nodes pubescent. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous, 28–30 cm long, 3 times as long as wide, retrorsely scabrous, ciliate on shoulders, shoulders with 0.3 mm long hairs. Culm-sheath ligule 1–2 mm high, ciliolate. Culm-sheath blade lanceolate, reflexed, 17 cm long, 18–20 mm wide, attenuate. Leaves 7–9 per branch. Leaf-sheaths tight, smooth, glabrous on surface. Leaf-sheath oral hairs setose, deciduous, 2–3 mm long. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4 cm long, petiole glabrous. Leaf-blades lanceolate, 15–17 cm long, 20–30 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle retrorsely scabrous above. Racemes 1, single, sinuous, unilateral, 8–11 cm long. Rhachis puberulous on surface to villous on surface, terminating in a sterile spikelet. Rhachis hairs white. Spikelet packing broadside to rhachis, contiguous, irregular. Spikelets deflexed, in pairs. Fertile spikelets pedicelled, 1 in the cluster or 2 in the cluster, all alike or heteromorphic, the upper smaller (sometimes rudimentary). Pedicels present, oblong, 1 mm long, puberulous.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 8–11 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 2 mm long, membranous, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 5 mm long, chartaceous, light green and dark green (spotted), 1-keeled, 5–7 -veined. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 8 mm long, 3.5–4 mm wide, chartaceous, keeled, 10–11 -veined, more than 3-veined. Palea lanceolate, 1 length of lemma, chartaceous, 6 -veined. Palea keels contiguous above a sulcus, scaberulous. Rhachilla extension 8 mm long, pubescent. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 2 mm long, ciliate. Anthers 3, 6 mm long. Stigmas 2. Caryopsis with free brittle pericarp, oblong, 6–7 mm long, light brown, smooth, cuspidate.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast, Brazil Southeast.

Bahia. Rio de Janeiro, Sao Paulo.

Merostachys calderoniana T. Sendulsky. *Novon,* 7(3): 290 (1997).

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 Synonomy Database: HT [6-sheets]: (US-2899856, US-2899857, US-2899858, US-2899859, US-2899860, US-2899861;). ; Brazil: Bahia: Mun. de Una, road Una-Olivença, 20 km N of Una, 70 m, growing in coastal forest on sandy soil, 27 Apr 1976 (st), *Calderón, Santos & Oliveira 2400* (HT: US; IT: CEPEC).

Illustrations (Journals): *Novon* (7: 293 Fig.4 (1997)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Cleofi Elsa Caldersn (1929-) Argentine-born United States botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms 1000 cm long, 10–15 mm diam., woody. Culm-internodes terete, smooth, distally pruinose. Lateral branches dendroid. Branch complement many, flabellate, with subequal branches. Culm-sheaths present, deciduous, 12–16 cm long, 4 times as long as wide, retrorsely scabrous, glabrous, setose on

shoulders, shoulders with 4–6 mm long hairs. Culm-sheath ligule 0.5 mm high. Culm-sheath blade lanceolate, reflexed, 9.5 cm long, 7 mm wide, scabrid. Leaves 5–9 per branch. Leaf-sheaths tight, outer margin hairy. Leaf-sheath oral hairs setose, curly, pale. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 7–8 cm long, 8–15 mm wide, dark green. Leaf-blade surface scaberulous. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys caucaiana T. Sendulsky. *Novon,* 5(1): 80 (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 Synonomy Database: Brazil: Estado de São Paulo: Município de Cotia, Caucaia, 1978 (fl)., *O. Handro & Menezes s.n.* (HT: SP-262720).

Illustrations (Journals): *Novon* (5:79, Fig.2 (1995)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. From Caucaia, Brazil.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, woody. Culm-internodes terete, thin-walled, mid-green and dark green, mottled. Culm-nodes bearded (retrorsely). Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Leaves 4–5 per branch. Leaf-sheaths tight, glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs setose, 13–15 mm long. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades ovate, 2–7 cm long, 5–12 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, unilateral, 2–3 cm long. Rhachis pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 fertile florets or 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 elliptic, laterally compressed, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 2 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 7 mm long, chartaceous, 9–11 -veined. Upper glume surface puberulous. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 7 mm long, 2–3 mm wide, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins ciliolate. Palea 7 mm long, 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus, ciliolate. Palea surface puberulous, hairy on back. Rhachilla extension pubescent. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 2 mm long, ciliate. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, ellipsoid, 6 mm long, light brown, cuspidate.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo.

Merostachys ciliata McClure & L. B. Smith. *Fl. Ilustr. Catar., Pt. 1, Gramin., Supl. Bambus.*, 71 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. Reitz 5940*, 15 Jan 1958, Brazil: Santa Catarina: Brusque, Azambuja, mata, 50 m (US-2240927).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (147, Fig. 33).

Derivation (Clifford & Bostock 2007): L. *cilium*, eyelid; *-ata*, possessing. Plant hairy overall or in part.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 800 cm long, 20–30 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths striately veined, scaberulous, puberulous, outer margin hairy. Leaf-sheath oral hairs setose, 10 mm long, pale. Ligule absent. Collar with external ligule. Leaf-blade base broadly rounded, symmetrical, with a brief petiole-like connection to sheath, petiole 0.3 cm long, petiole pubescent. Leaf-blades lanceolate, 9 cm long, 20 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, arcuate, unilateral, 9 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 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 lanceolate, laterally compressed, compressed slightly, 15–17 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure or two, persistent, shorter than spikelet. Lower glume ovate, 1 mm long. Lower glume surface pubescent. Upper glume ovate, 4 mm long, chartaceous, 1-keeled. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret oblong or ovate, 5–6 mm long, mid-green or red (mottled), 7 -veined, obtuse, mucronate. Fertile lemma linear or oblong, 10–12 mm long, chartaceous, mid-green or red, mottled with last colour, without keel, more than 3-veined. Lemma margins ciliate. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Catarina, Rio Grande do Sul. Paraná.

Merostachys claussenii Munro. *Trans. Linn. Soc.* xxvi. 48 (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Brazil, Minas Gerais: Claussen ; Brazil, Organ Mts.: Miers ; Brazil, Organ Mts.: Wilkes.

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (64), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (104, Fig. 18).

Derivation (Clifford & Bostock 2007): in honor of Peter Claussen (c. 1800–1855) Danish botanist who collected in Brazil.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 500–700 cm long, 3–4 mm diam., woody. Culm-internodes terete, scaberulous, distally glabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaf-sheaths puberulous. Leaf-sheath oral hairs setose, 4–6 mm long. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 5–18 cm long, 10–25 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 4–9 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 12–14 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, reaching apex of florets. Lower glume ovate, 5 mm long, chartaceous, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 12–14 mm long, 1 length of adjacent fertile lemma, chartaceous, 11 -veined. Upper glume lateral veins ribbed. Upper glume surface puberulous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma ovate, 12–14 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface puberulous. Lemma apex acuminate, mucronate. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, linear, 2–3 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil West Central, Brazil Southeast, Brazil South. Paraguay.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Goiás. Minas Gerais. Paraná. Misiones.

Merostachys exserta Munro ex E. G. Camus. *Les Bambusees,* 74 (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Brésil: Province de Minas Gerais, 1816–1821, *A. de Saint-Hilaire Cat. D, 713*.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 2000–3000 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 4–17 cm long, 9–15 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–10 cm long. Rhachis terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, laterally compressed, 8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 4 mm long, chartaceous. Lower glume apex acute. Upper glume ovate, 5 mm long, chartaceous. Upper glume apex acute.

Florets. Fertile lemma ovate, 6 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.
Distribution (TDWG). Continent. South America.
Country /Province /State. **Brazil**. Brazil Southeast.
Minas Gerais, Rio de Janeiro, Espirito Santo. Minas Gerais.

Merostachys filgueirasii T. Sendulsky. *Novon,* 5(1): 80 (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 Synonomy Database: Brazil, Catetinho: Filgueiras & Pereira 953 (IBGE holo, CCN, MG, SP, UEC).

Illustrations (Journals): *Novon* (5:81, Fig.3 (1995)).

Derivation (Clifford & Bostock 2007): In honor of Tarisco S. Filgueiras (1950-) Brazilian botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph, scaly. Butt sheaths absent. Culms erect, drooping at the tip, 200–1000 cm long, 10–15 mm diam., woody. Culm-internodes terete, thin-walled, light green and dark green, mottled. Culm-nodes with distinct supra-nodal ridge, glabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous, 12–15 cm long, 1.5 times as long as wide, glabrous, glabrous on margins or hairy on margins, setose on shoulders, shoulders with 12 mm long hairs. Culm-sheath ligule ciliolate. Culm-sheath blade linear, deciduous, reflexed, 4–5 cm long, 4 mm wide. Leaves 4–7 per branch. Leaf-sheaths tight, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, curly, 5–7 mm long. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long, petiole pubescent. Leaf-blades lanceolate or ovate, 4–9 cm long, 8–12 mm wide, light green. Leaf-blade venation without cross veins. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3.5–4.5 cm long, bearing 16–20 fertile spikelets on each. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, acute, 13.5–14 mm long, 3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume elliptic, 2 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acuminate, mucronate. Upper glume ovate, 8–10 mm long, chartaceous, 7–9 -veined. Upper glume surface asperulous, rough at apex, puberulous. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma ovate, 8–9 mm long, 6 mm wide, chartaceous, without keel, 21–23 -veined, more than 3-veined. Lemma surface puberulous. Palea 11 mm long, 1 length of lemma, chartaceous, 12 -veined. Palea keels contiguous above a sulcus, ciliolate. Rhachilla extension 7 mm long. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3, 6 mm long. Stigmas 2. Caryopsis with free brittle pericarp, ellipsoid, 7.5 mm long, light brown, striate, cuspidate.

Distribution (TDWG). Continent. South America.
Country /Province /State. **Brazil**. Brazil West Central.
Distrito Federal.

Merostachys fimbriata T. Sendulsky. *Novon,* 7(3): 302 (1997).

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 Synonomy Database: Brazil, Sao Lourenco: Calderon & Monteiro 2870 (MO holo, K).

Illustrations (Journals): *Novon* (7: 304 Fig.11 (1997)).

Derivation (Clifford & Bostock 2007): L. *fimbriae*, fringe; *-ata*, possessing. With fringed glumes or lemmas.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, 800 cm long, woody. Culm-internodes terete, thick-walled, 12 cm long. Culm-nodes swollen. Lateral branches dendroid. Branch complement several, flabellate. Culm-sheaths present, 10–12 cm long, 3 times as long as wide, antrorsely scabrous, pubescent, hairy at the base, with tawny hairs, ciliate on shoulders, shoulders with 8 mm long hairs. Culm-sheath ligule 0.1 mm high. Leaves 14 per branch. Leaf-sheaths tight, keeled, glabrous on surface. Leaf-sheath oral hairs setose, erect, 10–12 mm long, pale. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 1 cm long. Leaf-blades oblong or ovate, 30 cm long, 45–50 mm wide. Leaf-blade surface ribbed. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil North.

Rondonia.

Merostachys fischeriana Rupr. ex Doell. *Mart. Fl. Braz.* ii. III. 215. (1880).

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 Synonomy Database: HT: *L. Riedel 2986*, Nov 1834, Brazil: pr. St. Luzia in collib. sylvat. (LE-TRIN-3184.01; IT: K, US-79090).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (18, Fig. 3).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, 2000–3000 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 4–17 cm long, 9–15 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 6–9 cm long. Rhachis terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular, 2 - rowed. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present.

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, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 1–2 mm long, chartaceous. Lower glume apex acuminate. Upper glume ovate, 3–4 mm long, 0.5 length of adjacent fertile lemma, chartaceous. Upper glume apex obtuse, mucronate.

Florets. Fertile lemma ovate, 6–7 mm long, chartaceous, without keel, more than 3-veined. Lemma surface puberulous. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast, Brazil South.

Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Minas Gerais, Rio de Janeiro. Paraná.

Merostachys fistulosa Doell. *Mart. Fl. Braz.* 2. III. 209 (1880).

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 Synonomy Database: HT: *A.F. Regnell II, 1424*, 28 Dec 1859, Brazil: Minas Gerais (S (fragm., US-1021515); IT: S-1021516).

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, thick-walled, smooth. Lateral branches dendroid. Branch complement many, flabellate. Leaf-sheaths smooth, glabrous on surface. Leaf-sheath oral hairs lacking. Ligule a ciliolate membrane, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate or ovate, 7–13 cm long, 16–20 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 12–20 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, compressed slightly, 14–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, exceeding apex of florets. Lower glume lanceolate, 7–10 mm long, 0.5 length of upper glume, 1 -veined. Lower glume lateral veins absent. Upper glume ovate, 14–20 mm long, chartaceous. Upper glume surface pubescent, hairy at base. Upper glume apex caudate.

Florets. Fertile lemma lanceolate, 14–20 mm long, chartaceous, without keel, 5–7 -veined, more than 3-veined. Lemma surface scaberulous, pubescent. Lemma apex acuminate. Palea lanceolate, chartaceous. Palea keels contiguous above a sulcus, ciliolate. Rhachilla extension pilose. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, ciliate. Anthers 3. Stigmas 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Minas Gerais, Sao Paulo.

Merostachys glauca McClure & L. B. Smith. *Fl. Ilustr. Catar., Pt. 1, Gramin., Supl. Bambus.* 74 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. Reitz & R. Klein 2737*, 24 Feb 1956, Brazil: Santa Catarina: Palhoça, Pilões, mata, 200 m (US-2236977, US-2236076, US-2236075).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (147, Fig. 33).

Illustrations (Journals): *Novon* (5:83, Fig.4 (1995)).

Derivation (Clifford & Bostock 2007): L. *glauca*, bluish-green. Whole plant or any of its parts glaucous.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, woody. Culm-internodes terete, thin-walled, 30 cm long, glaucous or brown, mottled, smooth, distally glabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous, 20–29 cm long, 3 times as long as wide, glaucous, hairy on margins, ciliate on shoulders, shoulders with 5 mm long hairs. Culm-sheath ligule 1.5 mm high,

dentate. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths scaberulous, glabrous on surface. Leaf-sheath oral hairs ciliate, 2–4 mm long. Ligule a ciliolate membrane, 0.5 mm long, erose, truncate. Collar with external ligule. Leaf-blade base cuneate, symmetrical, with a brief petiole-like connection to sheath, petiole 0.4 cm long, petiole glabrous. Leaf-blades lanceolate or oblong, 10–13 cm long, 12–17 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface scabrous, rough abaxially, pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex caudate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 2–6 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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, compressed slightly, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 3.5 mm long, chartaceous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret elliptic, 5–7 mm long, sulcate, mucronate. Fertile lemma ovate, 6–8 mm long, chartaceous, pallid, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Catarina, Rio Grande do Sul. Santa Catarina.

Merostachys kleinii T. Sendulsky. *Novon,* 5(1): 84 (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 Synonomy Database: HT: (RB; IT: US-2773099). ; Brazil: Santa Catarina: Papanduva, E.R.F., 1 km ao sul da entrada para Papanduva, 800 m, 16 Jan. 1974 (fr), *Klein & Klein 11008* (HT: RB; IT: US).

Illustrations (Journals): *Novon* (5:85 Fig.5 (1995)).

Derivation (Clifford & Bostock 2007): in honor of Roberto Miguel Klein (1923-) Brazilian botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 20–35 mm diam., woody. Culm-internodes terete, thin-walled, grey, antrorsely scabrous. Lateral branches dendroid. Branch complement many (50–120), flabellate. Culm-sheaths present. Leaves 4–5 per branch. Leaf-sheaths tight, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs setose, deciduous. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.25 cm long. Leaf-blades lanceolate, 3–9 cm long, 7–15 mm wide. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–6 cm long, 20 mm wide, bearing 28–32 fertile spikelets on each. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, crowded, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 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 ovate, laterally compressed, 16 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, reaching apex of florets. Lower glume lanceolate, 4 mm long, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume

margins ciliate. Lower glume apex acute. Upper glume elliptic, 12–14 mm long, membranous, 15 -veined. Upper glume lateral veins with cross-veins. Upper glume surface puberulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 10 mm long, 6 mm wide, chartaceous, without keel, 16–17 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma surface puberulous. Lemma apex acute. Palea lanceolate, 11–12 mm long, 12–14 -veined. Palea keels ciliate. Palea surface glabrous. Rhachilla extension pubescent.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, ovoid, 6–7 mm long, yellow.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Santa Catarina.

Merostachys kunthii Rupr. *Mem. Acad. Petersb. Ser.* VI. v. 127. t. 10. f. 30. (1839).

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 Synonomy Database: HT: *H.C. Beyrich s.n.*, no date, Brazil: Rio de Janeiro: prope Corcovado (LE; IT: P, US-79089).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Karl Sigismund Kunth (1788–1850), German botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–900 cm long, woody. Culm-internodes terete, thin-walled, distally glabrous. Lateral branches dendroid. Branch complement many, flabellate. Culm-sheaths present. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs lacking. Leaf-sheath auricles erect, 1–2 mm long. Ligule a ciliolate membrane, 1–2 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 10–20 cm long, 10–40 mm wide. Leaf-blade venation with 12–16 secondary veins, without cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, unilateral, 10–12 cm long. Rhachis angular, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 14–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, reaching apex of florets. Lower glume lanceolate, 3 mm long. Lower glume apex acute. Upper glume lanceolate, 14–16 mm long, membranous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 14–16 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acute.

Flower and Fruit. Lodicules 3, ciliate. Anthers 3. Stigmas 2.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Rio de Janeiro.

Merostachys lanata T. Sendulsky. *Novon,* 7(3): 292 (1997).

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 Synonomy Database: HT [7 sheets]: (US-2810688, US-2810689, US-2810690, US-2810691, US-2810692, US-2810693, US-2810694;). ; Brazil: Bahia: Mun. Porto Seguro: on road to Eunápolis, forest on white sand, property of

Lewis and Iva Lee Hartman, 40 m, 9 May 1976 (fl), *T.R. Soderstrom, Russell & Hage 2191* (HT: US; IT: CEPEC, SP).

Illustrations (Journals): *Novon* (7: 294 Fig.5 (1997)).

Derivation (Clifford & Bostock 2007): L. *lana*, wool; *-ata*, possessing. Leaf-blades densely pubescent.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 1000–1500 cm long, 25–30 mm diam., woody. Culm-internodes terete, thin-walled, yellow and dark green, striped or mottled, smooth or retrorsely scabrous, distally pubescent. Culm-nodes swollen, bearded. Lateral branches dendroid. Branch complement many (50–80), flabellate. Culm-sheaths present, deciduous, 30 cm long, 3 times as long as wide, retrorsely scabrous, pubescent (woolly), with erect hairs, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule 1.5 mm high. Culm-sheath blade lanceolate, spreading or reflexed, 10–16 cm long, 8–10 mm wide. Leaves 1–5 per branch. Leaf-sheaths tight, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, erect, 6–8 mm long. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 10.5–13 cm long, 7–11 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–6 cm long. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3 mm long, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 7.5 mm long, 2 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 2 mm long, 0.33 length of upper glume, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 5.5 mm long, membranous, 9 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins transversely connected at apex. Upper glume apex acute.

Florets. Fertile lemma ovate, 7 mm long, 5 mm wide, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma surface pilose. Lemma apex acute. Palea ovate, 8.5 mm long, 8 -veined. Palea keels scaberulous.

Flower and Fruit. Lodicules 3. Anthers 3, 12 mm long, purple. Stigmas 2. Caryopsis with free brittle pericarp, ovoid, 3.5–4 mm long, light brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys latifolia R.W. Pohl. *Novon,* 2(2): 88 (1992).

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 Nicaragua. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *W.D. Stevens & J. Henrich 20418*, 24 May 1981, Nicaragua (CR-162213, MO).

Illustrations (Journals): *Novon* (2: 89, Fig. 3 (1992)).

Derivation (Clifford & Bostock 2007): L. *latus*, broad; *folium*, leaf. Leaf-blades broad or relatively broad with respect to related species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 150–400 cm long, 4–8 mm diam., woody. Culm-internodes terete, thin-walled, mid-green or purple, mottled, scaberulous. Culm-nodes bearded. Lateral branches dendroid. Bud complement 1. Branch complement many, flabellate. Culm-sheaths present. Leaves 2–6 per branch. Leaf-sheaths glabrous on surface or puberulous. Leaf-sheath oral hairs setose, 10–15 mm long. Ligule a ciliolate membrane, 0.1–0.6 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.6–1 cm long. Leaf-blades ovate, 15–20 cm long, 28–49 mm wide, dark green. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 5–7 cm long. Rhachis 1 mm wide, pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular, 2 -rowed. Spikelets pectinate, solitary or in pairs. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1 fertile florets, with a barren 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 elliptic, curved, laterally compressed, compressed slightly, 10–13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 1.5–3.5 mm long, chartaceous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, 4.7–7 mm long, chartaceous, 7 -veined, glabrous, acute. Fertile lemma ovate, 9–10 mm long, chartaceous, without keel, 11 -veined, more than 3-veined. Lemma surface puberulous or pubescent. Lemma apex acute. Palea 9.2–10.5 mm long, 1.1 length of lemma, chartaceous, 2 -veined. Palea keels contiguous above a sulcus. Rhachilla extension 6.5–10 mm long. Apical sterile florets distinct from fertile, 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Costa Rica, Guatemala, Honduras, Nicaragua, Panama.

Merostachys leptophylla T. Sendulsky. *Novon*, 7(3): 295 (1997).

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 Synonomy Database: HT [4 sheets]: (US-2810739, US-2810740, US-2810741, US-2810742;). ; Brazil: Bahia: Mun. Ibicara? between Ibicara?and Floresta azul, at 7 km from Ibicara? 270 m, 3 Apr 1976 (fl), *T.R. Soderstrom, Russell & Hage 2106* (HT: US; IT: CEPEC, SP).

Illustrations (Journals): *Novon* (7: 296 Fig.6 (1997)).

Derivation (Clifford & Bostock 2007): Gk. *leptos*, narrow; *phyllon,* leaf. Leaf-blades narrow.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 900–1200 cm long, 12–15 mm diam., woody. Culm-internodes terete, thin-walled, grey, smooth. Culm-nodes flush with internodes, pallid, glabrous. Lateral branches dendroid. Branch complement many (50–65), flabellate. Culm-sheaths present, deciduous, 12–13 cm long, 4 times as long as wide, smooth, setose on shoulders, shoulders with curved hairs, shoulders with 6–8 mm long hairs. Culm-sheath ligule 0.5 mm high. Culm-sheath blade lanceolate, deciduous, reflexed, 8.5–13 cm long, 7–8 mm wide, glabrous on surface or pubescent. Leaves 5–11 per branch. Leaf-sheaths tight, glabrous on surface. Leaf-sheath oral hairs setose, curly. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.15 cm long, petiole glabrous. Leaf-blades linear or lanceolate, 6.5–10 cm long, 4–8 mm wide, grey-green. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–3.5 cm long, bearing 4–9 fertile spikelets on each. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, distant. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5 mm long, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 8 mm long, 2.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 2 mm long, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate,

6.5 mm long, membranous, 7–9 -veined. Upper glume surface asperulous, glabrous. Upper glume apex attenuate.

Florets. Fertile lemma ovate, 7.5 mm long, coriaceous, yellow, without keel, more than 3-veined. Lemma apex acute. Palea 6.5 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys magellanica T. Sendulsky. *Novon,* 5(1): 86 (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 Synonomy Database: Brazil: State of São Paulo: Município Anhembi, Fazenda Barreiro Rico, 22.40'S, 48.09'W, 510 m, 11 Jan. 1988 (fr), *Reis de Magalhães s.n.* (HT: SP-248339; IT: BLA, BR, IBGE, ICN, K, MO, NY, P, R, RB, UB, UEC, US, W, WIS).

Illustrations (Journals): *Novon* (5:87, Fig.6 (1995)), Hoehnea (40: 327, fig. 6 (2013)).

Derivation (Clifford & Bostock 2007): L. *-ica*, belonging to. From the Straits of Magellan.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–800 cm long, 12–14 mm diam., woody. Culm-internodes terete, thin-walled, 60–80 cm long, yellow and dark green, striped and mottled. Culm-nodes pubescent. Lateral branches dendroid. Branch complement many, flabellate, with subequal branches, thinner than stem. Culm-sheaths present, deciduous, 25–30 cm long, 5 times as long as wide, green, hairy on margins. Culm-sheath blade lanceolate, reflexed, 5–12 cm long, 12–15 mm wide, attenuate. Leaves 4–7 per branch. Leaf-sheaths tight, striately veined, glabrous on surface. Leaf-sheath oral hairs setose, erect, 3–10 mm long, dark. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades linear or lanceolate, 8–17 cm long, 15–20 mm wide. Leaf-blade venation indistinct, without cross veins. Leaf-blade surface glabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle cylindrical at apex or tipped by a glumaceous appendage. Racemes 1, single, arcuate, unilateral, 6–18 cm long. Rhachis pilose on surface, terminating in a sterile spikelet. Rhachis hairs white. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate or spreading (at maturity), solitary. Fertile spikelets pedicelled. Pedicels present, oblong, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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 ovate, laterally compressed, 11–14 mm long, 1.8–2(–4) mm wide, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 2.5 mm long, pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 3–3.5 mm long, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume ovate, 5.5–7.5 mm long, 0.5 length of adjacent fertile lemma, chartaceous, 9 -veined. Upper glume surface pubescent. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma oblong, 10–11.5 mm long, 5–5.5 mm wide, chartaceous, shiny, without keel, 14–15 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Palea 10.5–12.5 mm long, chartaceous, 8–12 -veined. Palea keels contiguous above a sulcus, ciliolate. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 3.3 mm long, veined, ciliate. Anthers 3, 9 mm long. Stigmas 2. Caryopsis with free brittle pericarp, oblong, sulcate on hilar side, 6–7 mm long, apex rostrate. Embryo 0.1 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.
Sao Paulo.

Merostachys magnispicula T. Sendulsky. *Novon,* 7(3): 296 (1997).

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 Synonomy Database: Brazil: Bahia: Ilheus, Salobrinho, 18 Dec 1968 (fl), *Almeida & Santos 289* (HT: CEPEC).

Illustrations (Journals): *Novon* (7: 297 Fig.7 (1997)).

Derivation (Clifford & Bostock 2007): L. *magnus*, large. Spikelets large for the genus.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete. Lateral branches dendroid. Branch complement several, flabellate. Culm-sheaths present, deciduous. Leaf-sheaths tight. Leaf-sheath oral hairs scanty. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 10 cm long, petiole glabrous. Leaf-blades lanceolate or elliptic, 15–30 cm long, 28–45 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 8–12 cm long. Rhachis angular, puberulous on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, puberulous.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 13–15 mm long, 4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 9 mm long, chartaceous, without keels, 9–11 -veined. Lower glume lateral veins prominent, transversely connected at apex. Lower glume surface glabrous. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume ovate, 11–12 mm long, membranous, 17 -veined. Upper glume lateral veins transversely connected at apex. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Fertile lemma ovate, 10 mm long, 5 mm wide, cartilaginous, yellow, shiny, without keel, 15–17 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma margins woolly, hairy above. Lemma hairs white. Lemma apex acute. Palea 11 mm long, cartilaginous, 11 -veined. Palea keels woolly, adorned above. Palea surface woolly, hairy on margins, hairy above. Rhachilla extension 6.5 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Merostachys maguireorum McClure. *Mem. N. Y. Bot. Gard.* x. No. 5, p. 5 (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).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire & B. Maguire fil. 29163*, 3 May 1949, Venezuela: Amazonas (US-2040197; IT: NY).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (153, Fig. 109).

Derivation (Clifford & Bostock 2007): in honor of Basset Macguire and Basset Macguire, Jr.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1200 cm long, woody. Culm-internodes terete. Culm-nodes bearded. Lateral branches dendroid. Branch complement many, flabellate, with subequal branches. Culm-sheaths present. Leaf-sheaths striately veined, papillose. Leaf-sheath oral hairs scanty, 1–2 mm long. Ligule

a ciliolate membrane, 0.5 mm long, brown, scaberulous on abaxial surface, truncate. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate. Leaf-blade midrib scarcely raised beneath. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle 2–4 cm long, glabrous. Racemes 1, single, arcuate, unilateral, 4–8 cm long. Rhachis angular, puberulous on surface. Spikelet packing broadside to rhachis, contiguous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long, ciliate.

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, laterally compressed, 15–16 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 5–6 mm long, chartaceous, 1-keeled, 3 -veined. Lower glume apex attenuate, awned, 1 -awned, awn 1 mm long. Upper glume lanceolate, 10–12 mm long, chartaceous, without keels. Upper glume primary vein conspicuous. Upper glume surface asperulous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate or oblong, 13–14 mm long, chartaceous, keeled, more than 3-veined. Lemma surface pubescent. Lemma apex acuminate, mucronate. Palea 1 length of lemma. Palea keels contiguous above a sulcus. Palea surface papillose. Palea apex ciliate.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Merostachys medullosa T. Sendulsky. *Novon,* 7(3): 298 (1997).

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 Synonomy Database: HT [6 sheets]: (US-2810466, US-2810467, US-2810468, US-2810469, US-2810470, US-2810471;). ; Brazil: Bahia: Mun. Porto Seguro: forested slopes of "morro" on Fazenda Carvalho, ca. 26 km W of town of Monte Pascoal, at end of road that intersects with BR 101 in Monte Pascoal, 380–460 m, 15 May 1976 (fl), *T.R. Soderstrom, Russell & Hage 2212* (HT: US; IT: CEPEC, SP).

Illustrations (Journals): *Novon* (7: 299 Fig.8 (1997)).

Derivation (Clifford & Bostock 2007): L. *medulla*, bone-marrow; *-osa*, abundance. Culm internodes with an abundance of soft pith.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching, 1000–1500 cm long, 20 mm diam., woody. Culm-internodes terete, thick-walled, light green and dark green, mottled, retrorsely scabrous. Culm-nodes swollen, pallid, bearded. Lateral branches dendroid. Branch complement many (12–54), flabellate. Culm-sheaths present, deciduous, 50–75 cm long, 10–15 times as long as wide, setose on shoulders, shoulders with 15 mm long hairs. Culm-sheath ligule 2–2.5 mm high. Culm-sheath blade linear, deciduous, reflexed, 13 cm long, 4 mm wide. Leaves 10–17 per branch. Leaf-sheaths tight, pubescent, outer margin hairy. Leaf-sheath oral hairs setose, 12–15 mm long, dark. Leaf-sheath auricles erect. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate, 7–11.5 cm long, 16–20 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–10 cm long, 20 mm wide. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 16 mm long, 4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 6 mm long, chartaceous, without keels, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower

glume margins ciliate. Lower glume apex setaceously acuminate. Upper glume ovate, 13 mm long, membranous, 7 -veined. Upper glume surface hispid. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma ovate, 15 mm long, 8 mm wide, chartaceous, light brown, without keel, 17 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma surface scaberulous, rough below, puberulous. Lemma margins ciliate. Lemma hairs dark brown. Lemma apex acute. Palea 16 mm long. Palea keels ciliolate. Palea surface scaberulous (above), pilose, hairy at base. Rhachilla extension 16 mm long.

Flower and Fruit. Lodicules 3. Anthers 3, 9 mm long, purple. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys multiramea Hackel. *Fedde, Repert. Nov. Sp.* vii. 326 (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C. Juergens G. 308*, no date, Brazil: Rio Grande do Sul (W; IT: US-79088, US-1021518).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (65), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (147, Fig. 33).

Illustrations (Journals): *Novon* (5:89, Fig.7 (1995)).

Derivation (Clifford & Bostock 2007): L. *multus*, many; *ramus*, branch. Culms much branched.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1200–1500 cm long, 30–40 mm diam., woody. Culm-internodes terete, thick-walled, 30–60 cm long, antrorsely scabrous. Lateral branches dendroid. Bud complement 1. Branch complement many, flabellate, with subequal branches, thinner than stem. Culm-sheaths present, deciduous. Culm-sheath blade lanceolate, constricted at base, reflexed. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, deciduous. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3–0.5 cm long, petiole glabrous. Leaf-blades oblong, 5–13 cm long, 8–18 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, unilateral, 3–6 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, regular, 2 -rowed. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1–2 fertile florets, with a barren rhachilla extension. 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 elliptic, laterally compressed, 10–13 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume ovate, 0.3–0.4 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 0.9 length of adjacent fertile lemma, chartaceous, without keels, 9 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to upper glume, elliptic, 1 length of fertile lemma, chartaceous, 15–17 -veined, acute. Fertile lemma elliptic, 10–13 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pubescent, hairy above. Lemma hairs red. Lemma apex acute. Palea linear, 1 length of lemma, chartaceous, 2 -veined. Palea keels approximate. Rhachilla extension 0.7–0.8 length of fertile floret.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, apex unappendaged.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South.

Goias, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Distrito Federal, Goiás. Bahia. Rio de Janeiro, Sao Paulo. Paraná. Misiones.

Merostachys neesii Rupr. *Mem. Acad. Petersb. Ser.* VI. v. 127. t. 10. f. 30 (1839).

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 Synonomy Database: HT: *F. Sellow s.n.*, no date, Brazil (LE; IT: B, P, US-79087).

Illustrations (Journals): Hoehnea (40: 329, fig. 7 (2013)).

Derivation (Clifford & Bostock 2007): in honor of Christian Gottfried Daniel Nees von Esenbeck (1766–1858) German botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 500–1000 cm long, 30 mm diam., woody. Culm-internodes terete, thin-walled. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Leaves 4–10 per branch. Leaf-sheaths tight. Leaf-sheath oral hairs lacking. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 13–18 cm long, 15–25 mm wide. Leaf-blade venation without cross veins.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 15–19 cm long. Rhachis terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear, 5–6.5 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.7–1.8 mm long, chartaceous. Upper glume apex acuminate, awned, 1 -awned.

Florets. Fertile lemma lanceolate, 17 mm long, 7 mm wide, chartaceous, without keel, more than 3-veined. Palea chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, ovoid, 10 mm long, dark brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo Parana. Rio de Janeiro, Sao Paulo.

Merostachys pauciflora Swallen. *Amer. Midl. Nat.* xxix. 469 (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).

TYPE from British Honduras. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: British Honduras: Stann Creek Dist.: Stann Creek Valley, on bank of Big Eddy Creek, 12 Jan 1941, *Gentle 3485* (HT: US-145106; IT: LL, MICH).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *paucus*, few; *flos*, flower. With few florets per spikelt or few spikelets per inflorescence.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 20–35 mm diam., woody. Culm-internodes terete, thin-walled, mid-green,

antrorsely scabrous, distally pubescent. Lateral branches dendroid. Branch complement many, flabellate. Culm-sheaths present. Leaves 3–5 per branch. Leaf-sheaths puberulous, outer margin hairy. Leaf-sheath oral hairs setose, 5–11 mm long. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.3 cm long, petiole glabrous. Leaf-blades lanceolate, 8–10 cm long, 9–13 mm wide. Leaf-blade surface papillose, rough abaxially, glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–6 cm long, bearing 1–8 fertile spikelets on each. Rhachis angular, 0.6–0.8 mm wide, villous on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, 10–17 mm long, villous.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 1 fertile florets, with a barren 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 elliptic, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 0.1–0.2 mm long, 0.01 length of adjacent fertile lemma, membranous.

Florets. Basal sterile florets 2 or more, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret similar to fertile lemma, ovate, chartaceous, 7 -veined, acute. Lemma of upper sterile floret 9.5–10 mm long. Fertile lemma ovate, 9.5–10 mm long, chartaceous, shiny, without keel, 15 -veined, more than 3-veined. Lemma margins pubescent, hairy above. Lemma apex acute. Rhachilla extension 10 mm long, villous, hairy above. Apical sterile florets distinct from fertile, 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Belize.

Merostachys petiolata Doell. *Mart. Fl. Bras.* ii. III. 216. (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *A.F.M. Glaziou 6926*, no date, Brazil: Rio de Janeiro (US-734827).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (144, Fig. 32).

Derivation (Clifford & Bostock 2007): L. *petiolus*, little leg; *-ata,* possessing. Leaf-blades with a pseudopetiole.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, pendulous at the tip, 700–800 cm long, 10–15 mm diam., woody. Culm-internodes terete, thin-walled, retrorsely scabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths transversely wrinkled, outer margin hairy. Leaf-sheath oral hairs setose, erect. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base symmetrical, with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades linear or lanceolate, 4–12 cm long, 6–9 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface glabrous or puberulous, hairy abaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes, exserted or embraced at base by subtending leaf. Racemes 1, single, arcuate, unilateral, 2–10 cm long. Rhachis puberulous on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 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 lanceolate, laterally compressed, compressed slightly, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 2–4 mm long, chartaceous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret ovate, 2–4 mm long, 5 -veined, acuminate. Fertile lemma oblong or ovate, 4–6 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acuminate. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast, Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Bahia. Minas Gerais, Rio de Janeiro, Sao Paulo.

Merostachys pilifera T. Sendulsky. *Novon,* 5(1): 90 (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 Synonomy Database: Brazil: rio Grande do Sul: Mun. São Francisco de Paula, Primeiro Distrito, São Francisco de Paula, Morro da Pera (uppermost part of Serra Geral), 29.27'S 50.35'W, alt. 970 m, 11 May 1972 (fl)., *Soderstrom & Sucre 1987* (HT: RB).

Illustrations (Journals): *Novon* (5:91, Fig.8 (1995)).

Derivation (Clifford & Bostock 2007): L. *pilus*, a hair; *fero*, bear. Hairy in some respect.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1500–2000 cm long, 50 mm diam., woody. Culm-internodes terete, 60–65 cm long, retrorsely scabrous, distally pubescent. Culm-nodes with distinct supra-nodal ridge. Lateral branches dendroid. Branch complement many (50), flabellate. Culm-sheaths present. Leaves 2–3 per branch. Leaf-sheaths tight, puberulous, outer margin glabrous. Leaf-sheath oral hairs setose, 5–6 mm long. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.25 cm long, petiole pubescent. Leaf-blades lanceolate, 2–8 cm long, 4–12 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–3.5 cm long. Rhachis angular, pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, pubescent.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 13–14 mm long, 4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 2.5 mm long, chartaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex setaceously acuminate. Upper glume lanceolate, 9 mm long, membranous, 11 -veined. Upper glume lateral veins with cross-veins. Upper glume apex acute, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma lanceolate, 10 mm long, 7 mm wide, chartaceous, without keel, 15 -veined, more than 3-veined. Lemma surface puberulous. Lemma margins ciliate, hairy above. Lemma apex acute. Palea lanceolate, 11 mm long, 10–12 -veined. Palea keels ciliolate. Palea surface puberulous, hairy on back.

Flower and Fruit. Lodicules 3, 2.5 mm long, ciliate. Anthers 3, 10 mm long. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Rio Grande do Sul.

Merostachys pluriflora Munro ex E. G. Camus. *Les Bambusees,* 77 (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *C. Gaudichaud-Beaupre 97*, no date, Brazil: Santa Catarina: Ilha de Santa Catarina (hojo municipio de Florianópolis) (P; ILT: US-79085, US-79086). LT designated (as holotypus) by McClure & Smith, Fl. Ilustr. Catarin. 1(GRAM-Supl.): 68 (1967).

ST: *Herb. Maire ex Herb. Bureau 1875*, Chili (P). Mistakingly said to originate in Chile..

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (138, Fig. 31).

Illustrations (Journals): Hoehnea (40: 331, fig. 8 (2013)).

Derivation (Clifford & Bostock 2007): L. *plus,* several; *flos*, flower. Florets several per spikelet.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, woody. Culm-internodes terete, solid. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths striately veined, smooth, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate, deciduous. Ligule a ciliolate membrane, 1 mm long, obtuse. Collar with external ligule. Leaf-blade base cuneate, asymmetrical, with a brief petiole-like connection to sheath, petiole 0.5–0.6 cm long, petiole glabrous. Leaf-blades oblong, 12–25 cm long, 20–27 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface scaberulous, glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, arcuate, unilateral, 5–7 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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, laterally compressed, compressed slightly, 20–25 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume orbicular, 1.5 mm long, chartaceous, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret ovate, 9 mm long, pallid, sulcate, acute. Fertile lemma ovate, 15 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast, Brazil South.

Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Rio de Janeiro, Sao Paulo. Santa Catarina.

Merostachys polyantha McClure. *Smithsonian Contrib. Bot.*, 9: 91 (1973).

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 Synonomy Database: ST: *A. Lima 62–4122*, 24 Aug 1962, Brazil: São Paulo: Mun. Mongagu? Serra de Mongagu? pr. Praia Grande (K, US-2959595, US-2959596, US-3048742).

ST: *Flavia Tórgo s.n.*, 19 Aug 1926, Brazil: S? Paulo: Mun. Mongagu? Serra de Mongagu? pr. Praia Grande (HB, US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *polys*, many; *anthos*, flower. Spikelets with more than the expected number of florets.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 600–800 cm long, woody. Culm-internodes terete, thin-walled, light green or purple, mottled, retrorsely scabrous, distally pruinose or pubescent. Lateral branches dendroid. Bud complement 1. Branch complement many, flabellate. Culm-sheaths present, deciduous but leaving a persistent girdle, hairy on margins, auriculate, setose on shoulders, shoulders with 10–12 mm long hairs. Culm-sheath ligule ciliolate. Leaf-sheaths striately veined, retrorsely scabrous, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose. Leaf-sheath auricles falcate. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base broadly rounded or cordate, asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4–0.8 cm long, petiole glabrous or pubescent. Leaf-blades oblong, 8–15 cm long, 20–35 mm wide. Leaf-blade midrib indistinct. Leaf-blade venation with 10–16 secondary veins, with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, bracteate at pedicel base. Peduncle pubescent above. Racemes 1, single, arcuate, unilateral, 2.5–6.5 cm long, bearing 10–26 fertile spikelets on each. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, crowded, regular, 2 -rowed. Rhachis internodes 1.5–4 mm long. Spikelets pectinate. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets barren, 7–8 in number.

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 cuneate, laterally compressed, compressed slightly, 20–55 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes clavate, 2–4 mm long, pubescent.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4 mm long, chartaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume margins ciliate. Lower glume apex acuminate. Upper glume ovate, 6–9 mm long, chartaceous, 1-keeled, 5 -veined. Upper glume surface puberulous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 10–20 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma margins ciliolate, hairy above. Lemma apex acute. Palea 1 length of lemma, coriaceous, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, veinless or veined. Anthers 3, purple. Stigmas 2. Ovary glabrous. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo.

Merostachys procerrima T. Sendulsky. *Novon,* 7(3): 300 (1997).

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 Synonomy Database: HT [4 sheets]: (US-2810701, US-2810702, US-2810703, US-2810704;). ; Brazil: Bahia: Mun. Porto Seguro: Reserva Biológica do Pau Brazil (CEplac), primary hygrophilic forest with tall trees, 35 m, 7 May 1976 (st), *T.R. Sodertrom, Russell & Hage 2187* (HT: US; IT: CEPEC, SP).

Illustrations (Journals): *Novon* (7: 301 Fig.9 (1997)).

Derivation (Clifford & Bostock 2007): L. tallest. Taller than related species.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms leaning, 300–400 cm long, 15 mm diam., woody. Culm-internodes terete, thin-walled, grey, antrorsely scabrous. Culm-nodes swollen. Lateral branches dendroid. Branch complement three or several, flabellate. Culm-sheaths present, deciduous, 18 cm long, 3 times as long as wide, antrorsely scabrous. Culm-sheath blade lanceolate, deciduous, reflexed, 6–7 cm long, 7 mm wide. Leaves 3–8 per branch. Leaf-sheaths tight, without keel or keeled. Leaf-sheath oral hairs setose, erect, 10 mm long. Leaf-sheath auricles erect, 3 mm long. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.7 cm long.

Leaf-blades lanceolate or oblong, 7–20 cm long, 22–30 mm wide, light green. Leaf-blade surface smooth, glabrous. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys ramosissima T. Sendulsky. *Novon,* 7(3): 300 (1997).

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 Synonomy Database: HT [6 sheets]: (US-2810541, US-2810542, US-2810543, US-2810544, US-2810545, US-2810546;,). ; Brazil: Bahia: Mun. Ubaira, 3 km e of Ubaira and 11 km W of Matuipe, 425 m, 26 Apr 1976 (fl), *T.R. Soderstrom, Russell & Hage 2164* (US; IT: CEPEC, SP).

Illustrations (Journals): *Novon* (7: 303 Fig.10 (1997)).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms arching or leaning, 1200–1500 cm long, 20–35 mm diam., woody. Culm-internodes terete, thin-walled, 98 cm long, yellow. Lateral branches dendroid. Branch complement many, flabellate. Culm-sheaths present, tardily deciduous, 40 cm long, 4 times as long as wide, glabrous, auriculate, setose on shoulders, shoulders with 5–6 mm long hairs. Culm-sheath ligule 0.5 mm high. Culm-sheath blade lanceolate, deciduous, reflexed, 12 cm long, 18 mm wide, hispid. Leaves 12 per branch. Leaf-sheaths tight, keeled, outer margin hairy. Leaf-sheath oral hairs setose, curly, 5 mm long, dark. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 12–31 cm long, 10–40 mm wide. Leaf-blade surface scaberulous, glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 8 cm long, 42 mm wide. Rhachis angular, 2.5 mm wide, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Spikelets spreading, in pairs. Fertile spikelets pedicelled. Pedicels present, fused to each other, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 20–22 mm long, 2.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 1.5 mm long, chartaceous, without keels, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume ovate, 10 mm long, membranous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 13 mm long, 7 mm wide, chartaceous, without keel, 17 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma surface scaberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn 3 mm long overall. Palea 13 mm long, 8 -veined. Palea surface glabrous. Palea apex with excurrent keel veins. Rhachilla extension 12 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, 12 mm long, yellow.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia.

Merostachys retrorsa McClure. *Mem. N. Y. Bot. Gard.* x. No. 5, p. 6 (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).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark & J.J. Wurdack 117*, 16 Jan 1955, Venezuela: Bolívar: Chimant?Massif, on portage trail along Río Tirica (US-2182093, US-2182092; IT: F, NY, UB).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (154, Fig. 110), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (329, Fig. 60).

Derivation (Clifford & Bostock 2007): L. turned backwards. With retrorse hairs on the leaf-sheaths.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 200–250 cm long, woody. Culm-internodes terete, distally glabrous. Lateral branches dendroid. Branch complement many, flabellate. Culm-sheaths present. Leaf-sheaths papillose, outer margin hairy. Leaf-sheath oral hairs setose, 5–10 mm long. Ligule a ciliolate membrane, 0.2 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.2–0.4 cm long. Leaf-blades oblong or ovate, 10–20 cm long, 20–38 mm wide. Leaf-blade midrib indistinct. Leaf-blade venation with obscure cross veins. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, bracteate at pedicel base. Peduncle 6–17 cm long. Racemes 1, single, unilateral, 4–8 cm long. Rhachis angular, villous on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous. Rhachis internodes 2–10 mm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 16–17 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, clasping, 6–7 mm long, chartaceous, 1-keeled, 0 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume margins ciliate. Lower glume apex acute. Upper glume lanceolate, 8–9 mm long, membranous, 1-keeled, 5 -veined. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma lanceolate, 13–14 mm long, coriaceous, shiny, without keel, rounded except near apex, more than 3-veined. Lemma surface glabrous. Lemma apex acute, mucronate. Palea 1 length of lemma. Palea surface pilose, hairy above. Rhachilla extension 1 mm long.

Flower and Fruit. Lodicules 3, 3–4 mm long, veined, ciliate. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Guyana, Venezuela.

Merostachys riedeliana Rupr. ex Doell. *Mart. Fl. Bras.* ii. III. 213. (1880).

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 Synonomy Database: HT: *L. Riedel 1856*, Jan 1834, Brazil: Sâo Paulo: pr. St. Carlos, in sylvis (LE-TRIN-3187.01; IT: US-79084, US-1021519).

Illustrations (Journals): Hoehnea (40: 333, fig. 9 (2013)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Ludwig Riedel (1790–1861) German plant collector and traveller.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–1000 cm long, woody. Culm-internodes terete, thick-walled. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaf-sheaths striately veined, smooth, glabrous on surface. Leaf-sheath oral hairs setose, erect, 10–12 mm long. Ligule a ciliolate membrane, 2–3 mm long, obtuse. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole glabrous. Leaf-blades lanceolate or ovate, 8–15 cm long, 20–40 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 8–15 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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 oblong, laterally compressed, compressed slightly, 14–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume linear or lanceolate, 0.25 length of upper glume, 1 -veined. Lower glume surface puberulous. Lower glume apex acute. Upper glume lanceolate, 14–18 mm long, 1 length of adjacent fertile lemma, chartaceous, 9–13 -veined. Upper glume surface puberulous. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, 14–18 mm long, chartaceous, without keel, more than 3-veined. Lemma surface scaberulous, puberulous, hairy above. Lemma margins ciliolate, hairy above. Lemma apex acute. Palea chartaceous. Palea keels contiguous above a sulcus, ciliolate. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, glabrous. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp, oblong, 8–10 mm long, glabrous.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo. Minas Gerais, Sao Paulo.

Merostachys rondoniensis T. Sendulsky. *Novon,* 7(3): 305 (1997).

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 Synonomy Database: HT: *Caldeon 2780*, 7 July 1979, Brazil (MO-3634104, MO-3634103, MO-3634102; IT: US-3080680,). HT (3 sheets).

Illustrations (Journals): *Novon* (7: 306 Fig.12 (1997)).

Derivation (Clifford & Bostock 2007): L *-ensis*, denoting origin. From Rondonia, Brazil.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms 15 mm diam., woody. Culm-internodes terete, thin-walled, retrorsely scabrous. Culm-nodes swollen, brown, pubescent. Lateral branches dendroid. Branch complement many (27–30), flabellate. Culm-sheaths present, deciduous, 12 cm long, 2–3 times as long as wide, brown, pilose, setose on shoulders, shoulders with 5 mm long hairs. Culm-sheath ligule 1 mm high. Leaves 4–5 per branch. Leaf-sheaths tight, keeled, transversely wrinkled, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs setose, spreading or curly, 7–8 mm long, dark. Ligule a ciliolate membrane, 0.5 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 4–13.5 cm long, 10–24 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 8–9 cm long. Rhachis angular, pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, laterally compressed, 15–17 mm long, 4 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume elliptic, 7 mm long, chartaceous, 1-keeled, 5 -veined. Lower glume apex acute. Upper glume elliptic, 9 mm long, membranous, 9 -veined. Upper glume surface pubescent, hairy above. Upper glume apex acute.

Florets. Fertile lemma ovate, 14 mm long, 7 mm wide, chartaceous, without keel, 18–19 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma surface granulose. Lemma

margins ciliate. Lemma apex acute. Palea 13–14 mm long, 10 -veined. Rhachilla extension 11 mm long, pubescent.

Flower and Fruit. Lodicules 3. Anthers 3, 11 mm long, brown. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil North.

Rondonia.

Merostachys scandens T. Sendulsky. *Novon,* 5(1): 92 (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 Synonomy Database: HT: *Sendulsky 1319*, 6 Dec 1973, Brazil: State of São Paulo: Município de São Paulo, 10 km S of center of city of São Paulo, in grounds of the Instituto de Botânica, Parque do Estado (SP; IT: BLA, BR, IBGE, ICN, ISC, K, MEXU, MO, NY, P, R, RB, UB, UEC, US-2926656, W, WIS).

Illustrations (Journals): *Novon* (5:93, Fig.9 (1995)), Hoehnea (40: 335, fig. 10 (2013)).

Derivation (Clifford & Bostock 2007): L. *scando*, climb up. Of scrambling habit.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, pendulous at the tip, 600 cm long, 10–30 mm diam., woody. Culm-internodes terete, thin-walled, grey and dark green, striped. Culm-nodes pubescent. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous, 15–25 cm long, 3 times as long as wide, glabrous, glabrous on margins, setose on shoulders, shoulders with curved hairs. Culm-sheath ligule 1 mm high. Culm-sheath blade linear, deciduous, reflexed, 8–12 cm long, 4–5 mm wide, attenuate. Leaves 5–6 per branch. Leaf-sheaths tight, transversely wrinkled, glabrous on surface, outer margin glabrous. Leaf-sheath oral hairs ciliate, deciduous, 3 mm long. Ligule a ciliolate membrane, 0.8 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.25 cm long, petiole pubescent. Leaf-blades lanceolate, 3.5–10 cm long, 8–14 mm wide, glaucous. Leaf-blade venation with 4–6 secondary veins, without cross veins. Leaf-blade surface scaberulous, rough adaxially, glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–6 cm long, bearing 17–18 fertile spikelets on each. Rhachis angular, pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 13–14 mm long, 3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 4.5–5 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex attenuate. Upper glume elliptic, 9–10 mm long, chartaceous, 15 -veined. Upper glume primary vein pubescent. Upper glume surface scabrous, rough above. Upper glume margins ciliolate. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma elliptic, 11 mm long, 5–5.5 mm wide, chartaceous, without keel, 19–23 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma surface pubescent. Lemma margins ciliate. Palea linear, 11 mm long, chartaceous, 12 -veined. Palea keels contiguous above a sulcus, ciliolate. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo.

Merostachys sellovii Munro. *Trans. Linn. Soc. London* 26(1): 51 (1868).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Paraguay, Cabo de Butucaray: Sellow.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Friedrich Sellow (1789–1831) German botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil Northeast. Paraguay. Bahia.

Merostachys skvortzovii T. Sendulsky. *Novon,* 5(1): 94 (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 Synonomy Database: Brazil: Estado de São Paulo: São Paulo Parque do Estado e Jardim Botânico, 20 Oct. 1973., *Skvortzov s.n.* (HT: SP-120954).

Illustrations (Journals): *Novon* (5:95, Fig.10 (1995)), Hoehnea (40: 338, fig. 11 (2013)).

Derivation (Clifford & Bostock 2007): in honor of Alexei Konstantinovich Skvortsov (1920-) Russian botanist.

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, 400–600 cm long, 20–30 mm diam., woody. Culm-internodes terete, thin-walled, mid-green and dark green, striped, antrorsely scabrous. Culm-nodes with distinct supra-nodal ridge, pubescent. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous, 15–20 cm long, 3 times as long as wide, auriculate, ciliate on shoulders. Culm-sheath ligule 1 mm high. Culm-sheath blade lanceolate, deciduous, reflexed, 6–10 cm long, 10 mm wide. Leaves 5–7 per branch. Leaf-sheaths tight, striately veined, glabrous on surface. Leaf-sheath oral hairs setose, 5–6 mm long. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long, petiole pubescent. Leaf-blades lanceolate, 3–11 cm long, 6–16 mm wide. Leaf-blade venation with 6–8 secondary veins, without cross veins. Leaf-blade surface scaberulous, rough adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 1.5–3 cm long, bearing 16–18 fertile spikelets on each. Rhachis pilose on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, ciliate.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, acuminate, 10–12 mm long, 3 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume lanceolate, 1.5 mm long, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex acuminate. Upper glume lanceolate, 8–9 mm long, chartaceous, 9–11 -veined. Upper glume lateral veins transversely connected at apex. Upper glume surface scabrous, rough at apex, puberulous. Upper glume apex acuminate, awned, 1 -awned, awn 1 mm long.

Florets. Fertile lemma lanceolate, 9 mm long, 6 mm wide, chartaceous, without keel, 16–18 -veined, more than 3-veined. Lemma lateral veins transversely connected at apex. Lemma surface puberulous. Lemma margins ciliate. Palea 10 mm long, chartaceous, 13–14 -veined. Palea keels contiguous above a sulcus, ciliolate. Rhachilla extension 8 mm long. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3, 2–3 mm long. Anthers 3, 6 mm long. Stigmas 2. Caryopsis with free brittle pericarp, ovoid, 5 mm long, grey, smooth, apex rostrate. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast, Brazil South.

Sao Paulo. Paraná, Rio Grande do Sul.

Merostachys sparsiflora Rupr. *Mem. Acad. Petersb. Ser. VI*. v. 127. t. 10. f. 32. (1839).

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 Synonomy Database: HT: *L. Riedel s.n.*, Brazil: Bahia (LE?; IT: K, US-79083).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (18, Fig. 3).

Derivation (Clifford & Bostock 2007): L. *sparsus,* few; *flos,* flower; Florets few per spikelet.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–800 cm long, woody. Culm-internodes terete. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or oblong, 6.5–20 cm long, 10–20 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–18 cm long. Rhachis terminating in a sterile spikelet. Spikelet packing broadside to rhachis, lax, 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 lanceolate, laterally compressed, 10–12 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, reaching apex of florets. Lower glume ovate, 6 mm long, chartaceous. Lower glume apex acute or acuminate. Upper glume ovate, 11 mm long, 1 length of adjacent fertile lemma, chartaceous. Upper glume apex acuminate.

Florets. Fertile lemma ovate, 8 mm long, chartaceous, without keel, more than 3-veined. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia, Sao Paulo Parana. Bahia.

Merostachys speciosa Spreng. *Syst.* 249. (1825).

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 Synonomy Database: LT: *F. Sellow s.n.*, no date, Brazil; brasilia aequinoctiales (LE (photo, US)). LT designated by Sendulsky, Kew Bull. 56(3): 630 (2001).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (147, Fig. 33).

Illustrations (Journals): *Smithsonian Contributions to Botany* (9: 89, Fig. 37 (1973)), Hoehnea (40: 340, fig. 12 (2013)).

Derivation (Clifford & Bostock 2007): L. *species*, beauty; *-osa,* abundance. Showy in some respect, in particular the inflorescence.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1500 cm long, 20 mm diam., woody. Culm-internodes terete, thin-

walled, 35 cm long, striate, antrorsely scabrous. Culm-nodes glabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths striately veined, transversely wrinkled, outer margin hairy. Leaf-sheath oral hairs setose, erect, 10–15 mm long. Ligule a ciliolate membrane, 1 mm long, obtuse. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4–0.6 cm long, petiole glabrous. Leaf-blades lanceolate or ovate, 12–20 cm long, 15–33 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface scaberulous, rough on both sides, glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, arcuate, unilateral, 8–15 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 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 lanceolate, laterally compressed, compressed slightly, 18–20 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume lanceolate, 4–5 mm long, chartaceous, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret ovate, 14–20 mm long, acuminate. Fertile lemma oblong or ovate, 16–18 mm long, chartaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma apex acuminate. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast.

Sao Paulo Parana, Catarina, Rio Grande do Sul. Sao Paulo.

Merostachys tatianae Santos-Goncalves, Caralho-Okano & Filgueras. Syst. Bot. 37 (4): 938 (2012).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Mineas Gerais: Municipio de Marlieria, Parque Estadual do Rio Doce, 23 Aug 1999, *A.P. Santos-Goncalves 191* (holo: VIC; iso: SP).

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Merostachys ternata Nees. *Agrost. Bras.* 529. (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *K.F.P. von Martius 1818*, no date, Brazil: São Paulo (US-79081).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984, L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (138, Fig. 31).

Images: E.J.Judziewicz, E.J., *American Bamboos* (1999);.

Derivation (Clifford & Bostock 2007): L. *terni*, three each; *-ata,* possessing. Spikelets in clusters of three.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 600–1200 cm long, 8–13 mm diam., woody. Culm-internodes terete, thin-walled, antrorsely scabrous. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present, deciduous. Culm-sheath blade lanceolate, reflexed. Leaf-sheaths striately veined, smooth, pubescent, outer margin hairy. Leaf-sheath oral hairs setose, 20–40 mm long. Ligule a

ciliolate membrane. Collar with external ligule. Leaf-blade base broadly rounded, asymmetrical, with a brief petiole-like connection to sheath, petiole 1 cm long, petiole glabrous. Leaf-blades lanceolate or oblong or ovate, 15–32 cm long, 50–100 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 10–16 cm long. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, in pairs or in threes. Fertile spikelets sessile, 2–3 in the cluster.

Sterile Spikelets. Apical sterile spikelets rudimentary.

Fertile Spikelets. Spikelets comprising 1 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 elliptic, laterally compressed, compressed slightly, acuminate, 16 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet. Upper glume ovate, 5 mm long, chartaceous. Upper glume surface scabrous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret elliptic, 8 mm long, obtuse, mucronate. Fertile lemma ovate, 14 mm long, chartaceous, without keel, more than 3-veined. Lemma surface puberulous. Lemma apex acute. Palea 1 length of lemma, chartaceous. Palea keels contiguous above a sulcus. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with free brittle pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast, Brazil Southeast.

Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana, Catarina, Rio Grande do Sul. Bahia. Minas Gerais, Rio de Janeiro, Sao Paulo.

Merostachys vestita McClure & L. B. Smith. *Fl. Ilustr. Catar., Pt. 1, Gramin., Supl. Bambus.* 72 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.R. Swallen 8290*, 22 Jan 1946, Brazil: Santa Catarina: Caçador, Rio Cacador (US-2152483; IT: US-2152484, US-2152485).

Illustrations (Books): L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (147, Fig. 33).

Derivation (Clifford & Bostock 2007): L. *vestio,* clothe. Plant in some respect hairy.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo. Rhizomes short, pachymorph. Butt sheaths absent. Culms woody. Culm-internodes terete, 13 cm long, antrorsely scabrous. Lateral branches dendroid. Branch complement flabellate. Culm-sheaths present, 20 cm long, 4–5 times as long as wide, coriaceous, puberulous, setose on shoulders, shoulders with 10 mm long hairs. Culm-sheath ligule dentate. Leaf-sheaths striately veined, punctate, glabrous on surface or puberulous, outer margin hairy. Leaf-sheath oral hairs setose, 13 mm long. Ligule a ciliolate membrane, 0.5 mm long, erose, truncate. Collar with external ligule. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.3 cm long. Leaf-blades lanceolate, 15 cm long, 23 mm wide. Leaf-blade venation without cross veins. Leaf-blade surface pubescent, sparsely hairy, hairy abaxially. Leaf-blade apex acuminate. Flowering specimens unknown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil South.

Catarina, Rio Grande do Sul. Santa Catarina.

Merostachys yungasensis M.A. Lizarazu. *Syst. Bot.* 36(4): 900 (2011).

TYPE from Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: La Paz: Dpto. Nor Yungas, 40 km before Caranavi, from Rio Alto Beni, roadside through forest, 1500 m, 9 Mar 1987, *S. Renvoize 4732,* HT: LPB; IT: SI, K.

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 1000–1500 cm long, 15 mm diam., woody. Culm-internodes terete, thin-walled, 50 cm long, retrorsely scabrous, distally glabrous. Culm-nodes swollen. Lateral branches dendroid. Branch complement many, flabellate, thinner than stem. Culm-sheaths present. Leaf-sheaths scaberulous. Leaf-sheath oral hairs setose, 2–3.25 mm long, pale. Ligule a ciliolate membrane, 1 mm long. Collar with external ligule. Leaf-blade base asymmetrical, with a brief petiole-like connection to sheath, petiole 0.4–0.6 cm long, petiole glabrous. Leaf-blades lanceolate or oblong, 14–23 cm long, 35–51 mm wide, glaucous. Leaf-blade venation with 18–20 secondary veins. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 6.5–7 cm long, 15–16 mm wide, bearing 37–40 fertile spikelets on each. Rhachis pubescent on surface, terminating in a sterile spikelet. Spikelet packing broadside to rhachis, contiguous, regular. Spikelets pectinate, solitary. Fertile spikelets pedicelled. Pedicels present, 2 mm long, pubescent.

Sterile Spikelets. Apical sterile spikelets rudimentary.

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, 14–15 mm long, 3–3.5 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, shorter than spikelet. Lower glume ovate, 3.5–4 mm long, 0.4 length of upper glume, chartaceous, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, mucronate. Upper glume ovate, 8–8.5 mm long, 0.75 length of adjacent fertile lemma, chartaceous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma ovate, 11–12 mm long, coriaceous, without keel, 14–16 -veined, more than 3-veined. Lemma lateral veins with cross-veins. Lemma apex acute. Palea elliptic, 11–12 mm long, chartaceous. Palea keels contiguous above a sulcus, scabrous. Rhachilla extension 10–12 mm long. Apical sterile florets 1 in number, linear.

Flower and Fruit. Lodicules 3, lanceolate, 1.8–3 mm long, membranous, veined. Anthers 3, 6–6.5 mm long. Stigmas 2, plumose. Styles 0.5–1 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Bolivia.

Merxmuellera ambalavaoensis (A. Camus) Conert. *Senckenberg. Biol*. 51: 132 (1970).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. **Basionym or Replaced Name**: *Danthonia ambalavaoensis* A. Camus, *Bull. Soc. Bot. France*, 107: 210 (1960). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Madagascar, Ambalavao: Rakotovao 8455.

Illustrations: None found.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial. Culms 75 cm long. Culm-internodes striate, distally glabrous. Ligule a fringe of hairs. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, equilateral or nodding, 25–35 cm long, 3–4(–5) cm wide. Primary panicle branches appressed or ascending, 5–6 -nate, whorled at lower nodes. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 5–10 mm long, glabrous.

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, 17–18 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 17–18 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 17–18 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 8 mm long, chartaceous, without keel, more than 3-veined. Lemma surface with a transverse row of hair tufts. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma

awn from a sinus, geniculate, 10 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 1 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian Ocean**. Madagascar.

Merxmuellera davyi (C. E. Hubbard) Conert. *Senck. Biol.* li. 132 (1970).

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

TYPE from Tanzania. **Basionym or Replaced Name**: *Danthonia davyi* C.E. Hubb., *Bull. Misc. Inform. Kew* 1936: 501 (1936). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Malawi, Mulanje, Lichenya Gorge: *Burtt Davy 2068/69* (K holo).

Recent Synonyms: *Rytidosperma davyi* (C.E. Hubb.) T.A. Cope, *Fl. Zambes.*, 10(2): 7 (1999).

Illustrations (Books): G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):8, t. 4 as *Rytidosperma*).

Derivation (Clifford & Bostock 2007): In honor of Joseph Burtt Davy (1870–1940) Scots-born Californian and South African botanist.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths coriaceous, yellow, glossy, glabrous (strigose inside). Culms erect, 80–100 cm long. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades ascending, convolute, 30–60 cm long, 2 mm wide, stiff. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 20–25 cm long, 3–4 cm wide. Primary panicle branches 5–10 cm long. Panicle branches capillary, scaberulous, pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 2–4 mm long, scaberulous, puberulous, hairy above.

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 cuneate, laterally compressed, 15–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 0.5–1 mm long, pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 15–17 mm long, 1 length of upper glume, scarious, without keels, 3 -veined. Lower glume apex acute. Upper glume lanceolate, 15–17 mm long, 2 length of adjacent fertile lemma, scarious, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 7–8 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with marginal hair tufts, bearing 6 hair tufts in all. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.5 of lemma length, acute, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–11 mm long overall, with twisted column. Lateral lemma awns absent. Palea 2 length of lemma. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, ciliate. Anthers 3, 3 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa** and **Southern Africa**. Malawi, Mozambique, Zimbabwe. Mpumalanga.

Merxmuellera drakensbergensis (Schweikerdt) Conert. *Senck. Biol.* li. 132 (1970).

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

TYPE from South Africa. **Basionym or Replaced Name**: *Danthonia drakensbergensis* Schweick., *Repert. Spec. Nov. Regni Veg.* 43(88): -89 (1938)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: South Africa: Cape Province: Barkly Distr., summit of Doodman's Krans Mountain (Drakensbergen), 2900 m alt., 9 Mar. 1904, *Galpin 6903* (HT: K).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (247, Fig 219 as *Danthonia*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (213, Fig 133), T.R.Soderstrom, K.W.Hilu, C.S.Campbell & M.E.Barkworth (246, Fig 22.5).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Drakensberg, a range of mountains in South Africa.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 50–100 cm long. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, aciculate, convolute, 15–30 cm long, 1.3 mm wide, coriaceous. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, oblong, interrupted, 8–18 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising (5–)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 cuneate, laterally compressed, 13–17 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, 13–17 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume apex attenuate. Upper glume lanceolate, 13–17 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume apex attenuate.

Florets. Fertile lemma oblong, 6.5–9 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with a transverse row of hair tufts, bearing 6 hair tufts in all. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, adnate to lemma lobes at base, 9–12 mm long overall, with a straight or slightly twisted column. Palea keels pubescent. Palea surface puberulous, hairy on flanks. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, oblong, fleshy, ciliate. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Eastern Cape.

Merxmuellera grandiflora (Hochst. ex A. Rich.) H.P. Linder. *Ann. Mo. Bot. Gard.*.

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Ethiopia. **Basionym or Replaced Name**: *Danthonia grandiflora* Hochst. ex A. Rich., *Tent. Fl. Abyss.* 2: 418–419 (1850). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *G.H.W. Schimper (u.i. 1842 sect. II) 690*, 16 Feb 1840, Ethiopia: Gondor, in monte Silke [Selki] ad rupes (P; IT: GOET, K, L, MO, S, US-1612024, US-1093870).

Recent Synonyms: *Rytidosperma grandiflorum* (Hochst. ex A. Rich.) S.M. Phillips, *Fl. Ethiopia & Eritrea,* 7: 74 (1995).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *grandis,* large; *flos,* flower. Spikelets with more florets than those of related species.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50 cm long, 1–2 -noded. Culm-internodes distally glabrous. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, convolute, 20–40 cm long, 1–2.5 mm wide, stiff.

Inflorescence. Inflorescence composed of racemes, shorter than basal leaves. Racemes 1, single, paucilateral, 5–10 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Rhachis pubescent on surface. Spikelet packing lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–6 mm long, pubescent.

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, 35–40 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, 1–1.5 mm long, pilose.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 35–40 mm long, 1 length of upper glume, scarious, without keels, 3–5 -veined. Lower glume apex acute. Upper glume lanceolate, 35–40 mm long, 3–3.5 length of adjacent fertile lemma, scarious, without keels, 5 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 12 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pilose, with marginal hair tufts, bearing 2 hair tufts in all. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.33 of lemma length, acute, awned, 3–5 -awned. Principal lemma awn from a

sinus, geniculate, 20–28 mm long overall, with twisted column. Column of lemma awn 4 mm long. Lateral lemma awns present, arising on apex of lobes, 10–13 mm long, shorter than principal. Palea 1 length of lemma. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, membranous, ciliate. Anthers 3. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Northeast Tropical Africa**. Ethiopia (inc. Eritrea).

Merxmuellera macowanii (Stapf) Conert. *Senck. Biol.* li. 132 (1970).

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

TYPE from South Africa. **Basionym or Replaced Name**: *Danthonia macowanii* Stapf, *Fl. Cap.* 7: 527 (1899)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Central Region: Somerset Div.; on the banks of streamlets near the summit of Bosch Berg, and rarely in the bed of the Little Fish River, 4800 ft, *MacOwan 1986*.

Illustrations (Books): J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (183, Fig 64 as *Danthonia*).

Illustrations (Journals): *Ann. Missouri Bot. Gard*. (97: 322, Fig.3 (2010)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): in honor of Peter MacOwan (1830–1909) English-born South African educator and plant collector.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 70–130 cm long. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, aciculate, convolute, 30–65 cm long, 1.3 mm wide, coriaceous, stiff. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, interrupted, 17–27 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising (2–)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 cuneate, laterally compressed, 9–14 mm long, 6 mm wide, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma, gaping. Lower glume lanceolate, 9–14 mm long, 1 length of upper glume, membranous, without keels, 1–3 -veined. Lower glume apex acuminate. Upper glume lanceolate, 9–14 mm long, 2 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 5–7 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with a transverse row of hair tufts, bearing 6 hair tufts in all. Lemma apex entire or dentate, 2 -fid, incised 0–0.2 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, adnate to lemma lobes at base, 5–8 mm long overall, without a column or with a straight or slightly twisted column. Palea surface pilose, hairy on flanks. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, oblong, fleshy, ciliate. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**, **Western Indian Ocean**. Mpumalanga, Free State, Kwazulu-Natal, Lesotho, Eastern Cape. Madagascar.

Merxmuellera stereophylla (Anders.) Conert. *Senck. Biol.* li. 133 (1970).

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

TYPE from South Africa. **Basionym or Replaced Name**: *Danthonia stereophylla* J.G. Anderson, *Bothalia* 7: 419 (1960)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: South Africa, Cathedral Peak: Killick 1184 (PRE holo).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *stereos*, rigid; *phyllon*, leaf. Leaf-blades stiff.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths glabrous. Culms 80 cm long. Ligule a fringe of hairs. Leaf-blades aciculate, 18–36 cm long, 1–1.5 mm wide, stiff. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, interrupted, 9–18 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 cuneate, laterally compressed, 12–20 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident, pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma, gaping. Lower glume lanceolate, 11–18 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 11–18 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 10–16 mm long, chartaceous, without keel, 9 -veined, more than 3-veined. Lemma surface glabrous, with marginal hair tufts, bearing 2 hair tufts in all. Lemma margins ciliate, hairy below. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, geniculate, simple at base, 13–18 mm long overall, with twisted column. Lateral lemma awns present, arising on apex of lobes, 3 mm long. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, membranous, ciliate. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Mpumalanga, Free State, Kwazulu-Natal, Lesotho.

Merxmuellera tsaratananensis (A. Camus) Conert. *Senckenberg. Biol*. 51: 133 (1970).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Madagascar. **Basionym or Replaced Name**: *Danthonia tsaratananensis* A.Camus, *Bull. Soc. Bot. France*, 64: 692 (1928). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Madagascar, Mt. Tsaratanana: *Perrier 16125* (P syn); Madagascar, Mt. Tsaratanana: *Perrier 16367* (P syn, K).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Mt Tsaratanana, Madagascar.

Classification. Subfamily Danthonioideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms 60–80 cm long. Culm-internodes striate, smooth, distally glabrous. Lateral branches ample. Leaf-sheaths striately veined, glabrous on surface. Ligule a fringe of hairs. Leaf-blades convolute, 40 cm long, stiff. Leaf-blade surface glabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, interrupted, 10–15 cm long, 2–3 cm wide. Primary panicle branches appressed, 5–6 cm long. Panicle axis glabrous. Panicle branches glabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–4 mm long.

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 cuneate, laterally compressed, 10–12 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, 7 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, 8 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 6.5 mm long, chartaceous, without keel, 7–9 -veined, more than 3-veined. Lemma surface pilose. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, straight, 4–4.5 mm long overall. Palea 5 mm long, hyaline, 2-keeled. Palea surface pilose, hairy on flanks. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian Ocean**. Madagascar.

Mesosetum agropyroides Mez. Fedde, *Repert.* 15: 125 (1918).

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 Synonomy Database: HT: *Glaziou 22452*, 31 Aug 1895, Brazil: Goiás: central plateau of Goiás, Goiás (B; IT: K, P [Entre Siriaco et Guariroba, 31 Aug 1895; Glaziou ticket], S, US-1108621, US-1258813, US-3168282, US-94684 (fragm. ex B), US-1645051 (fragm. ex C, and part of plant from MPU)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (513, Fig 115).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Similar to *Agropyron* with respect to the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, slender, 20–80 cm long. Culm-nodes bearded. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades 3–28 cm long, 2–6 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides. Leaf-blade margins cartilaginous, ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2.2–6 cm long. Rhachis angular, 0.5 mm wide. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 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 oblong, laterally compressed, 5–7 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.8–5 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3–5 -veined. Lower glume primary vein ciliate (below). Lower glume surface pubescent. Lower glume apex acute. Upper glume lanceolate, 5–5.8 mm long, 0.75–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or pubescent, with a dorsal tuft of hair. Upper glume margins ciliate (above). Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 5 -veined, ciliate on midvein, smooth on margins or tuberculate on margins, ciliate on margins, bearing hairs 2 mm long, acute. Fertile lemma ovate, dorsally compressed, 4–4.8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis plano-convex, 3–3.3 mm long. Embryo 0.66 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Brazil**. Bolivia. Brazil West Central.

Goias. Goiás.

Mesosetum alatum T.S. Filgueiras. *Brittonia,* 39(2): 306 (1987).

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 Synonomy Database: Brazil: Matto Grosso: Serra de Roncador, ca. 14?30S 55?50W, Xavantina-Cachimbo road, 65 km from Xavantina, 24 May 1966, *Hunt & Ramos 5552* (HT: UB; IT: K, NY, SP).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *ala*, wing; *-ata*, possessing. Rhachides broadly winged.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 30–65 cm long. Culm-nodes glabrous or pubescent. Leaves mostly basal. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades flat or convolute, 4–15 cm long, 1–3 mm wide. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous, scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2.5–6 cm long. Rhachis broadly winged, 2.8–3 mm wide. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 3.2–4.2 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–4 mm long, 0.9 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume apex dentate, 2 -fid, awned, 1 -awned, awn 1.5–3 mm long. Upper glume lanceolate, 3–4 mm long, 0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume margins ciliate (below). Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 5 -veined, with marginal tufts of hair or with dorsal tufts of hair, 3 hair tufts in all, acute. Fertile lemma ovate, dorsally compressed, 2.5–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat, ciliolate, hairy above. Lemma apex acuminate. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, yellow or purple. Caryopsis plano-convex. Embryo 0.5 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central.

Mato Grosso.

Mesosetum annuum Swallen. *Brittonia,* 2: 377 (1937).

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 Synonomy Database: HT: *J.R. Swallen 4190*, 3 Apr 1934, Brazil: Piau? on open summit of rocky slope, Fazenda Nacional (US-1614005; IT: MG, RB, S).

Recent Synonyms: *Mesosetum multicaule* Swallen, *Brittonia* 2: 378 (1937).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. annual. Annuals.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, slender, 30–85 cm long, without nodal roots or rooting from lower nodes. Culm-nodes bearded. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 1.2–9.2 cm long, 3–6 mm wide. Leaf-blade surface pilose. Leaf-blade margins glabrous or ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2.5–12 cm long. Rhachis angular. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 3.5–4 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, asymmetrical, 2.8–3 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface pilose, hairy below. Lower glume hairs white. Lower glume apex emarginate or obtuse. Upper glume lanceolate, 2.3–2.5 mm long, 0.6–1 length of spikelet, membranous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume hairs white. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 5 -veined, pilose, hairy on veins, ciliate on midvein,

acute. Fertile lemma ovate, dorsally compressed, 2.5–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acuminate. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis ellipsoid, 2.2 mm long. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central, Brazil Northeast.

Maranhao, Piaui. Goiás. Maranhão, Piaui.

Mesosetum ansatum (Trin.) Kuhlm. *Comm. Linh. Telegr. Matto Grosso Amaz. Annexo 5, Bot*. xi. 42 (1922).

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. **Basionym or Replaced Name**: *Panicum ansatum* Trin., *Sp. Gram.* 3: t. 279 (1831) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Collector unknown s.n.*, Jan 1827, Brazil: Mato Grosso: Cuiab?(LE-TRIN-0570.01; IT: MO-2100915, US-80459 (fragm. ex LE)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *ansa*, handle; *-atum*, possessing. Lower glume bent at the base to form a handle as a cup.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect, 12–33 cm long. Culm-nodes pubescent. Ligule a fringe of hairs. Leaf-blades 1.5–6 cm long, 1–3 mm wide. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–4.5 cm long. Rhachis broadly winged, membranous, 2–3 mm wide. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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, laterally compressed, acute, 2.7 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, 1-keeled, keeled above, 3 -veined. Lower glume surface with a dorsal tuft of hair (at base). Lower glume apex lobed, 2 -fid, acute, awned, 1 -awned, awn 3–6 mm long. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, thicker on margins, 5 -veined, ciliate on margins, acute. Fertile lemma ovate, dorsally compressed, 2.5 mm long, coriaceous, without keel. Lemma margins flat. Lemma apex acuminate. Palea coriaceous.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central.

Mato Grosso. Mato Grosso.

Mesosetum arenarium Swallen. *Brittonia,* 2: 380 (1937).

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 Synonomy Database: HT: *A. Chase 10403*, 27–30 Dec 1929, Brazil: Minas Gerais: white sand and gravel, open campo, west of Diamantina, Serra de Santo Antonio, alt. 1200–1300 m (US-1500602; IT: B, MG, MO-5191407, NY, S).

Recent Synonyms: *Mesosetum aequiglume* Swallen, *Brittonia* 2: 380 (1937).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *arena*, sandy place; *-aria*, pertaining to. Of sandy habitats.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 90–120 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or hirsute, outer margin glabrous or hairy. Ligule a fringe of hairs, 3 mm long. Leaf-blades 3–16 cm long, 3–7 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides. Leaf-blade margins cartilaginous, glabrous or ciliate. Leaf-blade apex acuminate, hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–14 cm long. Rhachis angular, 1 mm wide, pubescent on surface, ciliate on margins. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 4.4–6.2 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, asymmetrical, 4–5 mm long, 0.8–0.9 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume primary vein ciliate (below). Lower glume lateral veins transversely connected at apex. Lower glume apex acute. Upper glume lanceolate, 4–4.5 mm long, 0.8 length of spikelet, membranous, without keels, 3–5 -veined. Upper glume lateral veins transversely connected at apex. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 5 -veined, pilose, hairy on veins, with dorsal tufts of hair, 1 hair tufts in all, acute. Fertile lemma ovate, dorsally compressed, 3.5–3.8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acuminate. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, 3 mm long, purple. Caryopsis 2.5 mm long, dark brown. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central, Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo. Goiás. Minas Gerais.

Mesosetum bifarium (Hack.) Chase. *Proc. Biol. Soc. Washington,* 24: 123 (1911).

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. **Basionym or Replaced Name**: *Panicum bifarium* Hack., *Oesterr. Bot. Z.* 47: 76 (1897)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.F.M. Glaziou 22455*, 5 Jan 1895, Brazil: Goiás: Sur le Plateau Central (W; IT: B, BAA, K, P US-80529 (fragm. ex W), US-1445722).

Recent Synonyms: *Mesosetum caudiculatum* (Hack.) Swallen, *Brittonia* 2: 369 (1937).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *bis*, twice; *faria*, -fold. Spikelets arranged conspicuously in two rows.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial. Culms erect, 46–53 cm long, rooting from lower nodes. Culm-nodes pubescent. Lateral branches lacking or sparse. Leaves basal and cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1–2 mm long. Leaf-blades convolute, 4–21 cm long, 1–3 mm wide. Leaf-blade surface glabrous or pilose, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–8 cm long. Rhachis broadly winged, 1–2.5 mm wide, scabrous on margins. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1–2 mm long, puberulous.

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 oblong, laterally compressed, 3.8–5.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.3–4.5 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume apex dentate, 2 -fid, awned, 1 -awned, awn 2.5–5.2 mm long. Upper glume lanceolate, 3–5.2 mm long, 0.75–0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface scabrous, with a dorsal tuft of hair. Upper glume margins ciliate (below). Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 5 -veined, with marginal tufts of hair or with conspicuous apical hairs, 3 hair tufts in all, acute. Fertile lemma ovate, dorsally compressed, 3.8–4 mm long, coriaceous, keeled, lightly keeled, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute, pubescent. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central.

Goias. Goiás.

Mesosetum blakei Swallen. *Brittonia,* ii. 390 (1937).

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 Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *S.F. Blake 7657*, 23 May 1919, Guatemala: Izabal: Cristina (US-1012994).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Stanley Thatcher Blake (1911–1973), Queensland botanist.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50–75 cm long. Culm-nodes pubescent. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose, outer margin glabrous or hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 10–25 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides. Leaf-blade margins ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 4–8 cm long. Rhachis angular, 0.5 mm wide, scabrous on surface, scabrous on margins. Spikelet packing adaxial, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1 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 oblong, laterally compressed, 4–5.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, symmetrical or asymmetrical, 3–4.8 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3–4 -veined. Lower glume surface pilose, hairy below. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 4–5.2 mm long, 0.9–1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 5 -veined, without hair tufts or with marginal tufts of hair, 2 hair tufts in all, eciliate on margins (but tufted) or ciliate on margins (when not tufted), acute. Fertile lemma ovate, dorsally compressed, 3–4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, 2–2.5 mm long, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Gulf (Mexico), Southeast Mexico. **Mesoamerica**. Belize, Guatemala, Honduras, Nicaragua.

Veracruz. Chiapas, Tabasco.

Mesosetum cayennense Steud. *Syn. Pl. Gram.* 118 (1855).

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 French Guiana. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Leprieur s.n.*, 1825, French Guiana: Cayenne (P; IT: L).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (513, Fig. 115), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (157, Fig. 113).

Derivation (Clifford & Bostock 2007): L. *-ense*, denoting origin. From Cayenne, French Guiana.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 35–140 cm long. Culm-nodes glabrous. Lateral branches lacking or sparse. Leaf-sheaths outer margin glabrous or hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades 4.5–20 cm long, 3–6 mm wide. Leaf-blade surface glabrous to hirsute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 5–15 cm long. Rhachis angular. Spikelet packing adaxial, irregular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.7–1 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 oblong, laterally compressed, 3.8–4.2 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 2.8–3.1 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface pilose, hairy below. Lower glume hairs red. Lower glume apex erose, truncate. Upper glume ovate, 3.5–4 mm long, 0.9 length of spikelet, membranous, without keels, 3–5 -veined. Upper glume surface pilose, hairy at base or on veins, with marginal tufts of hair. Upper glume margins ciliate. Upper glume hairs red. Upper glume apex entire or dentate, 2 -fid, acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1 length of spikelet, membranous, thicker on margins, 3 -veined, with marginal tufts of hair, 2 hair tufts in all, obtuse. Fertile lemma ovate, dorsally compressed, 3–3.2 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis 1.5–2 mm long, dark brown. Embryo 0.66 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**, **Northern South America**, **Western South America**, **Brazil**. French Guiana, Guyana, Surinam, Venezuela. Bolivia. Brazil West Central, Brazil Northeast, Brazil North.

Roraima, Maranhao, Piaui. Mato Grosso, Goiás, Mato Grosso do Sul. Maranhão, Paraíba. Acre, Roraima, Rondonia.

Mesosetum chaseae Luces. *Journ. Wash. Acad. Sci.* ii. 160 (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).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.G. Sandoval s.n.*, Aug 1940-Nov 1940, Venezuela: Anzoátegui: vecindad de Santom?(VEN; IT: US-1764957).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (156, Fig. 111), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (201, Fig. 56), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (334, Fig. 61).

Derivation (Clifford & Bostock 2007): in honor of Mary Agnes Merrill Chase (1869–1963) United States agrostologist.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Stolons present. Culms erect, 25–65 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of

hairs, 0.5 mm long. Leaf-blades flat or involute, 3–20 cm long, 2–7 mm wide. Leaf-blade surface glabrous or pilose. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–9 cm long. Rhachis narrowly winged, angular, 1–1.5 mm wide, scabrous on margins. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, fused to internode, oblong, 1 mm long, ciliate.

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 oblong, laterally compressed, 3.5–5.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3.5–5.5 mm long, 1 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume apex emarginate, mucronate or awned, 1 -awned, awn 0–2 mm long. Upper glume lanceolate, 3.5–5 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume margins scabrous, ciliate. Upper glume apex emarginate.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, thicker on margins, 7 -veined, eciliate on margins or ciliate on margins, laterally pinched at apex. Fertile lemma ovate, dorsally compressed, 3–4.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**, **Northern South America**, **Brazil**, **Southern South America**. Guyana, Venezuela. Brazil West Central, Brazil North, Brazil Southeast. Paraguay.

Mato Grosso do Sul. Roraima. Minas Gerais.

Mesosetum chlorostachyum (Doell) Chase. *Proc. Biol. Soc. Washington,* xxiv. 122 (1911).

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 Synonomy Database: LT: *R. Spruce 885*, Dec 1850- Mar 1851, Brazil: Amazonas: in regionibus fluminis Rio Negro (M; ILT: US-80567 (fragm. ex M & photo)). LT designated by Filgueiras, Acta Amaz. 19: 77 (1989).

ST: *Spruce 1310*, Brazil: Rio Negro.

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (158, Fig. 114).

Derivation (Clifford & Bostock 2007): Gk. *chloris*, green; *stachys*, ear of corn. Plants glabrous and so are green in comparison with related species.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, slender, 30–60 cm long, without nodal roots or rooting from lower nodes. Culm-nodes glabrous or pubescent or bearded. Lateral branches ample. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades 4–10 cm long, 3–7 mm wide. Leaf-blade surface glabrous to pilose. Leaf-blade margins cartilaginous, tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–12 cm long. Rhachis angular, glabrous on margins or ciliate on margins. Spikelet packing adaxial, lax, irregular, 1 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 mm long, glabrous or ciliate.

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 oblong, laterally compressed, 3–3.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 2–3 mm long, 0.6–0.8 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface glabrous.

Lower glume apex acute or acuminate. Upper glume lanceolate, 2–2.8 mm long, 0.6–0.8 length of spikelet, membranous, without keels, 3 -veined. Upper glume margins eciliate or ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, scaberulous, rough above, acute. Fertile lemma ovate, dorsally compressed, 2.7–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis 2–2.3 mm long. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Brazil**. Venezuela. Brazil West Central, Brazil North.

Para, Amapa, Amazonas, Acre, Rondonia. Mato Grosso. Amazonas, Pará, Rondonia.

Mesosetum comatum Swallen. *Journ. Wash. Acad. Sc.* . 215. (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).

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *D. Rodríguez 31*, 10 Mar 1914, Argentina: Misiones: San Ignacio, Cerro Piedras (US-1721241; IT: BAA).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (338), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (434, Fig. 151).

Derivation (Clifford & Bostock 2007): L. *coma*, hair of the head; *-ata,* possessing. With long hairs imparting a silky appearance to the spikelets.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, slender, 30–60 cm long. Culm-nodes glabrous. Leaves differentiated into sheath and blade. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Collar pubescent. Leaf-blades 3–9 cm long, 2–6 mm wide. Leaf-blade surface glabrous to hirsute, hairy on both sides.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–8 cm long. Rhachis angular, ciliate on margins. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 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 oblong, laterally compressed, 3.5–4.2 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, asymmetrical, 2.8–3.2 mm long, 0.7–0.8 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface pilose, hairy below, with tubercle-based hairs. Lower glume hairs white, 3 mm long. Lower glume apex emarginate or obtuse. Upper glume lanceolate, 2.8–3.2 mm long, 0.7–0.8 length of spikelet, membranous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume hairs white. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, with dorsal tufts of hair, 1 hair tufts in all, tuberculate on margins, ciliate on margins, bearing hairs 3 mm long, acute. Fertile lemma ovate, dorsally compressed, 3.2–3.6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis ellipsoid, 2–2.4 mm long, dark brown. Embryo 0.66 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil West Central. Argentina Northeast.

Misiones.

Mesosetum compressum Swallen. *Brittonia,* ii. 367 (1937).

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 Synonomy Database: HT: *Swainson s.n.*, Brazil: inter Pernambuco et Rio (BM).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *comprimo*, squeeze together. Culms flattened.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 20–45 cm long, without nodal roots or rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades 3–13 cm long, 3–6 mm wide. Leaf-blade surface glabrous or pubescent, hairy on both sides. Leaf-blade margins cartilaginous, tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Peduncle glabrous or pubescent above. Racemes 1, single, unilateral, 5–6 cm long. Rhachis broadly winged, foliaceous, 2–2.2 mm wide, ciliate on margins. Spikelet packing adaxial, crowded. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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 oblong, laterally compressed, 5–6 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 4.5–5 mm long, 0.8–0.9 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface scabrous. Lower glume apex dentate, 2 -fid, awned, 1 -awned, awn 5–12 mm long. Upper glume lanceolate, 4.8–5 mm long, 0.8–0.9 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface scabrous, with marginal tufts of hair. Upper glume margins ciliate. Upper glume apex acute, mucronate or awned, 1 -awned, awn 0.5–1 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, with marginal tufts of hair, 2 hair tufts in all, entire or dentate, 3 -fid, obtuse. Fertile lemma ovate, dorsally compressed, 3.3 mm long, coriaceous, shiny, keeled, lightly keeled, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil North.

Rondonia.

Mesosetum elytrochaetum (Hackel) Swallen. *Brittonia,* ii. 370 (1937).

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 Synonomy Database: HT: *A.F.M. Glaziou 22454*, 18 Jan 1895, Brazil: inter flumina Rio dos Couros et Rio Fiçarao (W; IT: B, G, P, S, US-80629 (fragm. ex W)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *elytron*, cover; *chaete*, bristle. Lower glume awned.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–50 cm long. Culm-nodes pubescent. Ligule a fringe of hairs, 1 mm long. Leaf-blades filiform, involute, 2–15 cm long, 1 mm wide. Leaf-blade surface pilose, hairy adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–6 cm long. Rhachis narrowly winged, angular, 0.7 mm wide, ciliate on margins. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile. Pedicels present, reduced to a stump, pubescent.

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 oblong, laterally compressed, obtuse, 3–4 mm long, falling entire. Spikelet callus pilose.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 1 length of spikelet, membranous, 1-keeled, 3 -veined. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume oblong, 1 length of spikelet, chartaceous, 1-keeled, keeled above, 3 -veined. Upper glume surface asperulous, with a transverse fringe of hair. Upper glume apex emarginate, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, much thinner on margins, 1-keeled, winged on margins (above), 5 -veined, with dorsal tufts of hair, 2 hair tufts in all, acute. Fertile lemma ovate, laterally compressed, 3–4 mm long, cartilaginous, keeled, keeled above. Lemma margins flat. Lemma apex acute, pubescent. Palea cartilaginous.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central.

Goiás.

Mesosetum exaratum (Trin.) Chase. *Proc. Biol. Soc. Washington,* xxiv. 121 (1911).

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. **Basionym or Replaced Name**: *Panicum exaratum* Trin., *Gram. Panic.* 160 (1826) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Langsdorff s.n.*, Brazil: Minas Gerais: Serra do Cipo, (Serra da Lapa), in pratis paludosis (LE-TRIN-0700.01 (& fig.); IT: B).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *exaro*, plough up. With furrows between the nerves of the glumes.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths pilose. Culms erect, slender, 8–35 cm long, 0.5–1 mm diam. Culm-nodes pubescent. Leaves mostly basal. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.5–0.8 mm long. Leaf-blades filiform, convolute, 3–10 cm long, 0.5–1 mm wide. Leaf-blade apex attenuate, hardened.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2–3.5 cm long, bearing few fertile spikelets, bearing 5–10 fertile spikelets on each. Rhachis subterete, glabrous on margins. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, free or fused to internode, united wholly or below, oblong, 1 mm long, ciliate, hairy at tip.

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 obovate, laterally compressed, 3.8–4 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, firmer than fertile lemma. Lower glume oblong, 2.8–3.2 mm long, 0.7–0.8 length of spikelet, membranous, much thinner above (and along midline), 1-keeled, 3–5 -veined. Lower glume margins ciliate (above). Lower glume hairs white, 2 mm long. Lower glume apex obtuse or acute. Upper glume lanceolate, 3.5–3.8 mm long, 0.9–1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pilose, hairy above. Upper glume margins ciliate. Upper glume hairs white. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, membranous, 3–5 -veined, with marginal tufts of hair, 2 hair tufts in all, acute. Fertile lemma ovate, dorsally compressed, 3–3.3 mm long, membranous, much thinner on margins, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface glabrous. Lemma margins flat. Lemma apex acute. Palea membranous, without keels.

Flower and Fruit. Anthers 3, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Southeast, Brazil South.

Minas Gerais. Paraná.

Mesosetum ferrugineum (Trin.) Chase. *Proc. Biol. Soc. Washington,* xxiv. 122 (1911).

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. **Basionym or Replaced Name**: *Panicum ferrugineum* Trin., *Gram. Panic.* 159 (1826)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *G.H. von Langsdorff s.n.*, Oct, Brazil: Minas Gerais: perto de Santa Luzia (LE-TRIN-0479.02).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (244, Fig. 91).

Derivation (Clifford & Bostock 2007): L. light-brown. Glumes and/or lemmas invested in light-brown hairs.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths villous. Culms erect, slender, 15–75 cm long. Culm-nodes glabrous or pubescent or bearded. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Ligule a fringe of hairs, 1–3 mm long. Leaf-blades filiform or linear, (4–)6–12(–28) cm long, (1–)3–5(–7) mm wide. Leaf-blade surface glabrous to pilose, hairy on both sides. Leaf-blade margins unthickened or cartilaginous, scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–13 cm long. Rhachis angular, puberulous on surface. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 mm long, glabrous or ciliate.

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 oblong, laterally compressed, 3.8–7 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.8–4.8 mm long, 0.7–1 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume margins ciliate or tuberculately ciliate. Lower glume hairs red, 2–3 mm long. Lower glume apex acute. Upper glume lanceolate, 3–7 mm long, 0.7–1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface pilose. Upper glume margins ciliate. Upper glume hairs red, 2 mm long. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 3–5 -veined, with veins transversely connected at apex, scabrous, rough above, ciliate on margins, bearing red hairs, bearing hairs 3 mm long, acute. Fertile lemma ovate, dorsally compressed, 4–5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute, pubescent. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis 3–3.5 mm long. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central, Brazil Northeast, Brazil Southeast, Brazil South.

Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Distrito Federal, Mato Grosso, Goiás. Ceará. Minas Gerais, Sao Paulo. Paraná.

Mesosetum filifolium Hubbard. *Proc. Amer. Acad.* xlix. 494 (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).

TYPE from British Honduras. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: British Honduras: El Cayo: near Manatee Lagoon, pine ridge, 30 Oct 1905, *M.E. Peck 136* (HT: GH).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (157, Fig. 112).

Derivation (Clifford & Bostock 2007): L. *filum*, thread; *folium*, leaf. Leaf-blades very narrow.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial. Culms erect, slender, 30–65 cm long. Culm-nodes bearded. Leaf-sheaths glabrous on surface, outer margin glabrous. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades filiform, 14–35 cm long, 0.5–1 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, flexuous, unilateral, 3–6.5 cm long. Rhachis angular, 0.5 mm wide, glabrous on surface, glabrous on margins. Spikelet packing adaxial, lax. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 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 oblong, laterally compressed, 4–5.2 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3–5.2 mm long, 0.75–1 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume margins ciliate or tuberculately ciliate. Lower glume hairs white. Lower glume apex acute. Upper glume lanceolate, 4–5.2 mm long, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume surface glabrous or pilose. Upper glume margins smooth or tuberculate, ciliate. Upper glume hairs white, 2–2.5 mm long. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, scabrous, rough at apex, glabrous, with marginal tufts of hair, 2 hair tufts in all, acute. Fertile lemma ovate, dorsally compressed, 3.2–4 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma surface smooth. Lemma margins flat, covering most of palea. Lemma apex acute, pubescent. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, 2.5–3 mm long, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southwest Mexico. **Mesoamerica**, **Northern South America**. Belize, Honduras, Nicaragua. Venezuela.

Oaxaca.

Mesosetum gibbosum S.A. Renvoize & Filgueiras. *Kew Bull.,* 39(1): 181 (1984).

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 Synonomy Database: HT: *Harley et al. 15086*, 16 Jan 1974, Brazil: Bahia: ca. 6 km N of Rio de Contas (CEPEC; IT: K, NY).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (241, Fig. 90).

Derivation (Clifford & Bostock 2007): L. *gibba*, swelling; *-osa,* indicating abundance. Spikelets swollen asymmetrically.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 30–100 cm long. Culm-nodes bearded. Leaves mostly basal. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 5–16 cm long, 2–5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–10 cm long. Rhachis angular. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, fused to internode, oblong, 1 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 oblong, laterally compressed, 5–6 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3.5–4.2 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface scabrous, villous, hairy below. Lower glume hairs white. Lower glume apex acute. Upper glume lanceolate, 4–5 mm long, 0.8 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface villous, hairy on veins. Upper glume margins ciliate. Upper glume hairs white. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, villous, bearing white hairs, acuminate. Fertile lemma ovate,

dorsally compressed, 4–5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia. Ceará.

Mesosetum loliiforme (Steud.) Hitchcock. *Bot. Gaz,* 51: 302 (1911).

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 Surinam. **Basionym or Replaced Name**: *Panicum loliiforme* Hochst. ex Steud., *Syn. Pl. Glumac.* 1: 56 (1853)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F.W. Hostmann, A. Kappler 1071*, no date, Surinam (P; IT: BM, K, U, US-80740 (fragm. ex BM), US-1647160 (fragm. ex P)).

Recent Synonyms: *Mesosetum tenuifolium* Swallen, *Brittonia* 2: 387 (1937).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (181, Fig. 115), S.A.Renvoize, *The Grasses of Bahia*, 1984 (244, Fig. 91), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (334, Fig 61).

Derivation (Clifford & Bostock 2007): Inflorescence resembles that of *Lolium*.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms erect, slender, 15–70 cm long. Leaf-sheaths hispid, outer margin hairy. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades 4–8 cm long, 3–5 mm wide. Leaf-blade surface hispid, hairy on both sides. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4–10 cm long. Rhachis angular. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 2.8–3.8 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 2–3 mm long, 0.66–0.75 length of spikelet, chartaceous, 1-keeled, 1–3 -veined. Lower glume primary vein ciliate (below). Lower glume surface asperulous. Lower glume apex emarginate. Upper glume lanceolate, 1.2–2.7 mm long, 0.6–0.9 length of spikelet, membranous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, thicker on margins, 3–5 -veined, ciliate on margins, acute. Fertile lemma ovate, dorsally compressed, 2.4–3 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface striate. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**, **Northern South America**, **Western South America**, **Brazil**. Cuba, Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Colombia. Brazil West Central, Brazil Northeast, Brazil North.

Roraima, Para, Amapa, Amazonas, Acre, Rondonia, Mato Grosso, Goias, Bahia, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe, Minas Gerais, Rio de Janeiro, Espirito Santo. Distrito Federal, Mato Grosso, Goiás, Mato Grosso do Sul. Bahia, Ceará, Maranhão, Paraíba, Piaui, Sergipe. Amazonas, Pará, Roraima, Rondonia.

Mesosetum longiaristatum T.S. Filgueiras. *Brittonia,* 39(2): 308 (1987).

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 Synonomy Database: Brazil: Goias: Flores de Goias, fazenda Sao Luiz, ca.14?0",47?0", 3 May 1985, *Almeida 1061* (HT: IBGE; IT: CEN, RB, SP, UEC, US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *longus*, long; *arista*, bristle. Lemmas or glumes long awned.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual. Culms decumbent, slender, 40–70 cm long, rooting from lower nodes. Culm-nodes bearded. Lateral branches ample. Leaves cauline. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades 5–11 cm long, 2–5 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–7 cm long. Rhachis broadly winged, foliaceous, 2–2.2 mm wide, ciliate on margins. Spikelet packing adaxial, crowded. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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 oblong, laterally compressed, 4–4.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 3–3.5 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface scabrous. Lower glume apex dentate, 2 -fid, awned, 1 -awned, awn 17–25 mm long. Upper glume lanceolate, 4–4.5 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface with a dorsal tuft of hair. Upper glume margins ciliate. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1–2 mm long.

Florets. Basal sterile florets 1, barren, with palea or without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, with marginal tufts of hair, 2 hair tufts in all, ciliate on margins, dentate, 2 -fid, muticous or mucronate. Fertile lemma ovate, dorsally compressed, 3–3.2 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis ellipsoid, 2 mm long. Embryo 0.55 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central.

Goiás.

Mesosetum pappophorum (Nees) Kuhlm. *Comm. Linh. Telegr. Matto-Grosso Amaz., Annexo 5 Bot.*, xi. 90 (1922).

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 Synonomy Database: ST: *G.H. von Langsdorff s.n.*, no date, Brazil (US-80897 (fragm. ex LE)).

LT: *K.F.P. von Martius s.n.*, Brazil: Piaui: in campis mioso dictis prov. Piauhiensis (M-3826; IT: US-1781550 (fragm. ex M)). LT designated by Filgueiras, Acta Amaz. 19: 99 (1989).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *pappos*, grandfather; *phero*, bear. The lemma bears long hairs.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 15–50 cm long, rooting from lower nodes. Culm-nodes bearded. Leaves cauline. Leaf-sheaths outer margin hairy. Ligule a fringe of hairs, 1.5 mm long. Leaf-blades 2–6.5 cm long, 2–5 mm wide. Leaf-blade surface glabrous or pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins cartilaginous, ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 2.3–5 cm long. Rhachis angular, 0.5–1 mm wide, ciliate on margins. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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 oblong, laterally compressed, gibbous, 2.8–3.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 2.2–2.6 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3–5 -veined. Lower glume surface with a dorsal tuft of hair. Lower glume apex acute. Upper glume lanceolate, gibbous, 2.7–3 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins transversely connected at apex. Upper glume surface pilose. Upper glume margins ciliate. Upper glume hairs 1–2 mm long. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 5 -veined, with veins transversely connected at apex, with marginal tufts of hair, 2 hair tufts in all, acute. Fertile lemma ovate, dorsally compressed, 2–2.8 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, yellow or purple. Caryopsis 1.5–2 mm long, dark brown. Embryo 0.66 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Brazil**. Venezuela. Brazil Northeast, Brazil Southeast.

Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe. Ceará, Maranhão, Pernambuco, Sergipe. Minas Gerais.

Mesosetum penicillatum Mez. *Fedde, Repert.* xv. 124 (1918).

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 Synonomy Database: HT: *Gardner 2979*, 1836–1841, Brazil: Piau?(B; IT: BM, G, GH, NY, US-825702, US-1126075 (fragm. ex W)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. penicillus, a small brush; -ata, possessing. With tufts of long hairs on the lemmas.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 35–70 cm long, 1–3 -noded. Culm-nodes pubescent. Leaves mostly basal. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades flat or convolute, 5–15 cm long, 2–5 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous or pilose, sparsely hairy. Leaf-blade margins ciliate or tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–4 cm long. Rhachis angular. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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 oblong, laterally compressed, 4.5–5.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 3–3.3 mm long, 0.6–0.7 length of spikelet, chartaceous, 1-keeled, keeled above, 3 -veined. Lower glume primary vein scabrous. Lower glume surface pilose, hairy below. Lower glume apex acute. Upper glume lanceolate, 3.8–4.2 mm long, 0.7–0.8 length of spikelet, membranous, without keels, 5 -veined. Upper glume primary vein tuberculate (below hair tuft). Upper glume surface with a dorsal tuft of hair. Upper glume margins ciliate. Upper glume hairs 3 mm long. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 1-keeled, 5–7 -veined, pilose, ciliate on margins, acute. Fertile lemma ovate, dorsally compressed, 3–3.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, yellow. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central, Brazil Northeast, Brazil Southeast.

Mato Grosso, Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Penambuco, Alagoas, Sergipe. Mato Grosso. Piaui. Minas Gerais.

Mesosetum pittieri Hitchcock. *Proc. Biol. Soc. Wash.* xl. 85. (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 Panama. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *H. Pittier 4751*, Oct 1911, Panama: Panama: Sabana de Juan Corso, near Chep? alt. 60–80 m (US-679914).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (324, Fig 119).

Derivation (Clifford & Bostock 2007): in honor of Henry Frangois de Fabrega Pittier (1857–1950) Swiss botanist and civil engineer.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent or prostrate, 15–50 cm long, 1 mm diam., rooting from lower nodes. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades 5–9 cm long, 3–5 mm wide. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, unilateral, 3–7 cm long. Rhachis angular, 1 mm wide. Spikelet packing adaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 5.5–6.2 mm long, falling entire. Spikelet callus oblong, incorporating lowest rhachilla internode with adnate lower glume, 0.5–1 mm long, glabrous, base truncate.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong, 4.9–5.5 mm long, 0.9 length of spikelet, chartaceous, 1-keeled, winged on keel, winged near apex, 3 -veined. Lower glume primary vein scabrous (above), ciliate (below). Lower glume apex truncate. Upper glume oblong, 5.5–6.2 mm long, 1 length of spikelet, chartaceous, 1-keeled, winged on keel, winged near apex, 5 -veined. Upper glume primary vein ciliate. Upper glume lateral veins ribbed. Upper glume surface rugose, rough above. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 5.5–6.2 mm long, 1 length of spikelet, membranous, 1-keeled, winged on keel (at apex), 5 -veined, ribbed, rugose, rough above, pilose, hairy below, hairy between veins, with dorsal tufts of hair, 1 hair tufts in all, ciliate on margins (in the middle), acute. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma ovate, laterally compressed, 4.7–4.8 mm long, indurate, without keel, 5 -veined, more than 3-veined. Lemma surface granulose. Lemma margins flat. Lemma apex acute. Palea coriaceous.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, obovoid. Embryo 0.5 length of caryopsis.

$2n = 16$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**. Costa Rica, Honduras, Panama.

Veracruz. Oaxaca. Chiapas.

Mesosetum rottboellioides (HBK) Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 211 (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).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Apr, Venezuela: Amazonas: between Maypures and Mountain Sipapo (P; IT: US-80960 (fragm. ex P-BONPL & photo)).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (244, Fig. 91), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (158, Fig. 115).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Resembling *Rottboellia* with respect to the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 27–80 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths glabrous on surface or pilose. Ligule a fringe of hairs, 1 mm long. Leaf-blades 5–20 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 1, single, unilateral, 5–13 cm long. Rhachis angular, glabrous on surface or puberulous on surface. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1 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 oblong, laterally compressed, 4–4.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 2.8–3.5 mm long, 0.75 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume surface pilose. Lower glume hairs red, 1–1.5 mm long. Lower glume apex obtuse or acute. Upper glume lanceolate, 3.5–4 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pilose. Upper glume margins ciliate. Upper glume hairs red. Upper glume apex acute or acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 3 -veined, pilose, hairy below, bearing red hairs, acute. Fertile lemma ovate, dorsally compressed, 2.7–3.2 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma lateral veins obscure. Lemma margins flat. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Western South America**, **Brazil**. Guyana, Venezuela. Colombia. Brazil Northeast, Brazil North, Brazil Southeast.

Bahia. Bahia, Maranhão, Pernambuco, Piaui. Amazonas, Pará, Roraima. Minas Gerais.

Mesosetum sclerochloa (Trin.) Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 212 (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *G.H. von Langsdorff s.n.*, Feb 1827, Brazil: Mato Grosso: Cuiaba, in humidis graminosis (LE-TRIN-0944.02 (& figs.); IT: LE-TRIN-0944.01, US-80980 (fragm. ex LE)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *skleros*, hard; *chloa*, grass. The glumes are indurate.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 15–30 cm long, rooting from lower nodes. Leaf-sheaths glabrous on surface. Ligule a fringe of hairs, 0.5–1 mm long. Leaf-blades lanceolate, 4–7 cm long, 4–7 mm wide. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3.5–6 cm long. Rhachis angular, 1 mm wide, ciliate on margins. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 mm long, 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 oblong, laterally compressed, 5–6 mm long, falling entire. Spikelet callus glabrous.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 5–6 mm long, 1 length of spikelet, coriaceous, 1-keeled, 5 -veined. Lower glume surface scabrous, glabrous. Lower glume apex acute. Upper glume lanceolate, 5–5.3 mm long, 1 length of spikelet,

coriaceous, without keels, 5 -veined. Upper glume surface rugose, rough above, glabrous. Upper glume margins ciliolate. Upper glume apex dentate, 2 -fid.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, cartilaginous, 5 -veined, rugose, rough at apex, glabrous, acute. Fertile lemma ovate, dorsally compressed, 3.8–4.2 mm long, coriaceous, keeled, lightly keeled, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acuminate. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis ellipsoid, 3 mm long. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil West Central.

Mato Grosso.

Mesosetum stoloniferum Swallen. *Contrib. U. S. Nat. Herb.* xxix. 412 (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 Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 31266*, 6 Nov 1939, Guatemala: Chiquimula: Montaña Castilla, vicinity of Montaña Cebollas, along Río Lucía Saso, 3 miles SE of Quezaltepeque (F-1061061; IT: US-2152610).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *stolo*, shoot; *fero*, bear. Plant with well developed underground stems.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Stolons present. Culms 20–80 cm long. Culm-nodes pubescent. Leaves mostly basal. Leaf-sheaths glabrous on surface or pubescent, outer margin hairy. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 5–20 cm long, 2–5 mm wide, stiff.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 3–9 cm long. Rhachis narrowly winged, angular, 1–1.4 mm wide. Spikelet packing adaxial. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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 oblong, laterally compressed, 4.5–5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4.5–5 mm long, 1 length of spikelet, chartaceous, 1-keeled. Lower glume primary vein ciliate. Lower glume apex awned, 1 -awned, awn 1 mm long. Upper glume lanceolate, 4–5 mm long, 0.9–1 length of spikelet, membranous, without keels, 3(–5) -veined. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 4.2–4.7 mm long, 1 length of spikelet, membranous, 3–5 -veined, ciliate on margins, acute. Palea of lower sterile floret 3–4.2 mm long. Fertile lemma ovate, dorsally compressed, 3.5–3.9 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma margins flat. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, 1.7–1.9 mm long.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southeast Mexico. **Mesoamerica**. Guatemala, Honduras.

Chiapas, Tabasco.

Mesosetum tenue S.A. Renvoize & Filgueiras. *Kew Bull.*, 39(1): 180 (1984).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Brazil: Bahia: Pico das Almas, 22 Jul 1979, *Mori et al. 12473* (HT: CEPEC).

Illustrations (Books): S.A.Renvoize, *The Grasses of Bahia*, 1984 (241, Fig. 90).

Derivation (Clifford & Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect, 35 cm long. Ligule a fringe of hairs. Leaf-blades filiform, conduplicate or involute, 15–26 cm long, 1 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 4.5–6 cm long, 5 mm wide. Rhachis angular. Spikelet packing adaxial, regular, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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, 5–5.5 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 0.5–0.66 length of spikelet, chartaceous, 1-keeled, 3 -veined. Lower glume margins ciliate. Lower glume hairs red. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume margins ciliate. Upper glume hairs red. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, membranous, 5 -veined, ciliate on margins, fringed above, bearing red hairs, acute. Fertile lemma ovate, dorsally compressed, 5–5.5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma margins flat. Lemma apex acute, scabrous. Palea coriaceous, without keels.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**. Brazil Northeast.

Bahia. Bahia.

Mesosetum wrightii Hitchcock. *Contrib. U. S. Nat. Herb.* xii. 211 (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).

TYPE from Cuba. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C. Wright 3859*, no date, Cuba: Pinar del Río: Dayaninguas (US-559961; IT: GH, NY-71103, NY-71104).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Charles Wright (1811–1885) United States botanist.

Classification. Subfamily Panicoideae. Tribe: Paspaleae. Subtribe Arthropogoninae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms decumbent, 10–40 cm long, rooting from lower nodes. Culm-nodes bearded. Leaves mostly basal. Leaf-sheaths striately veined, glabrous on surface or pilose, outer margin hairy. Ligule a fringe of hairs, 1 mm long. Leaf-blades linear or lanceolate, 2–6.5 cm long, 2–4 mm wide. Leaf-blade surface glabrous or pilose, with tubercle-based hairs. Leaf-blade margins cartilaginous, glabrous or tuberculate-ciliate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 1.5–3 cm long. Rhachis angular, 0.5 mm wide, pubescent on margins. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 1 mm long, scabrous.

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 oblong, laterally compressed, 3.2–4.2 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 2–2.5 mm long, 0.6 length of spikelet, chartaceous, much thinner on margins, 1-keeled, 3 -veined. Lower glume surface glabrous or pilose. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, 3.5–3.8 mm long, 1 length of spikelet, membranous, without keels, 7–9 -veined. Upper glume lateral veins transversely connected at apex. Upper glume surface glabrous or pilose, with a dorsal tuft of hair. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 1 length of spikelet, membranous, 7 -veined, with veins transversely connected at apex, with marginal tufts of hair or with dorsal tufts of hair, 3 hair tufts in all, ciliolate on margins, acute. Fertile lemma ovate, dorsally compressed, 2.5–2.8 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined.

Lemma lateral veins obscure. Lemma surface smooth. Lemma margins flat, covering most of palea. Lemma apex acute. Palea coriaceous, without keels.

Flower and Fruit. Anthers 3, purple. Caryopsis 2 mm long, dark brown. Embryo 0.5 length of caryopsis. Hilum linear, 0.66 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**. Cuba.

Metcalfia mexicana (Scribn.) Conert. *Willdenowia,* ii. 417 (1960).

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

TYPE from Mexico. **Basionym or Replaced Name**: *Danthonia mexicana* Scribn., *Proc. Acad. Nat. Sci. Philadelphia* 43(2): 301, t. 13, f. 7, 7a-7d (1891)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 3279*, 20 Sep 1890, Mexico: Coahuila: dry limestone ledges, Carneos Pass (US-747429; IT: B, CM, K, MO-3727963, MO-2973194, NY, US-878147).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating origin. From Mexico.

Classification. Subfamily Pooideae. Tribe: Phaenospermateae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations intravaginal. Culms erect or geniculately ascending, 70–90 cm long, 0.8–1 mm diam., 2 -noded. Ligule an eciliate membrane, 2–4 mm long, lacerate. Leaf-blades convolute, 20–40 cm long, 1–2 mm wide. Leaf-blade apex acuminate, pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 12–16 cm long, 1 cm wide. Panicle branches angular, scabrous. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, angular, unequal, 1.5–15 mm long, scabrous.

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, 13–16 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pilose, hairy above. Floret callus evident, 1–1.2 mm long, pilose.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 11–14 mm long, 0.9 length of upper glume, membranous, without keels, 7–9 -veined. Lower glume surface asperulous. Lower glume apex acute, awned, 1 -awned, awn 1.2–1.6 mm long. Upper glume lanceolate, 12–15 mm long, 1.2–1.5 length of adjacent fertile lemma, membranous, without keels, 7–9 -veined. Upper glume surface asperulous, rough above. Upper glume awned, 1 -awned, awn 1.2–1.6 mm long.

Florets. Fertile lemma ovate, 9–11 mm long, membranous, without keel, 7 -veined, more than 3-veined. Lemma surface pilose. Lemma hairs 0.6–1 mm long. Lemma apex lobed, 2 -fid, with lanceolate lobes, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–15 mm long overall, with twisted column. Palea lanceolate, 0.75 length of lemma. Palea apex dentate, 2 -fid. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 3, 2–2.5 mm long, glabrous. Anthers 2, 1.5–2 mm long. Stigmas 2. Styles free to the base. Ovary pubescent all over. Hilum linear, 0.33 length of caryopsis.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico.

Mexico State, Puebla. Coahuila, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Oaxaca.

Mibora maroccana (Maire) Maire. *Bull. Soc. Hist. Nat. Afr. Nord,* ii. 22 (1941).

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

TYPE from Morocco. **Basionym or Replaced Name**: *Libyella maroccana* Maire, *Bull. Soc. Hist. Nat. Afr. Nord*, 21: 76 (1930). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Morocco, Bou-Charen: Font Quer & Maire ; Morocco, Saffi to Cap Cantin: Jahandiez & Maire ; Morocco, Lixum: Larache.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating location. From Morocco.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 3–17 cm long. Ligule an eciliate membrane, 0.5–0.9 mm long, truncate. Leaf-blades conduplicate or involute, 1–6 cm long, 0.5–0.7 mm wide. Leaf-blade apex obtuse.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, unilateral, 2–15 cm long. Rhachis subterete. Spikelet packing broadside to rhachis, with lowest internode elongated, 2 -rowed. Spikelets appressed, solitary. Fertile spikelets sessile, heteromorphic (lowest female, larger).

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, truncate, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume oblong, 3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume oblong, 3 mm long, 1.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 2 mm long, membranous, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex erose, truncate. Palea 0.75 length of lemma, 2 -veined. Palea surface pubescent, hairy on back or on flanks.

Flower and Fruit. Lodicules absent. Anthers 3, 2 mm long. Stigmas pubescent. Caryopsis with adherent pericarp, ellipsoid, laterally compressed, 1.5 mm long. Hilum elliptic, 0.3 length of caryopsis.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Northern Africa**. Morocco.

Mibora minima (L.) Desv. *Fl. Anj.* 46 (1827).

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), T.G.Tutin et al, *Flora Europaea* 5 (1980), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from France. **Basionym or Replaced Name**: *Agrostis minima* L., *Sp. Pl.* 63 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Herb. Burser 1: 12*, (UPS). LT designated by Scholz in Cafferty et al., *Taxon* 49(2): 243 (2000).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (338), T. Cope & A. Gray, Grasses of the British Isles (113), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (144, Pl 43), 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) (757).

Derivation (Clifford & Bostock 2007): L. least. Smallest of the known species.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, 2–15 cm long. Ligule an eciliate membrane, 0.2–1 mm long. Leaf-blades flat or involute, 0.5–2 cm long, 0.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 0.5–2 cm long. Rhachis subterete. Spikelet packing broadside to rhachis, 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, truncate, 1.8–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1.8–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate. Upper glume oblong, 1.8–3 mm long, 1.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate.

Florets. Fertile lemma oblong, 1.2–2 mm long, hyaline, without keel, 5 -veined, more than 3-veined. Lemma surface pubescent. Lemma apex erose, truncate. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules absent. Anthers 3, 1–1.7 mm long. Stigmas pubescent. Caryopsis with adherent pericarp, ellipsoid. Hilum punctiform.

n = 7 (1 ref TROPICOS). 2*n* = 14 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Australasia (*), North America.

Region. **Northern Europe**, **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Great Britain. : Belgium, Germany, Netherlands. : France, Portugal, Spain. : Bulgaria, Greece, Italy. Estonia, Latvia, Lithuania, Ukraine. **Northern Africa**. Algeria, Tunisia. **Australia** (*). Western Australia (*). **Northeast USA**. Massachusetts, New York.

South-West.

Micraira adamsii M. Lazarides. *Brunonia,* 2(1): 71 (1979).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf Distr.: 12.45S 133.20E, 20 Feb 1973, *Craven 2328* (HT: CANB).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (123, Fig 21), 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): in honor of Laurence George Adams (1929-) Australian botanist.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 4–5 cm long, 0.5 mm diam., rooting from lower nodes. Culm-internodes 0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.4–0.5 cm long, longer than adjacent culm internode, as wide as blade at the collar, ribbed, glabrous on surface. Leaf-sheath oral hairs lacking or bearded. Ligule a fringe of hairs, 0.3–0.5 mm long. Leaf-blades deciduous at the ligule, tapering towards tip, 0.7–1.4 cm long, 0.5–1.5 mm wide, herbaceous or coriaceous. Leaf-blade venation comprising 5–7 vascular bundles. Leaf-blade surface scaberulous, pilose, with tubercle-based hairs (1–1.5mm long). Leaf-blade margins ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Peduncle 3–6 cm long, glandular, smooth, glabrous. Panicle open, ovate, 1–1.5 cm long, 0.7–1.5 cm wide. Primary panicle branches 0.1–0.3 cm long. Panicle branches glandular, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1.3 mm long, glandular.

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 oblong, laterally compressed, 0.5–1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 0.5–1 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein smooth or scaberulous. Lower glume lateral veins absent. Lower glume apex entire or erose, truncate or obtuse or acute. Upper glume oblong or ovate, 0.5–1 mm long, 1.1–2 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 entire or erose, truncate or obtuse or acute.

Florets. Fertile lemma ovate, 0.3–0.5 mm long, hyaline or membranous, keeled, 1–5 -veined, 0–3 -veined or more than 3-veined, one-veined or several-veined. Lemma apex emarginate or obtuse, muticous or mucronate. Palea oblong, 2–4 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.75–1 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.3–0.5 mm long, striate or reticulate, obtuse.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Micraira brevis M.D.Barrett & R.L.Barrett. *Flora of Australia* 44B:458 (2005).

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

TYPE from Australia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Australia: cultivated in Perth from specimen collected 1km E of summit of Mt Bomford, Drysdale River Station, Western Australia, 15:45'41"S, 125:56'22"e, *M.D. Barrett 999*, *M.D. Barrett 1292* (HT: PERTH; IT: CANB, DNA, MEL).

Illustrations: None found.

Images: K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;.

Derivation (Clifford & Bostock 2007): from *brevis* (Latin), referring to the distinctively short inflorescence.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 3–15 cm long. Culm-internodes 0.3–1 cm long. Lateral branches ample. Leaves spiral. Leaf-sheaths 0.1–0.25 cm long, longer than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a fringe of hairs, 0.1–0.2 mm long. Leaf-blades 0.35–0.6 cm long, 0.3–0.5 mm wide, indurate, stiff. Leaf-blade venation with 2 secondary veins. Leaf-blade surface smooth, pilose, moderately hairy or densely hairy. Leaf-blade margins scaberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, comprising 7–10 fertile spikelets, subtended by an unspecialized leaf-sheath and bracts (a whorl of leaves, and a bract 3mm long), embraced at base by subtending leaf. Peduncle brief, the infloresence subsessile. Panicle capitate, oblong, bearing few spikelets. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 4–5 mm long, 1.5–1.8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1.3–1.9 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure or distinct. Lower glume surface glabrous. Lower glume margins ciliate. Lower glume apex emarginate. Upper glume oblong, 1.3–1.9 mm long, 2 length of adjacent fertile lemma, membranous, 1–3 -veined. Upper glume lateral veins absent or obscure or distinct. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex emarginate.

Florets. Fertile lemma oblong, 0.6–0.8 mm long, hyaline, 1–3 -veined, 0–3 -veined, one-veined or several-veined. Lemma apex obtuse. Palea hyaline, 0 -veined.

Flower and Fruit. Lodicules absent.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Western Australia.

Micraira compacta M. Lazarides. *Brunonia,* 2(1): 75 (1979).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf Distr.: Mt. Brockman Range, ca. 15 km S of Jabiru and ca. 28 km E of Nourlangie, 23 Feb 1973, *Adams 3056* (HT: CANB).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (128, Fig 22), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Images: K.O.Mallett (ed.). *Flora of Australia*, Vol 44 A (2002) & Vol 44B (2004). *Poaceae*;.

Derivation (Clifford & Bostock 2007): L. compact. Inflorescence a short spike.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 2–3 cm long, 0.5 mm diam. Culm-internodes 0.07 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.3–0.4 cm long, longer than adjacent culm internode, wider than blade at the collar, ribbed, glabrous on surface. Ligule a fringe of hairs,

0.2 mm long. Leaf-blades deciduous at the ligule, 4–8 cm long, 0.3–0.75 mm wide. Leaf-blade venation comprising 3–5 vascular bundles. Leaf-blade surface scaberulous, pilose, with simple hairs or tubercle-based hairs (1.5–2mm long). Leaf-blade margins scaberulous, ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Peduncle 1–2 cm long, glandular, glabrous. Panicle spiciform, oblong, 0.4–0.5 cm long, 0.15–0.2 cm wide. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 1.75–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1.75–2 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate, awned, 1 -awned, awn flat 0.5 mm long. Upper glume oblong, 1.75–2 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein conspicuous. Upper glume lateral veins absent. Upper glume apex emarginate, awned, 1 -awned, awn flat 0.5 mm long.

Florets. Fertile lemma oblong, 0.5–1 mm long, hyaline, keeled, 1(–3) -veined, 0–3 -veined, one-veined or several-veined. Lemma lateral veins close to midvein. Lemma apex emarginate or obtuse. Palea oblong, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.6 mm long. Caryopsis with adherent pericarp, ellipsoid, obtuse.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Micraira dentata M. Lazarides. *Brunonia,* 2(1): 76 (1979).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf Distr.: ca. 10 km SSE of Mt. Brockman, 27 Feb 1973, *Adams 3121* (HT: CANB).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (123, Fig 21), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. *dens*, tooth; *-ata,* possessing. Glume apices truncate-dentate.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 2–3 cm long, 1–1.25 mm diam. Culm-internodes 0.07–0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.5 cm long, longer than adjacent culm internode, as wide as blade at the collar, glabrous on surface. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades deciduous at the ligule, tapering towards tip, 1.1–2.5 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade midrib indistinct. Leaf-blade venation comprising 7 vascular bundles. Leaf-blade surface scaberulous, glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate, pungent.

Inflorescence. Inflorescence a panicle. Peduncle 1–2 cm long, eglandular, glabrous. Panicle contracted, oblong, 1.5 cm long, 0.5 cm wide. Primary panicle branches 0.3–0.5 cm long. Panicle branches eglandular, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5 mm long.

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 oblong, laterally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or distinct. Lower glume apex dentate, truncate, mucronate. Upper glume oblong, 1 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume apex dentate, truncate, mucronate.

Florets. Fertile lemma oblong, 0.5 mm long, hyaline or membranous, keeled, 1 -veined, 0–3 -veined, one-veined. Lemma apex emarginate or truncate or obtuse, muticous or mucronate. Palea oblong, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.75 mm long. Caryopsis with adherent pericarp.
Distribution (TDWG). Continent. Australasia.
Country /Province /State. **Australia**. Northern Territory.
Darwin & Gulf.

Micraira dunlopii M. Lazarides. *Nuytsia,* 5(2): 291 (1984).

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 Synonomy Database: Australia: Western Australia: Northern Province, Wonjarring Jarring Gorge, Carson Escarpment, c. 36 km E of new Theda homestead, 14.49S 126.49E, 27 Jul 1977, *Telford 6174* (HT: CANB; IT: CBG, PERTH).

Illustrations (Books): J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1189, Fig 337).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): in honor of Clyde Robert Dunlop (1946-) Australian botanist.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 3–5 cm long, 0.5 mm diam. Culm-internodes 0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.3–0.4 cm long, longer than adjacent culm internode, as wide as blade at the collar, outer margin glabrous or hairy. Leaf-sheath oral hairs bearded, 1–1.5 mm long. Ligule a ciliolate membrane, 0.1–0.2 mm long. Leaf-blades deciduous at the ligule, flat or conduplicate, 6.5–9.5 cm long, 0.3 mm wide, herbaceous or coriaceous, stiff. Leaf-blade venation comprising 3 vascular bundles. Leaf-blade surface scaberulous, glabrous. Leaf-blade margins scaberulous. Leaf-blade apex obtuse to acute.

Inflorescence. Inflorescence a panicle. Peduncle glandular. Panicle open, ovate, 1–1.3 cm long. Primary panicle branches 0.3–0.5 cm long. Panicle branches glandular, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, glandular.

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 oblong, laterally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 1 mm long, 1 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse, mucronate. Upper glume oblong or ovate, 1 mm long, 2–3 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume primary vein conspicuous. Upper glume lateral veins absent. Upper glume apex truncate or obtuse, mucronate.

Florets. Fertile lemma oblong, 0.3–0.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins ribbed. Lemma apex entire or dentate, 3 -fid, truncate or obtuse, muticous or mucronate. Palea oblong, hyaline, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.8 mm long. Caryopsis with adherent pericarp, ellipsoid or obovoid, 0.2–0.5 mm long, smooth. Embryo 0.25 length of caryopsis.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. **Australia**. Western Australia, Northern Territory.
Kimberley. Darwin & Gulf.

Micraira inserta M. Lazarides. *Nuytsia,* 5(2): 292 (1984).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf District: Mt. Gilruth, 13.04S,133.05E, *Dunlop 4427* (HT: CANB; IT: BRI, DNA, K, NT).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. i*nsero*, place among. Inflorescence overtopped by upper leaves.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 1 cm long, 0.5–0.8 mm diam. Culm-internodes 0.5–0.8 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.2–0.3 cm long, longer than adjacent culm internode, as wide as blade at the collar. Ligule a fringe of hairs, 0.3–0.5 mm long. Leaf-blades deciduous at the ligule, 0.5–0.6 cm long, 0.3–0.5 mm wide, stiff. Leaf-blade venation with 3 subepidermal sclerenchyma strands. Leaf-blade surface papillose, rough adaxially, glabrous. Leaf-blade margins cartilaginous, scaberulous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, shorter than basal leaves, subtended by an inflated leaf-sheath, enclosed. Peduncle 0.1 cm long, eglandular. Panicle spiciform, oblong, 0.3–0.4 cm long, 0.1 cm wide, bearing few spikelets. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 1 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous. Lower glume apex truncate. Upper glume oblong or ovate, 1 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1(–3) -veined. Upper glume primary vein conspicuous. Upper glume lateral veins absent or obscure. Upper glume surface glabrous. Upper glume apex truncate.

Florets. Fertile lemma oblong or ovate, 0.5 mm long, hyaline, keeled, 1 -veined, 0–3 -veined, one-veined. Lemma midvein thickened. Lemma apex erose, truncate. Palea oblong, hyaline, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.8 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Micraira lazaridis L.G. Clark, J.F. Wendel & L.A. Craven. *Beagle,* 12: 2 (1995).

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 Synonomy Database: Australia: Western Australia, *L.A. Craven 9344* (HT: ?; IT: K).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Mike Lazarides (1928-) Australian botanist.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 3–11 cm long, 0.4–0.6 mm diam., rooting from lower nodes. Culm-internodes 1–1.5 cm long, brown, estriate, smooth. Lateral branches ample. Leaves cauline (in a whorl around panicle), spiral. Leaf-sheaths 0.8–1(–1.6) cm long, longer than adjacent culm internode, as wide as blade at the collar. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades 1.8–2.7 cm long, 0.3–0.4 mm wide, stiff. Leaf-blade midrib keeled beneath. Leaf-blade venation with 2 secondary veins. Leaf-blade surface papillose, rough adaxially, pilose, sparsely hairy. Leaf-blade margins cartilaginous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, comprising 5–6 fertile spikelets, subtended by an unspecialized leaf-sheath and bracts (a whorl of leaves, and a bract 1.5mm long), enclosed. Peduncle brief, the infloresence subsessile. Panicle capitate, oblong, 1.6–2 cm long, bearing few spikelets. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 1–1.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 mm long, 1 length of upper glume, membranous, much thinner on margins, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume surface glabrous. Lower glume margins ciliate. Lower glume apex emarginate. Upper glume ovate, 1–1.4 mm long, 3 length of adjacent fertile lemma,

membranous, with hyaline margins, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface glabrous. Upper glume margins ciliate. Upper glume apex emarginate.

Florets. Fertile lemma ovate, 0.33–0.5 mm long, hyaline, 1 -veined, 0–3 -veined, one-veined. Lemma apex truncate. Palea 0.3–0.5 mm long, hyaline, 2 -veined.

Flower and Fruit. Lodicules absent. Anthers 2, 0.9–1.1 mm long, yellow. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 0.4 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Western Australia.

Kimberley.

Micraira multinervia M. Lazarides. *Nuytsia*, 5(2): 293 (1984).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf District: top of Jim Jim Falls, 13.17'S, 132.51'E; 29 Jan 1981, *Dunlop 5634* (HT: CANB; IT: DNA).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *multus,* many; *nervus,* nerve. Lemma and palea many-nerved.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 10–15 cm long, 1 mm diam. Culm-internodes 0.1–0.2 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.4–0.5 cm long, longer than adjacent culm internode, as wide as blade at the collar. Ligule a fringe of hairs, 0.2 mm long. Leaf-blades deciduous at the ligule, lanceolate, 0.9–1.25 cm long, 1.3 mm wide, coriaceous, stiff. Leaf-blade venation with 7–9 subepidermal sclerenchyma strands. Leaf-blade surface ribbed, glabrous. Leaf-blade margins smooth or scaberulous, ciliate, hairy at base. Leaf-blade apex attenuate, pungent, hardened.

Inflorescence. Inflorescence a panicle. Peduncle glandular. Panicle contracted, oblong, 1 cm long, 0.3–1 cm wide. Primary panicle branches 0.2–0.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.1–0.8 mm long.

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 oblong, laterally compressed, 0.5–1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, firmer than fertile lemma. Lower glume ovate, 0.5–1 mm long, 1 length of upper glume, membranous or scarious, 1-keeled, 1(–2) -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse, muticous or mucronate. Upper glume ovate, 0.5–1 mm long, 1 length of adjacent fertile lemma, membranous or scarious, 1-keeled, 1 -veined. Upper glume primary vein conspicuous. Upper glume lateral veins absent. Upper glume apex truncate or obtuse, muticous or mucronate.

Florets. Fertile lemma oblong or ovate, 0.5–1 mm long, hyaline, keeled, 5–7 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex emarginate to obtuse. Palea oblong, hyaline, 6 -veined, 2-keeled. Palea keels thickened. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.8 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.5–0.6 mm long, striate.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Micraira pungens M. Lazarides. *Brunonia,* 2(1): 77 (1979).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf Distr.: 43 km E of Oenpeli Mission, 12.20S 133.26E, alt. 240 m, 17 Feb 1973, *Adams 3010* (HT: CANB).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (123, Fig 21), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. *pungo*, prick. Leaf-blades sharp-pointed.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 7–12 cm long, 1 mm diam., rooting from lower nodes. Culm-internodes 0.07–0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.4 cm long, longer than adjacent culm internode, as wide as blade at the collar, glabrous on surface. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades deciduous at the ligule, tapering towards tip, 4–8 cm long, 0.3–0.75 mm wide, coriaceous, stiff, glaucous. Leaf-blade midrib indistinct. Leaf-blade venation comprising 7–10 vascular bundles. Leaf-blade surface scaberulous, rough abaxially, glabrous. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate, pungent.

Inflorescence. Inflorescence a panicle. Peduncle 4–8 cm long, glandular, glabrous. Panicle contracted, oblong, 1.5–2.5 cm long, 0.7–1.5 cm wide. Primary panicle branches 0.5–1.2 cm long. Panicle branches glandular. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long, glandular.

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 oblong, laterally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex entire or erose, truncate or obtuse or acute, muticous or mucronate. Upper glume ovate, 1 mm long, 1–2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex entire or erose, obtuse or acute, muticous or mucronate.

Florets. Fertile lemma ovate, 0.5–1 mm long, membranous, keeled, 1–3 -veined, 0–3 -veined, one-veined or several-veined. Lemma apex emarginate or obtuse, muticous or mucronate. Palea oblong, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 1 mm long. Caryopsis with adherent pericarp, orbicular, reticulate, obtuse.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Micraira spiciforma M. Lazarides. *Nuytsia,* 5(2): 294 (1984).

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 Synonomy Database: Australia: Western Australia: Northern Province: Mitchell Plateau, 14.50'Lat, 125.42'Long, 24 Feb 1980, *Dunlop 5298* (HT: CANB; IT: BRI, CANB, DNA, K, MEL, NSW, NT, PERTH).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *spica*, thorn; *forma*, appearance. Inflorescence a condensed spike-like panicle.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 2–5 cm long, 0.5 mm diam., rooting from lower nodes. Culm-internodes 0.5 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.2–0.3 cm long, as wide as blade at the collar, glabrous on surface. Ligule absent. Leaf-blades deciduous at the ligule, 0.4–0.5 cm long, 0.4–0.5 mm wide. Leaf-blade venation with 3–5 subepidermal sclerenchyma strands. Leaf-blade surface pilose or hirsute, hairy on both sides. Leaf-blade margins cartilaginous, scabrous, tuberculate-ciliate. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle, comprising 5–7 fertile spikelets. Peduncle glandular. Panicle open, oblong, 0.3–0.4 cm long, 0.1 cm wide, bearing few spikelets. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, 1-keeled, 1–3 -veined. Lower glume lateral veins absent or obscure. Lower glume surface glabrous. Lower glume apex emarginate or obtuse. Upper glume oblong, 1 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface glabrous. Upper glume apex emarginate or obtuse.

Florets. Fertile lemma lanceolate, 0.5 mm long, hyaline, keeled, 1–3 -veined, 0–3 -veined, one-veined or several-veined. Lemma apex emarginate or obtuse. Palea oblong, hyaline, 2 -veined. Palea keels smooth. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.5–0.6 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Western Australia, Northern Territory.

Kimberley. Darwin & Gulf.

Micraira spinifera M. Lazarides. *Brunonia,* 2(1): 78 (1979).

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 Synonomy Database: HT: *Lazarides 7989 [7898]*, 27 Feb 1973, Australia: Northern Territory: Darwin & Gulf Distr.: 12.55S 132.59 E (CANB; IT: L, MO-2804489).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (123, Fig 21), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. *spina*, thorn; *fero*, bear. The glumes terminate in an apical spine.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming, clumped densely. Culms prostrate, 2–5 cm long, 0.4 mm diam. Culm-internodes 0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.3–0.4 cm long, longer than adjacent culm internode, as wide as blade at the collar, ribbed, glabrous on surface. Ligule an eciliate membrane or a ciliolate membrane, 0.2 mm long. Leaf-blades deciduous at the ligule, involute or convolute, 7–10 cm long, 0.75–1 mm wide, stiff. Leaf-blade midrib indistinct. Leaf-blade venation comprising 3–5 vascular bundles. Leaf-blade surface scabrous, pilose, with tubercle-based hairs. Leaf-blade margins scaberulous, ciliate. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle 1.5–4 cm long, eglandular or glandular, glabrous. Panicle contracted, oblong, 0.6–1 cm long, 0.3–0.8 cm wide. Primary panicle branches 1–3.5 cm long. Panicle axis smooth or scaberulous. Panicle branches eglandular or glandular, smooth or scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.3–2.5 mm long.

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 oblong, laterally compressed, 1.25–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1.25–1.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex entire or erose, obtuse to acuminate, awned, 1 -awned, awn terete 0.2–0.5 mm long. Upper glume ovate, 1.25–1.5 mm long, 2 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex entire or erose, obtuse to acuminate, awned, 1 -awned, awn terete 0.2–0.5 mm long.

Florets. Fertile lemma oblong, 0.6–0.7 mm long, hyaline, keeled, 3 -veined, 0–3 -veined, one-veined. Lemma apex emarginate, mucronate. Palea oblong, hyaline, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.6–0.75 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.5 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.
Darwin & Gulf.

Micraira subspicata M. Lazarides. *Brunonia,* 2(1): 79 (1979).

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 Synonomy Database: HT: *Lazarides 8004*, 4 Mar 1973, Australia: Northern Territory: Darwin & Gulf Distr.: 13.04 S, 132.56E (CANB; IT: L, MO-2804490).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (128, Fig 22), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. *sub*, approaching; *spica*, spike; *-ata*, possessing. Inflorescence a spike-like panicle.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming, clumped densely. Culms prostrate, 2–3 cm long, 0.5 mm diam. Culm-internodes 0.1 cm long, estriate or ridged. Leaves cauline, spiral. Leaf-sheaths 0.3–0.4 cm long, longer than adjacent culm internode, as wide as blade at the collar, pilose, with tubercle-based hairs. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades deciduous at the ligule, 6–9 cm long, 0.75 mm wide, stiff. Leaf-blade venation comprising 5 vascular bundles. Leaf-blade surface pilose. Leaf-blade margins ciliate. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Inflorescence a panicle. Peduncle 1–1.8 cm long, eglandular, pilose above. Panicle spiciform, ovate or globose, 0.3–0.4 cm long. Panicle axis pilose. Panicle branches eglandular. Spikelets solitary. Fertile spikelets sessile.

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 oblong, laterally compressed, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1.5–2 mm long, 1 length of upper glume, membranous, much thinner on margins, 1-keeled, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume surface pilose, with simple hairs or tubercle-based hairs. Lower glume apex acute. Upper glume ovate, 1.5–2 mm long, 3–4 length of adjacent fertile lemma, membranous, with hyaline margins, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface pilose, with simple hairs or tubercle-based hairs. Upper glume apex acute.

Florets. Fertile lemma ovate, 0.5 mm long, hyaline, shiny, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins ribbed. Lemma apex emarginate or obtuse. Palea oblong, hyaline, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 1 mm long. Caryopsis with adherent pericarp, 0.5 mm long, striate.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. **Australia**. Northern Territory.
Darwin & Gulf.

Micraira subulifolia F. Muell. *Fragm.* v. 208. (1866).

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 Synonomy Database: LT: *Dallachy s.n.*, without date, Australia: Queensland: North Kennedy Distr.: Rockingham Bay, (MEL, BRI). LT designated by Blake, Proc. Roy. Soc. Queensl. 74: 46 (1964).

Illustrations (Books): J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (306), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (145, Fig. 22), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (3, Fig. 1).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. *subulus*, fine sharp point*; folium*, a leaf. Leaf-blades narrow, tapering.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 6–8 cm long, rooting from lower nodes. Leaves cauline, spiral. Leaf-sheaths longer than adjacent culm internode. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, lanceolate, 0.5–1 cm long, 0.3–1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 0.7–1.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 oblong, laterally compressed, 1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.75 mm long, 1 length of upper glume, hyaline, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.75 mm long, 0.75 length of adjacent fertile lemma, hyaline, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma oblong, 1 mm long, membranous, without keel, 5–9 -veined, more than 3-veined. Lemma lateral veins ribbed. Lemma apex truncate. Palea oblong, 0.75 length of lemma, 5–7 -veined. Palea apex truncate.

Flower and Fruit. Lodicules absent. Anthers 2, 1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Queensland.

North, South East.

Micraira tenuis M. Lazarides. *Brunonia,* 2(1): 81 (1979).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf Distr.: 2–3 mi N of El Sharana Mine, 25 Jan 1973, *Martensz & Schodde AE 595* (HT: CANB; IT: BRI, DNA, K, NT).

Illustrations (Books): K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (123, Fig 21), 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. thin. Culms, leaf-blades or pedicels, slender.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, slender, 4–10 cm long, 0.3 mm diam., rooting from lower nodes. Culm-internodes 0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths 0.5 cm long, longer than adjacent culm internode, narrower than blade at the collar, smooth or scaberulous. Leaf-sheath oral hairs ciliate. Ligule a ciliate membrane, 0.5–1.3 mm long. Leaf-blades deciduous at the ligule, lanceolate or elliptic, 6–20 cm long, 0.3 mm wide. Leaf-blade venation comprising 1 vascular bundles. Leaf-blade surface pilose, with simple hairs or tubercle-based hairs. Leaf-blade margins smooth or scaberulous. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Inflorescence a panicle. Peduncle 3–9 cm long. Panicle open, ovate, 2–3 cm long, 2–4 cm wide. Primary panicle branches 5–10 cm long. Panicle branches eglandular or glandular, with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.75–4.5 mm long.

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 oblong, laterally compressed, 0.75–1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, firmer than fertile lemma. Lower glume oblong or ovate, 0.75–1 mm long, 1 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 emarginate, muticous or mucronate. Upper glume oblong or ovate, 0.8–1 mm long, 1–1.2 length of adjacent fertile lemma, membranous, 1-keeled, 1(–3) -veined. Upper glume

primary vein smooth or scaberulous. Upper glume lateral veins absent or obscure. Upper glume apex emarginate, muticous or mucronate.

Florets. Fertile lemma obovate, 0.8 mm long, hyaline, keeled, 1 -veined, 0–3 -veined, one-veined. Lemma apex emarginate. Palea oblong, hyaline, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.5–0.75 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.3–0.5 mm long, striate or rugose.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Micraira viscidula M. Lazarides. *Nuytsia,* 5(2): 295 (1984).

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 Synonomy Database: Australia: Northern Territory: Darwin & Gulf District: c. 8 km SW of Oenpelli, 12.23S 133.01E, 11 Jul 1978, *Dunlop 4975* (IT: CANB; IT: AD, BRI, DNA, K, MEL, NSW, NT, PERTH).

Illustrations: None found.

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): L. *viscida*, sticky; *-ula,* diminutive. Invested with small glandular tubercles.

Classification. Subfamily Micrairoideae. Tribe Micraireae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 3–5 cm long, 0.5 mm diam., rooting from lower nodes. Culm-internodes 0.1 cm long, estriate. Leaves cauline, spiral. Leaf-sheaths loose, longer than adjacent culm internode, wider than blade at the collar, pilose. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, 1 cm long, 0.5 mm wide, viscid. Leaf-blade venation with 5 subepidermal sclerenchyma strands. Leaf-blade surface pilose, hairy on both sides. Leaf-blade margins glandular. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Inflorescence a panicle. Peduncle glandular. Panicle open, ovate, 1.5 cm long. Primary panicle branches 0.3–0.5 cm long. Panicle branches glandular, viscid. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long, glandular.

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 oblong, laterally compressed, 1.3–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1.3–1.5 mm long, 1 length of upper glume, membranous, much thinner on margins, glandular, viscid, 1-keeled, 3 -veined. Lower glume lateral veins ribbed. Lower glume surface pubescent. Lower glume apex acuminate. Upper glume lanceolate, 1.3–1.5 mm long, 2–3 length of adjacent fertile lemma, membranous, with hyaline margins, glandular, viscid, 1-keeled, 3 -veined. Upper glume lateral veins ribbed. Upper glume surface pubescent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 0.5 mm long, hyaline, much thinner on margins, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins ribbed. Lemma apex dentate, 3 -fid. Palea oblong, hyaline, 2 -veined. Palea apex divided to base, 2 -fid.

Flower and Fruit. Lodicules absent. Anthers 2, 0.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.5 mm long, striate.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Northern Territory.

Darwin & Gulf.

Microcalamus barbinodis Franch. *Journ. de Bot.* 3:282 (1889).

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>: *fide* TROPICOS and Kew Synonomy Database: Congo, Njole: Thollon 715 (K holo).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (236, Fig. 162 as *M. aspidistrula*).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3070 (1916) as *M. convallarioides*).

Derivation (Clifford & Bostock 2007): L. *barba*, beard; *nodus*, knot. Nodes bearded.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Boivinellinae.

Habit, Vegetative Morphology. Perennial. Cataphylls evident. Culms decumbent, 15–60 cm long, wiry. Leaves cauline, 1–6 per branch. Ligule a ciliolate membrane. Collar bearded. Leaf-blades lanceolate or ovate, 20–55 mm wide. Leaf-blade venation with distinct cross veins.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 2.5–25 cm long, contracted about primary branches. Primary panicle branches simple, bearing 1–6 fertile spikelets on each lower branch. Panicle branches glabrous or pubescent. Spikelets solitary or in pairs or in threes. Fertile spikelets pedicelled, 1–3 in the cluster, subequal. 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 ovate, laterally compressed, 6–8 mm long, falling entire. Floret callus pubescent.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 2–2.5 mm long, 0.3 length of spikelet, chartaceous, 1-keeled, 5–7 -veined. Lower glume apex acute. Upper glume ovate, 2.5–4 mm long, 0.4–0.5 length of adjacent fertile lemma, chartaceous, without keels, 7 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 0.9 length of fertile lemma, 0.9 length of spikelet, chartaceous, 1-keeled, 7 -veined, acuminate. Fertile lemma lanceolate, laterally compressed, 6–8 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface glabrous or pubescent, hairy below. Lemma margins involute, ciliolate. Lemma apex acute, with a little green crest. Palea coriaceous.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**. Cameroon, Congo, Gabon.

Microchloa altera (Rendle) Stapf. *Dyer, Fl. Cap.* vii. 637. (1900).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Malawi. **Basionym or Replaced Name**: *Rendlia altera, Harpochloa altera* Rendle, *Trans. Linn. Soc. Ser.* II. 4: 57 (1894). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Malawi, Mlanje: Whyte 64 (K isosyn).

Illustrations (Books): R.M.Polhill, F.T.E.A., *Gramineae* (2(1974):330, Fig.93 as *Rendlia*), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1999):232 t. 69), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (194, Fig. 169 as *Rendlia*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (281, Fig, 178 as *Rendlia*), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (91, Fig. 24 as *Rendlia*).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *Rendlia*).

Derivation (Clifford & Bostock 2007): L. one of two. The second described species of a genus.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 15–30(–70) cm long, wiry, 2–8 -noded. Culm-internodes distally glabrous or woolly. Leaves cauline. Ligule a ciliolate membrane. Leaf-blades filiform or linear, flat or conduplicate, 3–25 cm long, 0.3–1.75 mm wide. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, unilateral, 2–7(–9) cm long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 1 -rowed. 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 lanceolate, dorsally compressed, compressed slightly, 4–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, similar, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 4–5.5 mm long, 1 length of upper glume, coriaceous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume elliptic, 4–5.5 mm long,

1.3–1.4 length of adjacent fertile lemma, coriaceous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface glabrous or woolly. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, (2.3–)2.9–4(–4.5) mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent or ciliate. Lemma margins ciliate. Lemma hairs white or red. Lemma apex entire or dentate, 2 -fid, obtuse. Palea 2 -veined. Apical sterile florets 1 in number, male or barren, lanceolate, 2.5 mm long.

Flower and Fruit. Anthers 3, 2.3 mm long. Stigmas 2. 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. Tanzania. Malawi, Zambia, Zimbabwe. Limpopo, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Eastern Cape.

Microchloa annua (Kupicha & Cope) T.A. Cope. *Fl. Zambes.*, 10(2): 231 : (1999).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Zambia. **Basionym or Replaced Name**: *Rendlia annua* F.K. Kupicha & T.A. Cope, *Kew Bull.*, 40(1): 90 (1985). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Zambia, Mongu: Robinson 6832 (K holo, SRGH).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. annual. Annuals.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 19–35 cm long, 2–5 -noded. Culm-internodes distally glabrous or woolly. Lateral branches sparse. Leaf-sheaths keeled, woolly. Ligule a ciliolate membrane. Leaf-blades 0.4–3.5 cm long, 2–3 mm wide. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, unilateral, 3.3–5.5 cm long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 1 -rowed. 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, dorsally compressed, compressed slightly, 2.4–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, similar, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 2.4–2.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic, 2.4–2.5 mm long, 1.2–1.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 1.8–2 mm long, hyaline, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy above. Lemma apex acute. Palea 2 -veined. Rhachilla extension 0.3–0.4 mm long. Apical sterile florets 1 in number, male, oblong, 1 mm long.

Flower and Fruit. Anthers 3, 1.1–1.5 mm long. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Zambia.

Microchloa caffra Nees. *Fl. Afr. Austr.* i. 246. (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 Synonomy Database: South Africa, Katberg: Drege (K isosyn).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (203, Fig. 179), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (218, Fig. 135), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (83, Fig. 20).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): pertaining to the Kaffirs of southern Africa.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–50 cm long, 2–3 mm diam., wiry, 2–8 -noded. Leaves cauline. Ligule a ciliolate membrane. Leaf-blades filiform or linear, flat or conduplicate, 2–10 cm long, 0.3–1.75 mm wide. Leaf-blade apex obtuse or abruptly acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 4–15 cm long. Rhachis semiterete, 1.2–1.8 mm wide. Spikelet packing broadside to rhachis, regular, 1 -rowed. Spikelets ascending, 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 lanceolate, dorsally compressed, compressed slightly, 3–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, similar, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 3–3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 3–3.5 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, hyaline, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Anthers 3, 1.2–2 mm long. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**. DRC. Ethiopia (inc. Eritrea). Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Eastern Cape.

Microchloa ensifolia Rendle. *Cat. Welw. Afr. Pl.* ii. 219. (1899).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Angola. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Angola, Pungo Andongo: Welwitsch 2763 ; Angola, Pungo Andongo: Welwitsch 2800 ; Angola, Pungo Andongo: Welwitsch 2816 (K iso).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *ensis,* sword; *folium,* leaf. Leaf-blades sword-like.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 12–15 cm long. Leaves mostly basal. Leaf-sheaths loose, 0.3–0.4 cm long. Ligule a ciliolate membrane. Leaf-blades lanceolate, tapering towards tip, 1–2 cm long, 3–4 mm wide. Leaf-blade margins cartilaginous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, unilateral, 5–8 cm long. Rhachis semiterete. Spikelet packing broadside to rhachis, regular, 1 -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 lanceolate, dorsally compressed, compressed slightly, 3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, similar, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 3.5 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 3 mm long, hyaline, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**. Angola.

Microchloa indica (L. f.) Beauv. *Agrostogr. Explic. Pl.* p. 13, Pl. xx. fig. 8 (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).

TYPE from India. **Basionym or Replaced Name**: *Nardus indica* L. f. *Suppl. Pl.*, 105 (1781)[1782]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India: Tranquebaria, *Kvnig s.n.* (T: LINN-73.8).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (139), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (212, Fig. 137), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (210, Fig. 116), K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl. 896), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (304, Fig. 53), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002), S.A.Renvoize, *Gramineas de Bolivia* (1998) (302, Fig. 62), S.A.Renvoize, *The Grasses of Bahia*, 1984 (77, Fig. 27), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (396, Fig. 138), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (395, Fig. 90 & 413, Fig. 95), 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) (383, Fig. 98), B.Rosengurtt, *Gramineas UruguayasI* (1970) (246, Fig. 100), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 696 as *Microchloa indica* var. *indica* & *M. indica* var *kunthii*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 230).

Illustrations (Journals): *Austr. J. Bot.* (*Suppl.*5: 38, Fig.16 (1972)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012)
(Pl. 22).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths withering. Culms erect, 5–50 cm long, wiry, 2–8 -noded. Leaves mostly basal. Ligule a ciliolate membrane. Leaf-blades filiform or linear, flat or conduplicate, 1–8(–11) cm long, 0.3–1.75 mm wide. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 1.4–15 cm long. Rhachis semiterete, 0.6–0.9(–1.1) mm wide. Spikelet packing broadside to rhachis, regular, 1 -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 lanceolate, dorsally compressed, compressed slightly, 1.7–2.9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, similar, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 1.7–2.9 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 1.7–2.9 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, hyaline, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Anthers 3, 0.3–0.7 mm long. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 0.9 mm long.

$2n = 12$.

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

Country /Province /State. **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**. Burkina, Ghana, Guinea, Ivory Coast, Mali, Nigeria, Sierre Leone, Togo. Burundi, Central African Republic, Cameroon, DRC. Ethiopia (inc. Eritrea), Somalia, Sudan. Kenya, Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana. **Arabian Peninsula**, **China**. China South Central, Hainan, China Southeast. **Indian Subcontinent**, **Indo-China**, **Malesia**. Bangladesh, India. Myanmar, Thailand, Vietnam. Java, Philippines. **Australia**. Northern Territory. **Northern South America**, **Western South America**,

Brazil, **Southern South America**. Bolivia, Colombia. Brazil West Central, Brazil Northeast, Brazil North, Brazil Southeast, Brazil South. Argentina Northeast, Argentina Northwest, Chile North, Paraguay, Uruguay.

Guangdong. Yunnan. Andhra Pradesh, Bihar, Karnataka. Madhya Pradesh, Maharashtra, Orissa, Tamilnadu, West Bengal. Darwin & Gulf. Distrito Federal (*), Mato Grosso, Goiás, Mato Grosso do Sul. Bahia. Tocantins. Minas Gerais, Sao Paulo. Paraná, Rio Grande do Sul, Santa Catarina. Catamarca, Jujuy, La Rioja, Salta, San Luis, Tucuman. Buenos Aires, Cordoba, Corrientes, Entre Rios, Misiones. Tarapaca.

Microchloa kunthii Desv. *Mem. Soc. Agric. Angers* 1:179 (1831).

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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Mexico: Hidalgo: Omitlan et Llano de las Tinaxas (P).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (139), C.E.Hubbard, *Grasses* (1968) (139), G.V.Pope et al., *Flora Zambesiaca* 10 (2(1974):315, Fig.88), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (77, Fig 18), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (174, Fig 72), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995), H.J.Noltie, *The Grasses of Bhutan* (2000) (677, Fig. 36), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (236), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 109, Fig. 16 (2001)).

Illustrations (Journals): *Ruizia* (13:284, Fig 34h-i (1993)).

Derivation (Clifford & Bostock 2007): in honor of Karl Sigismund Kunth (1788–1850), German botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 10–60 cm long, 1–4 mm diam., wiry, 2–8 -noded. Leaves cauline. Ligule a ciliolate membrane. Leaf-blades filiform or linear, flat or conduplicate, 1–8(–11) cm long, 0.3–1.75 mm wide. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, arcuate, unilateral, 2–25 cm long. Rhachis semiterete, 0.8–1.2 mm wide. Spikelet packing broadside to rhachis, regular, 1 -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 lanceolate, dorsally compressed, compressed slightly, 2.5–4(–4.5) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes deciduous, similar, exceeding apex of florets, firmer than fertile lemma, parallel to lemmas. Lower glume elliptic, 2.5–4(–4.5) mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 2.5–4(–4.5) mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, hyaline, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex obtuse. Palea 2 -veined.

Flower and Fruit. Anthers 3, 0.5–1.2 mm long. Stigmas 2. Caryopsis with adherent pericarp, ellipsoid, 1.5 mm long.

n = 12 (1 ref TROPICOS).

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

Country /Province /State. **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Western Indian Ocean**. Ghana, Ivory Coast, Nigeria. Burundi, Cameroon, Rwanda, DRC. 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, Eastern Cape. Madagascar. **Arabian Peninsula**, **China**. Oman. **Indian Subcontinent**, **Indo-China**. Eastern Himalaya. Myanmar, Thailand. **Southwestern USA**, **South-central USA**, **Mexico**.

Arizona. Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Western South America**, **Brazil**, **Southern South America**. Guatemala, Honduras, Nicaragua. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest, Chile North, Paraguay, Uruguay.

Bhutan. Meghalaya, Nagaland. Tamilnadu. Alagoas, Bahia, Ceará, Fernando do Noronha, Maranhão, Pernambuco, Paraíba, Piaui, Rio Grande do Norte (RN), Sergipe. Jujuy. Misiones. Tarapaca. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Microlaena avenacea (Raoul) Hook. f. *Handb. N. Zeal. Fl.* 320 (1864).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Ehrharta diplax*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), E.Edgar, & H.Connor, *Flora of New Zealand Gramineae* 5 (2000), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*) (as *Ehrharta diplax*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010) (as *Ehrharta diplax*).

TYPE from New Zealand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Raoul s.n.*, New Zealand, Akaroa in umbrosis (P).

Recent Synonyms: *Ehrharta diplax* F. Muell., nom nov non *E. avenacea* Schult.(1830), *Sel. Pl. Indust. Cult.* 74 (1876). *Microlaena giulianettii* Stapf, *Kew Bull.* 1899, 114. (1899).

Microlaena carsei Cheeseman, *Trans. N.Z. Inst.* 1914, 47: 47 (1915).

Illustrations (Books): E.Edgar. & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (46, Fig. 2 as *Microlaena avenacea*).

Images: E.Edgar & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000);.

Derivation (Clifford & Bostock 2007): Gk. *diploos*, double; The spikelets have two florets.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial, caespitose. Cataphylls evident. Rhizomes short or elongated. Culms geniculately ascending or decumbent, 40–90 cm long, rooting from lower nodes. Leaves mostly basal. Leaf-sheaths loose, glabrous on surface. Ligule an eciliate membrane, 0.6 mm long. Leaf-blades erect, flat or involute, (17–)30–40 cm long, 2–4(–13) mm wide. Leaf-blade surface scabrous, glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle open or contracted, linear, 20–55 cm long. Panicle branches capillary. Racemes 1, single. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, filiform, 2–8.5 mm long, scabrous.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 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, 6–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below basal sterile floret. Rhachilla elongation 0.2–0.4 mm long. Floret callus pubescent. Floret callus hairs 1.25 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 0.6–1.4 mm long, 0.33–0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume margins ciliolate. Lower glume apex acute. Upper glume oblong, 1.6–2.5 mm long, 0.25–0.33 length of adjacent fertile lemma, membranous, 1-keeled, 1–3 -veined. Upper glume lateral veins absent or distinct. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret lanceolate, 3.5–8 mm long, 0.75–1 length of fertile lemma, membranous, 1-keeled, 5–7 -veined, scabrous, rough on veins, attenuate, awned. Awn of lower sterile floret 1–10 mm long. Lemma of upper sterile floret lanceolate, 6–14 mm long, 2 length of lower sterile floret, membranous, scabrous (om veins), attenuate, awned. Awn of upper sterile floret 8–18 mm long. Fertile lemma lanceolate, 4.6–8.5 mm long, hyaline or membranous, keeled, 5–7 -veined, more than 3-veined. Lemma surface smooth or asperulous, rough on veins. Lemma margins eciliate or ciliolate, hairy above. Lemma apex dentate, 2 -fid. Palea lanceolate, 3–5.5 mm long, 1 -veined, 1-keeled.

Flower and Fruit. Lodicules 2, obovate, 1 mm long, membranous, glabrous. Anthers 2, 1–2.6 mm long. Caryopsis with adherent pericarp, lanceolate, 3.2–5 mm long. Embryo 0.15 length of caryopsis.

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

Country /Province /State. **Malesia**, **Papuasia**. Sulawesi. New Guinea PNG, or West Papua (Irian Jaya). New Guinea. **New Zealand**. New Zealand North I, New Zealand South I, Stewart Is. **Southwestern Pacific**, **South-central Pacific**. Fiji. Society Is.

Microlaena polynoda (Hook. f.) Hook. f. *Handb. N. Zeal. Fl.* 320 (1864).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Ehrharta*).

TYPE from New Zealand. **Basionym or Replaced Name**: *Diplax polynoda* Hook. f., *Fl. N. Zel.* 290 (1853). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: New Zealand, Ruahina range: Colenso (K iso).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *polys,* several; L. *nodus,* knot. Culms several-noded.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 100–250 cm long, wiry. Culm-internodes solid. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades flat or convolute, 7–12 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 2–10 cm long. Primary panicle branches indistinct the panicle almost racemose. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 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, 9–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 0.5 mm long, 0.25 length of upper glume, membranous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume lanceolate, 2 mm long, 0.25 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret lanceolate, 8–9 mm long, 0.9 length of spikelet, herbaceous, 1-keeled, 5 -veined, smooth, acuminate, awned. Awn of lower sterile floret 2 mm long. Lemma of upper sterile floret elliptic, 9–10 mm long, 1.1 length of lower sterile floret, herbaceous, acuminate, awned. Awn of upper sterile floret 6 mm long. Fertile lemma elliptic, 9 mm long, cartilaginous, keeled, 5–7 -veined, more than 3-veined. Lemma apex acute. Palea 1 -veined.

Flower and Fruit. Lodicules 2, membranous. Anthers 4.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **New Zealand**. New Zealand North I, New Zealand South I.

Microlaena stipoides (Labill.) R. Br. *Prod.* 210. (1810).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Ehrharta*), 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*) (as *Erhrarta*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010) (as *Erhrarta*).

TYPE from Australia. **Basionym or Replaced Name**: *Ehrharta stipoides* Labill., *Nov. Holl. Pl.* 1: 91, t. 118 (1804). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Labillardihre s.n.*, Australia: Tasmania: Capite van-Dieman (FI).

Illustrations (Books): E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (130, Pl. 50), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (59, Fig. 23 as var. *stipoides*), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (15, Pl 1), N.Walsh & T.Entwistle, *Flora of Victoria* Vol 2 (1994) (370, Fig. 73 as var. *stipoides*), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (308), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (105, Fig. 17), A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (382, Fig. 52 as var. *stipoides* and var. *breviseta*), 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) (1533, Pl. 226 as *Ehrharta*).

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): Gk. *-oides*, resembling. With spikelets resembling those of *Stipa*.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial. Cataphylls evident. Rhizomes short. Culms geniculately ascending or decumbent, 30–75 cm long, rooting from lower nodes. Ligule a ciliolate membrane. Leaf-blades 2.5–25 cm long, 1–5(–10) mm wide.

Inflorescence. Inflorescence a panicle or composed of racemes. Panicle open, linear, effuse, equilateral or nodding, 7–17 cm long. Primary panicle branches bearing 1–3 fertile spikelets on each lower branch. Panicle branches capillary. Racemes single (reduced panicle). Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–15 mm long.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 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 linear, laterally compressed, 8–14 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus evident or elongated, 0.1–2 mm long, pubescent.

Glumes. Glumes both absent or obscure (or minute, persistent).

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea. Lemma of lower sterile floret lanceolate, 5–10 mm long, coriaceous, 1-keeled, 5–7 -veined, scabrous, acuminate, awned. Awn of lower sterile floret 5–20 mm long. Lemma of upper sterile floret lanceolate, 8–12 mm long, 1.2–1.6 length of lower sterile floret, coriaceous, acuminate, awned. Awn of upper sterile floret 8–20 mm long. Fertile lemma lanceolate, 7–10 mm long, membranous, keeled, 5–7 -veined, more than 3-veined. Lemma midvein scabrous. Lemma apex acute or acuminate, muticous or mucronate. Palea linear, 0.75 length of lemma, membranous, thinner on margins, 1 -veined, 1-keeled. Palea keels ciliate.

Flower and Fruit. Lodicules 2, ovate, membranous. Anthers 4, 3–4 mm long. Caryopsis with adherent pericarp, linear.

Cleistogenes present.

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

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Southern Africa** (*). Kwazulu-Natal. **Indian Subcontinent**, **Malesia**, **Papuasia**. Sri Lanka. Java, Lesser Sunda Is, Philippines. 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. Chatham Is, Kermadec Is, New Zealand North I, New Zealand South I, Stewart Is. **South-central Pacific**, **North-central Pacific**. Easter Is. Hawaii.

South-West. Southern. North, Central, South East. Coast, Tablelands, Western Slopes, Western Plains.

Microlaena tasmanica (Hook.f.) Hook. f. ex Benth. *Fl. Austral.* vii. 552. (1878).

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

TYPE from Australia. **Basionym or Replaced Name**: *Diplax tasmanica* Hook. f., *Fl. Tasman.* 2: 105, t. 155 (1858). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Hab. Recherche Bay, *Gunn 1481*.

Illustrations (Books): A.Wilson (ed.), *Flora of Australia*, Vol 44A. *Poaceae* (2009) (382, Fig 52 as var. *tasmanica*), 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. *-ica*, belonging to. From Tasmania, Australia.

Classification. Subfamily Ehrhartoideae. Tribe: Ehrharteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 25–80 cm long. Ligule an eciliate membrane. Leaf-blades 6–20 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 4–10 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 2 basal sterile florets, 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, 8–10 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1.5–2 mm long, 0.66 length of upper glume, chartaceous, without keels, 3 -veined. Lower glume apex obtuse. Upper glume oblong, 2.5–3 mm long, 0.33 length of spikelet, chartaceous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 2 or more, similar, barren, without significant palea, attached to and deciduous with the fertile. Lemma of lower sterile floret lanceolate, 6–7 mm long, 0.75 length of spikelet, coriaceous, 1-keeled, 7 -veined, ribbed, scaberulous, acuminate, awned. Awn of lower sterile floret 1–2 mm long. Lemma of upper sterile floret lanceolate, 8–10 mm long, 1.3–1.4 length of lower sterile floret, coriaceous, scabrous or ribbed, acuminate, awned. Awn of upper sterile floret 2–5 mm long. Fertile lemma elliptic, 7–8 mm long, cartilaginous, keeled, 5 -veined, more than 3-veined. Lemma apex acute.

Flower and Fruit. Lodicules 2, membranous. Anthers 2.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Tasmania.

Micropyropsis tuberosa C. Romero-Zarco & B. Cabezudo. *Lagascalia,* 11(1): 95 (1983).

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

TYPE from Spain. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Spain, Parque National de Donana: Galiano & Novo in SEV 66232 (SEV holo, K, MA, MAF, MAG).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *tuber*, swelling; *-osa*, abundance. Culms thickened at the base.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Culms 30–100 cm long, swollen at the base, forming an ovoid corm or moniliform corms. Ligule an eciliate membrane. Leaf-blades 10–25 cm long, 2–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 10–30 cm long, bearing 6–17 fertile spikelets on each. Rhachis semiterete. Spikelet packing broadside to rhachis, distant. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 mm long.

Fertile Spikelets. Spikelets comprising 3–13 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, 10–26 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1.5–2 mm long, eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 3.5–5 mm long, 0.7 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic, 5–7 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5–7 mm long, chartaceous, without keel, 5 -veined, more than 3-veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, 2–6 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 3 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 4 mm long.

n = 7 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. **Southwestern Europe**.

Country /Province /State. : Spain.

Micropyrum patens (Brot.) Rothm. ex Pilger. *Engl. Bot. Jahrb.* lxxiv. 567 (1949).

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 Portugal. **Basionym or Replaced Name**: *Triticum patens* Brot., Fl. Lusit. 1: 120 (1804). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Portugal, Coimbra: Coll?.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *pateo*, lie open. Panicle branches spreading or reflexed or habit open.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms erect, 50–100 cm long. Ligule an eciliate membrane, 0.2–0.8 mm long. Leaf-blades 4–16 cm long, 0.5–2.5 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 6–20 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, lax. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 10–16 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, (9–)11–15(–20) mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, 1–1.6 mm long, eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 2.5–4 mm long, 0.7–0.8 length of upper glume, coriaceous, without keels, (1–)3 -veined. Lower glume lateral veins ribbed. Lower glume apex obtuse or acute. Upper glume oblong, 3.5–5 mm long, 0.7–0.8 length of adjacent fertile lemma, coriaceous, without keels, 3(–5) -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Fertile lemma elliptic, 5–6 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma surface scaberulous, rough on veins. Lemma apex obtuse, muticous. Palea 1 length of lemma, 2 -veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 2.5–3 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 2.5–3 mm long.

n = 7 (2 ref TROPICOS).

Distribution (TDWG). Continent. Europe.

Region. **Southwestern Europe**.

Country /Province /State. : Portugal, Spain.

Micropyrum tenellum (L.) Link. *Linnaea,* xvii. 398 (1843).

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 Europe. **Basionym or Replaced Name**: *Triticum tenellum* L., *Syst.* ed. X. 880 (1759). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Europe: Herb.Linn. 104/14 (LINN lecto).

Illustrations (Books): G.Hegi, *Flora von Mitteleuropa* 1 (1909) (as *Festuca festucoides*).

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual. Culms erect, 20–60 cm long. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades 1–6 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, bilateral, 1–20 cm long. Rhachis flattened. Spikelet packing broadside to rhachis, lax. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5–1.5 mm long.

Fertile Spikelets. Spikelets comprising 3–9(–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, (3–)4–9(–14) mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, eventually visible between lemmas.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 2–5 mm long, 0.8–1 length of upper glume, coriaceous, without keels, (1–)3 -veined. Lower glume lateral veins ribbed. Lower glume apex obtuse or acute. Upper glume oblong, 2.4–6 mm long, 1 length of adjacent fertile lemma, coriaceous, without keels, 3(–5) -veined. Upper glume lateral veins ribbed. Upper glume apex acute.

Florets. Fertile lemma elliptic, 2.7–5 mm long, coriaceous, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse, muticous or awned, 1 -awned. Principal lemma awn 0–5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels scabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3, 0.5–1.3 mm long. Ovary glabrous. Caryopsis with adherent pericarp, ellipsoid, 2.5–3.2 mm long.

2*n* = 14 (2 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia.

Region. **Northern Europe** (*), **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**.

Country /Province /State. : GB Aliens (Ryves et al), Northern Ireland. : Germany, Switzerland. : Corsica, France, Portugal, Sardinia, Spain. : Bulgaria, Greece, Italy, Sicily, Turkey Europe, Yugoslavia. **Northern Africa**, **Macaronesia**. Libya. Madeira. **Western Asia**. Cyprus, Turkey.

Microstegium batangense (S.L.Zhong) S.M.Phillips & S.L.Chen. *Fl China* 22:594 (2006).

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**: *Arthraxon batangensis* S.L. Zhong, *J. Southwest. Agric. Coll.* (Chongqing), 1982(4): 97 (1982). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Sichuan: Batang, dry river valleys, 2600–3100 m, 16 Sept. 1973, *West Sichuan Veget. Exped. 3898* (HT: SWAU; IT: CDBI).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Rhizomes elongated. Culms geniculately ascending or decumbent, slender, 20–45 cm long. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.6–1 mm long. Leaf-blades linear or lanceolate, 1–5.5 cm long, 1.5–2 mm wide, firm, glaucous. Leaf-blade surface smooth, glabrous, hairless except near base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 5.5–6.5 cm long. Rhachis fragile at the nodes, semiterete, ciliate on margins. Rhachis hairs 2 mm long. Rhachis internodes filiform, 1 length of fertile spikelet. Rhachis internode tip clavate. Spikelets in pairs. Fertile spikelets sessile, 2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, ciliate.

Sterile Spikelets. Companion sterile spikelets rudimentary or well-developed, containing empty lemmas or male, 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 lanceolate, dorsally compressed, 4–6.5 mm long, falling entire, deciduous from the base and with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely. Spikelet callus hairs 2–3 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume linear or lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled above, 5–7 -veined. Lower glume lateral veins with cross-veins. Lower glume surface with a longitudinal median groove, scabrous. Lower glume apex acuminate. Upper glume elliptic, without keels, 7 -veined. Upper glume lateral veins with cross-veins. Upper glume margins ciliolate. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma linear, 3.5–4 mm long, hyaline, without keel, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–14 mm long overall, with twisted column. Palea absent or minute.

Flower and Fruit. Anthers 2, 3 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

Sichuan.

Microstegium biaristatum (Honda) Koidz. *Bot. Mag., Tokyo,* xliii. 394 (1929).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Nepal. **Basionym or Replaced Name**: *Andropogon biaristatus* Steud. Syn. Plant. Glum. 1: 379 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: *Wallich Cat. 8823 p.p.* (P, holo; B, lost?, CAL ?, *microfiche IDC 7394;* L).

Recent Synonyms: *Microstegium glaberrimum* (Honda) Koidz., *Bot. Mag., Tokyo,* 43: 394 (1929). *Pollinia wallichiana* Nees ex Steud. (1854-b) 410. --- *Pollinia ciliata* Trin. subsp. *wallichiana* (Nees ex Steud.) Hack. in A. DC. (1889) 177. --- *Pollinia ciliata* Trin. var. *wallichiana* (Nees ex Steud.) Hack. (1899)

723. --- *Microstegium ciliatum* (Trin.) A. Camus var. *wallichianum* (Nees ex Steud.) Honda (1930) 405. --- Type: *Wallich Cat. 8822* (P, holo; BM, E, K, *microfiche IDC 7394*).

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Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (730 as *M. glaberimum*), C-C Hsu,*Taiwan Grasses* (1975) (as *M. glaberimum*).

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms 20–30 cm long. Culm-nodes glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades linear or lanceolate, 2 cm long, 3 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, paired or digitate. Rhachis fragile at the nodes, glabrous on margins. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, 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, 2 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus glabrous, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume surface with a longitudinal median groove, scabrous, rough above. Upper glume elliptic, 1-keeled. Upper glume primary vein scaberulous.

Florets. Basal sterile florets 1, barren. Lemma of lower sterile floret oblong, hyaline, 0 -veined, without midvein, without lateral veins, acuminate. Fertile lemma linear, hyaline, without keel. Lemma apex acuminate, muticous.

Flower and Fruit. Anthers 3, 1–1.8 mm long.

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

Country /Province /State. **China**, **Eastern Asia**. China Southeast. Ogosawara-shoto, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. India, Nepal, Sri Lanka. Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Philippines, Sulawesi, Sumatra. New Guinea PNG, or West Papua (Irian Jaya). New Guinea.

Fujian, Guangdong, Guangxi, Hong Kong, Hunan, Jiangxi. Sichuan, Yunnan. Arunachal Pradesh. Assam, Manipur, Meghalaya, Nagaland. Andhra Pradesh, Bihar. Orissa, Tamilnadu, Uttah Pradesh.

Microstegium borianum P.R. Sur. *J. Bombay Nat. Hist. Soc*., 79(3): 652 (1983).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India, Khasia Hills, Lowlyngdoh: Deka 15683 (CAL holo).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms robust, 128 cm long. Culm-internodes distally glabrous. Culm-nodes pubescent. Lateral branches lacking. Leaf-sheaths pubescent. Ligule an eciliate membrane, 2–4.5 mm long. Leaf-blades lanceolate, 10–25 cm long, 15–20 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–4, digitate, 5–10 cm long. Rhachis fragile at the nodes. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, angular, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, linear, 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 lanceolate or oblong, dorsally compressed, 5.5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 9 -veined. Lower glume primary vein ciliate. Lower glume surface with a longitudinal median groove. Lower glume apex dentate, 2 -fid. Upper glume lanceolate,

membranous or chartaceous, 1-keeled, 5 -veined. Upper glume primary vein scabrous. Upper glume awned, 1 -awned, awn 1 mm long.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret lanceolate, 4.5 mm long, hyaline, 3 -veined, ciliate on margins, fringed in the middle, dentate, 2 -fid. Palea of lower sterile floret 3.5–4 mm long. Fertile lemma oblong or ovate, 3.5–4 mm long, membranous, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–10 mm long overall, with a straight or slightly twisted column. Palea 1 length of lemma, hyaline. Palea apex dentate, 2 -fid.

Flower and Fruit. Anthers 3, 3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**. India.

Meghalaya.

Microstegium brandisii (Hook. f.) Rhind. *Grasses of Burma* 2, 62 (1945).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Burma. **Basionym or Replaced Name**: *Coelarthron brandisii* Hook. f., *The Flora of British India* 7(21): 164. 1897[1896]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: Brandis s.n.; 1883; Burma: high ground generally with teak (K).

Recent Synonyms: *Microstegium clavigerum* (Backer) Henrard, *Blumea* 3: 453 (1940).

Illustrations (Journals): *Blumea* (57:165, fig.2 (2012)).

Derivation (Clifford & Bostock 2007): L. *clava*, club; *gero*, carry. Inflorescence club-shaped.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms rambling, slender, 25–35 cm long, rooting from lower nodes. Culm-internodes terete, distally glabrous. Leaf-sheath oral hairs scanty. Ligule an eciliate membrane, 0.75 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate or ovate, 1.5–3 cm long, 6–10 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides. Leaf-blade margins smooth.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, straight or arcuate, 3–7 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes pyriform, 3.5–4 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, the upper smaller. Pedicels present, clavate, 2–4 mm long, ciliate.

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, 5.5–7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely. Spikelet callus hairs 1–3 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, winged on keel, winged narrowly, winged above, 6–8 -veined. Lower glume surface concave, scabrous. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume elliptic, 1-keeled. Upper glume primary vein ciliate. Upper glume margins ciliate. Upper glume apex acute, awned, 1 -awned, awn 2–3 mm long.

Florets. Basal sterile florets 1, developed or with vestigial lower floret, male, with palea. Lemma of lower sterile floret linear or lanceolate, 4 mm long, hyaline, pilose, hairy at apex. Palea of lower sterile floret 4–5 mm long, pubescent, adorned on back. Fertile lemma lanceolate, 1.5–2.25 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex lobed, 2 -fid, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 11–16 mm long overall, with twisted column. Palea oblong, 1.25–2 mm long, 0 -veined. Palea apex ciliate.

Flower and Fruit. Anthers 3, 2.5–3.5 mm long.

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

Country /Province /State. **Eastern Asia**. Taiwan. **Indo-China**, **Malesia**. Myanmar. Borneo, Java, Lesser Sunda Is, Sulawesi.

Microstegium butuoense Y.-C. Liu & H. Peng. *Annales Botanici Fennici* 182--184 (2011).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Type: China (Sichuan). Alpine meadow., *Zhu 318* (PE, holo).

Illustrations: None found.

Classification. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms decumbent, slender, 35 cm long. Culm-nodes bearded. Lateral branches ample. Leaf-sheaths hispid, with tubercle-based hairs. Ligule an eciliate membrane, 9.6 mm long. Leaf-blades lanceolate or elliptic, 0.7–2 cm long, 2–5 mm wide. Leaf-blade surface hispid, hairy on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 2–3.5 cm long. Rhachis tough, ciliate on margins. Rhachis hairs 1.5 mm long. Rhachis internodes linear, 4.5 mm long. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear.

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, 5.2–6 mm long, falling entire. Spikelet callus pubescent, base obtuse. Spikelet callus hairs 0.5–1 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume linear or lanceolate, 5 mm long, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 4–5 -veined. Lower glume surface flat, glabrous. Lower glume apex emarginate or truncate. Upper glume elliptic, 5.5 mm long, 1 length of spikelet, 1-keeled. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4 mm long, hyaline. Fertile lemma oblong, 3–3.5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex dentate, 2 -fid, with lobes 1 mm long, incised 0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–9 mm long overall, with twisted column. Palea 1 mm long. Palea apex ciliate.

Distribution (TDWG). Continent. Temperate Asia.

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

Sichuan.

Microstegium delicatulum (Hook.f.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.*, lxviii. 200 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, S-L Chen et al, *Flora of China 22* (Poaceae) (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from Myanmar. **Basionym or Replaced Name**: *Pollinia delicatula* Hook. f., *Fl. Brit. India* 7(21): 117 (1897 [1896])

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Myanmar: Rangoon, ca. 600 m, 13 Jan. 1854, *McClelland s.n.* (HT: K).

Illustrations (Journals): *Blumea* (57:166, fig.3 (2012)).

Derivation (Clifford & Bostock 2007): L. *delicatus*, dainty; *-ula,* diminutive. Small and dainty as of habit.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, weak, 30–90 cm long, rooting from lower nodes. Culm-nodes bearded. Leaf-sheaths tight, smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 0.2–0.5 mm long. Leaf-blades elliptic, 5–10 cm long, 4–8 mm wide, flaccid. Leaf-blade surface scaberulous, pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–5, digitate, 4–8 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear, 1.5 mm long. Rhachis internode tip clavate. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, 1 mm long, ciliate.

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 oblong, dorsally compressed, 2–2.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 0.5 length of spikelet.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, 2-keeled, keeled obtusely, 4 -veined. Lower glume lateral veins obscure. Lower glume surface flat or concave, smooth or asperulous, rough at apex. Lower glume margins ciliate. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, 1-keeled. Upper glume primary vein scabrous.

Florets. Basal sterile florets 1, with vestigial lower floret. Fertile lemma orbicular, 0.5 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–8 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1 mm long.

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

Country /Province /State. **China**. China South Central, China Southeast. **Indian Subcontinent**, **Indo-China**. Assam. Myanmar, Thailand.

Guangdong. Yunnan. Assam.

Microstegium dispar (Nees ex Steud.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.*, lxviii. 200 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Java. **Basionym or Replaced Name**: *Pollinia dispar* Nees ex Steud., *Syn. Pl. Glumac.* 1: 410 (1854)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Java: Coll?.

Illustrations (Journals): *Blumea* (in press).

Derivation (Clifford & Bostock 2007): L. unequal. Glumes unequal in length or nerve number.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms prostrate, 60–150 cm long, rooting from lower nodes. Lateral branches ample. Leaf-sheaths glabrous on surface or pilose. Ligule a ciliolate membrane. Leaf-blades spreading or reflexed, linear or lanceolate, 2–12 cm long, 3–10 mm wide. Leaf-blade surface glabrous or pilose, hairy abaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 2–5, digitate, ascending or spreading, 3.5–7.5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes linear, 3.25–4.75 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, 2.5–3 mm long, ciliate.

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, 4.5–7 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, light green, 2-keeled, keeled obtusely, 6(–8) -veined. Lower glume surface concave, pilose, hairy below. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume elliptic, 1-keeled, 3 -veined. Upper glume surface pilose, hairy below. Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3.5–4.5 mm long, hyaline. Fertile lemma lanceolate, 2.5–3.5 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma surface pubescent. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–17 mm long overall, with twisted column. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia**. Java, Lesser Sunda Is.

Microstegium eucnemis (Nees ex Steud.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.,* lxviii. 200 (1922).

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*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from Myanmar. **Basionym or Replaced Name**: *Pollinia eucnemis* Nees ex Steud., *Syn. Pl. Glumac.* 1: 410 (1854)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Wallich 8812*, Burma: Prome (P; IT: K).

Illustrations (Journals): *Blumea* (57:168, fig.4 (2012)).

Derivation (Clifford & Bostock 2007): Gk. *eu-*, well; *knemis*, leg armour. Well armoured, lower glume chartaceous with rigid hairs.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms erect, 90–130 cm long. Culm-nodes glabrous. Ligule a fringe of hairs. Leaf-blade base with a false petiole. Leaf-blades elliptic, 10–25 cm long, 10–25 mm wide. Leaf-blade surface pilose, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes (1–)3–25, digitate, 5–9 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes cuneate, 3 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, cuneate, 3 mm long, ciliate.

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, laterally compressed, 4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, 2-keeled, keeled obtusely. Lower glume primary vein ciliate. Lower glume surface with a longitudinal median groove. Lower glume apex acute. Upper glume elliptic, chartaceous, 1-keeled, 3 -veined. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 0.5–1 mm long.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret absent. Palea of lower sterile floret membranous (3.5mm long), pilose, adorned on flanks. Fertile lemma linear, 1–1.25 mm long, hyaline, without keel. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 15 mm long overall, with twisted column. Palea obovate, hyaline. Palea surface pilose, hairy on flanks.

Flower and Fruit. Lodicules 2. Anthers 3, 3–3.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**, **Indo-China**, **Malesia**. Nepal. Laos, Myanmar, Thailand. Lesser Sunda Is, Philippines, Sulawesi.

Andhra Pradesh.

Microstegium falconeri (Hook.f.) W.D. Clayton. *Kew Bull.,* 35(4): 816 (1981).

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 *Ischnochloa*).

TYPE from India. **Basionym or Replaced Name**: *Ischnochloa falconeri* Hook. f., *Hooker's Icon. Pl.* 25: t. 2466 (1896)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India, NW Himalaya: Falconer (K holo).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (783, Fig. 54).

Illustrations (Journals): *Blumea* (57:170, fig 5 (2012)).

Derivation (Clifford & Bostock 2007): in honor of Hugh Falconer (1808–1865) Scots-born Indian physician and botanist.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 15–25 cm long. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades lanceolate, 1–4 cm long, 3–7 mm wide. Leaf-blade surface glabrous or pilose.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, 2–4 cm long. Rhachis tough, narrowly winged, flattened, glabrous on margins. Rhachis internodes linear. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, 1.5–4 mm long, 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, 3–5 mm long, falling entire, deciduous from the base. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 5 -veined. Lower glume lateral veins ribbed. Lower glume surface flat. Lower glume apex emarginate. Upper glume elliptic. Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma oblong, 1.5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex dentate, 2 -fid, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–8 mm long overall, with twisted column. Palea absent or minute.

Flower and Fruit. Anthers 2.

Distribution (TDWG). Continent. Tropical Asia.

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

Bhutan. Himachal Pradesh.

Microstegium fasciculatum (L.) Henrard. *Blumea,* iii. 453 (1940).

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

TYPE from India. **Basionym or Replaced Name**: *Andropogon fasciculatus* L. *Sp. Pl.* 2: 1047 (1753)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: (LINN-1211.27 (lower specimen)). LT designated by Henrard, Blumea 3: 454 (1940), but this is a mixed collection and the specific specimen was not indicated; specific specimen indicated by Cope in Cafferty et al., Taxon 49(2): 245 (2000).

Recent Synonyms: *Microstegium vagans* (Nees ex Steud.) A. Camus, *Ann. Soc. Linn. Lyon, n. s.*, 68:. 200 (1922). *Microstegium ciliatum* (Trin.) A. Camus, *Lecomte, Fl. Gen. Indo-Chine*, 8: 259 (1922).

Microstegium calochloa (Lauterb. & K. Schum.) Pilg., *Engl. & Prantl, Nat. Pflanzenfam*. Aufl. 2, 14e. 122 (1940).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (273, Fig. 205 as *M. bequaertii*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (722 as *M. ciliatum*), C-C Hsu,*Taiwan Grasses* (1975) (as *M. ciliatum*), K.M.Matthew, *Flora Palni Hills* (1996) (847, Pl. 847 as *M. ciliatum*), H.J.Noltie, *The Grasses of Bhutan* (2000) (783, Fig. 54 as *M. ciliatum*), H.B.Gilliland, *Grasses of Malaya* (1971) (248, Fig. 54 as *M. ciliatum*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Figs. 833 & 836 as *M. ciliatum*).

Illustrations (Journals): *Blumea* (57:171, fig.6 (2012)).

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

Derivation (Clifford & Bostock 2007): L. *fascis*, bundle; *-ulus*, diminutive; *-ata,* possessing. With spikelets or branches clustered in the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms prostrate, 50–120 cm long, rooting from lower nodes. Culm-nodes glabrous or bearded. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, 5–30 cm long, 5–20 mm wide, flaccid. Leaf-blade surface scaberulous, pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–25, digitate, 5–10 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear, 2–3 mm long, 0.6–0.8 length of fertile spikelet. Rhachis internode tip clavate. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, semiterete, ciliate.

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 oblong, dorsally compressed, 2.5–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 0.33–0.5 length of spikelet.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume surface with a longitudinal median groove. Lower glume margins ciliate. Lower glume apex emarginate. Upper glume elliptic, 1 length of spikelet, 1-keeled, 3 -veined. Upper glume primary vein ciliate. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret absent. Palea of lower sterile floret hyaline (3–4mm long). Fertile lemma orbicular, 0.5–1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–8 mm long overall, with twisted column. Column of lemma awn glabrous. Palea oblong, 1 length of lemma, hyaline, without keels.

Flower and Fruit. Anthers 3, 1.4–2.7 mm long.

2*n* = 70 (1 ref TROPICOS as *M. ciliatum*).

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

Country /Province /State. **West-Central Tropical Africa** and **East Tropical Africa**. Congo, Rwanda, DRC. Tanzania, Uganda. **China**, **Eastern Asia**. China South Central, Hainan, China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. Eastern Himalaya, India, Nepal, Pakistan, Sri Lanka, West Himalaya. Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea PNG. New Guinea.

Fujian, Guangdong, Guangxi, Hunan, Jiangxi. Guizhou, Hubei, Sichuan, Yunnan. Arunachal Pradesh, Darjeeling, Bhutan, Sikkim. Manipur, Meghalaya, Nagaland. West Bengal.

Microstegium fauriei (Hayata) Honda. *J. Fac. Sci. Univ. Tokyo, Sect. 3, Bot.* 3: 410 (1930).

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.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Taiwan. **Basionym or Replaced Name**: *Pollinia fauriei* Hayata Suppl.:*The Bureau of Forestry, Industries, Government of Formosa*, Taihoku 99 (1917), 7: 73, t. 41 (1918). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Taiwan: mountain forest margins,.

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (726), C-C Hsu,*Taiwan Grasses* (1975), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 832 as *M. fauriei* ssp. *geniculatum*).

Derivation (Clifford & Bostock 2007): in honor of Urbain Jean Faurie (1847–1914) French cleric and amateur botanist.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms decumbent, slender, 50–100 cm long, rooting from lower nodes. Culm-internodes smooth, distally glabrous. Culm-nodes pubescent. Lateral branches ample. Leaf-sheaths glabrous on surface, outer margin glabrous or hairy. Leaf-sheath oral hairs lacking or ciliate. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades lanceolate, 5–20 cm long, 3–10 mm wide. Leaf-blade surface glabrous or pubescent, hairy on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 4–10, digitate, ascending or spreading, 5–10 cm long. Central inflorescence axis 1–2 cm long. Rhachis fragile at the nodes, glabrous on margins or ciliate on margins. Rhachis internodes linear, 5–8 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, 2–4 mm long, 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, 4.5–5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus square, 0.3–0.5 mm long, pilose, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume primary vein scabrous. Lower glume intercarinal veins distinct, 2 in number. Lower glume surface with a longitudinal median groove. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume elliptic, 1-keeled, 3 -veined. Upper glume primary vein ciliolate. Upper glume awned, 1 -awned, awn 0.5–1 mm long.

Florets. Basal sterile florets 1, with vestigial lower floret. Fertile lemma oblong, 1.5 mm long, hyaline, without keel. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 22–25 mm long overall. Palea ovate, 2 mm long, hyaline. Palea apex obtuse.

Flower and Fruit. Anthers 3, 1.5–1.8 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

Microstegium geniculatum (Hayata) Honda. *Journ. Fac. Sc. Tokyo, Sect.* III. Bot. iii. 410 (1930).

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*).

TYPE from Taiwan. **Basionym or Replaced Name**: *Pollinia geniculata* Hayata, *Icon. Pl. Formosan.* 7: 73, f. 40 (1918). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Taiwan:,.

Recent Synonyms: *Microstegium fauriei* var. *geniculatum* (Hayata) Honda, *Journ. Fac. Sc. Tokyo,* Sect. 3. Bot. 3: 410 (1930).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (728), C-C Hsu,*Taiwan Grasses* (1975).

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

Derivation (Clifford & Bostock 2007): L. *genus*, knee; *-ulus*, diminutive. *-ata,* possessing. Plants with bent culms or awns.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, 70–150 cm long, rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths 7.5–15 cm long, glabrous on surface. Ligule an eciliate membrane, 1.6 mm long. Leaf-blades linear or lanceolate, 10–22 cm long, 6–12 mm wide. Leaf-blade surface puberulous, hairy on both sides. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–10, digitate, 8–17 cm long. Rhachis fragile at the nodes, flattened, smooth on surface or scabrous on surface, scaberulous on margins, glabrous on margins. Spikelet packing lax. Rhachis internodes linear, 6–7 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, 3 mm long, 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, 4.8 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 4 -veined. Lower glume primary vein scabrous. Lower glume surface concave, glabrous. Lower glume apex acute. Upper glume elliptic, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume apex acute, awned, 1 -awned, awn 1.4 mm long.

Florets. Basal sterile florets 1, with vestigial lower floret. Fertile lemma oblong, 0.6 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 48 mm long overall, with twisted column. Palea 1.6 mm long, hyaline.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis with adherent pericarp.

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

Country /Province /State. **China**, **Eastern Asia**. Hainan, China North-Central, China Southeast. Taiwan. **Malesia**. Borneo, Sumatra, Malaya, Singapore.

Shandong. Fujian, Guangdong.

Microstegium glabratum (Brongn.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.,* lxviii. 201 (1922).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Society Islands. **Basionym or Replaced Name**: *Eulalia glabrata* Brongn., *Voy. Monde* 2(2): 93, t. 19 (1831). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Society Is., Borabora: Brongniart.

Illustrations (Journals): *Blumea* (57:174, fig.7 (2012)).

Derivation (Clifford & Bostock 2007): L. *glaber*, smooth; *-ata*, possessing. Plant glabrous in whole or in part.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual, mat forming. Culms rambling, 10–40 cm long, rooting from lower nodes. Ligule an eciliate membrane. Leaf-blades lanceolate, 5–10 cm long, 2–10 mm wide, flaccid. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 4–11, digitate, 4–9 cm long. Rhachis fragile at the nodes, flattened, glabrous on margins. Rhachis internodes filiform, 2.5–3.5 mm long. Rhachis internode tip clavate. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, flattened, 2–2.5 mm long, 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, 2.5–3 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus glabrous, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume surface with a longitudinal median groove. Lower glume apex obtuse. Upper glume elliptic, 1-keeled, 3 -veined. Upper glume apex attenuate, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret linear, 3 mm long, hyaline. Fertile lemma oblong, 0.5–1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex entire, acuminate, awned, 1 -awned. Principal lemma awn apical or from a sinus, flexuous, 10–15 mm long overall. Palea absent or minute.

Flower and Fruit. Anthers 2, 0.7–1 mm long.

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

Country /Province /State. **China**, **Eastern Asia**. Hainan. Ogosawara-shoto. **Malesia**, **Papuasia**. Borneo, Lesser Sunda Is, Philippines, Sulawesi. New Guinea. **Southwestern Pacific**, **South-central Pacific**, **Northwestern Pacific**. Fiji, New Caledonia, Samoa. Cook Is, Society Is. Caroline Is, Marianas.

Microstegium lanceolatum (Keng) S.M.Phillips & S.L.Chen. *Fl. China* 22: 596 (2006).

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**: *Ischaemum lanceolatum* Keng, *Journ. Wash. Acad. Sc*. 21: 155. fig. 1 (1931). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China, Yunnan: Maire 7039.

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *lanceus*, lance; *-ola*, diminutive; *-ata,* possessing. Mostly a reference to lanceolate leaf-blades.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–40 cm long. Lateral branches ample. Leaf-sheaths tight, keeled, striately veined, glabrous on surface. Ligule an eciliate membrane, 2–3 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 3–8 cm long, 6–10 mm wide, stiff, glaucous. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 2–3, paired or digitate, 3–6 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform, 0.5–1 length of fertile spikelet. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, ciliate.

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, 5–6 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely. Spikelet callus hairs 1 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 4–7 -veined. Lower glume primary vein scaberulous. Lower glume surface with a longitudinal median groove. Lower glume apex entire or dentate, 2 -fid, acute. Upper glume oblong, membranous or chartaceous, 1-keeled, 3 -veined. Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret oblong, hyaline, 0–1 -veined, without midvein or with evident midvein, without lateral veins. Fertile lemma oblong, 4–5 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–10 mm long overall, with twisted column.

Distribution (TDWG). Continent. Temperate Asia.

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

Microstegium monoracemum W.C. Wu. *Journal of South China Agricultural University* 35, f. 1. (1985).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Type: *Z.-L. Huang 10076* (CANT, holo).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Distribution (TDWG). Continent. Temperate Asia.

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

Microstegium multiciliatum B.S.Sun. *J. Yunnan Univ.* 21:95 (1999).

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 Synonomy Database: China: Yunnan: Tengchong, mountain slopes, (HT: ?).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *multus*, many; *cilium*, hair; *-ata*, possessing. With several rows of hairs on the upper glume.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms prostrate, robust, 50–120 cm long, rooting from lower nodes. Culm-internodes distally pilose. Culm-nodes pubescent. Leaf-sheaths hispid, with tubercle-based hairs. Ligule an eciliate membrane, 1.5–2 mm long. Leaf-blades elliptic or oblong, 23–25 cm long, 20–25 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 10, digitate, 9–12 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear, 0.8–1 length of fertile spikelet. Rhachis internode tip clavate. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear.

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 oblong, dorsally compressed, 4.5–5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus bearded, base obtuse, attached transversely. Spikelet callus hairs 1–1.5 mm long, 0.25–0.5 length of spikelet.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume primary vein pectinately ciliate. Lower glume intercarinal veins distinct, 2 in number. Lower glume surface with a longitudinal median groove, asperulous, rough at apex. Lower glume apex entire. Upper glume elliptic, 1 length of spikelet, with hyaline margins, 1-keeled. Upper glume primary vein ciliate. Upper glume apex acute.

Florets. Basal sterile florets absent or 1, barren, without significant palea. Lemma of lower sterile floret 0–1 mm long, hyaline. Fertile lemma orbicular, 0.8–1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma margins ciliolate, hairy above. Lemma apex lobed, 2 -fid, with lanceolate lobes, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10–12 mm long overall, with twisted column. Column of lemma awn glabrous. Palea oblong, 1.5 mm long, hyaline, without keels. Palea apex dentate, 3 -fid, ciliate.

Flower and Fruit. Anthers 3, 3–3.5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

Microstegium petiolare (Trin.) Bor. *Indian Forest Rec., n. s. Bot.*, i. 87 (1938).

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).

TYPE from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Nepal:, *Wallich 8807* (HT: LE; IT: K).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 833).

Illustrations (Journals): *Blumea* (57:175, fig.8 (2012)).

Derivation (Clifford & Bostock 2007): L. *petiolus*, little leg; *-are*, pertaining to. With a pseudopetiole between the leaf-blade and leaf-sheath.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms rambling or scandent, 60–100(–400) cm long, rooting from lower nodes. Culm-nodes pubescent. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane, 3–6 mm long. Leaf-blade base with a false petiole. Leaf-blades lanceolate or elliptic, 5–30 cm long, 10–25 mm wide. Leaf-blade surface pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform.

Inflorescence. Inflorescence composed of racemes. Peduncle glabrous or pubescent above. Racemes 8–20, digitate, 6–10 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes filiform, 3–4.5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, filiform, angular, ciliate.

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, 4.5–5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 6–8 -veined. Lower glume primary vein scabrous. Lower glume surface with a longitudinal median groove, scabrous. Lower glume apex acute. Upper glume oblong, membranous or chartaceous, 1-keeled, 1–3 -veined. Upper glume primary vein scabrous. Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret linear, 3–4 mm long, hyaline, ciliate on margins, obtuse. Palea of lower sterile floret 0.5–0.66 length of lemma. Fertile lemma oblong, 3 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–6 mm long overall, with twisted column. Palea 1 length of lemma, hyaline. Palea surface pilose, hairy on flanks.

Flower and Fruit. Lodicules 2. Anthers 3, 2.5–3 mm long.

n = 10 (1 ref TROPICOS).

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

Country /Province /State. **China**. China South Central. **Indian Subcontinent**, **Indo-China**. India, Nepal. Myanmar, Thailand.

Yunnan. Sikkim. Assam, Meghalaya, Nagaland. Andhra Pradesh, Bihar, Kerala. Madhya Pradesh, Maharashtra, Orissa, Uttah Pradesh, West Bengal.

Microstegium rufispicum (Steud.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.*, Ixviii. 200 (1922).

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

TYPE from Indonesia. **Basionym or Replaced Name**: *Andropogon rufispicus* Steud., *Syn. Pl. Glumac.* 1: 379 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Java, *Hrbr. Zollinger 2193*.

Illustrations (Journals): *Blumea* (57:177, fig.9 (2012)).

Derivation (Clifford & Bostock 2007): L. *rufus*, red; *spica*, a point; hence, in particular, an ear or spike of grain. Inflorescence invested with red hairs.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms prostrate, 60 cm long. Culm-internodes distally pubescent. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane. Leaf-blades lanceolate, 10–18 cm long, 8–12 mm wide, flaccid. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2–4, digitate, 4–8 cm long. Rhachis fragile at the nodes, angular, glabrous on margins or ciliate on margins. Rhachis hairs tawny. Rhachis internodes columnar or cuneate, 4 mm long. Rhachis internode tip clavate, cupuliform. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, heteromorphic (pedicelled smaller). Pedicels present, clavate, semiterete, 4 mm long, ciliate, with tawny hairs.

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 oblong, dorsally compressed, 5.5–6 mm long (sessile) or 4 mm long (pedicelled), falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pubescent, base obtuse, attached transversely. Spikelet callus hairs tawny.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume intercarinal veins absent below, prominent above, 2 in number. Lower glume surface with a longitudinal median groove. Lower glume apex obtuse. Upper glume elliptic, 1 length of spikelet, chartaceous, 1-keeled, 3 -veined. Upper glume primary vein scaberulous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret absent. Palea of lower sterile floret membranous (6mm long). Fertile lemma linear, 1.5–2 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, straight, 1–2 mm long overall.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia**. Java.

Microstegium spectabile (Trin.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.*, lxviii. 200 (1922).

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*).

TYPE from Caroline Islands. **Basionym or Replaced Name**: *Pollinia spectabilis* Trin., *Mem. Acad. Imp. Sci. St.-Petersbourg, Ser. 6, Sci. Math.* 2(3): 305 (1832). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: (LE-TRIN-0057.01). The only spec. in TRIN has "Unlan. Dr. Mertens." and Pollinia grandis Tr." on a packet.

T: Caroline Islands.

Recent Synonyms: *Microstegium pleiostachyum* (Lauterb. & K. Schum.) A. Camus.

Illustrations (Books): E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (131, Pl. 51).

Illustrations (Journals): *Blumea* (57:179, fig.10 (2012)).

Derivation (Clifford & Bostock 2007): L. showy. Attractive or outstanding in some respect such as height.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms rambling, robust, 100–170 cm long, rooting from lower nodes. Culm-nodes brown or black, glabrous. Lateral branches ample. Leaf-sheaths outer margin glabrous or hairy. Ligule an eciliate membrane, 1 mm long. Leaf-blades lanceolate, 10–15 cm long, 10–17 mm wide. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 10–40, digitate, 7–10 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes linear, 2 mm long. Rhachis internode tip clavate. Spikelets appressed, in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, 2.5 mm long, ciliate, tip widened.

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 oblong, dorsally compressed, 3–4 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pubescent, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled above. Lower glume primary vein ciliolate (above). Lower glume surface with a longitudinal median groove, impressed below. Lower glume apex obtuse. Upper glume elliptic, 1-keeled. Upper glume apex attenuate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.5 mm long, hyaline, obtuse. Fertile lemma linear, 1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex entire, acuminate, awned, 1 -awned. Principal lemma awn apical, flexuous, 4–6 mm long overall. Palea absent or minute.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, 1 mm long. Embryo 0.5 length of caryopsis.

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

Country /Province /State. **China**, **Eastern Asia**. China Southeast. Taiwan. **Indo-China**, **Malesia**, **Papuasia**. Myanmar. Borneo, Lesser Sunda Is, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea, Solomon Is. **Southwestern Pacific**, **Northwestern Pacific**. Caroline Is.

Hong Kong.

Microstegium stapfii (Hook. f.) A. Camus. *Ann. Soc. Linn. Lyon, n. s.*, lxviii. 200 (1922).

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 Myanmar. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *S. Kurz s.n.*, Oct 1869, Burma: Arakan, low sandstone hills, opposite Akyab (K).

Illustrations (Journals): *Blumea* (57:180, fig.11 (2012)).

Derivation (Clifford & Bostock 2007): in honor of Otto Stapf (1857–1933) Austrian-born English botanist.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 40–80 cm long, rooting from lower nodes. Leaf-sheaths outer margin hairy. Ligule a ciliolate membrane. Leaf-blade base with a false petiole. Leaf-blades elliptic, 10–15 cm long, 10–20 mm wide, flaccid. Leaf-blade surface pubescent, hairy abaxially. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes 6–9, digitate, 4–7 cm long. Rhachis fragile at the nodes, pilose on surface, ciliate on margins. Rhachis hairs dark brown. Rhachis internodes clavate, 4.5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, clavate, ciliate.

Sterile Spikelets. Basal sterile spikelets well-developed, 6–8 in number, lanceolate, 4 mm long, equalling fertile. Basal 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 elliptic, dorsally compressed, 4.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus square, 0.5 mm long, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 4 -veined. Lower glume lateral veins with cross-veins. Lower glume surface with a longitudinal median groove, pilose. Lower glume hairs dark brown. Lower glume apex obtuse. Upper glume elliptic, 1-keeled. Upper glume surface pilose, hairy above. Upper glume hairs dark brown. Upper glume apex dentate, 2 -fid, awned, 1 -awned.

Florets. Basal sterile florets 1, with vestigial lower floret. Fertile lemma orbicular, hyaline, without keel. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 20 mm long overall, with twisted column. Column of lemma awn 6 mm long. Palea 1 length of lemma, hyaline.

Flower and Fruit. Lodicules 2. Anthers 3.

Distribution (TDWG). Continent. Tropical Asia.

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

Microstegium steenisii Jansen. *Reinwardtia,* ii. 306 (1953).

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

TYPE from Java. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Java: Priangan, Mt. Papandajan, Tegal Pandjang, 2400 m alt., *van Steenis 4320* (HT: BO).

Illustrations (Journals): *Blumea* (57:181, fig12 (2012)).

Derivation (Clifford & Bostock 2007): in honor of Cornelis Gijsbert Gerrit Jan van Steenis (1901–1986) Dutch botanist.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 50–80 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes pubescent. Lateral branches sparse. Leaf-sheaths 2–7 cm long, mostly shorter than adjacent culm internode, glabrous on surface. Ligule a ciliolate membrane, 0.5–0.7 mm long. Leaf-blades lanceolate, 4–5 cm long, 6–8 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 2–4, digitate, 4–5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis hairs 1–1.5 mm long. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, subequal. Pedicels present, linear, ciliate.

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, 5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pilose, base obtuse, attached transversely. Spikelet callus hairs 1–1.5 mm long.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 4 -veined. Lower glume primary vein scabrous. Lower glume surface concave, glabrous. Lower glume margins ciliate. Lower glume apex emarginate. Upper glume elliptic, 1-keeled, 3 -veined. Upper glume margins ciliate. Upper glume apex acute, muticous.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 5 mm long, hyaline. Fertile lemma lanceolate, 2 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex lobed, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 12–15 mm long overall. Palea oblong, 0.33 length of lemma.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia**. Java.

Microstegium tenue (Trin.) Hosokawa. *Trans. Nat. Hist. Soc. Formosa* xxviii. 150 (1938).

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*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *am. de Chamisso 24*, [Philippines] Manilla (LE-TRIN-0058.01).

Illustrations (Journals): *Blumea* (57:183, fig.13 (2012)).

Derivation (Clifford & Bostock 2007): L. thin. Culms, leaf-blades or pedicels, slender.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual. Culms rambling, 20–100 cm long, rooting from lower nodes. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, 4–20 cm long, 4–8 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 2–4, digitate, 2–5 cm long. Rhachis fragile at the nodes, ciliate on margins. Rhachis internodes pyriform, 1.5–2 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, the upper smaller. Pedicels present, clavate, 1.5 mm long, ciliate.

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, 2–3 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus pubescent, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely. Lower glume surface with a longitudinal median groove, puberulous, hairy at apex. Lower glume apex emarginate. Upper glume elliptic, 1-keeled. Upper glume apex acute, awned, 1 -awned, awn 1–3 mm long.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1.5 mm long, hyaline. Fertile lemma lanceolate, 0.3 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 8–12 mm long overall, with twisted column. Palea absent or minute.

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

Country /Province /State. **Eastern Asia**. Taiwan. **Malesia**. Philippines. Caroline Is.

Microstegium vimineum (Trin.) A. Camus. *Lecomte, Fl. Gen. Indo-Chine,* vii. 260 (1922).

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), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Nepal. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Nepal:, *Wallich 8838* (HT: LE; IT: K, L).

Recent Synonyms: *Microstegium reticulatum* B.S.Sun ex H.Peng & X.Yang, *Acta Phytotax. Sin.*, 34 (2): 213 (1996). *Andropogon vimineus* Trin., *Mémoires de l'Academie Impériale des Sciences de St-Pétersbourg, VI, Sciences Mathématiques, Physiques et Naturelles* 2 268 (1832).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (426, Fig. 167), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (724 & 736), C-C Hsu,*Taiwan Grasses* (1975) (677, fig. 1473 & as *M. dilatatum*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (625), H.J.Noltie, *The Grasses of Bhutan* (2000) (783, Fig. 54), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 835), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:68(1980)).

Derivation (Clifford & Bostock 2007): L. with long flexible shoots as used for wicker work.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Annual, mat forming. Culms decumbent, 10–30 cm long, rooting from lower nodes. Culm-nodes glabrous or pubescent. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane. Leaf-blades elliptic or oblong, 5–10 cm long, 7–15 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins scabrous. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle pilose above. Racemes 1–5, single or paired or digitate, spreading or erect, 3–5 cm long. Central inflorescence axis 0–2.5 cm long. Rhachis fragile at the nodes, flattened, ciliate on margins. Rhachis internodes linear, 4–5 mm long. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster. Pedicels present, linear, flattened, 3.5–4.5 mm long, ciliate.

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, 5.5–6.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, 4 -veined. Lower glume primary vein scabrous. Lower glume lateral veins with cross-veins. Lower glume surface with a longitudinal median groove, glabrous. Lower glume apex obtuse. Upper glume elliptic, 1-keeled, 3–7 -veined. Upper glume primary vein scabrous. Upper glume muticous.

Florets. Basal sterile florets 1, with vestigial lower floret or developed, barren, without significant palea. Lemma of lower sterile floret oblong, 3.5 mm long, hyaline. Fertile lemma linear, 1–1.5 mm long, hyaline, without keel. Lemma apex dentate, 2 -fid, mucronate. Palea 1 length of lemma, hyaline.

Flower and Fruit. Lodicules 2. Anthers 3, 0.3–0.5 mm long. Caryopsis with adherent pericarp, fusiform, 2 mm long. Embryo 0.25 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Africa, Temperate Asia, Tropical Asia, North America.

Country /Province /State. **West-Central Tropical Africa**. Cameroon, Congo. Russian Far East, **Caucasus**, **Western Asia**, **China**, **Eastern Asia**, **Russia**. Primorye. Iran. China South Central, Manchuria, China North-Central, China Southeast. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan, Korea, Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**. Eastern Himalaya, India, Nepal, Pakistan. Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Philippines. **North-central USA**, **Northeast USA**, **Southeastern USA**. Illinois, Missouri. Connecticut, New York, Pennsylvania, Rhode Island. Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia.

Hebei, Shaanxi, Shandong, Shanxi. Anhui, Fujian, Guangdong, Guangxi, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Meghalaya.

Microstegium yunnanense R.J. Yang. *Acta Phytotax. Sin.,* 22(3): 221 (1984).

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

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Yunnan: Kunming, Xishan, Huatingsi, ad margines sylvarum, 17 Oct. 1977, *R.J. Yang & Y.G. Han 77025* (HT: SHYAC).

Illustrations: None found.

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

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms 50–100 cm long. Culm-nodes bearded. Leaf-sheaths hirsute, with tubercle-based hairs. Ligule an eciliate membrane. Leaf-blade base with a false petiole, petiole 1–2.5 cm long. Leaf-blades lanceolate, 5–30 cm long, 10–25 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, rough abaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 3–15, digitate, 4–11 cm long. Central inflorescence axis 2.5–8.7 cm long. Rhachis fragile at the nodes, angular, ciliate on margins. Rhachis internodes linear. Spikelets in pairs. Fertile spikelets sessile and pedicelled, 2 in the cluster, the upper smaller. Pedicels present, linear.

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 oblong, dorsally compressed, 5–5.5 mm long, falling entire, deciduous from the base or with accessory branch structures. Spikelet callus glabrous, base obtuse, attached transversely.

Glumes. Glumes dissimilar, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled obtusely, winged on margins, winged narrowly, winged above, 6–8 -veined. Lower glume surface with a longitudinal median groove, scabrous. Upper glume elliptic, 1-keeled, 3 -veined. Upper glume primary vein scabrous. Upper glume surface asperulous. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, membranous, 3 -veined, ciliate on margins. Fertile lemma oblong, 3.8–4.2 mm long, hyaline, without keel. Lemma margins ciliolate. Lemma apex lobed, 2 -fid, with triangular lobes, incised 0.75 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 11 mm long overall, with twisted column. Palea obovate, 3.7–4 mm long, 2 -veined.

Flower and Fruit. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.5–2.7 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

Yunnan.

Milium atropatanum Maroofi. *Iranian J. Bot.* 17 (1): 11 (2011).

TYPE from Iran. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Azerbajan: Protected Area of Arasbaran, western slopes of Doghroon mountain, 2550 m, *Maroofi & Karegar 8481* holotype Kurdistan Herbarium isotype TARI

.

Illustrations: None found.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms erect or decumbent, 35–65 cm long, 1.5–2.2 mm diam., (2–)3–5 -noded. Culm-internodes smooth, distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2.5–4.5 mm long, erose. Leaf-blades 3–7(–10.5) cm long, 1.4–5 mm wide. Leaf-blade surface scabrous, rough on both sides, glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 3–7(–10.5) cm long, 0.5–1.4 cm wide. Primary panicle branches 1–5(–8) in number, 0.7–2.7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–3.5 mm long, scabrous.

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, dorsally compressed, 3–3.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, thinner than fertile lemma. Lower glume oblong or ovate, 3 mm long, 1 length of upper glume, membranous, dark green or purple, without keels or 1-keeled, 3 -veined. Lower glume surface asperulous. Upper glume oblong or ovate, 3 mm long, 1 length of adjacent fertile lemma, membranous, dark green or purple, without keels or 1-keeled, 3 -veined. Upper glume surface asperulous.

Florets. Fertile lemma ovate, dorsally compressed, 3 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, indurate, 2 -veined, without keels. Palea apex acute.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Western Asia**. Iran.

Milium effusum Linn. *Sp. Pl.* 61. (1753).

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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Europe. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: (LINN-83.3). LT designated by Cope in Jarvis et al., Regnum Veg. 127: 66 (1993). ; Europe: Herb. Linn. 83/3 (LINN lecto).

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (276), T. Cope & A. Gray, Grasses of the British Isles (6), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (437 (295), Pl.5), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (217, Fig 78), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (350), C-C Hsu,*Taiwan Grasses* (1975), N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (594, Fig 65), H.J.Noltie, *The Grasses of Bhutan* (2000) (516, Fig. 9), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (779 as var. *cisatlanticum*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 431).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. spread out. Inflorescence an open panicle.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending, 45–180 cm long, 3–5 -noded. Ligule an eciliate membrane, 3–10 mm long. Leaf-blades 10–30 cm long, 5–15 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong or ovate, effuse, 10–40 cm long, 7–13 cm wide. Primary panicle branches 2–5 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–3 mm long.

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, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 3–4 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acute. Upper glume ovate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma ovate, dorsally compressed, 3–4 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, indurate, 2 -veined, without keels. Palea apex obtuse.

Flower and Fruit. Lodicules 2. Anthers 3, 2–3 mm long. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed. Embryo 0.2 length of caryopsis. Hilum elliptic.

n = 14 (1 ref TROPICOS). $2n$ = 28 (14 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Temperate Asia, Tropical Asia, North America.

Region. **Northern Europe**, **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Denmark, Finland, Great Britain, Iceland, Ireland, Northern Ireland, Norway, Sweden. : Austria, Liechstenstein, Belgium, Luxembourg, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland. : Corsica, Channel Islands, Monaco, Andorra, Gibralter, Spain. : Albania, Bulgaria, Italy, San Marino, Vatican, Romania, Malta, Sicily, Turkey Europe, Yugoslavia. Belarus, Estonia, Kalingrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. Siberia, Russian Far East, **Middle Asia**, **Caucasus**, **Western Asia**, **China**, **Eastern Asia**, **Russia**. Altay, Buryatiya, Chita, Irkutsk, Krasnoyarsk, Tuva. Amur, Kamchatka, Khabarovsk, Kuril Is, Primorye, Sakhalin. Kazakhstan, Kirgizistan, Tadzhikistan. Afghanistan, Iran. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan, Korea, Taiwan. **Indian Subcontinent**. Eastern Himalaya, Pakistan, West Himalaya. **Eastern Canada**, **North-central USA**, **Northeast USA**, **Southeastern USA**. New Brunswick, Newfoundland, Ontario, Prince Edward I, Quebec. Illinois, Iowa, Minnesota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia.

Gansu, Hebei, Shaanxi. Anhui, Henan, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Bhutan. Uttah Pradesh. Himachal Pradesh, Jammu Kashmir.

Milium pedicellare (Bornm.) Roshev. ex Melderis. *Arkiv Bot., Stockh., andra ser.*, ii. 291 (1952).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Lebanon. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Lebanon, Baalbek: Bornmuller 12925 (B holo, JE).

Illustrations (Books): N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 269), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (Tab. 39), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (279, Pl. 98).

Derivation (Clifford & Bostock 2007): L. *pes*, foot; *-ellus*, diminutive; *-are*, pertaining to. With at least some spikelets shortly stalked.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms erect, 10–25 cm long. Ligule an eciliate membrane. Leaf-blades 4–8 cm long, 2–4 mm wide, flaccid. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 7–15 cm long, 7–15 cm wide. Primary panicle branches spreading, 2 -nate, 5–9 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10–12 mm long, scabrous.

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, dorsally compressed, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 3 mm long, 1 length of upper glume, membranous, much thinner above, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acute. Upper glume elliptic, 3 mm long, 1.2

length of adjacent fertile lemma, membranous, much thinner above, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, dorsally compressed, 2.5 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, indurate, 2 -veined, without keels. Palea apex obtuse.

Flower and Fruit. Lodicules 2. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed. Embryo 0.2 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Western Asia**. Iran, Iraq.

Milium schmidtianum C. Koch. *Linnaea,* xxi. 438 (1848).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Russia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia, Grusien: Schmidt (B holo).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Karl Schmidt (fl. 1848) who collected in the Crimea.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms erect, 80–150 cm long, 4–6 -noded. Culm-internodes antrorsely scabrous (below nodes), distally glabrous. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 4–5 mm long, obtuse. Leaf-blades 6–30 cm long, 4–15 mm wide, flaccid. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, 10–23 cm long, 1–8 cm wide. Primary panicle branches 2–5 -nate, 2–7.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.7–3 mm long, scabrous.

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, dorsally compressed, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 3.5–4 mm long, 1 length of upper glume, membranous, dark green or purple, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acute. Upper glume elliptic, 3.5–4 mm long, 1.1–1.5 length of adjacent fertile lemma, membranous, dark green or purple, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, dorsally compressed, 2.4–3.2 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, indurate, 2 -veined, without keels. Palea apex obtuse.

Flower and Fruit. Lodicules 2. Anthers 3, 2.2–2.8 mm long. Caryopsis with adherent pericarp. Hilum elliptic.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus**, **Western Asia**. Iran.

Milium transcaucasicum Tzvelev. *Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS,* xx. 23 (1960).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Caucasus. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *N. N. Tzvelev, S. K. Cherepanov 386*, 23 Jun 1957, [Caucasus]: Azerbaijan: Nakhichevan: Dist. Shakhbuz: Bichenakh (LE). Azerbaijanskaya SSR, Nakhichevanskaya ASSR, r-n Shakhbuzskij, luzhajki u kraya bolotsa v verkhnem gornom poyase v 3–3,5 km k zapadu ot s. Bichenakh..

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-icum*, belonging to. From beyond the Transcaucasus as viewed from Western Russia.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with compacted dead sheaths. Culms erect, 40–75 cm long, 2.5–3 mm diam., 3–4 -noded. Culm-internodes scaberulous, distally glabrous. Leaf-sheaths smooth or scaberulous. Ligule an eciliate membrane, 1.3–1.6 mm long, entire or lacerate, obtuse. Leaf-blades 6.5–9.5 cm long, 2.5 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle contracted, linear, continuous or interrupted, 6–12 cm long, 0.8–1.5 cm wide. Primary panicle branches 1–5 -nate, 2.5–3 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 2–3.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume oblong or ovate, 2–3.4 mm long, 1 length of upper glume, membranous, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume oblong or ovate, 2–3.4 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma ovate, dorsally compressed, 1.9–3.2 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma surface smooth. Lemma apex obtuse. Palea 1 length of lemma, indurate, 2 -veined, without keels. Palea apex obtuse.

Flower and Fruit. Lodicules 2. Anthers 3, 2 mm long. Caryopsis with adherent pericarp. Hilum elliptic.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Caucasus**. Transcaucasus.

Milium vernale Bieb. *Fl. Taur. Cauc.* i. 53. (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).

TYPE from Caucasus. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *[Herb. M. Bieb.]*, s. d., Tauria & Caucasus (LE).

LT: *Steven [Herb. M. Bieb.]*, s. d., Caucasus (LE).

Illustrations (Books): T. Cope & A. Gray, Grasses of the British Isles (7), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (277, Pl. 97), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 24 *Poaceae*, part 1 (2007) (779).

Derivation (Clifford & Bostock 2007): L. *vernus*, spring-like; *-ale*, pertaining to. Spring flowering.

Classification. Subfamily Pooideae. Tribe: Poeae.

Habit, Vegetative Morphology. Annual, culms solitary. Culms erect, 20–45 cm long. Leaf-sheaths scaberulous. Ligule an eciliate membrane, 5–7 mm long. Leaf-blades linear or lanceolate, 4–7 cm long, 2–3 mm wide, light green. Leaf-blade surface scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, dense, 4–11 cm long, 2–6 cm wide, contracted about secondary branches. Primary panicle branches ascending, 4–7.5 cm long. Panicle branches bearing congested spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1–3 mm long.

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, dorsally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume elliptic, 2.5–3 mm long, 1 length of upper glume, membranous, much thinner above, without keels, 3 -veined. Lower glume surface asperulous. Lower glume apex acute. Upper glume elliptic, 2.4–3 mm long, 1.2 length of adjacent fertile lemma, membranous, much thinner above, without keels, 3 -veined. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, dorsally compressed, 2–2.5 mm long, indurate, shiny, without keel, 5 -veined, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma, indurate, 2 -veined, without keels. Palea apex obtuse.

Flower and Fruit. Lodicules 2. Anthers 3. Caryopsis with adherent pericarp, ellipsoid, dorsally compressed. Embryo 0.2 length of caryopsis. Hilum punctiform.

$2n = 8$ (2 ref TROPICOS), or 18 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, North America.

Region. **Northern Europe**, **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Great Britain. : Belgium, Netherlands. : Corsica, France, Portugal, Sardinia, Spain. : Bulgaria, Greece, Italy, Crete, Romania, Sicily, Yugoslavia. Krym, Northwest European Russia, Ukraine. **Northern Africa**. Algeria, Libya, Morocco, Tunisia. **Middle Asia**, **Caucasus**, **Western Asia**, **China**. Kazakhstan, Turkmenistan, Tadzhikistan, Uzbekistan. Iran, Iraq. **Northwest USA**. Idaho.

Miscanthus brevipilus Hand.-Mazz. *Symb. Sin. Pt.* VII. 1306 (1936).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Yunnan: 'Föhrenwälder der tp. St. am Hange des Waha bei Yungning', 3200 m, 19 July 1915, *Handel-Mazzetti 7073* (HT: ?).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis*, short, *pilum,* hair. Lemmas or glumes bearing short hairs.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short. Culms erect, 40–80 cm long, 2–4 mm diam. Lateral branches lacking or sparse. Leaf-sheaths loose, 10–12 cm long, mostly shorter than adjacent culm internode, striately veined, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 0.5–1 mm long, truncate. Leaf-blades 20–40 cm long, 3–7 mm wide, dark green or glaucous, discolorous with last colour beneath. Leaf-blade venation with 10 secondary veins. Leaf-blade surface smooth or scaberulous, pilose, sparsely hairy. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes digitate or borne along a central axis, 6–8 cm long. Central inflorescence axis 4–8 cm long. Rhachis tough, angular, glabrous on surface, glabrous on margins. Rhachis internodes filiform, 3–4 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1–2 mm long or 4–6 mm long, 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, 4–5 mm long, falling entire. Spikelet callus pilose, base truncate. Spikelet callus hairs white, 1–2 mm long, 0.25–0.33 length of spikelet.

Glumes. Glumes exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 7 -veined. Lower glume surface flat, hirsute. Lower glume hairs purple, 2–3 mm long. Lower glume apex truncate. Upper glume lanceolate, chartaceous, with hyaline margins, 1-keeled, 5 -veined. Upper glume lateral veins obscure. Upper glume surface hirsute. Upper glume hairs purple, 2–3 mm long. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 1 length of spikelet, hyaline, acute. Fertile lemma lanceolate, 2–2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn straight or geniculate, 6–7 mm long overall, without a column or with a straight or slightly twisted column.

Flower and Fruit. Anthers 2, 2.5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

Sichuan, Yunnan.

Miscanthus changii Y. N. Lee. *Journ. Jap. Bot*. ix. 115 (1964).

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

TYPE from Korea. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Chang Heungdo s.n.*, 7 Sep 1940, Korea: Kapyong (TNS).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): In honor of Chang Heungdo (fl. 1940) who collected in Korea.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 70–120 cm long. Culm-internodes smooth, distally glabrous. Culm-nodes bearded. Ligule a ciliolate membrane. Leaf-blades 15–20 cm long, 5–10 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 5–7, digitate, 15–18 cm long. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1 mm long or 3.5 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 lanceolate, dorsally compressed, 5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 6 mm long, 1.1–1.2 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface flat, villous. Lower glume apex acuminate. Upper glume lanceolate, 1 length of spikelet, chartaceous, without keels, 5 -veined. Upper glume surface villous. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3.5 mm long, 0.75 length of spikelet, hyaline, acute. Fertile lemma lanceolate, 4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn straight, 3 mm long overall, clearly exserted from spikelet. Palea linear, 0.66 length of lemma.

Flower and Fruit. Anthers 3, 2.5 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Eastern Asia**. Korea.

Miscanthus depauperatus Merrill. *Philipp. Journ. Sci.* v. 170 (1910).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Philippines. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *E. D. Merrill 583*, Apr 1910, Philippines: Canlaon Colcano Negros (L, SI).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *depaupero*, impoverish. Stunted as if for want of nourishment.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect or geniculately ascending, 30–60 cm long, 2–2.5 mm diam. Culm-internodes terete. Lateral branches lacking or sparse. Leaf-sheaths longer than adjacent culm internode. Ligule a ciliolate membrane, 2 mm long. Leaf-blades 15–30 cm long, 3–6 mm wide. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–9, digitate, erect or ascending, 4–15 cm long. Central inflorescence axis 0–5 cm long. Rhachis tough, angular, glabrous on surface, scabrous on margins. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1.5–6 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 lanceolate, dorsally compressed, 6 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs purple, 1 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume lanceolate, 1 length of spikelet, chartaceous, purple, without keels, 5 -veined. Lower glume lateral veins obscure. Lower glume surface flat. Lower glume margins eciliate or ciliolate. Lower glume apex acuminate. Upper glume lanceolate, chartaceous, purple, without keels, 3 -veined. Upper glume lateral veins obscure. Upper glume margins eciliate or ciliolate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5 mm long, 0.8 length of spikelet, hyaline, 1 -veined, without lateral veins, ciliolate on margins, acuminate. Fertile lemma lanceolate, 4 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 10 mm long overall, with twisted column. Palea ovate, 1 mm long, 0.25 length of lemma, hyaline.

Flower and Fruit. Lodicules 2, 0.8 mm long, truncate. Anthers 3, 2.5–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia**. Philippines.

Miscanthus ecklonii (Nees) D.J. Mabberley. *Taxon,* 33(3): 442: (1984).

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**: *Miscanthus sorghum, Miscanthus capensis*. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: South Africa, Mt. Chami: Ecklon.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (479, Fig.393, as *Miscanthidium sorgum* forma *inermis*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (221, Fig 137 as *M. capensis*).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *M. capensis*).

Derivation (Clifford & Bostock 2007): in honor of Christian Frederick Ecklon (1795–1868) German-born South African apothecary and plant collector.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 150–400 cm long. Ligule a ciliolate membrane. Leaf-blade base tapering to the midrib. Leaf-blades 20–50 cm long, 4–15(–25) mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle open, oblong or ovate, 20–40 cm long. Racemes 1–7 cm long. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

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, 3–6 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.25–0.33 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Lower glume surface flat, pilose. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, without keels, 5 -veined. Upper glume surface pilose. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 1 -veined, without lateral veins, ciliolate on margins, acute. Fertile lemma lanceolate, 1–2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate, hairy above. Lemma apex entire or dentate, 2 -fid, muticous or awned, 1 -awned. Principal lemma awn from a sinus, straight or geniculate, 2–7 mm long overall, with a straight or slightly twisted column. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**, **Southern Africa**. Angola, Zambia, Zimbabwe. Swaziland (?), Free State, Kwazulu-Natal, Lesotho, Northern Cape, Eastern Cape.

Miscanthus floridulus (Labill.) Warb. ex K. Schum. & Lauterb. *Fl. Deutsch. Sudsee,* 166 (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), S-L Chen et al, *Flora of China 22* (Poaceae) (2006), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.Koyama, *Grasses of Japan and its neighboring regions* (1987), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from New Caledonia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: New Caledonia: Coll?.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (397, Fig 155), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (740), C-C Hsu,*Taiwan Grasses* (1975) (679, Pl. 1474), H.B.Gilliland, *Grasses of Malaya* (1971) (219, Fig 47), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (619), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 813), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:69(1980)).

Illustrations (Journals): *Bot. J. Linn. Soc.* (164:199, Fig.13 (2010)).

Images: H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *floridus*, profusely flowering; *-ulus*, diminutive. Meaning obscure.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 150–400 cm long, 8–16 mm diam. Leaves basal and cauline. Leaf-sheaths glabrous on surface or pilose, outer margin glabrous or hairy. Ligule a ciliolate membrane, 1–3 mm long. Leaf-blades 30–80 cm long, 15–40 mm wide.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle open, obovate, 30–50 cm long, 10–20 cm wide. Racemes 10–25 cm long. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform, 3–5 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, recurved, unequal, 1–3.5 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 lanceolate, dorsally compressed, 3–3.5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 1.3–2 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, herbaceous, much thinner above, without keels, 5 -veined. Lower glume surface flat, glabrous or puberulous, hairy above. Lower glume apex entire or dentate, 2 -fid. Upper glume elliptic, without keels, 3 -veined. Upper glume surface glabrous or pilose. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 1 -veined, without lateral veins, ciliate on margins, obtuse. Fertile lemma lanceolate, 2.5–3 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 5–15 mm long overall, with twisted column. Palea absent or minute.

Flower and Fruit. Anthers 3.

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

Country /Province /State. **China**, **Eastern Asia**. China South Central, Hainan, China Southeast. Japan Honshu, or Shikoku, or Kyushu. Japan, Nansei-Shoto, Taiwan. **Indo-China**, **Malesia**, **Papuasia**. Laos, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Moluccas, Philippines, Sulawesi, Sumatra. New Guinea, Solomon Is. **Southwestern Pacific**, **South-central Pacific**, **Northwestern Pacific**. Fiji, Gilbert Is, Niue, New Caledonia, Samoa, Tonga, Vanuatu. Cook Is, Marquesas, Society Is, Tuamotu Is, Tubuai Is. Caroline Is, Marianas, Marshall Is.

Anhui, Fujian, Guangdong, Guangxi, Henan, Jiangsu, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Miscanthus fuscus (Roxb.) Benth. *Journ. Linn. Soc.* xix. 65 (1881).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Sclerostachya fusca, S. milroyi*).

TYPE from India. **Basionym or Replaced Name**: *Sclerostachya fusca* (Roxb.) A.Camus, in Lecomte, *Fl. Gen. Indo-Chine,* 7: 243 (1922). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: A native of damp places over Bengal. Flowering time the rainy season., *[Wallich Hb. 8855]* .

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L., dark, swarthy. Glumes or lemmas dark-brown.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms erect, reed-like, 100–300 cm long. Leaf-sheaths longer than adjacent culm internode, glabrous on surface, outer margin hairy. Leaf-sheath oral hairs ciliate.

Ligule a ciliolate membrane, 2 mm long, brown, pilose on abaxial surface, obtuse. Leaf-blades 25–150 cm long, 4–40 mm wide, stiff. Leaf-blade midrib widened. Leaf-blade surface glabrous. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate, filiform.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes numerous, borne along a central axis, closely spaced, ascending or drooping, 6–16 cm long. Central inflorescence axis 15–60 cm long, pubescent. Rhachis tough, pubescent on surface. Rhachis internodes filiform. Raceme-bases brief, pilose, hairy at base. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, angular, unequal, 1–2.5 mm long, glabrous, tip cupuliform.

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 oblong or ovate or obovate, dorsally compressed, 3–4 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.5 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 2–3 -veined. Lower glume lateral veins obscure. Lower glume surface flat, glabrous. Lower glume margins ciliate. Lower glume apex obtuse. Upper glume lanceolate, chartaceous, 1-keeled, keeled above, 1 -veined. Upper glume lateral veins absent. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea or without significant palea. Lemma of lower sterile floret oblong, 3 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins, fringed above, acute. Fertile lemma lanceolate, 2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate, hairy above. Lemma apex muticous. Palea present or absent or minute.

Flower and Fruit. Anthers 3, 1.5 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**, **Indo-China**. Cambodia, Myanmar, Thailand.

Assam, Meghalaya. Uttah Pradesh, West Bengal.

Miscanthus jinxianensis L. Liou. *Pl. Res. Gram.* 11: 36. 1989.

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. China South Central, Manchuria, China North-Central, China Southeast.

Beijing, Shaanxi. Henan. Hubei.

Miscanthus junceus (Stapf) Pilger. *Engl. & Prantl, Nat. Pflanzenfam. Aufl.* 2, xiv e. 113 (1940).

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 Synonomy Database: ST: *Buchanan 228*, Kalahari Region: Basutoland: Leribe

ST: *Nelson 73*, South Africa: Transvaal: Olifants River

ST: *Nelson 77*, South Africa: Jungle streamlet.

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (Plt. 14 as *Miscanthidium junceum*).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3084 (1922) as *Miscanthidium teretifolium*).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. *juncea*, rush-like. Leaf blades convolute resembling those of certain *Juncus* species.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–300 cm long. Ligule a ciliolate membrane. Leaf-blades terete, 50–100 cm long, 1–3 mm wide. Leaf-blade apex acuminate, hardened.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle open, elliptic, 20–50 cm long. Racemes 2–10 cm long. Rhachis tough, subterete. Rhachis internodes filiform, 3–5 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

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 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.2–0.3 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, without keels, 5 -veined. Lower glume surface flat, villous. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, without keels, 5 -veined. Upper glume surface villous. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 1 -veined, without lateral veins, ciliolate on margins, acute. Fertile lemma lanceolate, 1–2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 2–10 mm long overall, with twisted column. Palea absent or minute.

Flower and Fruit. Anthers 3.

n = 15 (1 ref TROPICOS).

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **South Tropical Africa**, **Southern Africa**. DRC. Angola, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Kwazulu-Natal, Eastern Cape.

Miscanthus lutarioriparius L.Liu ex S.L.Chen & Renvoize. *Kew Bull*. 60(4): 605 (-607; fig. 1) (2006).

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 Synonomy Database: China, Hunan, Lake Dongting: Liu 273 (PE holo).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 811).

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Rhizomes short, scaly. Culms geniculately ascending, robust, 300–700 cm long, 10–20 mm diam., without nodal roots or with prop roots. Culm-internodes thick-walled or solid. Culm-nodes pubescent. Lateral branches ample. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath auricles absent or erect. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blade base tapering to the midrib or simple. Leaf-blades 50–90 cm long, 15–30 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface glabrous, hairless except near base. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes few or numerous, 20–40, digitate or borne along a central axis, 10–30 cm long. Central inflorescence axis 10–25 cm long, glabrous. Rhachis tough, subterete. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1.5–5.5 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 lanceolate, dorsally compressed, 4–6.5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 10 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3–5 -veined. Lower glume surface flat, hirsute. Lower glume hairs 10 mm long. Lower glume apex entire, attenuate. Upper glume lanceolate, chartaceous, without keels, 3 -veined. Upper glume margins pubescent. Upper glume apex attenuate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 3.5–4.5 mm long, hyaline, 0 -veined, without lateral veins, pilose, acute. Fertile lemma lanceolate, 3–4 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma surface pilose.

Flower and Fruit. Anthers 3, 2 mm long. Caryopsis lanceolate, 2 mm long.

Distribution (TDWG). Continent. Temperate Asia.
Country /Province /State. **China**. China South Central, China Southeast.
Hunan. Hubei.

Miscanthus nepalensis (Trin.) Hack. *DC. Monog. Phan.* vi. 104 (1889).

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), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Yunnan: Lijiang valley, moist shady situations in woods, 7–9000 ft, Sept. 1904, *G. Forrest 343* (HT: ?; ST: E).

Illustrations (Books): T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (25, Fig. 26), H.J.Noltie, *The Grasses of Bhutan* (2000) (761, Fig. 49), E.Edgar. & H.E.Connor, *Flora of New Zealand* 5, *Gramineae* (2000) (607, Fig. 24), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (619), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 814).

Images: H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

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

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 90–150 cm long. Leaf-sheaths 10–12 cm long, pilose. Ligule a ciliolate membrane. Leaf-blades 30–50 cm long, 6–10 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 10–15, borne along a central axis, closely spaced, 5–10 cm long. Central inflorescence axis 4–8 cm long. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1–2.8 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 lanceolate, dorsally compressed, 2–2.5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs tawny, 3–4 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, light brown, without keels. Lower glume surface flat. Lower glume margins ciliate. Lower glume hairs tawny, 4–6 mm long. Lower glume apex emarginate. Upper glume lanceolate, chartaceous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 1.8 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma lanceolate, 1.8 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 9–13 mm long overall. Palea 0.8 mm long, 0.5 length of lemma, hyaline, 0 -veined, without keels.

Flower and Fruit. Anthers 2, 1.4 mm long.

n = 20 (1 ref TROPICOS).

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

Country /Province /State. **China**. China South Central, Tibet. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Myanmar. Malaya (*). New Guinea. **New Zealand** (*). New Zealand North I.

Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Assam, Meghalaya, Nagaland. Tamilnadu, Uttah Pradesh, West Bengal. Himachal Pradesh.

Miscanthus nudipes (Griseb.) Hack. *DC. Monog. Phan.* vi. 109 (1889).

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).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India: 9–13000 feet, *Hooker herb. nr. 10* (HT: ?).

Recent Synonyms: *Diandranthus tibeticus* L. Liou, *Fl. Xizangica*, 5: 308 (1987).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (761, Fig. 49), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 815).

Illustrations (Journals): *Bot. J. Linn. Soc.* (164:209, Fig.19 as var. *nudipes*: 210, Fig.20 as var. *yunnanensis* (2010)).

Derivation (Clifford & Bostock 2007): L. *nudus*, bare; *pes,* foot. Pedicel glabrous.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial. Culms erect, 90–120 cm long. Culm-nodes pubescent. Ligule a ciliolate membrane, 2–3 mm long, red, obtuse. Leaf-blades spreading, 20–30 cm long, 4–5 mm wide, stiff. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade margins smooth.

Inflorescence. Inflorescence composed of racemes. Peduncle pubescent above. Racemes 8–10, digitate, 5–7.5 cm long. Rhachis tough, angular, glabrous on surface. Rhachis internodes filiform, 3–4 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1–1.5 mm long or 2.5–3 mm long, 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 oblong, dorsally compressed, 5–5.5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.66 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, chartaceous, much thinner above, without keels, 4 -veined. Lower glume lateral veins ribbed. Lower glume surface flat, villous. Lower glume hairs 3–3.5 mm long. Lower glume apex emarginate or truncate. Upper glume lanceolate, chartaceous, 1-keeled, keeled above, 5 -veined. Upper glume primary vein ciliate. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 4 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins, fringed above, erose, acute. Fertile lemma lanceolate, 2.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate, hairy above. Lemma apex entire or dentate, 2 -fid, awned, 1 -awned. Principal lemma awn apical or from a sinus, geniculate, 6–8 mm long overall, with a straight or slightly twisted column. Palea 3.5 mm long.

Flower and Fruit. Anthers 2, 3 mm long.

n = 20 (1 ref TROPICOS).

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

Country /Province /State. **China**. China South Central, Tibet. **Indian Subcontinent**, **Indo-China**. Eastern Himalaya, India, Nepal.

Guizhou, Sichuan, Yunnan. Bhutan, Sikkim.

Miscanthus oligostachyus Stapf. *Kew Bull.* 1898, 227. (1898).

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).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan: Nikko Mountains, *Maries s.n.*.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (399, Fig 156), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (620).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes short, knotty. Culms erect, 80–180 cm long, 2–3 mm diam., 4–6 -noded. Culm-nodes pubescent. Leaves cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 1–3 mm long. Leaf-blades 8–60 cm long, 6–25 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy abaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 2–12, digitate, 7–15 cm long. Central inflorescence axis 1.5–2.5 cm long. Rhachis tough, subterete, puberulous on surface. Rhachis internodes

filiform, 8–11 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1.5–6 mm long, puberulous.

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, 6–8 mm long, 1.8–2.2 mm wide, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.5–1.3 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface flat, pilose. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, without keels, 3–5 -veined. Upper glume surface pilose. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 0.9 length of spikelet, hyaline, 1 -veined, without lateral veins, ciliolate on margins, acute. Fertile lemma lanceolate, 6.5–7 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 4–15 mm long overall, with twisted column. Palea linear, 0.2–0.4 length of lemma.

Flower and Fruit. Anthers 3, 2.5–3 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Eastern Asia**. Japan Honshu, or Shikoku, or Kyushu. Japan, Korea.

Miscanthus paniculatus (B. S. Sun) Renvoize & S. L. Chen. *Kew Bull.* 60: 607 (2006).

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 Synonomy Database: China: Yunnan: Zhaotong, Sujia, summit of mountain, moist place by ditch, 2700 m, 10 Aug. 1982, *B.S. Sun 82042* (HT: YUNU).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 809).

Illustrations (Journals): *Bot. J. Linn. Soc.* (164:211, Fig.21 (2010)).

Derivation (Clifford & Bostock 2007): L. *paniculus*, panicle; *-ata*, indicating possession. Inflorescence a panicle.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths glabrous. Culms erect, 30–50 cm long, 3–4 -noded. Culm-nodes glabrous or pubescent. Leaf-sheaths loose, mostly shorter than adjacent culm internode, glabrous on surface or pilose. Ligule an eciliate membrane, 0.8–1.2 mm long, obtuse. Leaf-blades 10–40 cm long, 3–7 mm wide. Leaf-blade surface scabrous, rough on both sides, pilose, hairy abaxially or on both sides.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 5–15 cm long. Primary panicle branches appressed, 1–2 -nate, 2–6 cm long. Racemes bearing few fertile spikelets, 2–5 fertile spikelets on each. Rhachis tough. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

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, 5–6 mm long, falling entire. Spikelet callus pilose, base truncate. Spikelet callus hairs 0.5–2 mm long, 0.1–0.3 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, chartaceous, without keels. Lower glume surface flat, smooth or scabrous, glabrous or pilose. Lower glume apex truncate. Upper glume elliptic, chartaceous. Upper glume surface smooth or scabrous, glabrous or pilose. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 4.5 mm long, hyaline, 3 -veined, acute. Fertile lemma lanceolate, 4.5–5 mm long, hyaline, without keel, 0–3 -veined. Lemma apex entire, mucronate. Palea 0.5 length of lemma.

Flower and Fruit. Anthers 3, 3 mm long. Caryopsis with adherent pericarp, obovoid.

Distribution (TDWG). Continent. Temperate Asia.

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

Guizhou, Sichuan, Yunnan.

Miscanthus sacchariflorus (Maxim.) Hack. *Engl. & Prantl, Nat. Pflanzenfam* 2,2:23 (1887).

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).

TYPE from Russia. **Basionym or Replaced Name**: *Triarrhena sacchariflora* (Maxim.) T. Nakai, *J. Jap. Bot.*, 25 (1–2): 7 (1950). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Russia: Siberia: Am. sudlichen Amur ... zwei Tagereisen oberhalf der Ssungari-Mundung... etc., *Maximowicz s.n.* (HT: ?).

'Gotemba'.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (403, Fig 158), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (619), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 812).

Illustrations (Journals): *Bot. J. Linn. Soc.* (164:204, Fig.16 as var. *sacchariflorus*: 205, Fig.17 as var. *lutarioroparius* (2010)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *flos*, flower. Inflorescence resembles that of *Saccharum*.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 90–250 cm long, 5–8 mm diam. Culm-internodes 5–20 cm long. Culm-nodes bearded. Leaves cauline. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades 20–80 cm long, 10–30 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes few or numerous, 8–40, digitate, drooping or ascending, 10–35 cm long. Central inflorescence axis 4–10 cm long. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform, 4–8 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1.5–7 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 lanceolate, dorsally compressed, 5–6 mm long, 0.8–1 mm wide, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 2–4 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, much thinner above, dark brown, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface flat. Lower glume margins ciliate (hairs to 15mm). Lower glume apex entire, acuminate. Upper glume lanceolate, chartaceous, much thinner above, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.8 length of spikelet, hyaline, 3 -veined, ciliate on margins, acute. Fertile lemma lanceolate, 3.5–4.5 mm long, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex dentate, 2 -fid, muticous or mucronate. Palea 0.5 length of lemma. Palea apex ciliate.

Flower and Fruit. Anthers 3, 2–2.5 mm long.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), Temperate Asia, North America.

Region. **Northern Europe** (*).

Country /Province /State. : Great Britain (*). Russian Far East, **China**, **Eastern Asia**, **Russia**. Amur, Primorye. China North-Central, China Southeast. Japan Hokkaido. Japan, Korea. **Eastern Canada**, **North-central USA**, **Northeast USA**. Ontario, Quebec. Illinois, Iowa, Kansas, Wisconsin. Michigan.

Gansu, Hebei, Shaanxi. Henan.

Miscanthus sinensis Anderss. *Oefvers. Vet. Akad. Stockh*. 166. (1855).

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.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).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: ??: Cap Syng-Moon, 1837, *F.J.F. Meyen s.n.* (HT: B).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (738 & 744 & 746 as *M. flavidus* & *M. sinensis* var. *formosanus* & *M. transmorrisonensis*), C-C Hsu,*Taiwan Grasses* (1975) (738 as *M. flavidus* & 744 as *M. sinensis* var. *formosanus* & 745 as *M. transmorrisonensis*), J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (529, Fig 451 as var. *zebrinus*), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (302), 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) (619), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (504, Fig. 179 as var. *zebrina*), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1141 & 1147, Fig. 222 & 224), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 813).

Illustrations (Journals): *Bot. J. Linn. Soc.* (164:200, Fig.14 as var. *sinensis*: 202, Fig.15 as var. *purpurascens* (2010)).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);, R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

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

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 60–200 cm long, 3–7 mm diam. Leaves basal and cauline. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 1–2 mm long. Leaf-blades 20–70 cm long, 6–20 mm wide.

Inflorescence. Inflorescence composed of racemes. Peduncle glabrous or pubescent above. Racemes few or numerous, 4–40, digitate, drooping or ascending, 10–30 cm long. Central inflorescence axis 6–15 cm long. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform, 4–8 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1.5–6 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 lanceolate, dorsally compressed, 4.5–7 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 1.3–1.7 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface flat. Lower glume apex entire or dentate, 2 -fid, acute. Upper glume lanceolate, chartaceous, with membranous margins, without keels, 1–3 -veined. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.8 length of spikelet, hyaline, 1 -veined, without lateral veins, ciliolate on margins, obtuse. Fertile lemma lanceolate, 3–4.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex lobed, 2 -fid, incised 0.25–0.33 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–12 mm long overall, with twisted column. Palea 0.5 length of lemma.

Flower and Fruit. Anthers 3.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), Africa, Temperate Asia, Tropical Asia, Australasia, North America, South America.

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Northern Africa**. Egypt (as var. *zebrinus*). Russian Far East, **Caucasus**, **Western Asia**, **China**, **Eastern Asia**. Kuril Is, Primorye, Sakhalin. China South Central, Hainan, Manchuria, China North-Central, China Southeast. Japan Hokkaido, or Honshu, or

Shikoku, or Kyushu. Japan, Korea, Kazan-retto, Ogosawara-shoto, Taiwan. **Indo-China**, **Malesia**. Thailand, Vietnam. Java, Moluccas, Philippines. **Australia** (*), **New Zealand** (*). Western Australia (*), South Australia (*), New South Wales (*). New Zealand North I, New Zealand South I. Marianas (*). Hawaii. **North-central USA**, **Northeast USA**, **Southeastern USA**, **Mexico**. Missouri. Pennsylvania. North Carolina, South Carolina, Virginia. Southeast Mexico. **Caribbean**, **Brazil**, **Southern South America**. Brazil West Central, Brazil Southeast, Brazil South. Chile Central, Uruguay.

Hebei, Shaanxi, Shandong. Anhui, Fujian, Guangdong, Guangxi, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. South-West. Southern. Coast. Distrito Federal (*). Sao Paulo. Rio Grande do Sul, Santa Catarina. Maule. Yucatan.

Miscanthus taylorii Bor. *Kew Bull.* 1953, 273 (1953).

Accepted by: U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Xizang: Kongbo Province, Trim La, Mayër, 3500 m, 9 July 1938, *Ludlow, Sherriff & Taylor 5799* (HT: BM).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths coriaceous. Culms erect, 50–90 cm long. Culm-nodes glabrous. Ligule a ciliolate membrane, 1.5 mm long, pilose on abaxial surface. Leaf-blades 20–45 cm long, 3–6 mm wide, flaccid. Leaf-blade midrib conspicuous. Leaf-blade surface pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Peduncle pilose above. Racemes borne along a central axis, 5 cm long. Central inflorescence axis 8 cm long, pilose. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 3–9 mm long, 0.5 length of fertile spikelet, ciliate, with 2–5.5 mm long hairs.

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, 4.5–5.5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs 0.5 length of spikelet.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume elliptic or oblong, 4–5 mm long, 1 length of upper glume, 0.9 length of spikelet, chartaceous, without keels, 5 -veined. Lower glume surface convex. Lower glume apex truncate (lower spikelet) or acute (upper spikelet). Upper glume elliptic, 5 mm long, chartaceous, without keels, 3 -veined. Upper glume margins ciliate. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 5.5 mm long, membranous, much thinner on margins, without lateral veins, ciliolate on margins, acute. Fertile lemma lanceolate, 4.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn flexuous, 4–5 mm long overall. Palea 0.66 length of lemma.

Flower and Fruit. Anthers 2, 3 mm long.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**. Tibet.

Sikkim.

Miscanthus tinctorius (Steud) Hack. *DC, Monog. Phan.* vi. 103 (1889).

Accepted by: 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).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japon, *Siebold s.n.* (HT: L) *Erianthus tinctorius* Siebold; nom. nud.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (401, Fig 157).

Derivation (Clifford & Bostock 2007): L. related to dyeing.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 60–150 cm long, 2–4 mm diam., 5–8 -noded. Culm-nodes pubescent. Leaves cauline. Leaf-sheaths glabrous on surface or pilose, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 2–3 mm long. Leaf-blades 15–40 cm long, 8–14 mm wide. Leaf-blade surface glabrous or pubescent, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 2–12, digitate, 10–15 cm long. Central inflorescence axis 1.5–3 cm long. Rhachis tough, angular, glabrous on surface, scaberulous on margins. Rhachis internodes filiform, 4–7 mm long. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 0.5–4 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 lanceolate, dorsally compressed, 4–6 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white, 0.4–0.5 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 1 length of spikelet, chartaceous, without keels, 3 -veined. Lower glume surface flat, pilose. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, chartaceous, without keels, 3 -veined. Upper glume surface pilose. Upper glume margins ciliolate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 0.9 length of spikelet, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins, acute. Fertile lemma lanceolate, 3–4.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliate, hairy above. Lemma apex entire, acuminate, muticous or mucronate or awned, 1 -awned. Principal lemma awn 0–1 mm long overall, not or scarcely exserted from spikelet. Palea linear, 0.2–0.5 length of lemma, 0 -veined. Palea surface pubescent, hairy on flanks. Palea apex acuminate.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **Eastern Asia**. Japan Honshu. Japan.

Miscanthus villosus Yan-C. Liu & H. Peng. *Nordic J. Bot.* 28: 671, f. 1–2 (2010).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Yunnan: Yongde County, Mingxinba Village, grass slope, 2000 m, 6 Sept. 1987 *B.S. Sun & Y.C. Wang 87245* HT: YUKU; IT: KUN

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Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms erect, 115–133 cm long, 3–5 mm diam., 3–4 -noded. Culm-nodes pubescent. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane, 2–4 mm long, obtuse. Leaf-blade base tapering to the midrib. Leaf-blades 10–45 cm long, 2–7 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle spiciform, linear, 19–23 cm long, 1–7 cm wide. Primary panicle branches appressed, 3–6 cm long. Panicle axis villous. Racemes bearing few fertile spikelets, 2–5 fertile spikelets on each. Rhachis tough. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

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, 5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs 3–4 mm long, 0.6–0.8 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 4.8 mm long, 0.9 length of spikelet, chartaceous, 2-keeled, 4–5 -veined. Lower glume lateral veins obscure. Lower glume surface flat, scabrous, pilose. Lower glume margins ciliate. Lower glume apex emarginate or truncate. Upper glume elliptic, 5 mm long, 1 length of spikelet, chartaceous, 1-keeled. Upper glume margins ciliate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 5 mm long, hyaline, 3 -veined, ciliate on margins, fringed above, acute. Fertile lemma

lanceolate, 4 mm long, hyaline, without keel, 0–3 -veined. Lemma apex awned, 1 -awned. Principal lemma awn straight, 5–6 mm long overall. Palea 3 mm long, 0.6 length of lemma.

Flower and Fruit. Caryopsis with adherent pericarp, obovoid, dark brown.

Distribution (TDWG). Continent. Temperate Asia.

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

Yunnan.

Miscanthus violaceus (K. Schum.) Pilger. *Engl. & Prantl, Nat. Pflanzenfam. Aufl*. 2, xiv e. 113 (1940).

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

TYPE from Tanzania. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Stuhlamnn 933*, Tanzania: western shore of Lake Victoria, Itolio (B (destroyed)).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (269, Fig. 201 as *Miscanthidium*), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):703, Fig 160), G.V.Pope et al., *Flora Zambesiaca* 10.

Derivation (Clifford & Bostock 2007): L. violet. Spikelets, stigmas or anthers violet-colored.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 200–400 cm long. Ligule a ciliolate membrane. Leaf-blade base tapering to the midrib. Leaf-blades 100–300 cm long, 5–25 mm wide. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle open, elliptic, 25–40 cm long. Racemes 1–7 cm long. Rhachis tough, subterete. Rhachis internodes filiform. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal.

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 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs white to purple, 0.5–1 length of spikelet.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, 5 -veined. Lower glume surface flat, glabrous or pilose. Lower glume margins ciliate. Lower glume apex dentate, 2 -fid. Upper glume lanceolate, without keels, 5 -veined. Upper glume surface glabrous or pilose. Upper glume margins ciliate. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 0.9 length of spikelet, hyaline, 1 -veined, ciliolate on margins, acute. Fertile lemma lanceolate, 1–2 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma margins ciliolate, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1.5–6 mm long overall. Palea absent or minute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**. Burundi, Rwanda, DRC. Kenya, Tanzania, Uganda. Zambia.

Miscanthus wardii Bor. *Kew Bull.* 274 (1953).

Accepted by: 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 Synonomy Database: India: Assam: Di Chu Gorge, Lohit Valley, terraces and among boulders in torrent bed, 1500 m, 18 July 1850, *? F. Kingdon-Ward 19328* (HT:K) [F. Kingdon-Ward nos. 20095 & 20091 possible syntypes, unclear].

Illustrations: None found.

Derivation (Clifford & Bostock 2007): In honor of Francis Kingdon-Ward (1885–1958) English botanist.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Saccharinae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths coriaceous. Culms erect, 50–100 cm long. Culm-nodes glabrous. Leaf-sheaths pilose, with tubercle-based hairs. Ligule an eciliate membrane,

1–1.5 mm long, lacerate, obtuse. Leaf-blades 25–50 cm long, 7–10 mm wide, glaucous. Leaf-blade surface pilose, sparsely hairy, hairy on both sides, with tubercle-based hairs. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Peduncle glabrous or pilose above. Racemes 8–12, digitate, 8–12 cm long. Rhachis tough, subterete, glabrous on surface. Rhachis internodes filiform, 3.5–5 mm long, 1 length of fertile spikelet. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, filiform, unequal, 1–4 mm long, 0.5 length of fertile spikelet, ciliate, hairy above, with 5 mm long hairs.

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, 5 mm long, falling entire. Spikelet callus bearded, base truncate. Spikelet callus hairs 0.5 length of spikelet.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume elliptic, 3.5 mm long, 0.75 length of upper glume, 0.7 length of spikelet, chartaceous, purple, without keels, 5 -veined. Lower glume surface flat. Lower glume apex truncate. Upper glume oblong or ovate, 4–4.5 mm long, chartaceous, without keels, 3 -veined. Upper glume apex truncate.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3.5–4.5 mm long, hyaline, without lateral veins, acute. Fertile lemma lanceolate, 3–4.5 mm long, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex awned, 1 -awned. Principal lemma awn flexuous, 11 mm long overall. Palea 0.5–0.66 length of lemma.

Flower and Fruit. Anthers 3, 2.75 mm long.

Distribution (TDWG). Continent. Tropical Asia.

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

Miscanthus x giganteus J.M.Greef , Deuter ex Hodk., Renvoize. *Kew Bull.* 56 (3): 759 (2001).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Saccharinae.

Mnesithea afraurita (Stapf) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (1986).

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

TYPE from Mali. **Basionym or Replaced Name**: *Rottboellia afraurita* Stapf, *Bull. Soc. Bot. France* 55: Mem. 8, 98 (1908)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Chevalier 232*, 20 Jan 1899, Mali: Bammako, Soknati-falls (K; IT: P).

Recent Synonyms: *Coelorachis afraurita* (Stapf) Stapf, Prain, *Fl. Trop. Afr.* 9:. 80 (1917).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (285, Fig. 224 as *Coelorachis*), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982): 841, Fig. 197 as *Coelorachis*), G.V.Pope et al., *Flora Zambesiaca* 10 (as *Coelorachis*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (362, Fig. 150 as *Coelorachis*).

Derivation (Clifford & Bostock 2007): L. *afer,* African; *aurita*, eared. Pedicels and glumes with a wing-like appendage.

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations intravaginal, flabellate. Culms erect, 120–400 cm long. Ligule a ciliolate membrane. Leaf-blades conduplicate, 30–100 cm long, 4–12 mm wide.

Inflorescence. Synflorescence compound, fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 2–7 cm long. Rhachis fragile at the nodes, angular. Rhachis internodes cuneate, 2 mm long. Rhachis internode tip transverse, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, cuneate, semiterete, 3 mm long, tip cupuliform, auriculate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, asymmetrical, dorsally compressed, 2.5–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet callus

square, obtuse. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 oblong, dorsally compressed, 3–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, reaching apex of florets, firmer than fertile lemma. Lower glume oblong, symmetrical or asymmetrical, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged broadly, winged above, 5 -veined. Lower glume surface flat, smooth. Upper glume oblong, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 1 length of spikelet, hyaline, 2 -veined, obtuse. Fertile lemma elliptic, hyaline, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma apex obtuse. Palea hyaline.

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

Country /Province /State. **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**. Guinea, Ivory Coast, Mali, Nigeria, Senegal. Cameroon. Ethiopia (inc. Eritrea), Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. **Brazil**. Brazil North.

Mnesithea annua (Lazarides) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 295: (1986).

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

TYPE from Australia. **Basionym or Replaced Name**: *Heteropholis annua* Lazarides, *Nuytsia* 5(2): 288, f. 1c-d, 7f. 1984 [1985]. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Australia: Western Australia, Mitchell Plateau, 12 km SW of mining camp, Camp Creek, Gauging Station, 14:53'10"S, 125:45'05"E, 3 May 1982, *Kenneally 8219* (HT: CANB; IT: BRI, DNA, K (photo, BRI), L, PERTH, US).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

Derivation (Clifford & Bostock 2007): L. annual. Annuals.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms robust, 150–200 cm long, 5–10 mm diam., with prop roots. Culm-nodes glabrous. Ligule an eciliate membrane, 1–2 mm long. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 30–60 cm long, 20–45 mm wide, dark green. Leaf-blade margins spinulose. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal or terminal and axillary. Peduncle widened at apex. Racemes 1, single, unilateral, 5–7.3 cm long. Rhachis fragile at the nodes, flattened. Rhachis internodes oblong, 5 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly, oblong, flattened, 5 mm long, tip rectangular.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 7.5–8 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, keeled, 5–7 -veined, obtuse. Companion sterile spikelet lemmas 2, 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 obovate, dorsally compressed, 4.5–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus cuneate, 1 mm long, glabrous, base truncate, with central boss, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume obovate, 1 length of spikelet, indurate, 2-keeled, keeled laterally, keeled obtusely, winged on keel, winged narrowly, winged above, 11 -veined. Lower glume surface rugose. Lower glume apex truncate or obtuse. Upper glume oblong, indurate, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic or oblong, hyaline. Fertile lemma oblong, hyaline, without keel, 2–3 -veined, 0–3 -veined. Palea 0.9 length of lemma.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Western Australia.

Kimberley.

Mnesithea aurita (Steud.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Coelorachis*).

TYPE from Brazil. **Basionym or Replaced Name**: *Rottboellia aurita* Steud., *Syn. Pl. Glumac.* 1: 361 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Anon.*, Brazil (P).

Recent Synonyms: *Coelorachis aurita* (Steud.) A.Camus, *Ann. Soc. Linn. Lyon,* n. s. 68 ; 197 (1922).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (532), S.A.Renvoize, *Gramineas de Bolivia* (1998) (616, Fig 147 as *Coelorachis*), S.A.Renvoize, *The Grasses of Bahia*, 1984 (288, Fig. 110 as *Coelorachis*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (75, Fig. 48 as *Coelorachis*), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (534, Fig. 193 as *Coelorachis*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (146, Fig 45 as *Coelorachis*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (145, Fig. 22 as *Coelorachis*).

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms erect, 100–250 cm long, 3–7 mm diam. Culm-internodes elliptical in section, solid. Culm-nodes brown. Lateral branches ample, arising from mid culm or upper culm. Leaf-sheaths keeled. Ligule a ciliolate membrane, 0.6–0.7 mm long. Leaf-blades conduplicate, 15–60 cm long, 4–10 mm wide.

Inflorescence. Synflorescence compound, fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 4–9 cm long, 1.5–2 mm wide. Rhachis fragile at the nodes, angular. Rhachis internodes oblong, 2–2.7 mm long. Rhachis internode tip transverse, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, 2.5–3 mm long, tip cupuliform, auriculate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, dorsally compressed, 2.3–4.3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 oblong, dorsally compressed, 4–4.7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged broadly, winged above. Lower glume surface flat, areolate. Lower glume apex emarginate. Upper glume oblong, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 2.5–3.1 mm long, hyaline, obtuse. Fertile lemma elliptic, 2.3–2.8 mm long, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3, 0.8–1.5 mm long, purple.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Caribbean**, **Northern South America**, **Western South America**, **Brazil**, **Southern South America**. Costa Rica, Honduras, Panama. Trinidad-Tobago. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia. Brazil West Central, Brazil Southeast. Paraguay.

Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Distrito Federal, Mato Grosso, Goiás, Mato Grosso do Sul. Minas Gerais, Sao Paulo. Paraná (as *Coelorachis*). Corrientes, Misiones. Mexico State, Morelos. Chihuahua. Veracruz. Sinaloa. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas, Tabasco, Yucatan.

Mnesithea balansae (Hack.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Paraguay. **Basionym or Replaced Name**: *Coelorachis balansae, Rotboellia balansae* Hack., *Fl. Bras.* 2(4): 312 (1883)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Balansa 291*, 12 Dec 1874, Paraguay: Villa Bica (W; IT: L, SI).

HT: *Balansa 291*, 12 Dec 1874, Paraguay: Villa Bica (W; IT: L).

Recent Synonyms: *Coelorachis balansae* (Hack.) A.Camus, *Ann. Soc. Linn. Lyon,* n. s. 68 ; 197 (1922).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (533), S.A.Renvoize, *Gramineas de Bolivia* (1998) (Fig. 147 as *Coelorachis*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (461, Fig. 196 as *Rottboellia*).

Derivation (Clifford & Bostock 2007): in honor of Benjamin Balansa (1825–1892) French botanist.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Basal innovations flabellate. Culms erect, 200–350 cm long. Culm-internodes elliptical in section, solid. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blade base tapering to the midrib. Leaf-blades 60–120 cm long, 5–10 mm wide.

Inflorescence. Synflorescence compound.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 7–10 cm long. Rhachis fragile at the nodes, angular. Rhachis internodes cuneate, 4–5 mm long. Rhachis internode tip transverse, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, angular, 4–5 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, dorsally compressed, 5–6 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 oblong, dorsally compressed, 5–7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged above. Lower glume surface convex, smooth. Lower glume apex emarginate. Upper glume oblong, chartaceous, 1-keeled, 1 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline, obtuse. Fertile lemma elliptic, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Brazil**, **Southern South America**. Bolivia. Brazil West Central. Argentina Northeast, Paraguay.

Mato Grosso do Sul. Chaco, Corrientes, Entre Rios, Formosa, Misiones.

Mnesithea benoistii (Camus) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 287: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Heteropholis*).

TYPE from Madagascar. **Basionym or Replaced Name**: *Heteropholis benoistii* A.Camus, *Bull. Soc. Bot. France,* 103: 476 (1957). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Benoist 1639*, 20 Dec 1951, Madagascar: Domaine Central, Manjakatompo, Ankaratra, 1700 m (P).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Charles Frappier de Mont Benoist (1813–1885) French botanist who was born on Mauritius and died on La Riunion.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms 35–50 cm long, 6–8 -noded. Culm-nodes glabrous. Ligule an eciliate membrane. Leaf-blades flat or involute, 10–25 cm long, 1.5–2 mm wide. Leaf-blade margins glabrous.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle 5–13 cm long, widened at apex. Racemes 1, single, smoothly terete, unilateral, bearing 12–20 fertile spikelets on each. Rhachis fragile at the nodes, semiterete. Rhachis internodes cuneate. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly, oblong, flattened, tip rectangular.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, elliptic, 2–3 mm long, shorter than fertile, persistent.

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 oblong, dorsally compressed, 3–4.35 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, keeled laterally, keeled obtusely, winged on keel, winged narrowly, winged near apex, 5–7 -veined. Lower glume surface areolate. Lower glume apex obtuse. Upper glume oblong, membranous, 1-keeled, keeled above. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel.

Flower and Fruit. Anthers 3, 2.1 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Western Indian Ocean**. Madagascar.

Mnesithea cancellata (Ridley) Ridley. *Fl. Mal. Penins.* v. 206 (1925).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Malaysia. **Basionym or Replaced Name**: *Coelorachis cancellata* (Ridley) Bor, *Dansk Bot. Arkiv,* 20:. 168 (1962). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Malaya, Setul Heatha: Ridley 15231 (K holo).

Illustrations: None found.

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

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 50–90 cm long, wiry. Culm-nodes pubescent. Leaf-sheaths glabrous on surface, outer margin hairy. Ligule an eciliate membrane. Leaf-blades 14–28 cm long, 4–8 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear. Racemes 1, single, smoothly terete, 3 cm long. Rhachis fragile at the nodes, angular, 2 mm wide, glabrous on surface. Rhachis internodes cuneate, 3 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, flattened, 3 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, lanceolate, 1.4 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes winged on keels.

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, 2.6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, asymmetrical, 1 length of spikelet, indurate, 2-keeled, winged on keel, winged narrowly, winged above, 5 -veined. Lower glume primary vein scaberulous. Lower glume surface cancellate. Lower glume apex acute. Upper glume oblong, membranous, 1-keeled, winged on keel, winged above, 3 -veined. Upper glume margins ciliate.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 2.2 mm long, hyaline, 2 -veined. Fertile lemma ovate, 2.2 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins.

Flower and Fruit. Anthers 3, 1.2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indo-China**, **Malesia**. Thailand, Vietnam. Sumatra.

Mnesithea capensis (Stapf) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (1986).

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

TYPE from South Africa. **Basionym or Replaced Name**: *Coelorachis capensis* Stapf*, Kew Bull.* 1916, 234. (1916). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Sim 2733*, South Africa: Coast Region, Stutterheim Div., Fort Cunninghame (BM).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (522, Fig 417 as *Coelorachis*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (88, Fig 47 as *Coelorachis*).

Derivation (Clifford & Bostock 2007): L. *-ense*, denoting origin. From the Cape of Good Hope, South Africa.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms 30–70 cm long. Lateral branches lacking or sparse. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades flat or conduplicate, 3–20 cm long, 3–8 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence composed of racemes, terminal. Peduncle widened at apex. Racemes 1, single, smoothly terete, 5–12 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes cuneate, 5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 4 mm long, glabrous, tip cupuliform, without appendage or auriculate.

Sterile Spikelets. Companion sterile spikelets rudimentary or well-developed, containing empty lemmas or male, lanceolate or ovate, 2–5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 ovate, dorsally compressed, 4.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged above. Lower glume surface smooth. Lower glume apex emarginate. Upper glume oblong, membranous, 1-keeled, winged on keel.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Kwazulu-Natal, Eastern Cape.

Mnesithea clarkei (Hack.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Coelorachis*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Manisuris*).

TYPE from India. **Basionym or Replaced Name**: *Coelorachis clarkei* (Hack.) Blatter & McCann, *Journ. Bombay Nat. Hist. Soc.* 32: 33 (1927). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Clarke 21075*, India: Chota Nagpur, Parasnath, 610 m (W; IT: K).

Recent Synonyms: *Manisuris clarkei* (Hack.) Bor, *Rec. Bot. Surv. India,* 16: 1. 357 (1953).

Illustrations (Books): N.L.Bor, *The grasses of Burma, Ceylon, India and Pakistan* (1960) (193, Fig 10 as *Manisuris clarkei*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 91).

Images: G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Pl. 22).

Derivation (Clifford & Bostock 2007): in honor of Charles Baron Clarke (1832–1906) English-born Indian teacher-botanist.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms erect, 20–60 cm long. Culm-nodes pubescent. Ligule a ciliolate membrane. Leaf-blade base broadly rounded. Leaf-blades linear or lanceolate, 10–15 cm long, 8–13 mm wide. Leaf-blade surface pilose, with tubercle-based hairs. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, paniculate or fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear or lanceolate, 2–3 cm long. Racemes 1, single, 1.3–2.5 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface, ciliate on margins. Rhachis internodes pyriform, 1–1.5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, inflated, semiterete, 1–1.5 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, elliptic or ovate, 1.5–2.5 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 obovate, dorsally compressed, 2.5–3 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume obovate, gibbous, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged broadly, winged all along, 3–5 -veined. Lower glume surface smooth, glabrous or pubescent. Lower glume margins ciliolate. Lower glume apex obtuse. Upper glume oblong, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline, 0 -veined, without midvein, without lateral veins. Fertile lemma oblong, hyaline, without keel, 0 -veined, 0–3 -veined, without veins.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**. India.

Bihar, Karnataka.

Mnesithea cylindrica (Michx.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Coelorachis*).

TYPE from USA. **Basionym or Replaced Name**: *Coelorachis cylindrica* (Michx.) Nash, *N. Am. Fl.* 17:. 85 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: USA: Florida, *Michaux s.n.* (HT: P).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (689 as *Coelorachis*), F.W.Gould, *The Grasses of Texas* (1975) (621, Fig. 329 as *Coelorachis*).

Derivation (Clifford & Bostock 2007): L. *cylindrus,* cylinder; L. *-ica,* belonging to. Inflorescences cylindrical.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Rhizomes short, knotty. Culms erect, 30–100 cm long. Lateral branches lacking or sparse. Leaf-sheaths without keel. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blades flat or conduplicate, 8–30 cm long, 1.5–4 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, terminal. Peduncle widened at apex. Racemes 1, single, smoothly terete, 6–15 cm long, 3 mm wide. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes clavate, 3.5–5.5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 3.5–5.5 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, ovate, 0.5–2 mm long, shorter than fertile, deciduous with the 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, 4–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled. Lower glume surface smooth. Upper glume oblong, membranous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southeastern USA**. Florida.

Mnesithea formosa (R. Br.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 288: (1986).

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

TYPE from Australia. **Basionym or Replaced Name**: *Rottboellia formosa* R. Br., *Prodr.* 1: 206 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Brown 6157*, 1 Mar 1803, Australia: Bay of Carpentaria, Mallison Island (BM (photo, BRI, K); IT: K (photo, BRI), MEL (photo, BRI), NSW (photo, BRI)).

Illustrations (Books): C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (305, Pl. 90, as *Rottboellia*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1187, Fig. 336), 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. handsome. Attractive in appearance.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms 20–60 cm long. Lateral branches lacking or sparse. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a ciliate membrane. Leaf-blades 4–12 cm long, 2–4 mm wide.

Inflorescence. Inflorescence composed of racemes, terminal or terminal and axillary, subtended by an inflated leaf-sheath, exserted or embraced at base by subtending leaf. Peduncle widened at apex. Racemes 1, single, smoothly terete, unilateral, 5–8 cm long. Rhachis fragile at the nodes, subcylindrical and excavated, 3 mm wide. Rhachis hairs white, 1–1.5 mm long. Rhachis internodes columnar, 2.5 mm long. Rhachis internode tip transverse, crateriform, with hairy rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly, linear, flattened, tip rectangular.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 unequal glumes without lemmas, lanceolate or ovate, 2.5–3 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes membranous, 1 -veined, 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 ovate, dorsally compressed, 2.2 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded, base truncate, with central peg, attached transversely. Spikelet callus hairs 1–1.5 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, keeled laterally, keeled obtusely. Lower glume surface smooth, pubescent, hairy above. Lower glume margins ciliate. Upper glume ovate, membranous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, hyaline, ciliate on margins. Fertile lemma ovate, hyaline, without keel.

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

Country /Province /State. **Malesia**, **Papuasia**. Lesser Sunda Is, Moluccas. New Guinea PNG. New Guinea. **Australia**. Western Australia, Northern Territory, Queensland.

Kimberley, Eremean, South-West. Darwin & Gulf, Victoria R & Barkly Tableland, Central Australia. North, Central, Inland.

Mnesithea geminata (Hack.) Ridley. *Mat. Fl. Mal. Penins.* iii. 163 (1907).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Malaysia. **Basionym or Replaced Name**: *Coelorachis geminata* (Hack.) Clayton, Kew Bull. 35 (4): 814 (1981). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Ridley 11*, Malaya (?; IT: K).

Illustrations: None found.

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

Derivation (Clifford & Bostock 2007): L. *gemini*, twins; *-ata,* possessing. Inflorescence of paired branches.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–60 cm long. Culm-nodes pubescent. Leaf-sheaths 6–10 cm long, keeled, pubescent. Ligule an eciliate membrane. Leaf-blades 12–26 cm long, 5–10 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal. Peduncle widened at apex. Racemes 1, single, smoothly terete, 5–6 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes cuneate, 2–4 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in threes. Fertile spikelets sessile, 2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 3.2 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, ovate, 0.4 mm long, shorter than fertile, deciduous with the 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, 3.4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, asymmetrical, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface smooth, pubescent. Lower glume apex acute. Upper glume oblong, membranous, 1-keeled, 3 -veined.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 2.2 mm long, hyaline. Fertile lemma elliptic, 2.2 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Palea 1.8 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Malesia**. Borneo, Malaya.

Mnesithea glandulosa (Trin.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 290: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Coelorachis*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Coelorachis*).

TYPE from Indonesia. **Basionym or Replaced Name**: *Coelorachis glandulosa* (Trin.) Stapf ex Ridley, *Fl. Mal. Penins* .5: 204 (1925). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Herb. Trinius s.n.*, Java (LE-TRIN-0113.01).

Illustrations (Books): H.B.Gilliland, *Grasses of Malaya* (1971) (271, Fig 57 as *Coelorachis*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (93, Fig. 91).

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

Derivation (Clifford & Bostock 2007): L. *glans,* gland; *-ula*, diminutive; *-osa*, abundance. With short teeth or hair cushions mistaken for glands.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms erect, robust, 150–250 cm long, with prop roots. Leaf-sheaths glabrous on surface. Ligule a ciliolate membrane, 1 mm long. Leaf-blade base broadly rounded or cordate. Leaf-blades linear or lanceolate, 30–60 cm long, 25–35 mm wide. Leaf-blade margins scaberulous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear. Racemes 1, single, smoothly terete, 8–15 cm long. Rhachis fragile at the nodes, angular, glabrous on surface. Rhachis internodes cuneate, 3.5–5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 4.4 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, ovate, 1.6 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes winged on keels.

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 oblong, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, winged on keel, winged broadly, winged above, 7 -veined. Lower glume surface with hooked spines, rough on flanks, glabrous or pubescent. Lower glume apex acute. Upper glume oblong, chartaceous, 1-keeled, winged on keel, winged all along, 3 -veined. Upper glume surface puberulous.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, hyaline, 3 -veined, ciliolate on margins. Palea of lower sterile floret 0.66 length of lemma. Fertile lemma elliptic, 2.6 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Palea 0.8 length of lemma.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indo-China**, **Malesia**. Cambodia, Myanmar, Nicobar Is, Thailand, Vietnam. Borneo, Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sulawesi, Sumatra.

Mnesithea granularis (L.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 295: (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 *Hackelochloa*), 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 *Hackelochloa*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Hackelochloa*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010) (as *Hackelochloa*).

TYPE from "India orientalis". **Basionym or Replaced Name**: *Cenchrus granularis* L., *Mant. Pl.* 2: 575 (1771). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India:, (HT: LINN-1217.12).

Recent Synonyms: *Hackelochloa granularis* (L.) Kuntze, *Rev. Gen.* 776 (1891). *Hackelochloa porifera* (Hack.) D. Rhind, *Grasses Burma* 77 (1945).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (50, as *Hackelochloa*), H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *Hackelochloa*), W. Robyns (1929 and 1934). Flora Agrostologique du Congo Belge et du Ruanda-Urundi, I. Maydees et Andropgonees and II. Panicees. Bruxelles, Goemaere (61, Pl.2 as *Manisuris*), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):848, Fig. 200 as *Hackelochloa*), G.V.Pope et al., *Flora Zambesiaca* 10 (as *Hackelochloa*), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (522, Fig. 418 as *Hackelochloa*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (173, Fig. 100 as *Hackelochloa*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (207, Fig. 74 as *Hackelochloa*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (364, Fig 151 as *Hackelochloa*), T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (476, Fig. 187 as *Hackelochloa*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (696 as *Hackelochloa*), C-C Hsu,*Taiwan Grasses* (1975) (656, Pl. 1466 as *Hackelochloa*), K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl. 874 & 875 as *Hackelochloa*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (as *Hackelochloa*), H.J.Noltie, *The Grasses of Bhutan* (2000) (831, Fig. 63 as *Hackelochloa granularis* & *H. porifera*), H.B.Gilliland, *Grasses of Malaya* (1971) (278, Fig. 60 as *Hackelochloa*), H.Duistermaat, *Field Guide to the Grasses of Singapore* (2005) (93, Fig. 92), E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (as *Hackelochloa*), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (307, Pl. 90 as *Hackelochloa*), J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1187, Fig. 336), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (254 as *Hackelochloa*), 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) (694 as *Hackelochloa*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (as *Hackelochloa*), S.A.Renvoize, *Gramineas de Bolivia* (1998) (621, Fig. 148 as *Hackelochloa*), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (115, Fig. 77 as *Hackelochloa*), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (543, Fig. 197 as *Hackelochloa*), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (254, Fig. 90 as *Hackelochloa*), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 196, Fig. 23 (2006) as *Hackelochloa*), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (250, Fig. 42 as *Hackelochloa*), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (135, Fig. 74 as *Hackelochloa*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 901 as *Hackelochloa*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 92).

Illustrations (Journals): *Ruizia* (13:457, Fig 62d-f (1993)).

Images: H.B.Gilliland et al., *Flora of Malaya Vol. 3 Grasses* (1971); (as *Hackelochloa*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012)
(Pl. 22 & 23).

Derivation (Clifford & Bostock 2007): L. *granum*, grain; *-aris*, pertaining to. Segments of the inflorescence resemble beads.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms erect, 5–100 cm long. Culm-nodes bearded. Leaf-sheaths loose or inflated, hirsute, with tubercle-based hairs. Ligule a ciliolate membrane. Leaf-blade base cordate. Leaf-blades linear to lanceolate, 2–15 cm long, 4–12 mm wide. Leaf-blade surface hirsute, with tubercle-based hairs. Leaf-blade margins ciliate.

Inflorescence. Synflorescence compound, scanty.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted or embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, 0.5–1.5 cm long. Rhachis fragile at the nodes, flattened. Rhachis internodes oblong, 1–1.5 mm long, adherent to upper glume of sessile spikelet. Rhachis internode tip transverse, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly, oblong.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, ovate, asymmetrical, dorsally compressed, 1.5–2.5 mm long, as long as fertile or longer than fertile, deciduous with the fertile. Companion sterile spikelet glumes herbaceous, winged on keels, distinctly veined, 5–7 -veined, smooth, glabrous, entire, acute, muticous. Companion sterile spikelet lemmas 2, 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 orbicular, dorsally compressed, 2–2.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume orbicular, 1 length of spikelet, indurate, without keels. Lower glume surface rugose or cancellate. Lower glume apex obtuse. Upper glume oblong, cartilaginous, without keels, 3 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, hyaline, 0 -veined, without midvein, without lateral veins, obtuse. Fertile lemma ovate, 1 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex obtuse. Palea hyaline, 0 -veined, without keels.

Flower and Fruit. Caryopsis with adherent pericarp, orbicular, dorsally compressed.

$2n = 14$.

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

Country /Province /State. **West Tropical Africa**, **West-Central Tropical Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Western Indian Ocean**. Burkina, Gambia, Guinea, Ivory Coast, Mali, Sierre Leone, Togo. Cameroon, Gabon, DRC. Eritrea, Ethiopia (inc. Eritrea), Socotra. Kenya, Tanzania, Uganda. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Botswana, Mpumalanga. Madagascar (*). **Arabian Peninsula**, **China**, **Eastern Asia**. Oman. China South Central, Hainan, China Southeast. Nansei-Shoto, Ogosawara-shoto, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. Eastern Himalaya, India, Pakistan, Sri Lanka. Thailand, Vietnam. Java, Lesser Sunda Is, Malaya, Singapore, Moluccas, Philippines, Sumatra. New Guinea PNG, or West Papua (Irian Jaya). New Guinea, Solomon Is. **Australia** (*). Western Australia, Northern Territory, Queensland. Caroline Is. Hawaii. **Southwestern USA**, **Southeastern USA**, **Mexico**. Arizona. Florida, Louisiana. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Caribbean**, **Northern South America**, **Western South America**, **Brazil**, **Southern South America**. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Cuba, Dominican Republic, Haiti, Jamaica (as *Hackelochloa*), Leeward Is, Windward Islands, Puerto Rico. French Guiana, Guyana, Surinam, Venezuela. Bolivia, Colombia, Ecuador, Peru. Brazil West Central, Brazil Southeast. Paraguay.

Anhui, Fujian, Guangdong, Guangxi, Zhejiang. Guizhou, Sichuan, Yunnan. Darjeeling, Bhutan, Sikkim. Kerala. Kimberley. Darwin & Gulf. North, Central. Distrito Federal, Goiás. Minas Gerais. Salta. Mexico State, Morelos. Chihuahua, Durango, Guanajuato, Queretaro, Zacatecas. Veracruz. Sinaloa. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Campeche, Chiapas, Tabasco, Yucatan.

Mnesithea helferi (Hook. f.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Coelorachis*).

TYPE from Myanmar. **Basionym or Replaced Name**: *Coelorachis helferi* (Hook.f.) Henrard, Blumea 4: 518 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Helfer s.n.*, Burma: Tenasserim (K).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Johan Wilhem Helfer (1810–40) Bohemian physician and traveller who collected in Myanmar.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms erect, 60–100 cm long. Culm-nodes pubescent. Leaf-sheaths glabrous on surface or pubescent. Ligule a fringe of hairs. Leaf-blade base cordate. Leaf-blades 20–45 cm long, 10–20 mm wide. Leaf-blade surface glabrous or pubescent, hairy adaxially. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, embraced at base by subtending leaf. Spatheole linear. Racemes 1, single, smoothly terete, 5–8 cm long. Rhachis fragile at the nodes, angular, 2.5 mm wide, glabrous on surface. Rhachis internodes cuneate, 3 mm long, with the lower often bearing triads. Rhachis internode tip transverse, crateriform, with simple rim.

Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 3 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, lanceolate, 0.8 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes winged on keels.

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, 3.6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, winged on keel, winged narrowly, winged above, 7 -veined. Lower glume surface concave, smooth. Lower glume apex caudate. Upper glume oblong, cartilaginous, 1-keeled, winged on keel, winged above, 3 -veined.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 2.2 mm long, hyaline, 0 -veined, without midvein, without lateral veins. Palea of lower sterile floret 0.5 length of lemma. Fertile lemma ovate, 2 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Palea 0.9 length of lemma.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indo-China**, **Malesia**. Cambodia, Myanmar, Thailand, Vietnam. Malaya.

Mnesithea impressa (Griseb.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Cuba. **Basionym or Replaced Name**: *Coelorachis impressa* (Griseb.) Nash, N. Am. Fl. 17: 85 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C. Wright 3904*, 1865, Cuba (GOET; IT: NY-71125, US-728046).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *imprimo*, press in. Lower glume of sessile spikelet deeply concave.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–100 cm long. Lateral branches ample. Leaf-sheaths without keel, glabrous on surface, outer margin hairy. Ligule an eciliate membrane. Leaf-blades filiform, terete, 20–40 cm long, 1–2 mm wide. Leaf-blade surface hispid.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle widened at apex. Racemes 1, single, smoothly terete, 6–12 cm long, 1–2 mm wide. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes oblong, 4 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, semiterete, 4 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, ovate, 0.5–1 mm long, shorter than fertile, deciduous with the 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 oblong, dorsally compressed, 4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled. Lower glume surface smooth. Lower glume apex obtuse. Upper glume oblong, membranous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**. Cuba.

Mnesithea khasiana (Hack.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006) (as *Coelorachis*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Coelorachis*).

TYPE from India. **Basionym or Replaced Name**: *Coelorachis khasiana* (Hack.) Stapf ex Bor, *Indian Forest Rec.*, n. s. *Bot.*, i. 101 (1938). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India: Khasia: tropical parts, 305–610 m, *Hooker & Thomson s.n.* (LT: B; ILT: K, L).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (826, Fig. 62 as *Coelorachis*).

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

Classification. Subfamily Panicoideae. Tribe: Saccharieae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms 180–250 cm long. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades linear or lanceolate, 60–130 cm long, 20–40 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate, filiform.

Inflorescence. Synflorescence compound, fastigiate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear, 2–3 cm long. Peduncle nodding (capillary), widened at apex. Racemes 1, single, smoothly terete, 2.5–3 cm long. Rhachis fragile at the nodes, angular, glabrous on surface. Rhachis internodes clavate, 2–3.5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united below, columnar, semiterete, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary or well-developed, comprising 2 subequal glumes without lemmas or male, lanceolate, laterally compressed, 1–3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 oblong, dorsally compressed, 3.5–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels, keel-less except near apex, winged on keel, winged above. Lower glume lateral veins ribbed. Lower glume surface smooth or muricate or cancellate. Lower glume apex obtuse. Upper glume lanceolate, chartaceous, 1-keeled, winged on keel, winged above, 1 -veined. Upper glume lateral veins absent.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, 2.5 mm long, hyaline. Fertile lemma lanceolate, 2.5 mm long, hyaline, without keel.

Flower and Fruit. Anthers 3, 1 mm long.

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

Country /Province /State. **China**. China South Central. **Indian Subcontinent**, **Indo-China**. Assam, Eastern Himalaya, India. Myanmar.

Yunnan. Darjeeling, Sikkim. Meghalaya. Himachal Pradesh.

Mnesithea laevis (Retz.) Kunth. *Rev. Gram.* i. 154 (1829).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Rottboellia*), 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) (as *Thaumastochloa cochinchinensis*), T.G.Tutin et al, *Flora Europaea* 5 (1980), T.Koyama, *Grasses of Japan and its neighboring regions* (1987) (as *Thaumastochloa cochinchinensis* & *T. chenii*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010).

TYPE from India. **Basionym or Replaced Name**: *Thaumastochloa chenii, Thaumastochloa cochinchinensis, Heteropholis cochinchinensis.* T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India, Tranquebar: Koenig.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (478, Fig 188 as *Thaumastochloa cochinchinensis*), C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (778 & 780 as *Thaumastochloa chenii* & *Thaumastochloa cochinchinensis* forma *shimadana*), C-C Hsu,*Taiwan Grasses* (1975) (702, Pl. 1481 as *Thaumastochloa chenii* & *Thaumastochloa cochinchinensis* forma *shimadana*), K.M.Matthew, Illustrations on the *Flora of Tamilnadu Carnatic* (1982) (Pl.897 & 898), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982), H.J.Noltie, *The Grasses of Bhutan* (2000) (831, Fig. 63), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 897 as *M. laevis* var. *laevis*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 93).

Images: G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Pl. 23).

Derivation (Clifford & Bostock 2007): L. smooth. Lacking hairs or roughness, usually of leaf-blades or lemmas.

Classification. Subfamily Panicoideae. Tribe: Saccharеae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms erect, 50–100 cm long. Culm-internodes solid. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades 8–35 cm long, 3–5 mm wide.

Inflorescence. Inflorescence composed of racemes, embraced at base by subtending leaf. Racemes 1, single, smoothly terete, 10–20 cm long. Rhachis subcylindrical and excavated. Spikelet packing abaxial. Rhachis internodes cuneate, 3–5 mm long. Rhachis internode tip transverse, crateriform. Spikelets sunken, in threes (or paired towards tip of raceme). Fertile spikelets sessile, 2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united at tip, linear.

Sterile Spikelets. Companion sterile spikelets rudimentary, orbicular, dorsally compressed, 0.5–1 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 oblong, dorsally compressed, 3.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, indurate, without keels. Lower glume apex obtuse. Upper glume oblong, cartilaginous, without keels. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret lanceolate, hyaline. Fertile lemma lanceolate, 2.5–4 mm long, hyaline, without keel, 0 -veined, 0–3 -veined, without veins.

Flower and Fruit. Lodicules absent. Anthers 3, 2.5–3 mm long. Caryopsis with adherent pericarp, oblong, biconvex, 2 mm long.

n = 9 (3 refs TROPICOS). 2n = 18 (1 ref TROPICOS), or 36.

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

Country /Province /State. **China**, **Eastern Asia**. Hainan, China Southeast. Nansei-Shoto, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**. Bangladesh, Eastern Himalaya, India, Pakistan, Sri Lanka. Laos, Myanmar, Thailand, Vietnam. Java, Lesser Sunda Is, Moluccas, Philippines, Sulawesi. **Northwestern Pacific**. Caroline Is, Marianas.

Fujian, Guangdong, Guangxi. Meghalaya. Andhra Pradesh, Bihar, Kerala. Madhya Pradesh, Maharashtra, Orissa, Tamilnadu, West Bengal.

Mnesithea laevispica (Keng) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (1986).

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

TYPE from China. **Basionym or Replaced Name**: *Coelorachis laevispica* (Keng) P.C. Keng, *Pl. Shanghai* 1: 753 (1999). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Anhui: west of Chuzhou, 24 Sept. 1921, *J.B. Griffin & A.N. Steward 996* (HT: US-1105524; IT: L).

Recent Synonyms: *Rottboellia laevispica* Keng, *Journ. Wash. Acad. Sc.* 21: 157 (1931).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 899 as *rottboellia*).

Derivation (Clifford & Bostock 2007): L. *laevis*, smooth; *spica*, thorn. Inflorescence smooth.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 100–150 cm long, 3 mm diam., rooting from lower nodes. Culm-internodes terete or channelled, striate. Leaf-sheaths keeled, smooth or papillose. Leaf-sheath oral hairs lacking or ciliate. Ligule a ciliolate membrane, 0.5–1 mm long, brown, obtuse. Leaf-blades linear or lanceolate, 15–40 cm long, 8–16 mm wide, flaccid, mid-green or glaucous. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous, hairless throughout or except near base. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, 10–15 cm long, 2–3 mm wide. Rhachis fragile at the nodes, glabrous on surface, terminating in a sterile spikelet. Rhachis internodes cuneate, 1 length of fertile spikelet. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, free or fused to internode, united wholly or below, oblong, flattened, 1 length of fertile spikelet.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, lanceolate, shorter than fertile.

Apical sterile spikelets barren.

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 oblong, dorsally compressed, 7–10 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus 1 mm long, glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume lateral veins prominent. Lower glume surface flat, asperulous, rough above. Upper glume ovate, chartaceous, 1-keeled, 9–11 -veined. Upper glume primary vein scaberulous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret ovate, 1 length of fertile lemma, membranous, 3–5 -veined. Fertile lemma ovate, 6–8 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2–3 mm long.

Distribution (TDWG). Continent. Temperate Asia.

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

Anhui, Jiangsu.

Mnesithea lepidura (Stapf) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*).

TYPE from Mozambique. **Basionym or Replaced Name**: *Coelorachis lepidura* Stapf in Prain, *Fl. Trop. Afr.* 9: 79 (1917). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Kirk s.n.*, Mozambique: Zambesi Delta, Kongone River (K).

Illustrations: None found.

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3081 (1922)as *Coelorachis*).

Derivation (Clifford & Bostock 2007): Gk. *lepis*, scale; *oura*, tail. Racemes solitary, terminal.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms erect, 100–150 cm long. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades conduplicate, 15–30 cm long, 2–7 mm wide.

Inflorescence. Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear. Racemes 1, single, 6–12 cm long. Rhachis fragile at the nodes, angular, glabrous on surface. Rhachis internodes cuneate, 4 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate, 2.5–3 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 or ovate, dorsally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged above. Lower glume lateral veins obscure. Lower glume surface smooth. Lower glume apex obtuse. Upper glume oblong, chartaceous, 1-keeled.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 2.5 mm long, hyaline, 2 -veined. Fertile lemma elliptic, hyaline, without keel, 3 -veined, 0–3 -veined.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **East Tropical Africa**, **South Tropical Africa**. Kenya, Tanzania. Mozambique.

Mnesithea mollicoma (Hance) A. Camus. *Bull. Mus. Hist. Nat. Paris,* xxv. 57. (1919).

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*).

TYPE from China. **Basionym or Replaced Name**: *Rottboellia mollicoma* Hance, *Journ. Bot.* 9:. 134. (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China, Whampoa Is.: Hance 7558 ; lectotype: *Hance 7558* (G, holo; K, L, fragm., W), designated by Roberty (1960: 66) Notes (Veldkamp et al 2013) --- The type of *Rottboellia mollicoma* is represented in K by two sheets. One has no original label, but is annotated *"*1862*"* and bears a note by C.B. Clarke *"*This is the type*"*. Hance said he had collected the species first in October 1861. The other sheet has an original label which bears the date August 1869. Roberty with an exclamation mark following Clarke's selection designated the G duplicate as the lectotype ("type"). However, if a specimen with the date October 1861 does exist that should take precedence as the lectotype.

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Recent Synonyms: *Coelorachis mollicoma* (Hance) Bor, *Dansk Bot. Arkiv*, 20: 169 (1962).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 896).

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

Derivation (Clifford & Bostock 2007): L. *molle*, soft; *coma*, head of hair. Covered in whole or in part with downy hairs.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms robust, 35–70 cm long. Culm-nodes pubescent. Leaf-sheaths keeled, pubescent. Ligule a ciliolate membrane. Leaf-blades 25–50 cm long, 10–20 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear. Racemes 1, single, smoothly terete, 4–8 cm long. Rhachis fragile at the nodes, angular, 2–2.5 mm wide, glabrous on surface. Rhachis internodes cuneate, 3–4 mm long, with the lower often bearing triads. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs or in threes. Fertile spikelets sessile, 1–2 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 3.8 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, lanceolate, 0.6 mm long, shorter than fertile, persistent. Companion sterile spikelet glumes winged on keels.

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, 3.6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus pubescent, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, asymmetrical, 1 length of spikelet, indurate, 2-keeled, winged on keel, winged narrowly, winged near apex,

6 -veined. Lower glume lateral veins ribbed. Lower glume surface tuberculate, pubescent, with tubercle-based hairs. Lower glume apex acute. Upper glume oblong, asymmetrical, chartaceous, 1-keeled, 3 -veined.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 2.6 mm long, hyaline, 2 -veined. Palea of lower sterile floret 0.8 length of lemma. Fertile lemma elliptic, 2.4 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Palea 0.66 length of lemma.

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

Country /Province /State. **China**. Hainan, China Southeast. **Indo-China**, **Malesia**. Thailand, Vietnam. Java, Malaya, Singapore, Philippines, Sumatra.

Guangdong, Guangxi.

Mnesithea nigrescens (Thw.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 287: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Heteropholis*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Heteropholis*).

TYPE from Sri Lanka. **Basionym or Replaced Name**: *Heteropholis nigrescens* (Thwait.) C.E.Hubb., *Hook. Ic. Pl.* 36: t. 3548, p. 4 (1956). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Thwaites CP 867*, Ceylon: Central Prov.: Bagavantalawa, 1220 m (PDA; IT: BM, BO, K, SING).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. nigresco, become black. Spikelets black at maturity.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 30–150 cm long, 10–15 -noded, rooting from lower nodes. Culm-nodes glabrous. Leaf-sheaths outer margin hairy. Ligule an eciliate membrane. Leaf-blade base cordate. Leaf-blades lanceolate, 6–15 cm long, 5–11 mm wide. Leaf-blade margins ciliate, hairy at base.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle 3–5 cm long, widened at apex. Racemes 1, single, smoothly terete, unilateral, 5–8 cm long, bearing 6–10 fertile spikelets on each. Rhachis fragile at the nodes, semiterete. Rhachis internodes cuneate, 3–4 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly, oblong, flattened, tip rectangular.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas, lanceolate, 4–5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, winged on keels.

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, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, 2-keeled, keeled laterally, keeled obtusely, winged on keel, winged near apex, 11 -veined. Lower glume surface areolate. Lower glume margins ciliolate (below). Upper glume oblong, membranous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma oblong, hyaline, without keel.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**. Sri Lanka.

Mnesithea parodiana (Henr.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Argentina. **Basionym or Replaced Name**: *Coelorachis parodiana* Henr., *Blumea* 4. 515 (1941). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Parodi 8410*, 1928, Argentina: Formosa: Las Lomitas (L; IT: BAA).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (534).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Lorenzo Raimondo Parodi (1895–1966) Argentinian agrostologist.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms erect, 100–150 cm long. Culm-internodes elliptical in section. Leaf-sheaths keeled. Ligule a ciliolate membrane, 2 mm long. Leaf-blades 40–50 cm long, 4–5 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, embraced at base by subtending leaf. Racemes 1, single, smoothly terete, 8–15 cm long. Rhachis fragile at the nodes, semiterete. Rhachis internodes cuneate, 4–6 mm long. Rhachis internode tip transverse, flat. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster or 2 in the cluster (in lower pairs). Companion sterile spikelets pedicelled, 0 in the cluster (in lower pairs) or 1 in the cluster. Pedicels present, columnar or oblong, unequal (the proximal very short), 0.5–5 mm long, 0.1–1 length of fertile spikelet, tip rectangular.

Sterile Spikelets. Companion sterile spikelets well-developed (in the middle) or rudimentary (distally), male or comprising 2 subequal glumes without lemmas, oblong or ovate, dorsally compressed, 1–6 mm long, shorter than fertile, deciduous with the fertile or separately deciduous. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 0–2, 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 oblong, dorsally compressed, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, simple, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface convex, areolate. Lower glume apex emarginate. Upper glume oblong, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, obtuse. Fertile lemma elliptic, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3, 1–1.5 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Paraguay.

La Rioja. Chaco, Formosa.

Mnesithea pilosa B.K. Simon. *Austrobaileya,* 3(1): 90 (1989).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Heteropholis*), 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 Synonomy Database: Australia: Queensland: Bottom C Paddock, Swans Lagoon, 24 Mar 1983, *P. Chaplain s.n. [AQ349053]* (HT: BRI).

Illustrations (Books): D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002).

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 Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Annual. Culms erect, 25–30 cm long. Culm-nodes pubescent. Lateral branches sparse. Ligule a ciliate membrane, 1 mm long. Leaf-blades 3–6 cm long, 1–3 mm wide.

Inflorescence. Inflorescence composed of racemes, subtended by an inflated leaf-sheath, exserted or embraced at base by subtending leaf. Peduncle 0.2–0.3 cm long, glabrous. Racemes 1, single, smoothly terete, unilateral, 1–4 cm long, bearing 5–10 fertile spikelets on each. Rhachis fragile at the nodes, subcylindrical and excavated, glabrous on surface. Rhachis internodes columnar, 3–5 mm long. Rhachis

internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united below, linear, flattened, 3–5 mm long, glabrous, tip rectangular.

Sterile Spikelets. Companion sterile spikelets represented by single glumes, lanceolate or ovate, 0.5 mm long, shorter than fertile. Companion sterile spikelet glumes membranous, 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 ovate, dorsally compressed, 2–3.5 mm long, 1.3–2 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, 2-keeled, keeled laterally, 11 -veined. Lower glume lateral veins obscure. Lower glume surface smooth, pilose, hairy in lines. Upper glume ovate, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret elliptic, hyaline. Fertile lemma elliptic, 2–3 mm long, hyaline, without keel.

Flower and Fruit. Anthers 3, 1 mm long.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Queensland.

North.

Mnesithea ramosa (Fourn.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name**: *Coelorachis ramosa* (Fourn.) Nash, *N. Am. Fl.* 17: 86 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Bourgeau 2647*, 24 Jul 1865–24 Jul 1866, Mexico: Veracruz: Río Blanco near Orizaba (P; ILT: L, US-728032 (fragm.)). LT designated by Veldkamp et al., Blumea 31: 291 (1986).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (146, Fig 45 as *Coelorachis*), R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983) (as *Coelorachis*).

Derivation (Clifford & Bostock 2007): L. *ramus*, branch; *-osa*, abundance. Inflorescences or culms much branched.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms erect, 75–125 cm long, 1–3 mm diam. Culm-internodes solid. Culm-nodes brown. Lateral branches ample, arising from mid culm or upper culm. Leaf-sheaths keeled. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades 30–60 cm long, 3–7 mm wide.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Racemes 1, single, 7–13 cm long, 5 mm wide. Rhachis fragile at the nodes, angular. Rhachis internodes columnar, 3.5–4.5 mm long. Rhachis internode tip transverse, crateriform. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, tip cupuliform, auriculate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, oblong, dorsally compressed, 3.5–4.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 oblong, dorsally compressed, 4–5.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume

surface convex, areolate. Lower glume apex emarginate. Upper glume oblong, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, 3–4 mm long, hyaline, obtuse. Fertile lemma elliptic, 3–3.5 mm long, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3, 1.2 mm long.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**, **Brazil**. Guatemala, Honduras, Panama. Venezuela. Colombia. Brazil North, Brazil South.

Amazonas. Paraná. Veracruz. Jalisco, Michoacan, Nayarit. Chiapas.

Mnesithea rottboellioides (R. Br.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006) (as *Coelorachis*), D.Sharp, D. & B.K.Simon, *AusGrass* (2002), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Australia. **Basionym or Replaced Name**: *Ischaemum rottboellioides* R. Br., *Prodr.* 1: 205 (1810). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Australia: Queensland: Bottom C Paddock, Swans Lagoon, 24 Mar 1983, *P. Chaplain s.n. [AQ349053]* (HT: BRI).

Recent Synonyms: *Coelorachis rottboellioides* (R. Br.) A.Camus, *Ann. Soc. Linn. Lyon,* n. s., 68: 197 (1922).

Illustrations (Books): E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (83, Pl. 31 as *Coelorhachis*), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (305, Pl 89 as *Coelorhachis*), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (166 as *Coelorachis*), 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. Resembling *Rottboellia* with respect to the inflorescence.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms erect, 200–300 cm long. Ligule an eciliate membrane. Leaf-blades 20–40 cm long, 8–20 mm wide.

Inflorescence. Synflorescence compound, fastigiate, 15–35 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted or embraced at base by subtending leaf. Spatheole linear. Peduncle widened at apex. Racemes 1, single, smoothly terete, 5–10 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes cuneate, 3.5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 3.5 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, ovate, 3–4 mm long, as long as fertile. Companion sterile spikelet glumes winged on keels. Companion sterile spikelet lemmas 2, 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 ovate, dorsally compressed, 3–4.5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged broadly, winged above. Lower glume primary vein spinulose. Lower glume surface smooth. Lower glume apex emarginate. Upper glume oblong, membranous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

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

Country /Province /State. **Eastern Asia**. Taiwan. **Indo-China**, **Malesia**, **Papuasia**. Thailand. Lesser Sunda Is, Malaya, Philippines. New Guinea PNG, or West Papua (Irian Jaya). New Guinea. **Australia**. Western Australia, Northern Territory, Queensland. New Caledonia (*).

Kimberley. Darwin & Gulf, Victoria R & Barkly Tableland. North, Central.

Mnesithea rugosa (Nutt.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 291: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Florida. **Basionym or Replaced Name**: *Coelorachis rugosa* (Nutt.) Nash, *N. Am. Fl.* 17: 86 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Baldwin s.n.*, 1818, USA: Florida (PH?).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (689 as *Coelorachis*).

Derivation (Clifford & Bostock 2007): L. *ruga*, wrinkle; *-osa*, abundance. Usually with sculptured glumes.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Basal innovations flabellate. Culms 75–130 cm long. Lateral branches ample. Leaf-sheaths keeled. Ligule an eciliate membrane, truncate. Leaf-blades conduplicate, 20–40 cm long, 2–8 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle widened at apex. Racemes 1, single, smoothly terete, 4–8 cm long, 2–2.5 mm wide. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes clavate, 2.5–3 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 2.5–3 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, ovate, 0.5–1 mm long, shorter than fertile, deciduous with the 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, 3.5–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface rugose. Upper glume oblong, membranous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northeast USA**, **South-central USA**, **Southeastern USA**. New Jersey. Texas. Alabama, Arkansas, Florida, Georgia, Mississippi, North Carolina, South Carolina, Virginia.

Mnesithea selloana (Hack.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 292: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Uruguay. **Basionym or Replaced Name**: *Coelorachis selloana* (Hack.) A.Camus, *Ann. Soc. Linn. Lyon*, n. s.,68: 197 (1922). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Sellow s.n.*, Uruguay: Montevideo (W).

Recent Synonyms: *Rottboellia selloana* Hack. in *Mart. Fl. Bras.* 2, 3: 312. (1883).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (534), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (1184, Fig.230 as *Rottboellia*), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (461, Fig. 196 as *Rottboellia*), A.L.Cabrera, *Flora de la Provincia de*

Buenos Aires, IV Pt 2 Gramineas (1970) (575, Fig. 153 as *Rottboellia*), B.Rosengurtt, *Gramineas UruguayasI* (1970) (182, Fig. 73 as *Rottboellia*).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Friedrich Sellow (1789–1831) German botanist.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Basal innovations flabellate. Culms erect, 10–75 cm long, 2–8 -noded. Leaf-sheaths keeled. Ligule a ciliolate membrane. Leaf-blades flat or conduplicate, 5–35 cm long, 2–6 mm wide.

Inflorescence. Inflorescence composed of racemes, terminal and axillary, embraced at base by subtending leaf. Racemes 1, single, straight or arcuate, smoothly terete, 7–12 cm long. Rhachis fragile at the nodes, semiterete. Rhachis internodes cuneate, 4–5 mm long. Rhachis internode tip transverse, crateriform. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, flattened, 3.5–4.5 mm long, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 subequal glumes without lemmas, oblong, dorsally compressed, 1–1.5 mm long, shorter than fertile, fused to and deciduous with fertile spikelet belonging to segment above. Companion sterile spikelet glumes winged on keels.

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 oblong, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface convex, areolate. Lower glume apex emarginate. Upper glume oblong, chartaceous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline, obtuse. Fertile lemma elliptic, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Lemma apex obtuse. Palea hyaline.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Brazil**, **Southern South America**. Brazil South. Argentina Northeast, Paraguay, Uruguay.

Catarina, Rio Grande do Sul. Rio Grande do Sul. Chaco, Cordoba, Corrientes, Entre Rios, Misiones, Santa Fe.

Mnesithea striata (Steud.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 292: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), S-L Chen et al, *Flora of China 22* (Poaceae) (2006) (as *Coelorachis*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *M. merguensis*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Coelorachis*).

TYPE from Myanmar. **Basionym or Replaced Name**: *Coelorachis striata* (Steud.) A.Camus, *Ann. Soc. Linn. Lyon*, n. s., 68: 197 (1922). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Myanmar: Tavoy, Oct. 1827, *Wallich 8877C (Gomez)* (LT: P; ILT: K, W).

Illustrations (Books): H.J.Noltie, *The Grasses of Bhutan* (2000) (as *Coelorachis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (fig. 896 as *Mnesithea striata* var. *striata* & *M. striata* var. *pubescens*).

Derivation (Clifford & Bostock 2007): L. *stria*, furrow; *-ata,* possessing. Glumes and lemmas streaked.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Culms slender, 100 cm long. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs. Ligule an eciliate membrane. Leaf-blades linear or lanceolate, 60–120 cm long, 8–50 mm wide, stiff. Leaf-blade margins scabrous. Leaf-blade apex acuminate, filiform.

Inflorescence. Synflorescence compound, paniculate.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, exserted. Spatheole linear, 5–8 cm long. Racemes 1, single, smoothly terete, 2.5–5 cm long. Rhachis fragile at the nodes, angular, 1–1.2 mm wide, glabrous on surface. Rhachis internodes cuneate, 3.7–4.8 mm long, with

the lower often bearing triads. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets appressed, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, tip cupuliform.

Sterile Spikelets. Companion sterile spikelets rudimentary or well-developed, comprising 2 subequal glumes without lemmas, lanceolate, 1–4 mm long, shorter than fertile, separately deciduous. Companion sterile spikelet glumes winged on keels.

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 oblong, dorsally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface smooth. Lower glume apex truncate or obtuse. Upper glume ovate, chartaceous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret ovate, 3.5–4.5 mm long, hyaline, 0 -veined. Fertile lemma ovate, hyaline, without keel, 0–1 -veined, 0–3 -veined, without veins or one-veined. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 2 mm long.

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

Country /Province /State. **China**. China South Central. **Indian Subcontinent**, **Indo-China**. Assam, Eastern Himalaya, India. Myanmar, Thailand.

Yunnan. Arunachal Pradesh. Manipur, Meghalaya. West Bengal.

Mnesithea subgibbosa (Hack.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 292 (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 *Rhytachne*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Brazil. **Basionym or Replaced Name**: *Rhytachne subgibbosa* (Winkler ex Hack.) Clayton, Kew Bull. 20: 261 (1966). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Riedel s.n.*, Brazil: São Paulo: Mugy (LE; IT: K).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (535 as *Rhytachne*), S.A.Renvoize, *The Grasses of Bahia*, 1984 (288, Fig. 110), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (532, Fig. 192 as *Rhytachne*).

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms (30–)90–120 cm long. Ligule a ciliolate membrane. Leaf-blades filiform, convolute, 15–30 cm long, 1–2 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, 16–30 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface, glabrous on margins. Spikelet packing with lowest internode elongated (10–20mm, sometimes bearing a triad). Rhachis internodes clavate, 6–11 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, linear, foliaceous, curved, 2–4 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets represented by barren pedicels or rudimentary or well-developed, 0–6.5 mm long, deciduous with the fertile. Companion sterile spikelet glumes coriaceous, 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, 5–9 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume oblong, 1 length of spikelet, coriaceous, without keels. Lower glume surface smooth or rugose or muricate. Lower glume apex acute, muticous. Upper glume oblong, membranous, 3 -veined. Upper glume muticous.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret lanceolate, hyaline, acute. Fertile lemma lanceolate, hyaline, without keel. Lemma apex acute.

Flower and Fruit. Anthers 3.

Distribution (TDWG). Continent. Africa, North America, South America.

Country /Province /State. **South Tropical Africa**. Zambia. **Mexico**. Southeast Mexico. **Western South America**, **Brazil**, **Southern South America**. Bolivia. Brazil Northeast, Brazil South. Paraguay.

Mato Grosso, Goias, Bahia, Minas Gerais, Rio de Janeiro, Espirito Santo, Sao Paulo Parana. Alagoas, Bahia, Ceará, Fernando do Noronha, Maranhão, Pernambuco, Paraíba, Piaui, Rio Grande do Norte (RN), Sergipe. Paraná. Corrientes. Chiapas.

Mnesithea sulcata (Stapf) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 287: (1986).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Heteropholis*).

TYPE from DRC. **Basionym or Replaced Name**: *Heteropholis sulcata* (Stapf) C.E.Hubb., Hook. Ic. Pl. 36: t. 3548, p. 2 (1956). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Homble 56*, Feb 1912, Zaire: Katanga: Lubumbashi (Elizabethsville) (K; IT: BR).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (as *Heteropholis*), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):850 Fig 201 as *Heteropholis*), G.V.Pope et al., *Flora Zambesiaca* 10 (as *Heteropholis*), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14e (1940) (207, Fig. 6 as *Heteropholis*).

Illustrations (Journals): *Hooker's Icones Plantarum* (t.3548 (1956)).

Derivation (Clifford & Bostock 2007): L. *sulcus*, furrow; *-ata*, possessing. Internodes grooved.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Cataphylls evident. Rhizomes short, scaly. Culms 60–120 cm long. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades 16–60 cm long, 3–10 mm wide. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, unilateral, 5–12 cm long. Rhachis fragile at the nodes, semiterete. Rhachis internodes cuneate. Rhachis internode tip transverse, crateriform. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, fused to internode, united wholly, oblong, flattened, tip rectangular.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, asymmetrical, 3–5 mm long, longer than fertile, separately deciduous. Companion sterile spikelet glumes coriaceous, winged on keels, obtuse. Companion sterile spikelet lemmas 2, 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 oblong, dorsally compressed, 2.5–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, pallid, 2-keeled, keeled laterally, keeled obtusely, winged on keel, winged near apex. Lower glume surface cancellate. Lower glume apex emarginate. Upper glume oblong, membranous, 1-keeled, keeled above, 3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined, ciliolate on margins, obtuse. Fertile lemma oblong, hyaline, without keel, 2 -veined, 0–3 -veined. Palea 0 -veined, without keels.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West-Central Tropical Africa**, **East Tropical Africa**, and **South Tropical Africa**. DRC. Tanzania. Angola, Malawi, Zambia.

Mnesithea tessellata (Steud.) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 293: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name**: *Coelorachis tessellata* (Steud.) Nash, N. Am. Fl. 18: 86 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: USA: Louisiana, *Riehl 60* (HT: P).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (689 as *Coelorachis*).

Derivation (Clifford & Bostock 2007): L. *tessela*, little tile; *-ata,* possessing.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Basal innovations flabellate. Culms 80–120 cm long. Lateral branches ample. Leaf-sheaths keeled. Ligule an eciliate membrane, truncate. Leaf-blades conduplicate, 20–40 cm long, 5–8 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle widened at apex. Racemes 1, single, smoothly terete, 5–12 cm long, 2–2.5 mm wide. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes clavate, 2.5–3 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, columnar, semiterete, 2.5–3 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, ovate, 1.5–2.5 mm long, shorter than fertile, deciduous with the 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 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface areolate. Upper glume oblong, membranous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southeastern USA**. Alabama, Florida, Louisiana, Mississippi.

Mnesithea thailandica Traiperm & Boonkerd. *Kew Bull*. 64: 341 (2010).

TYPE from Thailand. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Suwanaphoom Distr., Ban Hang Hoey: *Paisook. & Suth. 1048–82* (BK holo).

Illustrations: None found.

Classification. Subfamily Panicoideae. Tribe: Sacchareae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 26 cm long. Culm-internodes distally pubescent or pilose. Culm-nodes pubescent. Leaf-sheaths loose, 2.5–6 cm long, pubescent. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades 5–20 cm long, 4–8 mm wide. Leaf-blade surface pubescent, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, terminal, embraced at base by subtending leaf. Racemes 1, single, smoothly terete, 6 cm long. Rhachis fragile at the nodes, semiterete, pubescent on surface. Rhachis internodes cuneate, 2–2.5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, oblong, semiterete, 3 mm long, pubescent.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, ovate, 1 mm long, shorter than fertile, deciduous with the 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 glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, asymmetrical, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface smooth, pubescent. Lower glume apex acute. Upper glume ovate, 3 mm long, membranous, 1-keeled, keeled above. Upper glume primary vein ciliate. Upper glume surface with a dorsal tuft of hair.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel, 0 -veined, 0–3 -veined, without veins.

Flower and Fruit. Anthers 3, 1 mm long, yellow. Stigmas 2.

Distribution (TDWG). Continent. Tropical Asia.

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

Mnesithea tuberculosa (Nash) R. de Koning & M.S.M. Sosef. *Blumea,* 31(2): 293: (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 *Coelorachis*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name**: *Coelorachis tuberculosa* (Nash) Nash, *N. Am. Fl.* 18: 86 (1909). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *G.V. Nash 1074*, 16–30 Jun 1894, USA: Florida: Lake Co.: in vicinity of Eustis (NY-6669; IT: US-824901).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (689 as *Coelorachis*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (419, Fig. 370 as *Manisuris*).

Derivation (Clifford & Bostock 2007): L. *tuberculus*, wart; *-osa,* abundance. Lemmas or glumes bearing warty projections.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations flabellate. Culms 90–150 cm long. Lateral branches ample. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades conduplicate, 15–30 cm long, 3–7 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence composed of racemes, terminal and axillary. Peduncle widened at apex. Racemes 1, single, smoothly terete, 2–6 cm long. Rhachis fragile at the nodes, semiterete, glabrous on surface. Rhachis internodes clavate, 4–5 mm long. Rhachis internode tip transverse, crateriform, with simple rim. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, clavate, semiterete, 5–6 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets rudimentary, comprising 2 unequal glumes without lemmas, ovate, 1–2 mm long, shorter than fertile, deciduous with the 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, 5–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, coriaceous, 2-keeled, winged on keel, winged narrowly, winged above. Lower glume surface smooth or muricate, rough on flanks. Upper glume oblong, membranous, 1-keeled.

Florets. Basal sterile florets 1, barren, with palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, hyaline, without keel.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southeastern USA**. Florida. **Caribbean**. Cuba.

Mnesithea veldkampii Potdar, S.P.Gaikwad, Salunkhe & S.R.Yadav. *Kew Bull.* 59(4): 629 (-631; fig. 1) (2005).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India, Maharashtra, Mawashi Plateau: Yadav 1466 (CAL holo, BSI, K).

Illustrations (Books): G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 94).

Images: G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Pl. 23).

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Rottboelliinae.

Habit, Vegetative Morphology. Perennial. Cataphylls evident. Culms erect, 30–150 cm long. Culm-internodes with septate pith. Culm-nodes glabrous. Lateral branches sparse, extravaginal. Leaf-sheaths 5–

20 cm long, outer margin glabrous. Ligule an eciliate membrane, 1.4–15 mm long. Leaf-blades conduplicate, 5–60 cm long, 1–2 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface glabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, smoothly terete, 5–20 cm long. Rhachis semiterete, glabrous on margins. Rhachis internodes cuneate, 4–5 mm long. Rhachis internode tip transverse, crateriform. Spikelets sunken, in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, free, clavate, 4.5 mm long, glabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, male, orbicular, dorsally compressed, 4.8–51 mm long, shorter than fertile. Companion sterile spikelet lemmas 2.

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, 5–5.5 mm long, 2–2.2 mm wide, falling entire, deciduous with accessory branch structures. Spikelet callus glabrous, base truncate, with central peg, attached transversely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume ovate, 1 length of spikelet, indurate, without keels, 2–3 -veined. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, cartilaginous, without keels, 2–3 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret ovate, 4.5–4.6 mm long, membranous, 0 -veined, without midvein, without lateral veins, acute. Fertile lemma ovate, 4–4.2 mm long, membranous, without keel, 0 -veined, 0–3 -veined, without veins. Lemma apex acute. Palea ovate, 3.8–4 mm long, 0 -veined. Palea apex obtuse.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 3.4–3.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 2.5–3 mm long.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**. India.

Maharashtra.

Mniochloa pulchella (Griseb.) Chase. *Proc. Biol. Soc. Washington,* xxi. 186 (1908).

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 Cuba. **Basionym or Replaced Name**: *Digitaria pulchella* Griseb., *Cat. Pl. Cub.* 231 (1866). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.H. Wright 3448*, 8 Jun 1856, Cuba: Oriente: Yunque de Baracoa, on vertical cliffs (GOET; IT: B (photo, USJ), GH, LE, MO, NY-70980 [1860–1864], US-865842 (fragm. ex GOET)).

Illustrations (Books): A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (375, Fig. 342).

Illustrations (Journals): *Ann. Missouri Bot. Gard.* (80: 855. Fig.3 K-R (1993)).

Derivation (Clifford & Bostock 2007): L. pretty. Attractive in some respect, usually the inflorescence.

Classification. Subfamily Bambusoideae. Tribe: Olyreae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths absent. Culms 5–20 cm long. Leaves cauline. Ligule absent. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades oblong, 10–18 cm long, 4–6 mm wide. Leaf-blade apex obtuse or acute. Monoecious, with male and female spikelets in the same inflorescence.

Inflorescence. Synflorescence on a separate leafless culm (much longer than sterile culms).

Inflorescence composed of racemes. Racemes 2, paired, 2–3.5 cm long. Rhachis angular. Sexes segregated, on unisexual branches, with male conjugate. Spikelets solitary. Fertile spikelets pedicelled. Male spikelets pedicelled. Pedicels present, filiform (male) or cuneate (female).

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, dorsally compressed, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.8–2 mm long, 1 length of upper glume, herbaceous, without keels, 5 -veined. Lower glume apex acute. Upper glume ovate, 2–2.5 mm long, 0.75 length of adjacent fertile lemma, herbaceous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile florets female. Fertile lemma ovate, 2.4–2.6 mm long, coriaceous, without keel. Lemma surface glabrous. Lemma margins involute. Lemma apex acute. Palea 1 length of lemma, coriaceous, 2 -veined. Palea surface glabrous.

Flower and Fruit. Male spikelets distinct from female, 1 flowered, persistent, lanceolate, 1–1.5 mm long, glabrous. Male spikelet glumes absent. Male spikelet lemma 3 -veined, muticous.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Caribbean**. Cuba.

Molinia caerulea (L.) Moench. *Meth.* 183. (1794).

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).

TYPE from Europe. **Basionym or Replaced Name**: *Aira caerulea* L., *Sp. Pl.* 63 (1753). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: (LINN). Europe: In Europae paseuis aquasis,.

Illustrations (Books): C.E.Hubbard, *Grasses* (1968) (350), T. Cope & A. Gray, Grasses of the British Isles (174), G.Hegi, *Flora von Mitteleuropa* 1 (1909), N.N.Tsvelev, *Grasses of the Soviet Union* (1983) (927 (613), Pl.12 as *M.coerulea*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (9).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. bluish. Often with bluish-green leaf-blades.

Classification. Subfamily Arundinoideae. Tribe: Arundineae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 15–120 cm long, swollen at the base, forming an elongated corm. Leaves mostly basal. Ligule a fringe of hairs. Leaf-blades deciduous at the ligule, 10–45 cm long, 3–10 mm wide. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, linear or oblong, 5–40 cm long, 1–10 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1–4 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 or oblong, laterally compressed, 4–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 1–2 mm long, eventually visible between lemmas, scaberulous. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or ovate, 1.5–3 mm long, 0.6–1 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate or ovate, 2.5–4 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume apex acute.

Florets. Fertile lemma ovate, lanceolate in profile or oblong in profile, 4–6 mm long, membranous, without keel, 3–5 -veined, 0–3 -veined or more than 3-veined. Lemma apex obtuse or acute. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–3 mm long. Stigmas 2, purple. Caryopsis with tardily free pericarp, obovoid. Embryo 0.33 length of caryopsis. Hilum linear, 1 length of caryopsis.

n = 18 (1 ref TROPICOS). $2n$ = 18 (1 ref TROPICOS), or 36 (5 refs TROPICOS).

Distribution (TDWG). Continent. Europe, Africa, Temperate Asia, North America.

Region. **Northern Europe**, **Middle Europe**, **Southwestern Europe**, **Southeastern Europe**, **Eastern Europe**.

Country /Province /State. : Denmark, Finland, Foroyar, Great Britain, Ireland, Northern Ireland, Norway, Sweden. : Channel Islands, France, Monaco, Portugal, Sardinia, Andorra, Spain. : Albania, Bulgaria, Greece, Italy, San Marino, Vatican, Romania, Malta, Turkey Europe, Yugoslavia. Belarus, Estonia, Kalingrad, Latvia, Lithuania, Baltic States, Krym, Central European Russia, East European Russia, North European Russia, South European Russia, Northwest European Russia, Moldova, Ukraine. **Northern Africa**, **Northeast Tropical Africa**. Algeria, Tunisia. Ethiopia (inc. Eritrea). **Middle Asia**, **Caucasus**, **Western Asia**. Kazakhstan. North Caucasus, Transcaucasus. Lebanon-Syria, Turkey. **Eastern Canada**,

Northwest USA, **Northeast USA**, **Southeastern USA**. Newfoundland, Ontario, Quebec. Oregon. Maine. North Carolina.

Molinia hui Pilger. *Trans. Sci. Soc., China* 7:609 (1922).

TYPE from China. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: China: Zhejiang: offenes Gelande, 400 m U. Meer, 1920, *H.H. Hu 572-IX* (HT: B; IT: US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): In honor of Hsen Hsu Hu (1894–1968) Chinese botanist.

Classification. Subfamily Arundinoideae. Tribe: Arundineae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 80–100 cm long, swollen at the base, forming an elongated corm. Culm-internodes distally glabrous. Culm-nodes brown, glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths tight, longer than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs, 0.2–0.5 mm long. Leaf-blades deciduous at the ligule, 25–50 cm long, 5–10 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade margins scaberulous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–30 cm long, 3–6 cm wide. Primary panicle branches appressed or ascending, 4–6 -nate, 10–12 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 mm long.

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, compressed slightly, 7–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent, hairy at tip. Floret callus 0.2–0.3 mm long, pilose, truncate. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.5–3 mm long, 0.75–0.9 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume surface asperulous, rough above. Lower glume apex acute. Upper glume lanceolate, 3.2–3.5 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume surface asperulous, rough above. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 5–5.3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex entire or dentate, 3 -fid, truncate. Palea 4–4.2 mm long, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Stigmas 2.

Distribution (TDWG). Continent. Temperate Asia.

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

Zhejiang.

Molinia japonica Hack. *Bull. Herb. Boiss.* vii. 704. (1899).

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 *Moliniopsis*).

TYPE from Japan. **Basionym or Replaced Name**: *Moliniopsis japonica* Hack. *Bull. Herb. Boiss*. 8:. 704. (1899). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *Faurie 925*, 7 Aug 1887, Japan: sommet du Hakoda (K). 9 more syntypes cited by Hackel. ST: *Matsumura 243*, (W; US (ex W)). ST: *Matsumura 104*, (W; IT: US (ex W)). ST: *Faurie 13466*, 20 Jul 1894, Japan: TSuragizan (K). ST: *Faurie 4596*, 31 Aug 1889, Japan: Aomori (K).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (234, Fig 85 as *Moliniopsis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 625).

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 Arundinoideae. Tribe: Arundineae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 30–120 cm long, 2–5 mm diam., swollen at the base, forming an elongated corm. Leaves mostly basal. Ligule a fringe of

hairs, 0.1 mm long. Leaf-blades deciduous at the ligule, 20–80 cm long, 2–10 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, linear or elliptic, 10–40 cm long, 3–6 cm wide. Primary panicle branches 1–3 -nate, 8–20 cm long. Panicle branches bearded in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–8 mm long.

Fertile Spikelets. Spikelets comprising 2–6 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 elliptic, laterally compressed, compressed slightly, 8–15 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes eventually visible between lemmas. Floret callus bearded, truncate. Floret callus hairs 1–2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 3–4.7 mm long, 0.75–1 length of upper glume, membranous, 1-keeled, 3 -veined. Lower glume apex acute. Upper glume ovate, 4–5.2 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate or ovate, 4–6.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute. Palea 1 length of lemma, 2 -veined. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–3 mm long. Stigmas 2.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian Far East, **China**, **Eastern Asia**, **Russia**. Kuril Is, Sakhalin. China Southeast. Japan Hokkaido, or Honshu. Japan, Korea.

Anhui, Zhejiang.

Monachather paradoxus (R.Br.) Steud. *Syn. Pl. Gram.* 247 (1855).

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 Synonomy Database: T: *Drumond Hrbr. coll. IV. nr. 396*, Australia: Swan river (IT: US-91132 (fragm.)).

Illustrations (Books): J.P.Jessop, G.R.M. Dashorst & F.M.James, *Grasses of South Australia* (2006) (303, Fig. 238), C.A.Gardner, *Flora of Western Australia*, Vol 1, Part 1, *Gramineae* (1952) (as *Danthonia bipartita*), J.C.Tothill,& J.B.Hacker. *The grasses of southern Queensland* (1983) (310 as *M. paradoxa*), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (145, Fig. 22), K.O.Mallett (ed.), *Flora of Australia*, Vol 44B. *Poaceae* (2004) (23, Fig. 3), S.W.L.Jacobs, R.D.B.Whalley & D.J.B.Wheeler,, *Grasses of New South Wales*, 4th edn (2008) (303), 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. *para*, irregular; *doxa*, opinion. Different from the expected in regard to related species.

Classification. Subfamily Arundinoideae. Tribe: Danthonieae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths thickened and forming a bulb, woolly. Culms erect, 30–70 cm long. Leaves mostly basal. Ligule a ciliolate membrane, 1–3 mm long. Leaf-blades 7–12 cm long, 10–13 mm wide. Leaf-blade surface pilose, sparsely hairy, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 5–15 cm long, 2 cm wide. 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 cuneate, laterally compressed, 8–17 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 0.25 length of lemma.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma, gaping. Lower glume ovate, 8–17 mm long, 1 length of upper glume, chartaceous, without keels, 11–13 -veined. Lower glume apex acute. Upper glume ovate, 8–17 mm long, 1.1 length of adjacent fertile lemma, chartaceous, without keels, 11–13 -veined. Upper glume apex acute.

Florets. Fertile lemma oblong, 7–15 mm long, coriaceous, without keel, 9 -veined, more than 3-veined. Lemma surface pilose, hairy below, with a transverse fringe of hair. Lemma apex lobed, 2 -fid, with linear

lobes, incised 0.66 of lemma length, attenuate, awned, 1 -awned. Principal lemma awn from a sinus, 5–7 mm long overall, not or scarcely exserted from spikelet. Palea ovate, 0.33 length of lemma, coriaceous, 0 -veined, without keels. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, glabrous. Anthers 3, 0.3 mm long. Caryopsis with adherent pericarp. Hilum linear, 0.25 length of caryopsis.

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Western Australia, Northern Territory, South Australia, Queensland, New South Wales.

Eremean, South-West. Central Australia. NW & Lake Eyre, Southern. South East, Inland. Western Plains.

Monelytrum luederitzianum Hack. *Verh. Bot. Vereins Prov. Brandenburg* 30: 140 (1888).

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

TYPE from Namibia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Lüderitz 40*, 1885–1886, Namibia: Kaoko, nordlich von Omuramba u Omaruru (W; IT: B, Z).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (109, Fig 83), M.A.N.Muller, *Grasses of South West Africa/Namibia* (1984), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (222, Fig 138).

Illustrations (Journals): *Blumea* (Supp.3: 74, Fig.1 (1946)).

Derivation (Clifford & Bostock 2007): L. *-anum,* indicating connection. In honor of Franz Adolf Edward Luderitz (1834–1886) German merchant and explorer.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms 20–60 cm long. Ligule a ciliate membrane. Leaf-blades 4–12 cm long, 1–5 mm wide, glaucous. Leaf-blade margins cartilaginous, spinulose.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, in a multilateral false spike, cuneate, 3–6 cm long, bearing few fertile spikelets, bearing 2–4 fertile spikelets on each. Central inflorescence axis 3–25 cm long. Rhachis deciduous from axis, flattened, ciliate on margins, terminating in a sterile spikelet. Raceme-bases linear, 0.5–1 mm long, pilose. Spikelets solitary. Fertile spikelets sessile.

Sterile Spikelets. Apical sterile spikelets awn-like, 1–3 in number, 2–10 mm long.

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, 3–6 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus bearded. Spikelet callus hairs 0.6–0.7 length of spikelet.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 0.3–0.5 mm long, 0.1 length of upper glume, 0.1 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Upper glume lanceolate, 3–6 mm long, 0.6–0.7 length of adjacent fertile lemma, chartaceous, without keels, 5 -veined. Upper glume lateral veins ribbed. Upper glume surface pilose, hairy below. Upper glume margins scabrous. Upper glume apex acuminate, awned, awn 3–10 mm long.

Florets. Fertile lemma elliptic, 2–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn 0.5–1 mm long overall. Palea 1 length of lemma. Palea surface pilose.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**, **Southern Africa**. Angola. Namibia.

Monocymbium ceresiiforme (Nees) Stapf. *Prain, Fl. Trop. Afr.* ix. 387 (1919).

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 Synonomy Database: IT: *Drège s.n.*, South Africa (K, L, S).

Illustrations (Books): W. Robyns (1929 and 1934). Flora Agrostologique du Congo Belge et du Ruanda-Urundi, I. Maydees et Andropgonees and II. Panicees. Bruxelles, Goemaere (203, Pl. 15), R.M.Polhill, F.T.E.A., *Gramineae* (3(1982):824, Fig 190), G.V.Pope et al., *Flora Zambesiaca* 10, L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (515, Fig 411 & Plt. 25), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (223, Fig 139), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (332, Fig 134).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999).

Derivation (Clifford & Bostock 2007): L. Ceres, Goddess of the harvest; forma, appearance. The racemes somewhat resemble those of wheat.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Anthistiriinae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Culms erect or geniculately ascending or decumbent, 30–130 cm long. Ligule a ciliolate membrane. Leaf-blades linear, 5–25 cm long, 2–5 mm wide.

Inflorescence. Synflorescence compound, scanty, 5–45 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2–4 cm long, membranous, brown or red. Racemes 1, single, unilateral, 1.4–1.6 cm long, bearing few fertile spikelets, bearing 6–8 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing crowded. Rhachis internodes filiform, 1.5 mm long. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 1.5 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, elliptic, dorsally compressed, as long as fertile, separately deciduous. Companion sterile spikelet callus cuneate, 0.5–1 mm long, obtuse. Companion sterile spikelet glumes coriaceous, 7–11 -veined, pilose or villous, obtuse, muticous. Companion sterile spikelet lemmas 2, 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, 3–4 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus oblong, pilose, hairy on the sides or below (across the base), base obtuse, attached obliquely.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma. Lower glume elliptic, 1 length of spikelet, coriaceous, without keels, 8 -veined. Lower glume surface pilose or villous. Lower glume apex entire, obtuse. Upper glume elliptic, without keels, keel-less except near apex, 3 -veined. Upper glume apex entire, acute, awned, 1 -awned, awn 2–6 mm long.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 2 -veined, ciliate on margins. Fertile lemma linear, 2–3 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.4–0.6 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 6–20 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

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**. Burkina, Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Sierre Leone, Togo. Cameroon, Congo, Rwanda, DRC. Ethiopia (inc. Eritrea), Sudan. Tanzania. Angola, Malawi, Mozambique, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Eastern Cape.

Monocymbium deightonii C. E. Hubbard. *Kew Bull.* 1949, 374 (1949).

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

TYPE from Sierra Leone. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *F.C. Deighton 4666*, 10 Nov 1947, Sierra Leone (US-1935636).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Frederick Claude Deighton (1926–1949) British botanist who collected in West Africa.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Anthistiriinae.

Habit, Vegetative Morphology. Perennial. Culms decumbent or prostrate, slender, 30–120 cm long, 0.5–1.7 mm diam., rooting from lower nodes. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane. Leaf-blades lanceolate, 1–5 cm long, 2–7 mm wide. Leaf-blade surface glabrous or pilose, sparsely hairy, hairy abaxially. Leaf-blade margins cartilaginous, ciliate. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, scanty, 8–30 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 1.5–2.7 cm long, membranous, brown or red, glabrous. Peduncle 0.4–0.8 cm long, pilose above. Racemes 1, single, unilateral, 0.8–1.6 cm long, bearing few fertile spikelets. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing crowded. Rhachis internodes filiform, 1.3–1.8 mm long. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 1.3–1.8 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate or elliptic, dorsally compressed, 2.5–3.3 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus cuneate, 0.3 mm long, obtuse. Companion sterile spikelet glumes coriaceous, 10 -veined, glabrous, muticous. Companion sterile spikelet lemmas 2, 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 or oblong, dorsally compressed, obtuse, 3–3.7 mm long, falling entire, deciduous with accessory branch structures. Spikelet callus square, pilose, hairy on the sides, base obtuse, attached obliquely. Spikelet callus hairs 1 mm long.

Glumes. Glumes dissimilar, exceeding apex of florets, firmer than fertile lemma, shiny. Lower glume elliptic, 1 length of spikelet, coriaceous, yellow or dark brown, without keels, keel-less except near apex, 9–10 -veined. Lower glume surface scabrous, rough at apex, glabrous. Lower glume apex entire, truncate. Upper glume elliptic, chartaceous, without keels, keel-less except near apex, 3 -veined. Upper glume surface scabrous, rough at apex. Upper glume margins ciliolate. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1–2 mm long.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, hyaline, 0 -veined, without midvein, without lateral veins, ciliate on margins. Fertile lemma linear, 2.5–2.8 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.4–0.6 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 9–13 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 1–1.5 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West Tropical Africa**. Guinea, Ivory Coast, Sierre Leone.

Monocymbium lanceolatum C. E. Hubbard. *Kew Bull* 1936, 313 (1936).

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

TYPE from Sierra Leone. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Sierra Leone: between Mamaria and Kulufaga, *Glanville 337* (HT: K).

Illustrations (Books): H.Jacques-Felix, *Les Graminees d'Afrique tropicale* (1962) (308, Fig. 246).

Derivation (Clifford & Bostock 2007): L. *lanceus*, lance; *-ola*, diminutive; *-ata*, possessing. Mostly a reference to lanceolate leaf-blades.

Classification. Subfamily Panicoideae. Tribe: Sacchareae. Subtribe Anthistiriinae.

Habit, Vegetative Morphology. Perennial. Culms decumbent or prostrate, 100–120 cm long, 2.5–3 mm diam., rooting from lower nodes. Leaf-sheaths glabrous on surface or pilose. Ligule an eciliate membrane, 1 mm long. Leaf-blade base amplexicaul. Leaf-blades lanceolate, 4.5–9 cm long, 10–20 mm wide. Leaf-blade margins scabrous, glabrous or ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Synflorescence compound, scanty, 20–45 cm long.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole lanceolate, 2–3 cm long, membranous, brown or red, glabrous. Peduncle 0.4–1.8 cm long, pubescent above. Racemes 1, single, unilateral, 1.2–2.2 cm long, bearing few fertile spikelets, bearing 5–10 fertile spikelets on each. Rhachis fragile at the nodes, ciliate on margins. Spikelet packing crowded. Rhachis internodes filiform, 1.5 mm long. Rhachis internode tip oblique. Spikelets in pairs. Fertile spikelets

sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 1 in the cluster. Pedicels present, filiform, 2 mm long, ciliate.

Sterile Spikelets. Companion sterile spikelets well-developed, male, lanceolate or oblong, dorsally compressed, 3–4.5 mm long, as long as fertile, separately deciduous. Companion sterile spikelet callus cuneate, 0.3 mm long, obtuse. Companion sterile spikelet glumes coriaceous, 9–15 -veined, glabrous or villous, muticous. Companion sterile spikelet lemmas 2, 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 square, pilose, hairy on the sides, base obtuse, attached obliquely.

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, 9–15 -veined. Lower glume surface scabrous, rough at apex, villous. Lower glume apex entire. Upper glume lanceolate, chartaceous, without keels, keel-less except near apex, 3 -veined. Upper glume surface scabrous, rough at apex. Upper glume margins ciliolate. Upper glume apex dentate, 2 -fid, awned, 1 -awned, awn 1–3 mm long.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret oblong, 3–3.5 mm long, hyaline, 0 -veined, without midvein, without lateral veins, ciliolate on margins, emarginate or truncate. Fertile lemma linear, 2.5–3 mm long, hyaline, without keel. Lemma apex lobed, 2 -fid, incised 0.4–0.6 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, geniculate, 12–16 mm long overall, with twisted column. Column of lemma awn glabrous. Palea absent or minute.

Flower and Fruit. Anthers 3, 2 mm long.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **West Tropical Africa**. Guinea, Sierre Leone.

Monodia stipoides S.W.L. Jacobs. *Kew Bull.,* 40(3): 659 (1985).

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 Synonomy Database: Australia: Western Australia: Mitchell River, 40:50'S, 125:42'E, 22 Sep 1980, *C.R. Dunlop 5233* (HT: CANB; IT: NRI, DNA, NT, PERTH).

Illustrations (Books): J.R.Wheeler et al, *Flora of the Kimberley Region* (1992) (1189, Fig 337).

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002);.

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. With spikelets resembling those of *Stipa.*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 100–150 cm long, 3 mm diam., 2(–3) -noded. Leaf-sheath oral hairs bearded. Ligule a fringe of hairs, 2–3 mm long. Leaf-blades conduplicate, 30–60 cm long, 2 mm wide, coriaceous, stiff. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 20–50 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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 linear, subterete, 16–24 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus elongated, 2 mm long, pubescent, pungent.

Glumes. Glumes persistent, similar, exceeding apex of florets, thinner than fertile lemma. Lower glume lanceolate, 16–24 mm long, 1.1–1.3 length of upper glume, scarious, without keels, 9–11 -veined. Lower glume apex acuminate. Upper glume lanceolate, 14–18 mm long, 1.5–1.75 length of adjacent fertile lemma, scarious, without keels, 3–5 -veined. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, laterally compressed, 8–12 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma margins convolute, covering most of palea, ciliate. Lemma apex lobed, 2 -fid, incised 0.1 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 50–60 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels approximate. Rhachilla extension 0.1 length of fertile floret.

Flower and Fruit. Lodicules 2, cuneate. Anthers 3, 5–6 mm long. Stigmas 2.

Distribution (TDWG). Continent. Australasia.
Country /Province /State. **Australia**. Western Australia.
Kimberley.

Moorochloa eruciformis (Sm.) Veldkamp. *Reinwardtia* 12(2): 139 (2004).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Brachiaria*), W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Brachiaria*), D.Sharp, D. & B.K.Simon, *AusGrass* (2002) (as *Brachiaria*), S-L Chen et al, *Flora of China 22* (Poaceae) (2006) (as *Brachiaria*), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*), N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960) (as *Brachiaria*), T.G.Tutin et al, *Flora Europaea* 5 (1980) (as *Brachiaria*), W.D.Clayton & N.Snow, Key to Pacific Grasses (2010) (as *Urochloa*).

TYPE from Greece. **Basionym or Replaced Name**: *Panicum eruciforme* Sm, *Fl. Graec.* 1(2): 44, pl. 59 (1808). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Greece: Samos: in arvis circa Junonis templum, *Sibthorp s.n.* (HT: OXF (photo, L, LD, LP)).

Recent Synonyms: *Brachiaria eruciformis* (Sibth. & Sm.) Griseb., *Ledeb. Fl. Ross.* 4:469 (1852).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (339), L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (376, Fig 321 as *Brachiaria*), J.Bosser, *Graminees des Paturage et des Cultures a Madagascar (*1969) (417, Fig 158 as *Brachiaria eruciformis*), N.Feinbrun-Dothan, *Flora Palaestina* 4 (1986) (Pl. 407 as *Brachiaria*), S.Phillips, *Poaceae* (Gramineae) in I.Hedberg & S.Edwards, *Flora of Ethiopia and Eritrea* (1995) (226, Fig 92 as *Brachiaria*), L.Boulos, *Flora of Egypt* 4 (2005) (293, Pl. 86 as *Brachiaria*), T.A.Cope, in M.Thulin, *Poaceae* (Gramineae). *Flora of Somalia* (1995) (228, ig 130 as *Brachiaria eruciformis*), N.L.Bor, *Gramineae* in K.H.Rechinger, *Flora Iranica*. No. 70/30 (1970) (as *Brachiaria*), N.L.Bor, *Gramineae* in *Flora of Iraq* (1968) (473, Pl. 181 as *Brachiaria*), K.M.Matthew, Further Illustrations on the *Flora of Tamilnadu Carnatic* (1988) (pl.725 as *Brachiaria*), T.A.Cope, *Flora of Pakistan* 143: *Poaceae* (1982) (204, Fig 23 as *Brachiaria*), D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002) (as *Brachiaria*), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (491 as *Brachiaria eruciformis*), T.D.Stanley & E.Ross, *Flora of South East Queensland, Gramineae* (1989) (219, Fig. 35 as *Brachiaria eruciformis*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (186, Fig. 118 as *Brachiaria erucaeformis*), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 729 as *Brachiaria*), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (1:15(1980) as *Brachiaria*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012) (Fig. 148).

Images: F.van Oudtshoorn, *Guide to Grasses of Southern Africa* (1999) (as *Brachiaria*), G.G.Potgar, C.B.Salunkhe & S.R.Yadav, Grasses of Maharashtra (2012)
(Pl. 23).

Derivation (Clifford & Bostock 2007): L. *eruca*, caterpillar; *forma,* shape. Racemes bear a fanciful resemblance to caterpillars.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, slender, 10–60 cm long. Ligule a fringe of hairs. Leaf-blades linear or lanceolate, 2–15 cm long, 2–6 mm wide. Leaf-blade surface glabrous or pubescent.

Inflorescence. Inflorescence composed of racemes. Racemes 3–14, borne along a central axis, unilateral, 0.5–2.5 cm long. Central inflorescence axis 1–8 cm long. Rhachis wingless, angular. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets sessile.

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, compressed slightly, subacute, 1.7–2.7 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.2–0.5 mm long, 0.1–0.2 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface glabrous or pubescent. Lower glume apex truncate. Upper glume oblong, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface glabrous or pubescent or villous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 5 -veined, glabrous or pubescent or villous, acute. Fertile lemma

elliptic, 1.5–2.5 mm long, indurate, shiny, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate, without keels.

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

Region. **Northern Europe** (*), **Southwestern Europe**, **Southeastern Europe**.

Country /Province /State. : GB Aliens (Ryves et al). : France, Spain. : Bulgaria, Greece, Italy, Crete, Sicily, Turkey Europe, Yugoslavia. **Northern Africa**, **Northeast Tropical Africa**, **East Tropical Africa**, **South Tropical Africa**, **Southern Africa**, **Western Indian Ocean**. Egypt (as *Brachiaria*). Eritrea, Ethiopia (inc. Eritrea), Socotra, Somalia, Sudan. Kenya, Tanzania, Uganda. Angola, Malawi, Zambia, Zimbabwe. Namibia, Botswana, Limpopo, North-West, Gauteng, Mpumalanga, Swaziland, Free State, Kwazulu-Natal, Lesotho, Northern Cape, Eastern Cape. Mauritius (*), Madagascar (*), Reunion (*), Rodrigues (*). **Middle Asia**, **Caucasus**, **Western Asia**, **Arabian Peninsula**, **China**. Iran, Iraq. Gulf States, Oman. China South Central, China Southeast. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. India, Pakistan, Sri Lanka. Thailand. Java, Malaya. New Guinea. **Australia** (*). Queensland (*). **Southwestern Pacific**, **Northwestern Pacific**. Fiji (*), New Caledonia. Marianas (*), Marshall Is (*). **Mexico**. Northeast Mexico. **Caribbean**, **Southern South America**. Leeward Is, Windward Islands.

Fujian. Guizhou, Yunnan. Assam. Andhra Pradesh, Bihar, Karnataka. Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu, West Bengal. Jammu Kashmir. Entre Rios. Coahuila.

Moorochloa malacodes (Mez & K. Schum.) Veldkamp. *Reinwardtia* 12(2): 139 (2004).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Brachiaria*).

TYPE from Angola. **Basionym or Replaced Name**: *Panicum malacodes* Mez & K. Schum., *Notizbl. Bot. Gart. Berlin-Dahlem* 7: 70 (1917). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Antunes 202*, Angola: Huilla (B).

Recent Synonyms: *Brachiaria malacodes* (Mez &K. Schumann) H. Scholz, *Willdenowia* 8(2): 384 (1978).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *malakos*, soft to the touch; *-odes*, resembling. Surface of plants in whole or in part with texture of velvet.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, slender, 25–100 cm long. Ligule a fringe of hairs. Leaf-blades 7–10 cm long, 6–14 mm wide.

Inflorescence. Inflorescence a panicle with branches tipped by a raceme. Panicle open, ovate, 7–15 cm long. Primary panicle branches 2–6 cm long. Panicle branches capillary. Racemes unilateral, 0.5–1 cm long. Rhachis wingless, angular. Spikelet packing adaxial, crowded, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. 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 elliptic, dorsally compressed, compressed slightly, obtuse, 2.5 mm long, falling entire, readily shedding fertile florets.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.2–0.5 mm long, 0.1–0.2 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume surface pubescent. Upper glume apex acute.

Florets. Basal sterile florets 1, male or barren, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 5 -veined, pubescent, acute. Fertile lemma elliptic, 2–2.5 mm long, indurate, shiny, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate, without keels.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **South Tropical Africa**, **Southern Africa**. Angola, Zimbabwe. Namibia.

Moorochloa schoenfelderi C.E. Hubb. & Schweick. *Bull. Misc. Inform. Kew* 1936(5): 323 (1936).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online (as *Brachiaria*).

TYPE from Namibia. **Basionym or Replaced Name**: *Brachiaria schoenfelderi* C.E.Hubb. & Schweickerdt, *Kew Bull.* 1936, 323. (1936). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Schoenfelder 584*, Mar 1931, Namibia: Grootfontein, on red soil near Gross Huis (PRE).

Recent Synonyms: *Brachiaria schoenfelderi* C.E.Hubb. & Schweickerdt, *Kew Bull.* 1936, 323. (1936).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Eberhard Bruno Willie Schoenfelder (1892–1969) South African farm manager and plant collector.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Melinidinae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending or decumbent, 30–80 cm long, without nodal roots or rooting from lower nodes. Ligule a fringe of hairs. Leaf-blades 3–15 cm long, 3–4 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 8–15, borne along a central axis, straight or arcuate, unilateral, 1–3.5 cm long, with branchlets at base of longer racemes, secondary branches racemulose. Central inflorescence axis 5–12 cm long. Rhachis wingless, angular, pilose on surface. Spikelet packing adaxial, regular, 2 -rowed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.2 mm long, ciliate.

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, compressed slightly, acute, 2–3.4 mm long, with hairs extending 0.5 mm beyond apex, falling entire, readily shedding fertile florets.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5 mm long, 0.15 length of spikelet, membranous, without keels. Lower glume surface villous. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume lateral veins obscure. Upper glume surface villous. Upper glume apex acute.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, sulcate, villous, acute. Fertile lemma oblong, 2–3 mm long, cartilaginous, shiny, without keel. Lemma surface smooth. Lemma margins involute. Lemma apex obtuse. Palea involute, cartilaginous, without keels.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Namibia.

Morronea arundinariae (Trin. ex E. Fourn.) Zuloaga & Scataglini. *Syst. Bot.* 38: 1081 (2013).

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**: *Panicum arundinariae* Trin. ex E. Fourn., *Mexic. Pl.* 2: 25 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *C.J.W. Schiede s.n.*, Absque loco (US-80474 (fragm. ex P)). ST: *Virlett 1302*, Mexico: San Luis Potos?ST: *Liebmann 423*, Mexico: Mirador (US (fragm.)). ST: *Liebmann 424*, Mexico: Consoquitla (US (fragm.)). ST: *Mueller 2018*, Mexico: Orizaba ST: *Schaffner 276*, Mexico: Cordova (P). ST: *Schaffner 279*, Mexico: Cordova (P).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (354, Fig 129).

Derivation (Clifford & Bostock 2007): of *Arundinaria*. With the habit of *Arundinaria*.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Panicinae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 50–80 cm long, 1–1.5 mm diam., without nodal roots or rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes bearded. Lateral branches ample. Leaf-sheaths glabrous on surface, outer margin hairy. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 0.3–0.8 mm long. Collar bearded. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 4–11 cm long, 4–9 mm wide. Leaf-blade surface glabrous or puberulous, sparsely hairy.

Inflorescence. Inflorescence a panicle. Peduncle 4–17 cm long. Panicle open, ovate, 2–6 cm long, contracted about primary branches. Primary panicle branches 3–5 in number, 0.5–1.5 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. 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 elliptic or obovate, dorsally compressed, obtuse, 1.7–1.9 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.5–0.6 mm long, 0.33 length of spikelet, hyaline, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1.7–1.9 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, ovate, 1.7–1.9 mm long, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma elliptic, dorsally compressed, 1.5–1.6 mm long, indurate, shiny, without keel. Lemma surface striate, pubescent. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate. Palea surface pubescent, hairy on back.

Flower and Fruit. Anthers 3, 0.7 mm long, orange. Caryopsis with adherent pericarp, ellipsoid, 1.1 mm long, yellow.

2*n* = 36 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**. Costa Rica, El Salvador, Guatemala, Honduras, Panama. Venezuela. Colombia, Ecuador, Galapagos, Peru.

Mexico State. Guanajuato, Queretaro, San Luis Potosi. Veracruz. Colima, Jalisco, Oaxaca. Chiapas.

Morronea cayoense (Swallen) Zuloaga & Scataglini. *Syst. Bot.* 38: 1081 (2013).

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 Belize. **Basionym or Replaced Name**: *Panicum cayoense* Swallen, *Contrib. U. S. Nat. Herb.* 29 (9): 418 (1950). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.L. Lundell 6809*, Jul 1936-Aug 1936, Belize: Cayo: top of limestone hill at San Agustin, Mountain Pine Ridge (US-1722487; IT: LL, US-1647559).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ense*, denoting origin. From El Cayo District, British Honduras.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Panicinae.

Habit, Vegetative Morphology. Perennial. Culms erect, 105 cm long. Culm-internodes distally hirsute. Lateral branches sparse. Leaf-sheaths hispid, with tubercle-based hairs. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades lanceolate, 10–16 cm long, 15–21 mm wide. Leaf-blade surface pubescent, densely hairy, hairy on both sides. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open, ovate, 21 cm long. Primary panicle branches ascending. Panicle branches stiff, scabrous. Spikelets solitary. Fertile spikelets pedicelled. 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 ovate, dorsally compressed, 2.3–2.5 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.25 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, acute. Fertile lemma elliptic, dorsally compressed, 2 mm long, indurate, without keel. Lemma margins involute, ciliate. Lemma apex acute. Palea involute, indurate. Palea surface villous.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southeast Mexico. **Mesoamerica**. Belize, Guatemala.

Campeche, Chiapas, Quintana Roo.

Morronea guatemalense (Swallen) Zuloaga & Scataglini. *Syst. Bot.* 38: 1081 (2013).

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 Guatemala. **Basionym or Replaced Name**: *Panicum guatemalense* Swallen, *Journ. Wash. Acad. Sc.* 23 (10): 460. (1933). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *P. Weatherwax 182*, 25 Mar 1932, Guatemala: just south of Quezaltenango (US-1538064). Publication cites collection number as 1689.

Illustrations: None found.

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

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Panicinae.

Habit, Vegetative Morphology. Perennial. Culms 75 cm long. Culm-internodes scaberulous, distally pilose, with tubercle-based hairs. Lateral branches ample. Leaf-sheaths glabrous on surface or pilose, with tubercle-based hairs. Ligule an eciliate membrane, 0.2 mm long. Collar pubescent. Leaf-blades lanceolate, 7–12 cm long, 4–10 mm wide. Leaf-blade surface scaberulous, pilose, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10 cm long, contracted about primary branches. Primary panicle branches appressed or ascending, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. 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 elliptic, dorsally compressed, 2.2–2.4 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.5–1 mm long, 0.25–0.33 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma elliptic, dorsally compressed, 2 mm long, indurate, shiny, without keel. Lemma margins involute. Lemma apex pubescent. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Gulf (Mexico), Southeast Mexico. **Mesoamerica**. Guatemala. Veracruz. Chiapas.

Morronea incumbens (Swallen) Zuloaga & Scataglini. *Syst. Bot.* 38: 1081 (2013).

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 Guatemala. **Basionym or Replaced Name**: *Panicum incumbens* Swallen, *Contrib. U. S. Nat. Herb.* 29 (9): 417 (1950). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 31573*, 10 Nov 1939, Guatemala: Chiquimula: in cloud forest on top of Cerro Tixixi, 3–5 mi N of Jocotan (F-1039524; IT: US-2236476 (fragm. ex F)).

Illustrations (Journals): *Systematic Botany* (38: 1082, Fig.3 (2013)).

Derivation (Clifford & Bostock 2007): L. *incumbo,* lie upon. Lateral inflorescence branches appressed to central axis.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Panicinae.

Habit, Vegetative Morphology. Perennial. Culms rambling, 85 cm long. Culm-internodes distally pubescent. Lateral branches sparse. Leaf-sheaths longer than adjacent culm internode, hispid, with tubercle-based hairs. Ligule a ciliate membrane, 0.5 mm long. Leaf-blades lanceolate, 13–22 cm long, 9–18 mm

wide, coriaceous. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 6–25 cm long. Primary panicle branches appressed. Panicle axis scabrous, pilose. Panicle branches stiff, scabrous, pilose. Spikelets solitary. Fertile spikelets pedicelled. 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 elliptic, dorsally compressed, acute, 2.9–3 mm long, falling entire.

Glumes. Glumes reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.15–0.33 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1 length of spikelet, membranous, without keels, 5–7 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren. Lemma of lower sterile floret similar to upper glume, ovate, 1 length of spikelet, membranous, 5–7 -veined, acute. Fertile lemma elliptic, dorsally compressed, 2–6 mm long, indurate, without keel. Lemma surface striate, pubescent. Lemma margins involute. Palea involute, indurate.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southeast Mexico. **Mesoamerica**, **Caribbean**. Guatemala, Honduras, Nicaragua.

Chiapas.

Morronea parviglumis Hack.) Zuloaga & Scataglini. *Oesterr. Bot. Zeitschr.* 1901, 429. (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).

TYPE from Costa Rica. **Basionym or Replaced Name**: *Panicum parviglume* Hack., *Oesterr. Bot. Zeitschr.* 1901, 429 (1901). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Pittier 9080*, Costa Rica: in ripis fl. Río Torres prope San Jos?(W; ILT: US-80900 (fragm. ex W)). LT designated by Hitchcock & Chase, Contr. U.S. Natl. Herb. 15: 126 (1910). ST: *Tonduz 8448*, Sep-Nov 1893, Costa Rica: San Jos? prope S. Francisco de Guadelupe, buissons sur les bordes du Rio Corres (W; IST: US-80900 (fragm. ex W), US-471874).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *parvus*, small*; gluma*, husk. Glume or glumes short especially in comparison to lemmas.

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Panicinae.

Habit, Vegetative Morphology. Perennial. Rootstock evident. Culms decumbent, 100–120 cm long, 1.5 mm diam., rooting from lower nodes. Culm-internodes distally pilose, with tubercle-based hairs. Culm-nodes constricted, pubescent. Leaf-sheaths pilose, with tubercle-based hairs, outer margin hairy. Ligule a ciliolate membrane, 0.7–1 mm long. Collar bearded. Leaf-blade base broadly rounded, asymmetrical. Leaf-blades ovate, 8–20 cm long, 15–25 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface hispid, sparsely hairy, with tubercle-based hairs. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 20 cm long, 10 cm wide. Panicle axis scabrous. Panicle branches scabrous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1–2 length of fertile spikelet, scabrous, bearing a few hairs, hairy at tip.

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, compressed strongly, subacute, 2.2–2.5 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume oblate, 0.3–0.5 mm long, 0.2 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume ovate, 2.2–2.3 mm long, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea. Lemma of lower sterile floret similar to upper glume, ovate, 2.2–2.3 mm long, 1 length of spikelet, membranous, 5 -veined, acute. Fertile lemma ovate, dorsally compressed, 2 mm long, indurate, shiny, without keel. Lemma surface striate. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate.

Flower and Fruit. Anthers 3, 1 mm long, yellow.

2*n* = 36 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**. Belize, Costa Rica, El Salvador, Guatemala, Honduras.

Queretaro. Veracruz. Jalisco, Oaxaca. Chiapas.

Morronea trichidiachnis (Doell) Zuloaga & Scataglini. *Syst. Bot.* 38: 1084 (2013).

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. **Basionym or Replaced Name**: *Panicum trichidiachne* Doell, *Mart. Fl. Bras.* 2 (2): 339. (1877). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.F.M. Glaziou 6979*, 4 Jan 1875, Brazil: Rio de Janeiro (P; IT: US-81150 (fragm. ex P, B)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (365, as *Panicum*), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (271, Fig. 237 as *Panicum schiffneri*), F.O.Zuloaga et al, *Flora del Paraguay* 23 (1994) (315, Fig. 92 as *Panicum*), G.Harling & C.Persson, *Flora of Ecuador* (2006) (78: 33, Fig. 2 (2006) as *Panicum*).

Illustrations (Journals): *Darwiniana* (22: 38, Fig.9 (1979)as *Panicum*), *Smithsonian Contributions to Botany* (38: 1083, Fig. 4 (2013)).

Classification. Subfamily Panicoideae. Tribe: Paniceae. Subtribe Panicinae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 30–60 cm long, rooting from lower nodes. Leaf-sheaths pilose, with tubercle-based hairs. Ligule a ciliate membrane. Leaf-blades lanceolate, 10–15 cm long, 14–17 mm wide. Leaf-blade surface pubescent, hairy abaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–16 cm long, contracted about secondary branches. Spikelets solitary. Fertile spikelets pedicelled. 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 oblong, dorsally compressed, subacute, 1.5–1.75 mm long, falling entire.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume ovate, 0.2 length of spikelet, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1 length of spikelet, membranous, without keels, 5 -veined. Upper glume apex obtuse.

Florets. Basal sterile florets 1, male, with palea. Lemma of lower sterile floret similar to upper glume, oblong, 1 length of spikelet, membranous, 5 -veined, obtuse. Fertile lemma elliptic, dorsally compressed, 1.5 mm long, indurate, pallid, without keel, more than 3-veined. Lemma surface pubescent, hairy all along. Lemma margins involute. Lemma apex obtuse. Palea involute, indurate. Palea surface pubescent.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southwestern USA**, **Southeastern USA**, **Mexico**. Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Virginia. Central Mexico, Northeast Mexico, Gulf (Mexico), Southeast Mexico. **Mesoamerica**, **Caribbean**, **Northern South America**, **Western South America**, **Brazil**, **Southern South America**. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Dominican Republic, Haiti, Windward Islands, Puerto Rico. Venezuela. Colombia. Brazil Southeast, Brazil South. Paraguay.

Minas Gerais, Rio de Janeiro, Espirito Santo. Espirito Santo, Minas Gerais, Rio de Janeiro, Sao Paulo. Paraná. Misiones. Puebla. Hidalgo, Queretaro, San Luis Potosi. Veracruz. Chiapas.

Mosdenia leptostachys (Ficalho & Hiern) Clayton. *Kew Bull,* 25(2): 250 (1971).

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

TYPE from Angola. **Basionym or Replaced Name**: *Sporobolus leptostachys* Ficalho & Hiern, *Trans. Linn.Soc. Lond., Bot.* 2: 30 (1881). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Angola, R. Ninda: *Serpa Pinto* 58 (LISU holo).

Illustrations (Books): L.K.A. Chippindall, *Grasses and Pastures of South Africa* (1955) (108, Fig 81 as *M phleoides*), G.E.Gibbs Russell el al, *Grasses of Southern Africa* (1990) (223, Fig 140).

Derivation (Clifford & Bostock 2007): Gk. *leptos*, narrow; *stachys*, ear of corn. Inflorescences narrow.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Rhizomes elongated. Culms 40–90 cm long. Ligule a ciliolate membrane. Leaf-blades 2–3 mm wide.

Inflorescence. Inflorescence composed of racemes. Racemes 1, single, erect, multilateral, 4–14 cm long. Rhachis angular, glabrous on surface. Spikelets spreading, 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 lanceolate, curved, dorsally compressed, 2.5–4 mm long, falling entire. Spikelet callus square, pubescent, base truncate, attached transversely.

Glumes. Glumes similar, exceeding apex of florets, firmer than fertile lemma. Lower glume lanceolate, 2.5–4 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein conspicuous, scaberulous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 2 mm long, hyaline, without keel, 3 -veined, 0–3 -veined. Lemma apex obtuse. Palea hyaline, 2 -veined.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Africa.

Country /Province /State. **Southern Africa**. Limpopo, North-West, Gauteng, Mpumalanga.

Muhlenbergia aguascalientensis Y. Herrera-Arrieta & M. De la Cerda-Lemus. *Novon,* 5(3): 278 (1995).

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 Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *G.Garcia 2801*, 8 Nov 1986, Mexico: Aguascalientes: San Jose de Gracia Mun.: Playa Mariquitas, Monte Grande de Sierra Fria: 2850 mt (HUAA; IT: CIIDIR, ENCB, IEB, US-3335737).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Aguascalientes, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Culms erect, 30–58 cm long. Leaf-sheaths 1–1.5 cm long, mostly shorter than adjacent culm internode, without keel, striately veined, smooth or scaberulous. Leaf-sheath auricles erect, 1–2(–6) mm long. Ligule an eciliate membrane, 0.5–1 mm long, obtuse. Leaf-blades flat or conduplicate, 5–15 cm long, 1–2.5 mm wide. Leaf-blade surface scaberulous. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–8 cm long, 2–4 cm wide. Primary panicle branches ascending or spreading, 2–5 cm long. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2.5 mm long.

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, 5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 5–6.5 mm long, 1 length of upper glume, membranous, dark green, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 5–

6.5 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, dark green, without keels, 3 -veined. Upper glume lateral veins obscure. Upper glume surface asperulous. Upper glume apex acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous or pubescent, hairy at base, hairy on veins. Lemma apex dentate, 2 -fid, with lobes 0.2 mm long, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 20–35 mm long overall. Palea oblanceolate, 4.2–4.8 mm long, 2 -veined. Palea keels eciliate or pubescent, adorned below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.4–3 mm long, purple. Caryopsis with adherent pericarp, fusiform.

2*n* = 20 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northeast USA**, **Mexico**. Northeast Mexico.

Aguascalientes.

Muhlenbergia alamosae Vasey. *Coult. Bot. Gaz.* xvi.:146 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Palmer 407*, 25 Mar-8 Apr 1890, Mexico: Sonora: Sierra de Almos (US-81604; IT: GH, MEXU-5189, US-822802).

Illustrations (Journals): *Sida* (29: 77, Fig. 30 (2007)).

Derivation (Clifford & Bostock 2007): from Alamose, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–70 cm long, wiry. Leaf-sheaths without keel. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 5–15 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 6–12 cm long. Primary panicle branches ascending or spreading, 2–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1–2.5 mm long, 0.5–0.8 length of fertile spikelet.

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, 2–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate or ovate, 1–1.5 mm long, 0.66–0.75 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate or awned, 1 -awned, awn 0.5(–1) mm long. Upper glume lanceolate or ovate, (1–)1.5–2 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, purple, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, mucronate or awned, 1 -awned, awn 0.5–1 mm long.

Florets. Fertile lemma lanceolate, 2–3.2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acute, awned, 1 -awned. Principal lemma awn (5–)10–20 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.2 mm long. Caryopsis with adherent pericarp, fusiform, 1.2 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

Mexico State, Morelos, Puebla. Aguascalientes, Chihuahua, Durango, Guanajuato, Zacatecas. Baja California Sur, Sinaloa, Sonora. Jalisco.

Muhlenbergia alopecuroides (Griseb.) P.M.Peterson & Columbus. *Madrono* 55 (2): 159 (2008).

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**: *Lycurus alopecuroides* Griseb. *Abh. Konigl. Ges. Wiss. Gottingen,* 19: 255–256 (1874). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *P. G. Lorentz s.n. [Hb. Kurtz 548]*, Feb 1872, Argentina: Prov. Catamarca: cerca de Belén, en el altivalle de las Granadillas (GOET; IT: BA, BAA, CORD, SI, US-996080 (fragm. ex GOET)).

Recent Synonyms: *Lycurus setosus* (Nutt.) C.G. Reeder, *Phytologia*, 57(4): 287: (1985). *Pleopogon setosum* Nutt., *Proc. Acad. Nat. Sci. Philadelphia* 4: 25 (1848).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (143), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (203), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (343, Fig. 117).

Derivation (Clifford & Bostock 2007): L. *seta*, bristle; *-osa*, abundance. Each raceme subtended by a stout bristle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 20–50 cm long. Leaf-sheaths glabrous on surface or pubescent. Ligule an eciliate membrane, (1–)2–5(–6) mm long, white, entire, acuminate. Leaf-blades conduplicate, 1–10 cm long, 1–2 mm wide. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 0.5–10 cm long, 0.4–0.9 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis angular, scabrous, bearing deciduous spikelet clusters. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, fused to each other, united below, linear, unequal, 0.5–1 mm long, scaberulous.

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, 3.5–4 mm long, falling entire, deciduous in a cluster with fused pedicels.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 2 -veined. Lower glume apex awned, 2 -awned, awn 2–3 mm long. Upper glume oblong, 1–1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume awned, 1 -awned, awn 2–3 mm long.

Florets. Fertile lemma elliptic, 3.5–4 mm long, chartaceous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 2–3 mm long overall. Palea elliptic, 2 -veined. Palea keels ciliate. Palea apex acuminate.

Flower and Fruit. Anthers 3, 1.7–2 mm long. Caryopsis with adherent pericarp, fusiform.

$2n = 4020$ (Peterson et al 2007, as *Lycurus setosus*).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Oklahoma. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico. **Western South America**, **Southern South America**. Argentina Northwest.

Catamarca, Jujuy, Mendoza, Salta, San Juan, San Luis, Tucuman. Cordoba. Coahuila, Chihuahua, Durango, San Luis Potosi. Baja California, Sonora.

Muhlenbergia ammophila P.M.Peterson. *Am. J. Bot.* 97 (9): 1543 (2010).

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**: *Graphephorum flexuosum* Thurb. ex A. Gray, *Proc. Acad. Nat. Sci. Philadelphia* 1863: 78 (1864). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *E. Hall & J.P. Harbour 635*, 1862, USA: Nebraska (US-82055).

Recent Synonyms: *Redfieldia flexuosa* (Thurb.) Vasey, *Bull. Torrey Bot. Club,* 14: 133, t. 70 (1887).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (43), F.W.Gould, *The Grasses of Texas* (1975) (240, Fig. 127), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (19, Fig. 3).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 50–100 cm long. Ligule a fringe of hairs. Leaf-blades filiform, involute, 10–25 cm long, 1.5–4 mm wide. Leaf-blade apex filiform.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 20–50 cm long. Panicle branches capillary, flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

Fertile Spikelets. Spikelets comprising 2–6 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, 5–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 0.2 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 0.75–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–5 mm long, 0.5–1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex acuminate.

Florets. Fertile florets divergent, free at tip. Fertile lemma lanceolate, 4–5 mm long, chartaceous, keeled, 3 -veined, 0–3 -veined. Lemma margins pubescent, hairy below. Lemma apex acute or acuminate, muticous or mucronate. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**. Colorado, Washington, Wyoming. Illinois, Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Arizona, Utah. New Mexico, Texas.

Muhlenbergia andina (Nutt.) Hitchcock. *U. S. Dept. Agric. Bull.* No. 77a, 14 (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 USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *W. Gambel*, Sept-Oct 1894, USA: California.

Recent Synonyms: *Calamagrostis andina* Nut., *Journ. Acad. Sc. Philad. N. S*. 1:. 187. (1847).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (157).

Derivation (Clifford & Bostock 2007): L. *-ina,* indicating possession. From other high mountains such as those of the north-western United States.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms 35–60(–80) cm long. Culm-internodes smooth, distally glabrous or pubescent. Lateral branches lacking or sparse. Leaf-sheaths puberulous. Ligule a ciliolate membrane, 0.6–1.3 mm long. Leaf-blades 4–16 cm long, 2–3 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, interrupted, dense, 4–10(–13) cm long, 0.5–1.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume lanceolate, 2–4 mm long, 1–1.25 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, 2–3.2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough on veins, villous. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 4–8 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–1.5 mm long, yellow. Caryopsis with adherent pericarp, fusiform, 1 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**, **Northwest USA**, **Southwestern USA**, **South-central USA**. British Columbia, Manitoba, Saskatchewan. Colorado, Idaho, Montana, Oregon, Wyoming. Arizona, California, Nevada, Utah. New Mexico, Texas.

Rest of Chile- Biobio, La Auracania, Maule, O'Higgins, Santado, Valpariso.

Muhlenbergia angustata (Presl) Kunth. *Enum. Pl.* i. 202. (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 Peru. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Haenke s.n.*, Peru (PR).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (144), S.A.Renvoize, *Gramineas de Bolivia* (1998) (339, Fig. 71), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 74, Fig. 10 (2001)).

Illustrations (Journals): *Ruizia* (13:263, Fig 30g-i (1993)).

Derivation (Clifford & Bostock 2007): L. *angusta*, narrow; *-ata,* possessing. Leaf-blades narrow.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 50–100 cm long. Ligule an eciliate membrane, 5–8 mm long. Leaf-blades conduplicate, 10–30 cm long, 2–4 mm wide, stiff. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 10–20 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 lanceolate, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 5.5–6.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acuminate. Upper glume lanceolate, 5.5–6.5 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 6–7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 5–6 mm long overall. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia, Colombia, Ecuador, Peru.

Salta, Tucuman. Cordoba.

Muhlenbergia annua (Vasey) Swallen. *Contrib. U. S. Nat. Herb.* xxix. 204 (1947).

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 Synonomy Database: HT: *Palmer 4a*, 1885, Mexico: Chihuahua: Noragachi (US-82016; IT: K, NY-19971 [Palmer 4]).

Illustrations (Journals): *Sida* (29: 78, Fig. 31 (2007)).

Derivation (Clifford & Bostock 2007): L. annual. Annuals.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms 8–22 cm long, 0.2–0.3 mm diam. Culm-internodes 0.3–2.5 cm long, scaberulous. Leaf-sheaths 0.2–2.5 cm long, smooth or scaberulous. Ligule an eciliate membrane, 1.6–2.5 mm long, erose or lacerate, acute. Leaf-blades flat or involute, 1–6 cm long, 0.8–1.5 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 5–13 cm long, 1.4–6 cm wide. Primary panicle branches ascending, 1–2 -nate, 1–3.6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3–8 mm long.

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, 1.6–2.1 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1.6–2.1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, muticous or mucronate. Upper glume lanceolate, 1.6–2.1 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, 1.4–1.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex acute, muticous. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.6 mm long. Caryopsis with adherent pericarp, fusiform, 0.9–1.1 mm long.

$2n = 20$ (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Chihuahua, Durango.

Muhlenbergia appressa Goodding. *Journ. Wash. Acad. Sci.* i. 504 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Harrison & Kearney 1493*, 28 Mar 1926, USA: Arizona: Pinal or Gila Co.: Devil's Canyon (US-1296986).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (166).

Derivation (Clifford & Bostock 2007): L. appressed. Lateral branches of panicle held erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, robust, 10–40 cm long. Culm-internodes antrorsely scabrous. Lateral branches ample. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 2–3 mm long, lacerate, obtuse. Leaf-blades flat or conduplicate, 1–5 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough abaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5–20 cm long. Primary panicle branches appressed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

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, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex entire or erose, obtuse. Upper glume oblong, 1–2 mm long, 0.2–0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex entire or erose, obtuse.

Florets. Fertile lemma lanceolate, 5–6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scaberulous, rough above. Lemma margins pubescent, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 10–30 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.9 mm long. Caryopsis with adherent pericarp, fusiform, 2–2.5 mm long, light brown.

Cleistogenes present, in lower sheaths.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **Mexico**. Arizona. Northwest Mexico. Baja California, Baja California Sur.

Muhlenbergia arenacea (Buckl.) Hitchcock. *Proc. Biol. Soc. Wash*. xli. 161 (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *C.H. Wright 737*, May 1849-Oct 1849, USA: Texas: western Texas, hillsides (GH; ILT: US-997371). LT designated by Hitchcock, Man. Grass. U.S. 886 (1935), but without citing a specific sheet in a specific herbarium; specific sheet cited by Herrera & Peterson, Sida, Bot. Misc. 29: 13 (2007).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (182), F.W.Gould, *The Grasses of Texas* (1975) (253, Fig. 132).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 940, fig.1 (2007)).

Derivation (Clifford & Bostock 2007): L. *arena*, sandy place; *-acea,* indicating position; Species of beach dunes or deserts.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Rhizomes elongated. Culms decumbent, 10–20(–40) cm long. Culm-internodes striate, antrorsely scabrous. Leaves mostly basal. Leaf-sheaths mostly shorter than adjacent culm internode, without keel. Leaf-sheath auricles erect, 1–2 mm long. Ligule an eciliate membrane, 0.5 mm long, lacerate. Leaf-blades flat or conduplicate or involute, 1–3(–6) cm long, 0.5–1.5 mm wide. Leaf-blade midrib widened. Leaf-blade margins cartilaginous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 5–15 cm long, 4–12 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

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, 1.5–2 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, 0.9–1.3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth to scabrous. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 0.9–1.3 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth to scabrous. Upper glume apex acute, muticous or mucronate.

Florets. Fertile lemma lanceolate, 1.5–2 mm long, membranous, purple, keeled, 3 -veined, 0–3 -veined. Lemma apex obtuse, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Durango, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Sonora.

Muhlenbergia arenicola Buckl. *Prod. Acad. Sc. Philad.* 1862:91 (1863).

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 Synonomy Database: LT: *C. Wright 735*, no date, USA: Texas: arid places in western Texas to El Paso (PH; ILT: US-87239 (fragm.)). LT designated by Hitchcock, Man. Grass. U.S. 886 (1935), but without citing a specific sheet in a specific herbarium; specific sheet designated by Herrera & Peterson, Sida, Bot. Misc. 29: 14 (2007). ST: *Fendler 968*, USA: Texas (PH). ST: *Fendler 969*, USA: Texas (PH).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (174).

Illustrations (Journals): *Sida* (31: 77, Fig. 32 (2007)), *J. Bot. Res. Inst. Texas* (1(2) 949, fig.4 (2007)).

Derivation (Clifford & Bostock 2007): L. *arena*, sandy place; -*cola*, dweller. Species of sandy habitats.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms geniculately ascending, 20–60 cm long. Culm-nodes pubescent. Leaves basal and cauline. Leaf-sheath auricles absent or erect. Ligule an eciliate membrane, 2–7(–9) mm long. Leaf-blades 4–14 cm long, 1–2 mm wide, glaucous. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 12–25(–30) cm long, 5–15 cm wide. Primary panicle branches spreading. Panicle branches stiff. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 2.5–3.5 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, 1.5–2(–2.5) mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acute or acuminate, muticous or awned. Upper glume lanceolate, 1.5–2(–2.5) mm long, 0.5–0.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acute or acuminate, muticous or awned.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scabrous, rough above. Lemma margins pubescent, hairy above. Lemma apex acute, awned, 1 -awned. Principal lemma awn 0.5–2.5(–3.5) mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.7–1.9 mm long. Caryopsis with adherent pericarp, fusiform.

$2n = 80$ (1 ref TROPICOS, Peterson et al 2007), or 82 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Kansas. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Jujuy. Coahuila, Chihuahua, San Luis Potosi, Zacatecas. Sinaloa.

Muhlenbergia argentea Vasey. *Bull. Torrey Bot. Club,* xiii 252. (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Palmer 160*, Aug 1885-Nov 1885, Mexico: Chihuahua: Hacienda San Miguel, near Batopilas (US-995727; IT: US-995726, W-1916–27631). Annotated by Reeder.

Illustrations (Journals): *Sida* (29: 80, Fig. 33 (2007)).

Derivation (Clifford & Bostock 2007): L. silvery. Glumes or lemmas silvery.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms 30–45 cm long. Lateral branches lacking. Ligule an eciliate membrane. Leaf-blades 5–15 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle open, lanceolate, nodding, 10–15 cm long. Primary panicle branches 2 -nate, simple. Panicle branches capillary. 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, subterete, 3 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 or ovate, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral

veins absent. Lower glume apex acuminate. Upper glume lanceolate or ovate, 0.66–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex dentate, 3 -fid, acuminate.

Florets. Fertile lemma oblanceolate, 3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous, hairy on veins. Lemma apex dentate, 2 -fid, incised 0.25 of lemma length, awned, 1 -awned. Principal lemma awn from a sinus, 6 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Chihuahua.

Muhlenbergia arizonica Scribn. *Bull. Torrey Bot. Club,* xv. 8:76 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *C.G. Pringle 402*, 16 Sep 1885, Mexico: State Chihuahua (LE, MO, US). LT: *C.G. Pringle s.n.*, 11 Sep 1884, USA: Arizona: mesas near the Mexican boundary (US-81603; ILT: W-1916–27633). LT designated by Hichc. in Mex. Grasses, Contr. U.S. Natl. Herb. 17: 297 (1913).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (174).

Illustrations (Journals): *Sida* (29: 81, Fig. 34 (2007)).

Derivation (Clifford & Bostock 2007): L. *-ica,* belonging to. From Arizona, USA.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect or geniculately ascending, slender, 15–40 cm long. Culm-internodes distally pubescent. Leaf-sheaths keeled, smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 1–2 mm long, entire or erose, obtuse. Leaf-blades flat or conduplicate, 2–5 cm long, 1–2 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface smooth or scaberulous, rough abaxially, glabrous or puberulous, hairy adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–15 cm long, 4–8 cm wide. Primary panicle branches spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume oblong, 1 mm long, 0.33–0.4 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma lateral veins prominent. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1.5 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–1.6 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico. Northwest Mexico.

Baja California, Baja California Sur.

Muhlenbergia arsenei Hitchcock. *Proc. Biol. Soc. Wash.* xli. 161. (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Bro. Arsene 16405*, 17 Aug 1926, USA: New Mexico: Sandoval Co.: Sulphur Springs (US-1298444; IT: US-81602).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (170).

Illustrations (Journals): *Sida* (29: 82, Fig. 35 (2007)).

Derivation (Clifford & Bostock 2007): in honor of Gustav Joseph Brouard Arshne (1867–1938) cleric and botanist who collected in New Mexico, USA.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rootstock evident. Rhizomes short. Culms erect or geniculately ascending, 10–45 cm long. Culm-internodes distally pubescent (below nodes). Leaves mostly basal. Leaf-sheaths puberulous. Ligule an eciliate membrane, 1–1.5 mm long, erose. Leaf-blades ascending or spreading, flat or involute, 1–6 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5–11 cm long. Primary panicle branches appressed or ascending, 3–4 cm long. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 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, laterally compressed, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or exceeding apex of florets. Lower glume oblong, 2.5–4 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, rough above. Lower glume apex acuminate to setaceously acuminate. Upper glume oblong, 2.5–4 mm long, 0.75–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous, rough above. Upper glume apex acuminate to setaceously acuminate.

Florets. Fertile lemma lanceolate, 3.4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 10–20 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–1.8 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona, California, Nevada. New Mexico. Northeast Mexico, Northwest Mexico.

Chihuahua. Baja California Sur.

Muhlenbergia articulata Scribn. *Proc. Acad. Phila.* 1891:298 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 3477*, 7 Oct 1890, Mexico: San Luis Potos? Cárdenas (VT: IT: US-746291).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *articulus*, joint; *-ata*, possessing. Jointed with spikelets readily articulating.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 60 cm long. Culm-internodes distally glabrous. Leaf-sheaths scaberulous, puberulous. Ligule an eciliate membrane, 3–7

mm long, scarious, obtuse. Leaf-blades deciduous at the ligule, involute, 20–30 cm long, 1–3 mm wide. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted, linear, 30–40 cm long. Primary panicle branches appressed. 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, shorter than spikelet. Lower glume lanceolate, 3–4 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 3.5–4.5 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma lanceolate, 4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 20–40 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

Puebla. Chihuahua, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Tamaulipas. Sonora. Guerrero.

Muhlenbergia asperifolia (Nees & Meyen) Parodi. *Rev. Fac. Agron. & Vet., Buenos Aires,* vi. 117 (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *Meyen s.n.*, Mar 1831, Chile: Río Mayno, 1000' alt (B, BAA-3464 (fragm. ex B), LE-TRIN-1679.01 b). ST: *Meyen s.n.*, Chile: Copiap?(LE-TRIN-1679.01 a).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (145), K.F.Best, et al, *Prairie Grasses* (1971) (155), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (180), M.N.Correa, *Flora Patagonica* Parte III, Gramineae (1978) (*Fl. Pat.* 3: 469, Fig. 314 (1978)), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (70, Fig. 16).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 951, fig.5 (2007)).

Derivation (Clifford & Bostock 2007): L. *asper,* rough; *folium*, leaf. Leaf-blades rough.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms geniculately ascending or decumbent, 10–50 cm long. Ligule an eciliate membrane, 0.2–0.5 mm long. Leaf-blades flat or conduplicate, 2–6 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle, not deciduous as a whole or deciduous as a whole. Panicle open, ovate, effuse, 6–15 cm long, 6–14 cm wide. Primary panicle branches spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, scaberulous.

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, compressed slightly, 1.5–2 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, 1–1.5 mm long, 1 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume lanceolate, 1–1.5 mm long, 0.6–0.75 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 1.5–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex erose, obtuse, muticous or mucronate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.2 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.8–0.9 mm long.

2*n* = 20 (1 ref TROPICOS, Peterson et al 2007), or 22 (Peterson et al 2007), or 28 (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Western Canada**, **Eastern Canada**, **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Alberta, British Columbia, Manitoba, Saskatchewan. Ontario. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Illinois, Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico, Southwest Mexico. **Western South America**, **Southern South America**. Bolivia. Argentina Northeast, Argentina Northwest, Chile North, Chile Central, Chile South.

Catamarca, Jujuy, La Rioja, Mendoza, San Juan, Tucuman. Buenos Aires, Cordoba, Distrito Federal, La Pampa. Chubut, Neuquén, Río Negro. Tarapaca, Antofagasta, Atacama. Coquimbo, Santiago. Los Lagos. Coahuila, Chihuahua, Durango, San Luis Potosi. Baja California. Jalisco.

Muhlenbergia atacamensis Parodi. *Rev. Argent. Agron.* xv. 248 (1948).

Accepted by: R.J.Soreng et al., *Catalogue of New World Grasses* (2000–2003) and online (as *Chaboissaea*), 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 Synonomy Database: HT: *L.R. Parodi 9656*, 15 Feb 1931, Argentina: Jujuy: La Quiaca, 3442 m (BAA-1623; IT: BAA-1624, SI, US-1502428).

Recent Synonyms: *Chaboissaea atacamensis* (Parodi) P.M. Peterson & C.R. Annable, *Madrono,* 39(1): 19 (1992).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (146).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Province de Atacana, Chile.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, weak, (3–)5–10(–15) cm long, 0.3–0.4 mm diam., without nodal roots. Lateral branches ample. Leaf-sheaths 1–2.4 cm long, glabrous on surface. Ligule an eciliate membrane, 1.5–3.2 mm long, acuminate. Leaf-blades 1.2–7 cm long, 0.7–3 mm wide, flaccid. Leaf-blade surface scaberulous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate or elliptic, 1–5.4 cm long, 0.4–2.4 cm wide, contracted about primary branches. Primary panicle branches 6–10 in number, appressed or ascending, 1 -nate, 0.3–1.8 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long, scabrous.

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 elliptic, laterally compressed, compressed slightly, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1–1.7 mm long, 0.75 length of upper glume, membranous, yellow or mid-green, 1-keeled, keeled above, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.3–2 mm long, 0.5 length of adjacent fertile lemma, membranous, yellow or mid-green, 1-keeled, keeled above, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.8–2.9 mm long, cartilaginous, yellow and grey, mottled with last colour, keeled, keeled above, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma hairs 0.1–0.2 mm long. Lemma apex acute or acuminate, muticous or awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea 1.7–2.8 mm long, cartilaginous, 2 -veined. Palea keels smooth. Palea apex with excurrent keel veins. Apical sterile florets 1 in number, male, lanceolate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.9–1.1 mm long, green. Caryopsis with adherent pericarp, fusiform, 1.3–1.5 mm long, light brown.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America** and **Southern South America**. Bolivia. Argentina Northwest.

Jujuy, Salta.

Muhlenbergia aurea Swallen. *Contrib. U. S. Nat. Herb.* xxix. 411 (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 Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 33175*, 31 Dec 1939, Guatemala: Quezaltenango (F-1057948; IT: US-2236470).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. golden-yellow. With spikelets or pedicels or other parts invested in golden-yellow hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 75–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths keeled, antrorsely scabrous. Leaf-sheath auricles erect, 0.8–3 mm long. Ligule an eciliate membrane, 0.5–1.5 mm long. Leaf-blades flat, 20–45 cm long, 2.5–5 mm wide. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 25–35 cm long, 7–8 cm wide. Primary panicle branches 12–15 cm long. Panicle branches flexible. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, 2–4 mm long, scaberulous.

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, 1.7–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs 0.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2 mm long, 1 length of upper glume, membranous, yellow, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.5–2 mm long, 0.9 length of adjacent fertile lemma, membranous, yellow, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 1.7–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scabrous, rough above. Lemma margins pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn 10–15 mm long overall. Palea 2 -veined. Palea surface smooth or scaberulous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1 mm long. Filaments free. Caryopsis with adherent pericarp, fusiform, 1 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Guatemala.

Muhlenbergia beyrichiana Kunth. *Enum. Pl.* 1: 200 (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).

TYPE from Brazil. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *Catal B' No 1028*, Voyage d'Auguste de Saint-Hilaire de 1816 a 1821, Brasil: Province de Saint-Paul (P).

Recent Synonyms: *Pereilema beyrichianum* (Kunth) Hitchcock, *Contrib. U. S. Nat. Herb.* 24: 385 (1927).

Illustrations (Books): G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 89, Fig. 13 (2001)).

Illustrations (Journals): *Ruizia* (13:269, Fig 31e-g (1993)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Heinrich Carl Beyrich (1796–1834) German-born United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 40–80 cm long, rooting from lower nodes. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.7–1 mm long. Leaf-blades 10–20 cm long, 5–8 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, continuous or interrupted, 10–20 cm long, 1–2 cm wide, contracted about primary branches. Primary panicle branches appressed, 1 cm long, bearing 1–3 fertile spikelets on each lower branch, bearing spikelets almost to the base. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 3–4 in the cluster. Companion sterile spikelets sessile, 2–3 in the cluster. Involucre composed of imperfect spikelets, cuneate. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets represented by awns, comprising a tuft of awns, 3 mm long, persistent. Companion sterile spikelet glumes glabrous.

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, 1–1.5 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 ovate, 0.7–1 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, awned, 1 -awned, awn 3–4 mm long. Upper glume lanceolate, 0.7–1 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, awned, 1 -awned, awn 3–4 mm long.

Florets. Fertile lemma lanceolate, 1–1.5 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn straight, 15–20 mm long overall. Palea 1 length of lemma. Palea keels approximate. Palea apex acuminate, with excurrent keel veins.

Flower and Fruit. Anthers 3, 0.7–1 mm long, purple. Caryopsis with adherent pericarp.

$2n = 80$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**, **Brazil**. Guatemala. Venezuela. Colombia, Ecuador, Peru. Brazil West Central.

Goias, Minas Gerais, Rio de Janeiro, Espirito Santo. Distrito Federal. Chiapas.

Muhlenbergia biloba Hitchcock. *Contrib. U. S. Nat. Herb.* 17: 294 (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 (as *Muhlenbergia biloba*), U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name**: *Bealia mexicana* Scribn., *Proc. Calif. Acad. Ser.* 2, 2: 212 (1890). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *C.G. Pringle 819*, 7 Oct 1886, Mexico: Chihuahua: near Chihuahua, thin soil of dry porphyry mts. (US-995611; ILT: LE, MO, NME, NY, UC, US-967198, US-723648, US-820886, US-1645965, US-90613, VT, WIS). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 17(3): 294 (1913); redesignated by Peterson (without sheet no.), Madroqo 36: 262 (1989).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating origin. From Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect, 10–30 cm long. Leaf-sheaths antrorsely scabrous. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades 1–3 cm long, 0.5–1 mm wide. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal or ovate, 3–7 cm long. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, scaberulous, tip pyriform.

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, compressed slightly, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets, similar to fertile lemma in texture. Lower glume elliptic, 3–3.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined.

Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex obtuse. Upper glume elliptic, 3–3.5 mm long, 1.2 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 lemma elliptic, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface villous. Lemma apex lobed, 2 -fid, incised 0.25–0.33 of lemma length, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 5–10 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface villous. Palea apex obtuse.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico.

Chihuahua, Durango. Sonora.

Muhlenbergia brandegei C. G. Reeder. *Madrono,* xiii. 248 (1956).

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 Synonomy Database: Mexico, Santa Margarita Is.: Brandegee 16 (UC holo, US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Townsend Stith Brandegee (1843–1925) United States civil engineer and botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 15–25 cm long. Culm-internodes scaberulous. Leaf-sheaths smooth to antrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 0.7–1 mm long, erose. Leaf-blades 3–7 cm long, 1–2 mm wide. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 3–10 cm long, 0.5–0.7 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

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, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume oblong, 3–4.5 mm long, 1 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 oblong, 3–4.5 mm long, 1–1.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein conspicuous, scabrous. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, 5–8 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.5 mm long, purple. Caryopsis with adherent pericarp, fusiform, 1.4–1.8 mm long, dark brown.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northwest Mexico.

Baja California Sur.

Muhlenbergia breviaristata (Hack.) Parodi. *Physis,* ix. 219 (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).

TYPE from Argentina. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Lillo 11322 [Stuckert hb. 22470]*, Argentina: Tucumán: Lara, a 3200 m. alt. (W; IT: US-3412353 (fragm. ex W)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis,* short; *arista*, bristle; *-ata*, possessing. Glumes or lemmas shortly awned.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 50–100 cm long. Ligule an eciliate membrane, 10–15 mm long, acute. Leaf-blades convolute, 20–40 cm long, 1–3 mm wide. Leaf-blade surface scabrous, glabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, 20–30 cm long, 1–2 cm wide. Primary panicle branches 6–9 cm long. Panicle branches capillary, scabrous. 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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume elliptic or ovate, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic or ovate, 1–2 mm long, 0.33–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma surface asperulous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 3–4 mm long overall, 1 length of lemma. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northwest.

La Rioja, Salta, Tucuman.

Muhlenbergia breviculmis Swallen. *Contrib. U. S. Nat. Herb.* xxix. 408 (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 Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Steyermark 49905*, 2 Aug 1942, Guatemala: Huehuetenango: Cerro Chemalito, Sierra de los Cuchumatanes, 3.5 mi W of Santa Eulalia, 3100–3150 m (US-1935054; IT: F, US-2208654).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis*, short; *culmus*, stalk. Culms short.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived, caespitose, clumped loosely. Culms erect or geniculately ascending, 5–9 cm long. Culm-internodes distally glabrous. Leaf-sheaths mostly shorter than adjacent culm internode, without keel, striately veined, glabrous on surface. Ligule an eciliate membrane, 0.8–1 mm long, erose. Leaf-blades flat or conduplicate, 1.5–2 cm long, 0.5–1 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle, exserted. Panicle open, 15–40 cm long, 1.5–2 cm wide. Primary panicle branches ascending, 0.8–1 cm long. Panicle branches stiff. 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, 2.5–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous, truncate.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.2–1.5 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume lanceolate, 1.5–1.7 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 2.2–3 mm long, membranous, grey, without keel, 3 -veined, 0–3 -veined. Lemma apex acute, muticous or mucronate, 1 -awned. Principal lemma awn 0–1 mm long overall. Palea 2 -veined. Palea surface glabrous. Palea apex acute.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.2 mm long, purple. Caryopsis with adherent pericarp, ellipsoid, 1 mm long, red, obtuse.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Guatemala.

Muhlenbergia brevifolia Scribn. ex Beal. *Grasses N. Amer.* ii. 254 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 4736*, 6 May 1893, Mexico: Jalisco: near Guadalajara (MSC; IT: US-250853).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis*, short; *folium*, leaf. Leaf-blades shorter than those of some other species in the genus or relative to the length of the culm.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rootstock evident. Rhizomes elongated. Culms slender, 20–30 cm long, without nodal roots or rooting from lower nodes. Lateral branches ample, arising from lower culm. Leaf-sheaths 0.5–2 cm long, glabrous on surface. Leaf-sheath auricles erect, 0.5–1 mm long. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades spreading, flat or involute, 1–3(–5) cm long, 1–2 mm wide, stiff. Leaf-blade surface pilose, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 2–5 cm long. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, scaberulous.

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, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2.5–3.5 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 acuminate, muticous or awned, 1 -awned. Upper glume lanceolate, 2.5–3.5 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, muticous or awned, 1 -awned.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn flexuous, 3–15 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Southwest Mexico.

Durango, Guanajuato. Jalisco, Nayarit.

Muhlenbergia breviligula Hitchcock. *N. Am. Fl.* xvii. 458 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.S. Hitchcock 9063*, 2 Dec 1911, Guatemala (US-995888).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis*, short; *ligula*, small tongue. Ligule very short.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 75–140 cm long, 3 -noded. Culm-internodes smooth or scaberulous. Culm-nodes glabrous. Leaf-sheaths wider than blade at the collar, keeled. Ligule a ciliolate membrane, 0.1–2 mm long. Leaf-blades flat or conduplicate, 24–47 cm long, 2–3 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, nodding, 30–50 cm long, 3–9 cm wide. Primary panicle branches ascending, 6–12 cm long. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1.5 mm long, scabrous.

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, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 2–3 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2–2.6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, flexuous, 7–17 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface pubescent, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southeast Mexico. **Mesoamerica**. Guatemala, Honduras, Nicaragua.

Chiapas.

Muhlenbergia brevis Goodding. *Journ. Wash. Acad. Sci.* i. 505 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *O.B. Metcalfe 671*, 8 Sep 1903, USA: New Mexico: Socorro Co.: Mogollon Mts., 8000 ft (US-495644; IT: GH, K, MO, NMC, NY, P).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (197), F.W.Gould, *The Grasses of Texas* (1975) (283, Fig. 150).

Illustrations (Journals): *Sida* (29: 83, Fig. 36 (2007)).

Derivation (Clifford & Bostock 2007): L. *brevis*, short. Culms short.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, slender, 3–20 cm long. Culm-internodes antrorsely scabrous. Lateral branches ample, arising from lower culm. Leaf-sheaths longer than adjacent culm internode, keeled, striately veined. Leaf-sheath auricles absent or erect. Ligule an eciliate membrane, 1–3 mm long, lacerate. Leaf-blades flat or involute, 0.5–4 cm long, 1–2 mm wide. Leaf-blade midrib widened. Leaf-blade surface scabrous, rough on both sides, glabrous or puberulous, hairy adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle contracted, linear, dense, 1–12 cm long, 0.5 cm wide. Primary panicle branches bearing 2–3 fertile spikelets on each lower branch, bearing spikelets almost to the base. Panicle axis bearing deciduous branches. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, falling entire, deciduous with accessory branch structures.

Glumes. Glumes dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 1–2 mm long, 0.5–0.66 length of upper glume, membranous, 1-keeled, 2 -veined. Lower glume surface scabrous. Lower glume apex dentate, 2 -fid, acute. Upper glume lanceolate, 1.5–4 mm long, 0.3–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate to setaceously acuminate.

Florets. Fertile lemma lanceolate, 4–5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma surface scabrous, pubescent, hairy below, hairy between veins. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 10–20 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.8 mm long. Caryopsis with adherent pericarp, fusiform, 2–2.5 mm long.

n = 10 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Southwest Mexico.

Distrito Federal, Mexico State. Chihuahua, Durango, San Luis Potosi, Zacatecas. Jalisco.

Muhlenbergia breviseta Fourn. *Mex. Pl. Enum., Gram*. 83 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *F. Müller 1453*, 1853, Mexico: Veracruz: Orizaba (P; ILT: US-81601). LT designated by Hitchcock, N. Am. Fl. 17(6): 464 (1935), but herbarium not specified; cited by McVaugh, Fl. Novo-Gal. 14: 233 (1983). ST: *F. Müller 2003*, Mexico: Orizaba (IST: US-81601). ST: *F. Müller 2093*, Mexico: Orizaba (IST: US-81601). ST: *Schaffner 111*, Mexico: Orizaba (P). ST: *Schaffner 157*, Mexico: Orizaba (P). "in pl. ed. Hohen.".

Illustrations: None found.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, scaly. Culms slender, 5–20(–30) cm long, 0.3–0.8 mm diam., wiry. Culm-nodes pubescent. Leaf-sheaths longer than adjacent culm internode, wider than blade at the collar, scaberulous. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades filiform, conduplicate or involute, 1–4 cm long, 0.5–1 mm wide, stiff. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade apex abruptly acute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, effuse, 2–3.5(–7) cm long, 1 cm wide. Primary panicle branches ascending, 1 cm long, bearing 3–12 fertile spikelets on each lower branch. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, 1–2.5 mm long, tip widened.

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, 1.3–1.5 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 or ovate, 0.7–1.2 mm long, 1 length of upper glume, membranous, purple, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate, muticous or mucronate. Upper glume lanceolate or ovate, 0.7–1.2 mm long, 0.5–0.75 length of adjacent fertile lemma, membranous, purple, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, 1.3–1.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma lateral veins obscure. Lemma margins ciliate. Lemma apex erose, obtuse, muticous or mucronate. Palea 1 length of lemma, 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.8–1.2 mm long. Caryopsis with adherent pericarp, fusiform, 0.8 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Gulf (Mexico), Southwest Mexico.

Mexico State. Veracruz. Guerrero, Jalisco, Michoacan, Nayarit.

Muhlenbergia brevivaginata Swallen. *Bol. Soc. Bot. Mexico,* No. 23. 30 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. McVaugh 13671*, 21 Oct 1952, Mexico: Jalisco (US-2118495).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *brevis,* short; *vagina*, sheath; *-ata*, possessing. Leaf-sheaths only about half the length of the succeeding internode.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, scaly. Culms 10–40 cm long, wiry. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades filiform, involute, 8–15 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence a panicle, comprising 10–20(–30) fertile spikelets. Panicle contracted, lanceolate, 1–3.5(–4) cm long, bearing few spikelets. Primary panicle branches appressed, bearing 1–3 fertile spikelets on each lower branch. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–6(–10) mm long.

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, 4–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate or ovate, 1.3–2.4 mm long, 0.5–0.75 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate or ovate, 2.5–3.5 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, (4–)4.5–5.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight, 3–8 mm long overall. Palea 0.8 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.2–2.7(–3) mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Southwest Mexico.

Aguascalientes, Durango, Zacatecas. Guerrero, Jalisco, Nayarit.

Muhlenbergia bryophilus (Doell). P.M.Peterson,. *Caldasia* 31 (2): 279 (2009).

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. **Basionym or Replaced Name**: *Aegopogon bryophilus* Doell, *Mart. Fl. Bras.* 2(3): 239. (1878). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *A.F.M. Glaziou 11661*, 10 Apr 1879, Brazil: Minas Gerais (US-1280026).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (146), S.A.Renvoize, *Gramineas de Bolivia* (1998) (369, Fig. 79), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (345, Fig. 118), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 121, Fig. 18 (2001)).

Derivation (Clifford & Bostock 2007): Gk. *bryon*, moss; *phileo,* love. Growing amongst mosses.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, 10–25 cm long, 0.2–0.8 mm diam. Leaves cauline. Ligule an eciliate membrane. Leaf-blades 5–10 cm long, 1 mm wide. Leaf-blade surface scabrous, rough abaxially, pilose, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 15–25, borne along a central axis, spreading, cuneate, unilateral, 0.3–0.4 cm long, bearing a triad of spikelets. Central inflorescence axis 2–4 cm long. Rhachis obsolete, deciduous from axis. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, linear, 1 mm long, scabrous.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, laterally compressed, 0.5–1.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, glabrous, entire, acuminate, awned, both glumes awned, with 0.5–1 mm long awn. Companion sterile spikelet lemmas 1, exserted from glumes, 1-awned, with 1.5–3 mm long awn.

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, 3–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume linear, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex entire, acuminate, muticous. Upper glume linear, 1–1.5 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex entire, acuminate, muticous.

Florets. Fertile lemma elliptic, laterally compressed, lanceolate in profile, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins ribbed. Lemma surface scabrous. Lemma apex lobed, 3 -fid, with outer lobes longer, with lanceolate lobes, with lobes 0.5 mm long, incised 0.1–0.3 of lemma length, acuminate, awned, 3 -awned. Principal lemma awn 5–10 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 0.5 mm long, shorter than principal. Palea lanceolate, 1 length of lemma, 2 -veined. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid, acute, awned, awns 0.5–2 mm long.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

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

Country /Province /State. **Malesia**, **Papuasia**. New Guinea. **Western South America**, **Brazil**, **Southern South America**. Bolivia, Colombia, Ecuador, Peru. Brazil Southeast, Brazil North. Argentina Northwest.

Minas Gerais, Rio de Janeiro, Espirito Santo. Jujuy, Salta, Tucuman.

Muhlenbergia bushii R. W. Pohl. *Amer. Midl. Nat.* 1 ii. 534 (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Palmer 2734*, 20 September 1909, USA: Missouri, Webb City (MO-757387). IT: *Palmer 2734*, 20 September 1909, Missouri: Webb City (MO!).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (159).

Derivation (Clifford & Bostock 2007): in honor of Benjamin Franklin Bush (1858–1937) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms 30–90 cm long. Culm-internodes smooth, distally glabrous. Lateral branches ample, arising from upper culm. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane, 0.2–0.6 mm long. Leaf-blades 5–10(–15) cm long, 2–5 mm wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle, terminal and axillary. Peduncle 1–2 cm long. Panicle contracted, linear, 4–15 cm long, 0.1–0.4 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.6–3.3 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, 1.4–2(–2.5) mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 1.4–2(–2.5) mm long, 0.5–0.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate or attenuate.

Florets. Fertile lemma lanceolate, 2.6–3.3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy at base. Lemma apex acute, muticous or mucronate or awned, 1 -awned. Principal lemma awn 0–7 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.6 mm long, brown. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**. Illinois, Kansas, Missouri, Nebraska, Oklahoma. West Virginia. Texas. Arkansas, Georgia, Louisiana.

Muhlenbergia calcicola Swallen. *Contrib. U. S. Nat. Herb.* xxix. 407 (1950).

TYPE from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Standley 81703*, 31 Dec 1940, Guatemala: Huehuetenango: Chemal, Sierra de los Chuchumatanes, 3300 m (US-1910686; IT: US-2236500).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (333, Fig 122).

Derivation (Clifford & Bostock 2007): L. *calx*, lime; *-cola*, dweller. Growing on limestone.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms erect, 3–4 cm long, 0.5 mm diam. Lateral branches ample. Leaf-sheaths ribbed, glabrous on surface. Ligule an eciliate membrane, 0.7–0.9 mm long. Leaf-blades flat or conduplicate, 0.3–1.4 cm long, 1–1.5 mm wide, stiff. Leaf-blade midrib prominent beneath. Leaf-blade surface ribbed, puberulous, hairy adaxially. Leaf-blade apex abruptly acute, hooded.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 3–7 fertile spikelets, shorter than basal leaves. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, laterally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1.4–1.7 mm long, 0.9–1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1.7–1.9 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume apex acute.

Florets. Fertile lemma ovate, 2.5–3 mm long, membranous, black, keeled, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 0.5–1 mm long overall, limb scaberulous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, oblong, 1 mm long.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Guatemala.

Muhlenbergia californica Vasey. *Bull. Torrey Bot. Club,* xiii. 53 (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).

TYPE from USA. **Basionym or Replaced Name**: *Muhlenbergia glomerata* var. *brevifolia* Vasey, *Bot. Gaz.* 7(8–9): 92 (1882). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *S.B. Parish, W.F. Parish 1028*, 15 Aug 1882, USA: California, San Bernardino Co. (US-81620).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (157).

Derivation (Clifford & Bostock 2007): L. *-ica*, belonging to. From California, USA.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms geniculately ascending, 30–60 cm long, woody. Culm-internodes distally pubescent. Leaf-sheaths scaberulous, glabrous on surface. Ligule a ciliolate membrane, 1 mm long, truncate or obtuse. Leaf-blades 5–15 cm long, 4–6 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 7–15 cm long. Primary panicle branches appressed. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 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, laterally compressed, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 0.5 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–4 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 3–4 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex acuminate, mucronate or awned, 1 -awned. Principal lemma awn 0.5–1 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**. California.

Muhlenbergia capillaris (Lam.) Trin. *Gram. Unifl.* 191. (1824).

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**: *Stipa capillaris* Lam., *Tabl. Encycl.* 1: 158 (1791)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *D. Fraser s.n.*, USA: E. Carolina (P-LAM; IT: US-A866136 (fragm. ex P-LAM)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (191), F.W.Gould, *The Grasses of Texas* (1975) (259, Fig. 135), A.S.Hitchcock, *Manual of the Grasses of the West Indies* (1936) (79, Fig. 45).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *capillis*, a hair; *-are*, pertaining to. Inflorescence with filiform branches.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, slender, 60–100 cm long. Culm-nodes pubescent. Leaf-sheaths without keel, smooth or scaberulous. Ligule an eciliate membrane, 2–5(–8) mm long. Leaf-blades curved, flat or involute, 20–50 cm long, 1–2(–4) mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 30–40 cm long, 8–17(–20) cm wide. Primary panicle branches spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 3.5–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate or ovate, 1–1.5(–2) mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex erose, acute or acuminate. Upper glume lanceolate or ovate, 1–1.5(–2) mm long, 0.25–0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex erose, acute or acuminate, awned, 1 -awned, awn 1.5(–2.5) mm long.

Florets. Fertile lemma lanceolate, 3.5–4.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, (2–)5–13 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface scaberulous. Palea apex acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–2 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**, **Mexico**. Illinois, Kansas, Missouri, Oklahoma. Massachusetts, Pennsylvania. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Caribbean**. Guatemala. Bahamas, Cuba, Puerto Rico.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Chihuahua, Guanajuato, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Michoacan, Oaxaca. Chiapas, Yucatan.

Muhlenbergia capillipes (M.E. Jones) P.M. Peterson & C.R. Annable. *Syst. Ann. Sp. Muhlenbergia (Syst. Bot. Monog.,* 31): 27: (1991).

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**: *Sporobolus capillipes* M.E. Jones**,** *Contr. W. Bot.* 14: 9 (1912). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Jones s.n.*, 16 Sep 1903, Mexico: Chihuáhua: San Diego Canyon (W of Colonia Juarez), Sierra Madre Mountains (POM; IT: US-90605 (fragm.)).

Illustrations (Journals): *Sida* (29: 84, Fig. 37 (2007)).

Derivation (Clifford & Bostock 2007): L. *capillis*, a hair; *pes*, foot. The spikelets are borne on thread-like pedicels.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect, slender, 15–40 cm long, 0.2–0.5 mm diam. Culm-internodes smooth or scaberulous. Leaf-sheaths mostly shorter than adjacent culm internode, smooth or scaberulous. Ligule an eciliate membrane, 1.8–2.8 mm long, erose or lacerate, acute. Leaf-blades flat or involute, 3–12 cm long, 0.6–2 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–21 cm long, 3.5–8 cm wide. Primary panicle branches ascending or spreading, 1–3 -nate, 1–6 cm long. Panicle axis 18–32 noded. Spikelets pendulous or deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 3–8 mm long.

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, 1.3–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–1.2 mm long, 1 length of upper glume, membranous, red, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume lanceolate, 1–1.2 mm long, 0.66 length of adjacent fertile lemma, membranous, red, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 1.3–1.8 mm long, membranous, light brown or red, without keel, 3 -veined, 0–3 -veined. Lemma apex obtuse or acute, muticous. Palea lanceolate, 1.3–1.8 mm long, 2 -veined. Palea apex obtuse or acute.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6–1.3 mm long, purple. Caryopsis with adherent pericarp, fusiform, 1–1.2 mm long, dark brown.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Chihuahua.

Muhlenbergia caxamarcensis S. Laegaard & I. Sanchez Vega. *Nordic J. Bot.*, 10(4): 437 (1990).

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 Synonomy Database: HT: *S.A. Renvoize & S. Laegaard 4962*, 26 Mar 1988, Peru: Prov. Cajamarca: Micuypampa, 62 km from Cajamarca towards Celendin, growing in mud flat at bottom of limestone quarry, 3600 m (PCUN; IT: AAU, K, MO-3712393, US-3185350).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Caxamarca (Cajamarca), Peru.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms erect, 8–12 cm long. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane, 2–2.5 mm long, lacerate. Leaf-blades flat or conduplicate, 10–15 cm long, 0.6–1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 3–4 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 lanceolate, laterally compressed, 2.5–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1–1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 1.5 mm long overall. Palea 2.5 mm long, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Peru.

Muhlenbergia cenchroides (Humb.& Bonpl. ex Willd.) P.M.Peterson. *Caldasia* 31 (2): 280 (2009).

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), J.F.Veldkamp, Poaceae ms (*Flora Malesiana*).

TYPE from Venezuela. **Basionym or Replaced Name**: *Aegopogon cenchroides* Humb.& Bonpl. ex Willd., *Sp. Pl.* 4: 899. (1812). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n. [3002]*, Venezuela: Sucre: Cumana (B-W; IT: P, US-75957 (fragm. ex P)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (369, Fig. 79), J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (16, Fig. 2), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (27, Fig. 3), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 121, Fig. 18 (2001)), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (46, Fig. 4).

Illustrations (Journals): *Ruizia* (13:289, Fig 35h-i (1993)).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Resembling *Cenchrus* usually with respect to the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 4–20 cm long, 0.2–0.8 mm diam. Leaves cauline. Ligule an eciliate membrane, 1.3–2.3 mm long, lacerate. Leaf-blades 2–5 cm long, 1–1.7 mm wide, flaccid. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence composed of racemes. Racemes 15–25, borne along a central axis, spreading, cuneate, unilateral, 0.2–0.5 cm long, bearing a triad of spikelets. Central inflorescence axis 1–6 cm long. Rhachis obsolete, deciduous from axis. Raceme-bases cuneate, 2–3 mm long, pubescent, shed with the raceme, acute. Spikelets in threes. Fertile spikelets pedicelled, 1 in the cluster, on shorter pedicels than sterile. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, semiterete.

Sterile Spikelets. Companion sterile spikelets well-developed, comprising 2 subequal glumes without lemmas or containing empty lemmas or male (vary from resembling fertile to rudimentary, the two spikelets often unequal), lanceolate, laterally compressed, 2–3 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, glabrous, lobed, 4 -fid, obtuse, awned, one glume awned, with 2–5 mm long awn. Companion sterile spikelet lemmas 1, exserted from glumes, 1-awned.

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, 2–3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume cuneate, 0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex lobed, 2 -fid, acute, awned, 1 -awned, awn 1–3 mm long. Upper glume cuneate, 0.7 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex lobed, 2 -fid, acute, awned, 1 -awned, awn 1–3 mm long.

Florets. Fertile lemma ovate, laterally compressed, lanceolate in profile, 2–3 mm long, membranous, dark brown, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins ribbed. Lemma apex lobed, 3 -fid, with outer lobes longer, with lanceolate lobes, incised 0.3 of lemma length, acuminate, awned, 3 -awned. Principal lemma awn 4–7 mm long overall, limb scaberulous. Lateral lemma awns present, arising on inner edge of lobes, 1–2 mm long, shorter than principal. Palea lanceolate, 1 length of lemma, 2 -veined. Palea keels contiguous above a sulcus. Palea apex dentate, 2 -fid, acute, awned, awns 0.5–2 mm long.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.2 mm long. Stigmas 2. Caryopsis with adherent pericarp, fusiform, isodiametric, biconvex, estipitate, without sulcus, 1.4 mm long, smooth, apex unappendaged. Embryo 0.3 length of caryopsis. Hilum punctiform. Endosperm farinose.

$2n = 40$ (1 ref TROPICOS).

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

Country /Province /State. **Papuasia**. New Guinea PNG. New Guinea. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**. Costa Rica. Venezuela. Bolivia, Colombia.

Distrito Federal, Mexico State. Chihuahua, Durango, Queretaro, Zacatecas. Guerrero, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia ciliata (Kunth) Kunth. *Rev. Gram.* 1:63 (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).

TYPE from Mexico. **Basionym or Replaced Name**: *Podosemum ciliatum* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 128–129 (1815 [1816])

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Mexico: Michoacán: Volcán de Jorullo (P-Bonpl.; IT: BAA-1619 (ex P), BM, P-Bonpl., US-91918 (fragm.)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (147).

Illustrations (Journals): *Sida* (29: 85, Fig. 38 (2007)), *Ruizia* (13:263, Fig 30l (1993)).

Derivation (Clifford & Bostock 2007): L. *cilium*, eyelid; *-ata*, possessing. Plant hairy overall or in part.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 15–25 cm long, 0.3 mm diam. Culm-internodes distally glabrous. Lateral branches ample, arising from lower culm or mid culm. Leaf-sheaths glabrous on surface or hirsute. Ligule an eciliate membrane, 0.3 mm long, lacerate. Leaf-blades reflexed, conduplicate or involute, 1.5–3 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 5–9 cm long, contracted about primary branches. Primary panicle branches 5–10 in number, spreading or reflexed, 1 -nate, 1–2 cm long. Spikelets appressed, 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, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume linear or lanceolate, 0.7–1.2 mm long, 0.6–0.7 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, muticous or mucronate. Upper glume linear or lanceolate, 1.2–1.7 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex setaceously acuminate.

Florets. Fertile lemma lanceolate, 2.1–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma margins ciliolate or ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 7–17 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

n = 9 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico. **Mesoamerica**, **Western South America**, **Brazil**, **Southern South America**. El Salvador, Guatemala, Honduras, Nicaragua, Panama. Bolivia, Colombia, Ecuador. Brazil West Central. Argentina Northwest.

Distrito Federal. Jujuy. Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia cleefii S. Laegaard. *Caldasia,* 17: 409 (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 Colombia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.Cleff & P.A.Florschutz 5578*, 26 Sep 1972, Colombia: Boyaca: Sierra Nevada del Cocuy, Alto Valle Lagunillas, páramo pantanosos al Sur de la Laguna Cuadrada, 4060 m (COL; IT: U, US-2785756).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of A. M. Cleef (fl. 1972) who collected in Colombia.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms decumbent, 1–2 cm long. Leaf-sheaths smooth or papillose. Ligule an eciliate membrane, 1.5 mm long, erose. Leaf-blades erect or ascending, 0.5–0.6 cm long, 1 mm wide. Leaf-blade venation with 9–11 secondary veins. Leaf-blade surface ribbed, papillose, rough on both sides, puberulous, hairy adaxially. Leaf-blade apex obtuse, hooded.

Inflorescence. Inflorescence comprising only a few spikelets, comprising (1–)2–3(–5) fertile spikelets. 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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus obtuse.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 1 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 1.2–1.3 mm long, 0.33–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3 mm long, membranous, purple, shiny, keeled, lightly keeled, keeled below, 3 -veined, 0–3 -veined. Lemma apex acute or acuminate, awned, 1 -awned. Principal lemma awn hooked, 0.2–0.3 mm long overall. Palea 2.5 mm long, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, 0.1 mm long, fleshy. Anthers 3, 1.3–1.5 mm long, purple. Caryopsis with adherent pericarp, fusiform, 2–2.5 mm long, light brown. Embryo 0.5 length of caryopsis.

Distribution (TDWG). Continent. South America.

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

Muhlenbergia columbi P.M.Peterson. *Am. J. Bot.* 97 (9): 1543 (2010).

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**: *Schaffnera gracilis* Benth., genus illegit, *Hook. Ic. Pl.* 14: 59. t. 1378. (1882). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Mexico, San Luis Potosi: Schaffner 1070 (US isosyn); Mexico, San Luis Potosi: Schaffner 134 (US isosyn).

Recent Synonyms: *Schaffnerella gracilis* (Benth.) Nash, *N. Amer. Fl.* 17: 141 (1912). *Muhlengergia spatha* Columbus, *Aliso* 28: 66 (2010).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 5–12 cm long. Ligule an eciliate membrane, 1 mm long. Leaf-blades 1–3 cm long, 0.5–1 mm wide. Leaf-blade apex obtuse.

Inflorescence. Synflorescence compound, fasciculate, with ultimate bract subtending a compact bracteolate fascicle of spikelets.

Inflorescence composed of racemes, terminal and axillary, subtended by a spatheole, enclosed. Spatheole cymbiform or tubular, oblong, 0.3–0.4 cm long, hyaline. Racemes 1, single, unilateral, 0.8–1.2 cm long, bearing few fertile spikelets, bearing 1–3 fertile spikelets on each. Rhachis angular, scabrous on margins. Spikelets 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 lanceolate, laterally compressed, 5–6 mm long, falling entire. Spikelet callus pubescent.

Glumes. Glumes one the lower absent or obscure, reaching apex of florets, firmer than fertile lemma. Upper glume oblong, 3–5 mm long, 1 length of adjacent fertile lemma, chartaceous, without keels, 7–9 -veined. Upper glume lateral veins ribbed. Upper glume apex lobed, 2 -fid, awned, 3–7 -awned, awn 3–8 mm long.

Florets. Fertile lemma lanceolate, 3–5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein scaberulous. Lemma lateral veins ribbed. Lemma apex obtuse, awned, 1 -awned. Principal lemma awn subapical, 3–5 mm long overall. Palea lanceolate, tightly convolute around flower, 1 length of lemma, 2 -veined. Palea keels approximate. Palea apex acuminate.

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

Country /Province /State. Russian Far East. Sakhalin. **Mexico**. Northeast Mexico.
San Luis Potosi.

Muhlenbergia crispiseta Hitchcock. *N. Am. Fl.* xvii. 440 (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.

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 1411*, 23 Oct 1887, Mexico: Chihuahua: thin soil of porphyry ledges, Sierra Madres (near Guerrero) (US-995491; IT: GH, MEXU-5177, RSA, VT).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (186).

Illustrations (Journals): *Sida* (29: 86, Fig. 39 (2007)).

Derivation (Clifford & Bostock 2007): L. *crispus*, curly; *seta*, bristle. Awn much curled in the upper part.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 7–16 cm long, 0.2 mm diam. Culm-internodes 2–7 cm long, distally glabrous. Lateral branches ample. Leaf-sheaths 1–5 cm long, longer than adjacent culm internode, smooth or scaberulous. Ligule an eciliate membrane, 1.3–2 mm long, obtuse. Leaf-blades flat or involute, 1–5 cm long, 0.7–1.4 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 1.8–4.5 cm long, 1.3–3 cm wide. Primary panicle branches ascending, 1 -nate, 1.5–2.8 cm long. Panicle axis 7–11 noded. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present, straight or curved, 0.4–2 mm long, scaberulous.

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, 1.7–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.2–1.6 mm long, 0.25–0.9 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, 1.6–1.8 mm long, 0.75–1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume primary vein scabrous. Upper glume apex dentate, 3 -fid, truncate.

Florets. Fertile lemma lanceolate, 1.7–2.2 mm long, membranous, pallid and mid-green, mottled with last colour, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma hairs 0.2–0.5 mm long. Lemma apex dentate, 2 -fid, with lobes 0.2 mm long, acute, awned, 1 -awned. Principal lemma awn subapical, flexuous or coiled, 8–18 mm long overall. Palea lanceolate, 1.1–1.7 mm long, 2 -veined. Palea surface pubescent, hairy on back, hairy below. Palea apex acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.7 mm long, purple. Caryopsis with adherent pericarp, ellipsoid, 0.5–1.1 mm long, light brown.

n = 10 (2 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Aguascalientes, Chihuahua, Durango, Guanajuato, San Luis Potosi, Zacatecas. Sinaloa, Sonora. Jalisco, Nayarit.

Muhlenbergia cualensis Y. Herrera A. & P.M. Peterson. *Novon,* 2(2): 114 (1992).

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 Synonomy Database: HT: *R. Guzman M. 6090*, 31 Jan 1983, Mexico: Jalisco (COCA; IT; IBUG, US-3239031).

Illustrations (Journals): *Novon* (*Novon* 2: 115, Fig. 1 (1992)).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Sierra del Cuale, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes absent. Culms erect, 50–70 cm long. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths 7–34 cm long, longer than adjacent culm internode, without keel, smooth or scaberulous. Ligule an eciliate membrane, 10–12 mm long, entire or lacerate, acuminate. Leaf-blades flat or involute, 11–25 cm long, 0.5–2 mm wide, stiff. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–15 cm long, 0.7–4 cm wide. Primary panicle branches ascending, 0.6–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.6–3 mm long, scaberulous or scabrous.

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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume oblong, 3–4 mm long, 1 length of upper glume, membranous, dark green, without keels, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume oblong, 3–4 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume primary vein ciliolate. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma oblong, 2.6–3 mm long, membranous, dark green, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliolate. Lemma surface pubescent, hairy below. Lemma margins ciliolate. Lemma hairs 0.2–0.4 mm long. Lemma apex acute or acuminate, awned, 1 -awned. Principal lemma awn straight or flexuous, 16–20 mm long overall. Palea oblong, 2.6–3 mm long, 2 -veined. Palea surface pubescent, hairy on back, hairy below. Palea apex obtuse.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.6–2.2 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Southwest Mexico.

Jalisco.

Muhlenbergia curtifolia Scribn. *Bull. Torr. Bot. Club,* viii. 328. (1911).

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 Synonomy Database: HT: *M.E. Jones 6047J*, 13 Sep 1894, USA: Utah, collected between Kanab and Carmel, 6000 ft (US-278700).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (168).

Derivation (Clifford & Bostock 2007): L. *curtus*, short; *folium,* leaf. Leaf-blades short.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated. Culms geniculately ascending, 25–45 cm long. Culm-internodes distally pubescent. Lateral branches ample. Leaves basal and cauline. Leaf-sheaths pubescent to hirsute. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades spreading, 1–2.5 cm long, 1–2 mm wide, stiff. Leaf-blade surface pubescent to hirsute. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 2–10 cm long. Primary panicle branches appressed. 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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3.5 mm long, 1 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, 2–3.5 mm long, 0.66–0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–3 mm long overall. Palea 0.5 length of lemma, 2 -veined. Palea surface pubescent, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.2–1.6 mm long. Caryopsis with adherent pericarp, fusiform, 2–2.2 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**. Arizona, Nevada, Utah.

Muhlenbergia curviaristata (Ohwi) Ohwi. *Bot. Mag., Tokyo,* lv. 397 (1941).

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).

TYPE from Japan. **Basionym or Replaced Name**: *Muhlenbergia ramosa* var. *curviaristata* Ohwi, *Acta Phytotax. Geobot.* 6(4): 292 (1937). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan: Hondo: Hondo media in montibus, *J. Ohwi 7329* (HT: KYO).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 690).

Derivation (Clifford & Bostock 2007): L. *curvus*, bent; *arista*, bristle; *-ata,* possessing. Awn curved.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 50–110 cm long, 1.8–2.5 mm diam., 6–9 -noded. Culm-internodes distally glabrous or pubescent. Lateral branches lacking or sparse, arising from mid culm. Ligule an eciliate membrane, 0.5–1 mm long, erose, truncate. Leaf-blades 8–20 cm long, 3–7 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 15–35 cm long, 1–1.5 cm wide. Primary panicle branches ascending, 2–4 -nate. Panicle branches scabrous. 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, 3–3.5 mm long, 0.5–0.6 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2 mm long, 0.75 length of upper glume, membranous, pallid, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2–2.5 mm long, 0.66 length of adjacent fertile lemma, membranous, pallid, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–3.5 mm long, membranous, glaucous or grey, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, curved, 3–4(–10) mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.8–1.2 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian Far East, **China**, **Eastern Asia**. Kuril Is. Manchuria, China North-Central. Japan Honshu. Japan.

Hebei.

Muhlenbergia cuspidata (Torr.) Rydb. *Bull. Torr. Bot. Club,* 1905: 599 (1905).

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**: *Vilfa cuspidata* Torr. ex Hook., *Fl. Bor.-Amer.* 2: 238–239 (1840)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Canada: banks of the Saskatchawan near the Rocky Mts., *Drummond s.n.*.

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (157), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (172).

Derivation (Clifford & Bostock 2007): L. *cuspis*, head of a spear; *-ata*, possessing. Glumes or lemmas long tapering or terminating in a sharp tip.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms erect or geniculately ascending, 20–40 cm long, wiry. Culm-internodes solid, distally pubescent. Lateral branches sparse. Leaf-sheaths keeled, puberulous. Ligule a ciliolate membrane, 1 mm long, truncate. Leaf-blades 5–10 cm long, 1–1.5 mm wide. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 5–12 cm long, 0.4 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 0.5 mm long. Upper glume ovate, 1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate, awned, 1 -awned, awn 0.5 mm long.

Florets. Fertile lemma lanceolate, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein scabrous. Lemma surface puberulous, hairy below, hairy on veins. Lemma apex acuminate, mucronate or awned, 1 -awned. Principal lemma awn 0.5 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.2 mm long. Caryopsis with adherent pericarp, fusiform.

$2n = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**, **Northwest USA**, **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**. Alberta, Manitoba, Saskatchewan. Colorado, Montana. Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Indiana, Ohio. New Mexico. Kentucky.

Muhlenbergia decumbens Swallen. *Bol. Soc. Bot. Mexico,* No. 23. 30 (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) (as Chaboissaea).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Hernández X. & Tania J. N-359*, 27 Oct 1954, Mexico: Chihuahua: orilla carretera, suelo migajon arenoso gris, km 33, Cuahtemoc-V. Guerrero, 2200 m, (US-2237023).

Recent Synonyms: *Chaboissaea decumbens* (Swallen) J.R. & C.G. Reeder, *Phytologia,* 65(2): 156 (1988).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *decumbo*, fall down. Culms prostrate.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, weak, 12–30 cm long, 0.4–0.7 mm diam., rooting from lower nodes. Lateral branches ample. Leaf-sheaths 1.2–4.6 cm long, glabrous on surface. Ligule an eciliate membrane, 1.6–2.5 mm long, truncate or obtuse. Leaf-blades 2.5–8 cm long, 0.8–1.4 mm wide. Leaf-blade surface scaberulous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, lanceolate or elliptic, (4.5–)8–11 cm long, 1.5–4.5 cm wide, contracted about primary branches. Primary panicle branches 6–10 in number, appressed or ascending, 1 -nate, 2.5–4.8 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long, scabrous.

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 elliptic, laterally compressed, compressed slightly, 3–4 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, 1.8–2.5 mm long, 0.75 length of upper glume, membranous, grey, 1-keeled, keeled above, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate, muticous or awned, 1 -awned, awn 0–0.6 mm long. Upper glume ovate, 2.4–3.2 mm long, 0.66–0.8 length of adjacent fertile lemma, membranous, grey, 1-keeled, keeled above, 1 -veined. Upper glume

primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate, muticous or awned, 1 -awned, awn 0–0.6 mm long.

Florets. Fertile lemma lanceolate, 3–3.8 mm long, cartilaginous, dark green or grey, keeled, keeled above, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma hairs 0.1–0.2 mm long. Lemma apex acuminate, muticous or awned, 1 -awned. Principal lemma awn 0.2–3 mm long overall. Palea 3–3.7 mm long, cartilaginous, 2 -veined. Palea keels scaberulous. Palea apex awned, awns 0.3–0.6 mm long. Apical sterile florets 1 in number, male, lanceolate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.9–1.1 mm long, green. Caryopsis with adherent pericarp, fusiform, 2–2.3 mm long, light brown.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico.

Mexico State. Chihuahua.

Muhlenbergia depauperata Scribn. *Coult. Bot. Gaz*. 9: 187 (1884).

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 Synonomy Database: LT: *Pringle s.n.*, 13 Sep 1884, USA: Arizona: Cochise Co. or Santa Cruz Co.: Mustang Mts. (US-994221; ILT: GH, K, MICH, MO, MSC, NY, P, US-746200, VT, W01916–27671). LT designated (as type) by McVaugh, Fl. Novo-Galiciana 14: 236 (1983), but without indicating a specific sheet, specific sheet indicated by Peterson, Syst. Bot. Monogr. 31: 35(1991).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (197), F.W.Gould, *The Grasses of Texas* (1975) (283, Fig. 149).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 952, fig.6(2007)).

Derivation (Clifford & Bostock 2007): L. reduced. Small compared with related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 3–15 cm long. Culm-internodes distally hirsute. Lateral branches ample, arising from lower culm. Leaf-sheaths keeled, striately veined, smooth or antrorsely scabrous. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1.5–4.5 mm long, lacerate. Leaf-blades 1–2(–3) cm long, 0.5–1(–1.5) mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface scabrous, glabrous or hirsute. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, dense, 2–7 cm long, 0.2–0.5 cm wide. Primary panicle branches bearing 2–3 fertile spikelets on each lower branch, bearing spikelets almost to the base. Panicle axis bearing persistent branches or deciduous branches. Spikelets appressed, solitary. Fertile spikelets pedicelled, heteromorphic (shorter awned at base of branch). Pedicels present, linear.

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, 2.5–3.5 mm long, breaking up at maturity or falling entire, deciduous with accessory branch structures, disarticulating or below each fertile floret.

Glumes. Glumes persistent, dissimilar, reaching apex of florets, similar to fertile lemma in texture. Lower glume linear, 2.5–3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 2 -veined. Lower glume surface scabrous, rough on veins. Lower glume apex dentate, 2 -fid, acute. Upper glume linear, 2.5–3.5 mm long, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous, rough on veins. Upper glume apex acuminate or attenuate.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above, pubescent, hairy below, hairy between veins. Lemma apex attenuate, muticous or awned, 1 -awned. Principal lemma awn 0–10 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.8 mm long, yellow. Caryopsis with adherent pericarp, fusiform, 2 mm long.

n = 10 (2 refs TROPICOS). $2n$ = 20 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico.

Distrito Federal. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, San Luis Potosi, Zacatecas.

Muhlenbergia diandra (R.W. Pohl) P.M.Peterson. *Am. J. Bot.* 97 (9): 1543 (2010).

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 Costa Rica. **Basionym or Replaced Name**: *Pereilema diandrum* R.W. Pohl, *Novon* 2 (2): 102 (1992). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Costa Rica: Heredia: Puente Mulas, S of San Antonio, canyon of Río Virilla, 850 m, 28 Nov 1968, *R. W. Pohl & G. Davidse 11482* (HT: ISC; IT: MO (fragm. ex ISC), US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *dis*, twice; *aner*, man. Florets with two stamens.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 40–80 cm long, 1–2 mm diam., without nodal roots or rooting from lower nodes. Culm-internodes scaberulous. Culm-nodes glabrous. Lateral branches lacking. Leaf-sheaths antrorsely scabrous. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.7–1 mm long. Leaf-blades 10–20 cm long, 5–8 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Peduncle 3–6 cm long. Panicle contracted, linear, continuous or interrupted, 10–20 cm long, 1–2 cm wide, contracted about primary branches. Primary panicle branches appressed, 1–3 cm long, bearing spikelets almost to the base. Panicle axis angular, scabrous. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 3–4 in the cluster. Companion sterile spikelets sessile, 2–3 in the cluster. Involucre composed of imperfect spikelets, cuneate. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets represented by awns, comprising a tuft of awns, 3–5 mm long, persistent. Companion sterile spikelet glumes glabrous.

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, subterete, 1.9–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 0.5–0.8 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic or ovate, 0.7–1.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, awned, 1 -awned, awn 1.5–4 mm long. Upper glume lanceolate, 0.7–1.5 mm long, 0.33–0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, awned, 1 -awned, awn 1.5–4 mm long.

Florets. Fertile lemma lanceolate, 1.9–2.5 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn straight, 10–24 mm long overall. Palea 1.05 length of lemma. Palea keels approximate. Palea apex dentate, 2 -fid, with excurrent keel veins.

Flower and Fruit. Anthers 2, 0.8–1 mm long, purple. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Costa Rica.

Muhlenbergia distans Swallen. *N. Am. Fl.* xvii. 461 (1935).

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 Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 5575*, 15 Sep 1894, Mexico: Oaxaca: dry hills, Las Sedas, alt. 6000 ft (US-746297; IT: F, GH, MO-1837832, TAES, US-134322, US-305676).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *disto*, be apart. Spikelets widely separated in inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 100–150 cm long. Culm-internodes smooth or scaberulous. Leaf-sheaths keeled. Ligule an eciliate membrane, 5–15 mm long, lacerate. Leaf-blades conduplicate, 20–40 cm long, 2–3 mm wide. Leaf-blade surface scaberulous or scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 20–40 cm long, 2–4 cm wide. Primary panicle branches bearing spikelets almost to the base. 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, 2.7–3.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets. Lower glume lanceolate, 2.7–3.6 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex entire or erose, acute. Upper glume lanceolate, 2.7–3.6 mm long, 0.9–1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume apex entire or erose, acute.

Florets. Fertile lemma lanceolate, 2.7–3.6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy all along or below. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn subapical, 0.5–5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.4–1.7 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Puebla, Tlaxcala. Aguascalientes, Durango, Hidalgo, San Luis Potosi, Tamaulipas, Zacatecas. Guerrero, Jalisco, Michoacan, Oaxaca.

Muhlenbergia distichophylla (Presl) Kunth. *Enum. Pl.* i. 202. (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).

TYPE from Mexico. **Basionym or Replaced Name**: *Podosemum distichophyllum* J. Presl, *Reliq. Haenk.* 1(4–5): 231 (1830)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *T. Haenke s.n.*, Mexico (PR (photo, US); IT: MO-1837831, US-90711 (fragm. ex PR, fragm. ex W)).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 954, fig.7 (2007)).

Derivation (Clifford & Bostock 2007): Gk. *distichos*, in two rows; *phyllon*, leaf. Leaves arranged conspicuously in two rows.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm. Culms robust, 100–150 cm long. Leaf-sheaths keeled, pubescent. Leaf-sheath auricles absent or erect. Ligule an eciliate membrane, 10–15 mm long, lacerate. Leaf-blades 30–75 cm long, 2–4 mm wide. Leaf-blade surface glabrous or puberulous, sparsely hairy.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, 30–50 cm long, 5–15 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, obtuse, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume lanceolate, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse, muticous or awned, 1 -awned. Upper glume lanceolate, 2.5–3.5 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 1.5–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 10–16 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.2–1.4 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. Europe (*), North America, South America.

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**. Guatemala.

Mexico State, Puebla. Chihuahua. Colima, Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia diversiglumis Trin. *Mem. Acad. Petersb. Ser.* VI. vi. II. 298 (1845).

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 Synonomy Database: HT: *Karwinsky 1393*, Mexico: Porto Pedro (LE-TRIN-1497.01; IT: US-84831 (fragm. ex LE-TRIN-1497.02), W).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (166), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (327, Fig 120), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 83, Fig. 12 (2001)).

Illustrations (Journals): *Sida* (29: 87, Fig. 40 (2007)), *Ruizia* (13:263, Fig 30j (1993)).

Derivation (Clifford & Bostock 2007): L. *diversus*, variable; *gluma*, husk. One glume of some spikelets long-awned.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 25–60 cm long, 0.5–0.7 mm diam., rooting from lower nodes. Culm-internodes distally glabrous. Culm-nodes bearded. Leaf-sheaths glabrous on surface or hirsute, with tubercle-based hairs. Ligule an eciliate membrane, 0.7 mm long. Leaf-blades 2–6 cm long, 1.5–2 mm wide. Leaf-blade surface glabrous or hirsute, with tubercle-based hairs.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, secund, 5–12 cm long. Primary panicle branches spreading or drooping, bearing 2(–4) fertile spikelets on each lower branch. Panicle axis bearing deciduous branches. Spikelets solitary. Fertile spikelets pedicelled, heteromorphic. 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, 3.5–4.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 0.2–0.3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume orbicular, 0.2–0.3 mm long, 0.05 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse, awned only on distal spikelets, 1 -awned, awn 1–6 mm long.

Florets. Fertile lemma lanceolate, 3.5–4.2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 7–10 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.6 mm long, orange. Caryopsis with adherent pericarp, fusiform.

n = 10 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**. Costa Rica, El Salvador, Guatemala, Honduras, Panama. Venezuela. Colombia, Ecuador, Peru.

Distrito Federal, Mexico State, Morelos. Chihuahua, Durango, Hidalgo, Zacatecas. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit. Chiapas.

Muhlenbergia dubia Fourn. *Mex. Pl. Enum., Gram.* 82 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F.M. Liebmann 688*, May 1841, Mexico: Oaxaca: Chinantla (P; IT: C, US-91018 (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (195).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 956, fig.8 (2007)).

Images: R.Darke, *Ornamental Grasses* (2004);.

Derivation (Clifford & Bostock 2007): L. doubtful. Readily confused with other species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 30–100 cm long. Culm-nodes pubescent. Leaf-sheaths without keel, smooth or scaberulous. Ligule an eciliate membrane, 4–12 mm long. Leaf-blades involute, 25–60 cm long, 1–2 mm wide, grey-green. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 10–30 cm long, 1 cm wide. Primary panicle branches appressed or ascending, 1–2 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, shorter than spikelet, similar to fertile lemma in texture. Lower glume elliptic, 2–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex obtuse. Upper glume elliptic, 2–3 mm long, 0.5–0.6 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn 0–4 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 40 (Peterson et al 2007), or 50 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico.

Distrito Federal, Puebla, Tlaxcala. Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California Sur. Jalisco, Michoacan, Oaxaca.

Muhlenbergia dumosa Scribn. ex Vasey. *Contrib. U.S. Nat. Herb.* iii. 71 (1892).

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 Synonomy Database: LT: *C.G. Pringle s.n.*, 25 May 1884, USA: Arizona: Santa Catalina Mountains (US-994324; ILT: GH, VT, W-1916–27698). LT designated by ?; cited by McVaugh, Fl. Novo-Gal. 14: 239 (1983).

ST: *Pringle & Lemmon*, USA: Arizona

ST: *Orcutt s.n.*, USA: Southern California.

Recent Synonyms: *Muhlenbergia firma* Beal, *Grasses N. Amer.* 2: 243 (1896).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (176).

Illustrations (Journals): *Sida* (29: 88, Fig. 41 (2007)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *dumus*, thorn-bush; *-osus*, well developed. Habit decidedly bushy.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect, 30–150(–300) cm long, woody. Lateral branches fastigiate, arising from upper culm. Ligule an eciliate membrane, 0.5 mm long, erose, truncate. Leaf-blades deciduous at the ligule, flat or convolute, 2–5(–10) cm long, 0.5–1.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open or contracted, linear or lanceolate, 1–3(–4) cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

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, 2–2.2 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, 1–1.3 mm long, 0.75–0.9 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, awned, 1 -awned, awn 0.5–1 mm long. Upper glume lanceolate, 1.3–1.5 mm long, 0.7–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, awned, 1 -awned, awn 0.6–1(–2) mm long.

Florets. Fertile lemma lanceolate, 2–2.2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn (3–)5–11 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.2–1.3 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **Mexico**. Arizona, California. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

Mexico State, Puebla. Chihuahua, Durango, Queretaro, Zacatecas. Baja California, Baja California Sur, Sinaloa, Sonora. Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia durangensis Y. Herrera Arrieta. *Phytologia,* 63(6): 457 (1987).

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 Synonomy Database: Mexico: Durango: Mun. de Los Charcos: Mezquital, 32 km de Charcos por el camino a La Guajolota, alt. 2040 m, bosque de pino-encino, 15 Mar 1985, *M. González et al. 1659* (HT: CIIDIR).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Durango, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes short. Culms erect, 40–70 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, without keel, smooth or scaberulous. Ligule an eciliate membrane, 0.5–1 mm long, erose. Leaf-blades flat or involute, 10–30 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough adaxially or on both sides. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 10–25 cm long, 0.5–1 cm wide. Primary panicle branches 3–7 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long, scabrous.

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, 5.5–7.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 5.5–7.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex attenuate. Upper glume lanceolate, 5.5–7.5

mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume surface smooth or asperulous. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, 5–7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn straight or flexuous, 10–25 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.5–3.5 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Chihuahua, Durango.

Muhlenbergia duthieana Hackel. *Osterr. Bot. Zeitschr.* lii. 11 (1902).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, N.L.Bor, Grasses of Burma, Ceylon, India and Pakistan (1960).

TYPE from India & Himalaya. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *J.F. Duthie s.n.*, no date, India (US-10021 (fragm.)). 3 isosyntypes on sheet with 3 localities.

ST: *Duthie s.n.*, In vallibus jugis Himalaya occidentalis, in silvis prope Sambalpul, 2200–2400 m

ST: *Hooker & Thompson s.n.*, In Himalaya occid. (K). "sub. M. sylvatica Torr.".

ST: *Duthie*, In vallibus jugis Himalaya occidentalis: in valle fl. Indus pr. Punj Galli in rupibus ad 2200 m

ST: *Duthie*, In vallibus juis Himalaya occidentalis: prope Simla 2300 m-2500 m

IST: *J.F. Duthie 7611*, Oct 1888, Northern India: Black Mountain Expeditio (US-995909).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. As for *Duthiea*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rootstock evident. Culms erect or decumbent or prostrate, 20–40 cm long, without nodal roots or rooting from lower nodes. Ligule an eciliate membrane, 0.7–1.2 mm long, obtuse. Leaf-blades 3–9 cm long, 1.5–3 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 4–12 cm long, contracted about primary branches. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 2.4–3.4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–3.4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–3.2 mm long, 0.8–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 2.2–3.2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy at base. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn 8–10 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp, fusiform.

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

Country /Province /State. **Western Asia**. Iran. **Indian Subcontinent**. Pakistan, West Himalaya.

Punjab. Himachal Pradesh, Jammu Kashmir.

Muhlenbergia elongata Scribn. ex S. Wats.;. *Beal, Grasses N. Amer.* ii. 251 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *C.G. Pringle 398*, Aug 1885, Mexico: Chihuahua: rocky ledges near Chihuahua (US-746292; ILT: LE (2 sheets), MO-2974118, TEX, US-78502, US-822891, US-1645960, US-746293, US-2959891, W-1888–141). LT designated by A.S. Hitchcock in Contr. U.S. Natl. Herb. 17: 302 (1913), without explicitly citing a specific herbarium; specific sheet designated by Herrera & Peterson, Sida, Bot. Misc. 29: 27 (2007).

ST: *C.G. Pringle 3477*, Mexico.

Recent Synonyms: *Muhlenbergia xerophila* C.O. Goodd., *Journ. Wash. Acad. Sc.* 19. (1940).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (193).

Derivation (Clifford & Bostock 2007): L. elongated. Inflorescence elongated.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 40–70 cm long. Culm-internodes distally glabrous. Leaf-sheaths longer than adjacent culm internode, antrorsely scabrous, glabrous on surface. Ligule an eciliate membrane, 5 mm long, acute. Leaf-blades filiform or linear, involute, 20–30 cm long, 0.5–1 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted or spiciform, linear, nodding, 20–35 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 lanceolate, laterally compressed, 3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–2.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous, rough above. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 2–2.5 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous, rough above. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma lanceolate, 3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 15–30 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

n = 20 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico.

Chihuahua, Hidalgo. Sonora.

Muhlenbergia eludens C. G. Reeder. *Journ. Wash. Acad. Sci*. ix. 365 (1949).

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 Synonomy Database: HT: *A.S. Hitchcock 7768*, 13 Oct 1910, Mexico: Chihuahua: Minaca (US-995423; IT: ARIZ, YU).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (201), F.W.Gould, *The Grasses of Texas* (1975) (285, Fig. 152).

Illustrations (Journals): *Sida* (29: 89, Fig. 42 (2007)).

Derivation (Clifford & Bostock 2007): L. *eludo*, avoid. Not to be confused with a series of closely related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms 10–35(–40) cm long, 2–4 -noded. Culm-internodes distally hirsute. Lateral branches lacking or sparse. Leaf-sheaths keeled, antrorsely scabrous, glabrous on surface or pubescent. Ligule an eciliate membrane, 1.5–2.5 mm long, lacerate. Leaf-blades 1–8 cm long, 1 mm wide. Leaf-blade surface scabrous, rough adaxially, pubescent, hairy abaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 5–25 cm long, 7 cm wide, 0.6–0.7 of culm length. Primary panicle branches ascending or spreading. Panicle branches capillary. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.5–2 mm long, tip widened.

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, 2–2.5 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, 1–2 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent, hairy above. Lower glume apex acute or acuminate. Upper glume lanceolate, 1–2 mm long, 0.5–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent, hairy above. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 2–2.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins prominent. Lemma margins pubescent. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn 1.3–3.5 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.6 mm long. Caryopsis with adherent pericarp, fusiform, 1.5 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Chihuahua, Durango. Sonora.

Muhlenbergia emersleyi Vasey. *Contrib. U.S. Nat. Herb.* iii. 1 66. (1892).

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 Synonomy Database: HT: *J.D. Emersley 46*, 1890, USA: Arizona: southern Arizona (US-73223).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (186long-awned plant & short-awned plant), F.W.Gould, *The Grasses of Texas* (1975) (263, Fig. 138).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 959, fig.9 (2007)).

Derivation (Clifford & Bostock 2007): in honor of J.D. Emersley (-) United States plant collector.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, robust, 100–150(–200) cm long, 3–4 -noded. Culm-nodes glabrous or pubescent. Leaf-sheaths keeled. Leaf-sheath auricles absent. Ligule an eciliate membrane, 10–25 mm long, lacerate. Leaf-blades flat or conduplicate, 23–40 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough abaxially or on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate or pyramidal, 20–40 cm long, 4–7 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, (2.2–)2.5–3(–3.2) mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume elliptic, 1–2 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous or scabrous. Lower glume apex obtuse or acute. Upper glume elliptic, 2.2–3.2 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous or scabrous. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 2–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scabrous, rough above. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn subapical, flexuous, 10–15 mm long overall, persistent or deciduous, abscissing from top of lemma. Palea 0.8–0.9 length of lemma, 2 -veined. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

$2n$ = 24, or 26, or 28, or 30, or 40, or 46, or 60, or 64 (all Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Western South America**. Colombia.

Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Hidalgo, Neuvo Leon, Queretaro, Tamaulipas, Zacatecas. Baja California, Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia eriophylla Swallen. *Contrib. U. S. Nat. Herb.* xxix. 409 (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 Synonomy Database: HT: *G.B. Hinton 5307*, 12 May 1933, Mexico: México: Temascaltepec Dist., Luvianos P.G., 1100 m (US-1840917; IT: US-1867750).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *erion*, wool; *phyllon*, leaf. Leaves densely wooly.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 17–22 cm long. Leaf-sheaths longer than adjacent culm internode, without keel, antrorsely scabrous. Ligule an eciliate membrane, 5–9 mm long. Leaf-blades curled, 10–20 cm long, 1.2–1.5 mm wide. Leaf-blade surface scabrous, rough abaxially, woolly, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 4–8 cm long, 0.5 cm wide. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume lanceolate, 3–3.5 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, 3.5–4 mm long, 1–1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 20 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface pubescent.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico.

Mexico State. Aguascalientes, Durango, Guanajuato, Zacatecas. Jalisco, Michoacan.

Muhlenbergia expansa (DC.) Trin. *Mem. Acad. Petersb. Ser.* VI. vi. II. 299. (1845).

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 Caroline Islands. **Basionym or Replaced Name**: *Stipa expansa* Poir., *Encycl.* 7: 453 (1806)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Caroline, *M. Bosc s.n.*.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (189).

Derivation (Clifford & Bostock 2007): pando, expand. Inflorescence an open panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, slender, 60–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, glabrous on surface. Ligule an eciliate membrane, 2–4(–5) mm long. Leaf-blades curved, flat or involute, 30–50 cm long, 2–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 20–30(–60) cm long, 4–7(–10) cm wide. Primary panicle branches spreading. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 3.5–4(–5) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 2.5–3.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate, muticous or mucronate. Upper glume lanceolate, 2.5–3.5 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, 3.5–4(–5) mm long, membranous, light brown, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 0.5–1(–1.5) mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA**, **Southeastern USA**. Texas. Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina.

Muhlenbergia fastigiata (Presl) Henrard. *Meded. Herb. Leid. No.* 40, 59 (1921).

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. **Basionym or Replaced Name**: *Sporobolus fastigiatus* J. Presl, *Reliq. Haenk.* 1(4–5): 241 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Haenke s.n.*, Peru (PR; IT: PRC, US-3048470 (fragm. ex PR)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (148), S.A.Renvoize, *Gramineas de Bolivia* (1998) (339, Fig 71).

Derivation (Clifford & Bostock 2007): L. *fastigio*, sharpen to a point. Panicle branches or culms held erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Stolons present. Culms prostrate, 5–10 cm long. Lateral branches ample. Ligule an eciliate membrane. Leaf-blades involute, 0.5–1 cm long, 1 mm wide, coriaceous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 0.5–1 cm long, bearing few spikelets. 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, 2–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1–1.3 mm long, 1 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1–1.3 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute, muticous. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia, Ecuador, Peru. Argentina Northwest, Chile North.

Jujuy. Tarapaca.

Muhlenbergia filiculmis Vasey. *Contrib. U.S. Nat. Herb.* i. 267. (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.S. Sheldon 321*, 2 Aug 1892, USA: Colorado, El Paso Co. (US-81618).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (182).

Derivation (Clifford & Bostock 2007): L. *filum*, thread; *culmus*, stalk. Culms slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 15–30 cm long. Leaf-sheaths without keel. Ligule an eciliate membrane, 4–8 mm long. Leaf-blades filiform, involute, 3–6 cm long, 1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 2–5 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 lanceolate, laterally compressed, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate, 1.2–1.7 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, muticous or awned, 1 -awned. Upper glume lanceolate, 1.2–1.7 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex dentate, 3 -fid, acute, muticous or awned, 1 -awned or 3 -awned.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, mid-green or purple, mottled with last colour, without keel, 3 -veined, 0–3 -veined. Lemma margins pubescent. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–5 mm long overall. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**. Colorado, Wyoming. Arizona. New Mexico.

Muhlenbergia filiformis (Thurb.) Rydb. *Bull. Torr. Bot. Club,* 1905, 600 (1905).

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**: *Vilfa depauperata* var. *filiformis* Thurb. ex S. Watson, *Botany Fortieth Parallel* 376 (1871). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *S. Watson 1281*, Aug 1869, USA: Utah: Vinta Mts. (US-83989).

LT: *H.N. Bolander 6091*, 1935, USA: California: Yosemite Valley (NY; ILT: GH, MO, NY, US-556881, US-344165). LT designated by Hitchcock, N. Amer. Fl. 17: xxx (1935).

ST: *Torrey 565*, USA: California: Donner LK.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (180).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms erect or geniculately ascending, slender, 5–20 cm long, without nodal roots or rooting from lower nodes. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 1–2 mm long, erose, obtuse. Leaf-blades 1–5 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially or on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 2–6 cm long, bearing few spikelets. Primary panicle branches appressed. 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, 2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 0.6–1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex entire or erose, obtuse. Upper glume oblong, 0.6–1 mm long, 0.33–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex entire or erose, obtuse.

Florets. Fertile lemma lanceolate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acute, muticous or mucronate. Palea 1 length of lemma, 2 -veined. Palea surface scaberulous (above).

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6–0.9 mm long, purple. Caryopsis with adherent pericarp, fusiform, 1–1.2 mm long, dark brown.

n = 9 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Western Canada**, **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Kansas, Nebraska, South Dakota. Arizona, California, Nevada, Utah. New Mexico. Northwest Mexico.

Baja California.

Muhlenbergia flabellata Mez. *Fedde, Repert.* xvii. 213 (1921).

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 Costa Rica. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *H. Pittier 3372*, 19 Jan 1891, Costa Rica: San Jos? Cerro de Bueno Vista, 3000 m (B; IT: LE, US-577110).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (329, Fig 121).

Derivation (Clifford & Bostock 2007): L. *flabella*, fan; *-ata*, possessing. Culms fan-shaped at the base.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths papery. Basal innovations flabellate. Culms decumbent, 25–45 cm long. Lateral branches ample. Leaves mostly basal. Leaf-sheaths keeled. Ligule an eciliate membrane, 2.5–8 mm long, acute. Leaf-blades involute, 2–4 cm long, 1–2 mm wide. Leaf-blade surface ribbed, puberulous, hairy adaxially. Leaf-blade apex acuminate, antrorsely scabrous.

Inflorescence. Inflorescence a panicle. Peduncle angular (ribbed), 9–18 cm long, antrorsely scabrous above. Panicle contracted, linear, 3–9 cm long, bearing few spikelets. Primary panicle branches appressed. Panicle axis scabrous. Panicle branches scabrous. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 3–4 mm long.

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, 3.5–4(–5) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, disarticulating transversely.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 1.2–1.6 mm long, 0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic or obovate, 2.2–2.6 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume lateral veins parallel at apex, all extending to apex. Upper glume surface asperulous, rough on veins. Upper glume apex entire or dentate, 3 -fid, truncate.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, black, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma margins pubescent. Lemma apex acuminate,

awned, 1 -awned. Principal lemma awn flexuous, 4–7.5 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.8–2.1 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**. Costa Rica, Panama.

Muhlenbergia flavida Vasey. *Contrib. U.S. Nat. Herb.* i. 282. (1892).

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 Synonomy Database: HT: *E. Palmer 645*, Jun-Oct 1886, Mexico: Jalisco: Río Blanco (US-81623; IT: GH, K, LE, MEXU-4269, MO-2974124, NY, P, US-822896, US-995427, VT).

Illustrations (Journals): *Sida* (29: 90, Fig. 43 (2007)).

Derivation (Clifford & Bostock 2007): L. *flavidus*, pale yellow. Spikelets yellow.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms 15–35 cm long. Culm-internodes distally pubescent. Ligule an eciliate membrane, 1.5–2.5 mm long, hyaline. Leaf-blades 2–5 cm long, 1 mm wide. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, 5–15 cm long. Primary panicle branches ascending, 2–4 cm long. Panicle branches capillary. Spikelets appressed, 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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate or ovate, 1.5–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 1.5–2 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex entire or dentate, 2–3 -fid, acute, awned.

Florets. Fertile lemma elliptic or oblong, 3 mm long, membranous, yellow, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform, 1 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico, Southwest Mexico.
Chihuahua, Durango, Hidalgo. Sinaloa, Sonora. Jalisco, Michoacan, Nayarit.

Muhlenbergia flaviseta Scribn. *U.S. Dept. Agric. Bull. Agrost.* viii. 11. (1897).

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 Synonomy Database: HT: *E. Palmer 834*, Apr-Nov 1896, Mexico: Durango: collected at the city of Durango and vicinity, Dos Cajetes (US-81622; IT: GH, LE, MEXU-5198, MO-2974125, US-476182, US-746184).

Illustrations (Journals): *Sida* (29: 91, Fig. 44 (2007)).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Cataphylls evident. Rhizomes absent or short, scaly. Culms erect or geniculately ascending, 15–25 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, 0.2–

0.5 mm long. Leaf-blades flat or conduplicate, 2–10 cm long, 1–3 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins cartilaginous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted, elliptic or ovate, 2–5 cm long. Primary panicle branches appressed or ascending, 1–2 cm long, bearing spikelets almost to the base. Panicle axis angular, scaberulous. Panicle branches puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 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, laterally compressed, 4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume oblong, 1.5–2 mm long, 0.4–0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 3.5–4 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 10–15 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Chihuahua, Durango, Zacatecas.

Muhlenbergia flexuosa Hitchcock. *Contrib. U. S. Nat. Herb*. xxiv. 388 (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 Synonomy Database: HT: *J. Francis Macbride 3874*, 20 May-1 Jun 1923, Peru: Huacachi: Muna (F-534937; IT: BAA-1622, LE, US-1256339).

Illustrations (Journals): *Ruizia* (13:263, Fig 30k (1993)).

Derivation (Clifford & Bostock 2007): L. *flecto*, bend; *-osa,* abundance. Awn flexuous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 15–25 cm long. Ligule an eciliate membrane. Leaf-blades 2–3.5 cm long, 1–2 mm wide. Leaf-blade surface scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 4–6 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 lanceolate, laterally compressed, 4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 3 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, 4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 20–25 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Peru.

Muhlenbergia fragilis Swallen. *Contrib. U. S. Nat. Herb.* xxix. 206 (1947).

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 Synonomy Database: HT: *B.H. Warnock 235*, 29 Sep 1935, USA: Texas: Brewster Co.: Sunny Glen, W of Alpine (US-1829290; IT: GH).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (201).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 952, fig.6 (2007)).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose, clumped loosely. Culms geniculately ascending, 10–35 cm long. Culm-internodes distally hirsute. Lateral branches lacking or ample, arising from lower culm. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1.5–2.5 mm long, hyaline. Leaf-blades flat or conduplicate, 2–5(–6) cm long, 1.5–2 mm wide. Leaf-blade midrib widened. Leaf-blade surface scabrous, glabrous or hirsute. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle, deciduous as a whole. Panicle open, oblong, effuse, 7–25 cm long, 0.66–0.75 of culm length. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2.5–8 mm long, tip widened.

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, 0.9–1.3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.6–0.9 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface glabrous. Lower glume apex obtuse or acute. Upper glume lanceolate, 0.6–0.9 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface glabrous. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 0.9–1.2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein eciliate or pubescent, hairy below. Lemma margins eciliate or pubescent, hairy below. Lemma apex acute, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.6–0.9 mm long, dark brown or red.

n = 10 (2 refs TROPICOS). 2n = 20 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona, Nevada, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico.

Morelos, Puebla. Aguascalientes, Coahuila, Chihuahua, Guanajuato, Neuvo Leon, Queretaro, San Luis Potosi, Zacatecas. Baja California, Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia frondosa (Poir.) Fernald. *Rhodora,* xlv. 235 (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).

TYPE from Germany. **Basionym or Replaced Name**: *Agrostis frondosa* Poir., *Encycl.* 1: 252 (1810) . T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Germany, *Tenore* (K iso).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (159), F.W.Gould, *The Grasses of Texas* (1975) (279, Fig. 147).

Derivation (Clifford & Bostock 2007): L. *frons*, leaf; *-osa*, abundance. Origin uncertain.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms decumbent or prostrate, slender, 30–90 cm long. Culm-internodes smooth, distally glabrous. Lateral branches ample, arising from upper culm. Leaf-sheaths mostly shorter than adjacent culm internode, without keel, glabrous on surface.

Ligule an eciliate membrane or a ciliolate membrane, 0.8–1(–1.4) mm long, erose. Leaf-blades 4–12 cm long, 1–7 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle, terminal and axillary. Peduncle 1–2 cm long. Panicle contracted, linear or lanceolate, interrupted, dense, 3–10 cm long, 0.1–0.6(–0.9) cm wide. Primary panicle branches appressed or ascending, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.9–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 2–4 mm long, 0.7–1.1 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 lanceolate, 2.9–3.6 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute, mucronate or awned, 1 -awned. Principal lemma awn 1–2 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.6 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Eastern Canada**, **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**. Quebec. Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Texas. Kentucky, Tennessee, Virginia.

Muhlenbergia geminiflora (Kunth) P.M.Peterson. *Am. J. Bot.* 97 (9): 1543 (2010).

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**: *Aegopogon geminiflorus* Kunth, *Nov.Gen.Sp.*1:133, t.43 (1816). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Anon.*, Cultivated at Montpelier (MPU?; IT: US-75926 (fragm.)).

Recent Synonyms: *Aegopogon tenellus* (DC) Trin., *Gram. Unifl.* 164 (1824).

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) (275).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 940, fig.1 (2007), as *Aegopogon tenellus*).

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent or prostrate, 10–40 cm long, 0.2–0.8 mm diam., without nodal roots or rooting from lower nodes. Leaves cauline. Ligule an eciliate membrane. Leaf-blades 1.5–6 cm long, 0.5–1.5 mm wide, flaccid. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence composed of racemes. Racemes 15–25, borne along a central axis, spreading, cuneate, unilateral, 0.3–0.5 cm long, bearing a triad of spikelets. Central inflorescence axis 1–5 cm long. Rhachis obsolete, deciduous from axis. Raceme-bases brief, 0.5 mm long, pubescent. Spikelets in threes. Fertile spikelets pedicelled, 1 in the cluster, on shorter pedicels than sterile. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, linear, 1 mm long.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas, lanceolate, laterally compressed, 1.5–3.5 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, glabrous, lobed, 2 -fid, obtuse, muticous or mucronate. Companion sterile spikelet lemmas 1, exserted from glumes, muticous.

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, 2–4 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume obovate or cuneate, 1–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex lobed, 2 -fid, obtuse, muticous or awned, 1 -awned, awn 0.2–1 mm long. Upper glume obovate or cuneate, 1–2 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex lobed, 2 -fid, obtuse, muticous or awned, 1 -awned, awn 0.2–1 mm long.

Florets. Fertile lemma ovate, laterally compressed, lanceolate in profile, 2–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins ribbed. Lemma apex lobed, 3 -fid, with outer lobes longer, with lanceolate lobes, with lobes 0.5 mm long, incised 0.1–0.3 of lemma length, acuminate, awned, 1 -awned or 3 -awned. Principal lemma awn 4–8(–11) mm long overall. Lateral lemma awns absent or present, arising on inner edge of lobes, 0.5 mm long, shorter than principal. Palea lanceolate, 1 length of lemma, 2 -veined. Palea keels contiguous above a sulcus. Palea surface pubescent, hairy on back. Palea apex dentate, 2 -fid, acute, awned, awns 0.5–2 mm long.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

$2n = 20$ (Peterson et al 2007), or 60 (Peterson et al 2007, as *Aegopogon tenellus*).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southwestern USA**, **Mexico**. Arizona. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Brazil**. Costa Rica, El Salvador, Guatemala, Honduras, Panama. Brazil Southeast.

Minas Gerais, Rio de Janeiro, Espirito Santo. Distrito Federal, Mexico State. Chihuahua, Durango, Zacatecas. Michoacan, Oaxaca. Chiapas.

Muhlenbergia gigantea (Fourn.) Hitchcock. *N. Am. Fl.* xvii. 460 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name**: *Epicampes gigantea* E. Fourn.,. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E.Bourgeau 3137*, 30 Sep 1886, Mexico: Orizaba: Río Blanco (P; IT: US-865978 (fragm.), US-865977 (fragm.)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. very large. Culms tall compared with those of related species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 150–300 cm long. Culm-internodes smooth or scaberulous. Leaf-sheaths keeled. Ligule an eciliate membrane, 5–10 mm long, lacerate. Leaf-blades 70–100 cm long, 5–8 mm wide. Leaf-blade surface scaberulous or scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 50–100 cm long, 30–60 cm wide. Primary panicle branches 15–20 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 lanceolate, laterally compressed, 1.3–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1.3–2.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex obtuse or acute. Upper glume lanceolate, 1.3–2.5 mm long, 1.3–2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 1–1.3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex obtuse or acute, muticous or mucronate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico.

Mexico State, Puebla. Durango, Guanajuato, Hidalgo, San Luis Potosi. Veracruz. Sinaloa. Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia glabriflora Scribn. *Rhodora,* ix. 22 (1907).

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): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (157 as *Muhlenbergia glabrifloris*).

Derivation (Clifford & Bostock 2007): L. *glaber*, smooth; *flos*, flower. Lemmas glabrous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms 30–95 cm long. Culm-internodes smooth, distally pubescent. Lateral branches ample, arising from upper culm. Ligule an eciliate membrane, 0.5–1.5 mm long. Leaf-blades 3–4(–8) cm long, 1.5–4 mm wide, stiff. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle, terminal and axillary. Peduncle 1–4 cm long. Panicle contracted, linear, dense, 2–5 cm long, 0.3–0.5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.2–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute to setaceously acuminate. Upper glume lanceolate, 2–3 mm long, 1 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 lanceolate, 2.2–3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma apex acute, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.5 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**. Illinois, Missouri. Indiana. Texas. Kentucky, Louisiana, Mississippi, Tennessee.

Muhlenbergia glauca (Nees) Mez. *Fedde, Repert.* xvii. 214 (1921).

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**: *Podosemum glaucum* Nees, *Linnaea* 19(6): 689 (1847). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Aschenborn exs. 335*, Mexico (B?).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (166).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 961, fig.10 (2007)).

Derivation (Clifford & Bostock 2007): L. *glauca*, bluish-green. Whole plant or any of its parts glaucous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms slender, 25–60 cm long. Culm-internodes distally hispid, with reflexed hairs. Leaf-sheaths longer than adjacent culm internode, without keel, pubescent. Ligule an eciliate membrane, 0.5–1(–2) mm long, erose or lacerate, truncate. Leaf-blades 4–12 cm long, 3–6 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 4–10 cm long, 0.3–0.6 cm wide. Primary panicle branches appressed. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, scabrous.

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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Lower glume elliptic, 1.5–3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume elliptic, 1.5–3.5 mm long, 0.5–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile lemma elliptic, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex acute, mucronate or awned, 1 -awned. Principal lemma awn 0.5–3 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2 mm long, orange. Caryopsis with adherent pericarp, fusiform.

$2n = 60$ (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Southwest Mexico.

Distrito Federal, Mexico State, Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, San Luis Potosi, Zacatecas. Jalisco.

Muhlenbergia glomerata (Willd.) Trin. *Gram. Unifl.* 191. t. 5. f. 10. (1824).

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**: *Polypogon glomeratus* Willd., *Enum. Pl.* 87 (1809). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *[67]*, USA: Habitat in Pensylvania (B (Willd. hb); IT: US-1535797 (fragm. ex Willd. hb) [67]).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (155).

Derivation (Clifford & Bostock 2007): L. *glomus*, ball of thread; *-ata*, possessing. Spikelets crowded and forming clusters in the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect, 30–120 cm long. Culm-internodes smooth, distally pubescent. Leaf-sheaths keeled, scaberulous. Ligule an eciliate membrane, 0.2–0.6 mm long, erose, truncate. Leaf-blades 2–15 cm long, 2–4 mm wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear or lanceolate, continuous or interrupted, 1.5–12 cm long, 0.3–1.8 cm wide. Primary panicle branches appressed, 0.2–2.5 cm long. Spikelets 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 lanceolate, laterally compressed, 2–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose. Floret callus hairs 1 mm long.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous, rough at apex. Lower glume apex attenuate, awned, 1 -awned, awn 2–5 mm long. Upper glume lanceolate, 2–4 mm long, 1–1.3 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous, rough at apex. Upper glume apex attenuate, awned, 1 -awned, awn 2–5 mm long.

Florets. Fertile lemma lanceolate, 1.4–3.1 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma surface asperulous, rough above, pubescent, hairy at base. Lemma margins pubescent. Lemma apex attenuate, muticous or awned, 1 -awned. Principal lemma awn 0–1 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.8–1.5 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

$2n = 20$ (1 ref TROPICOS), or 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Subarctic America**, **Western Canada**, **Eastern Canada**, **Northwest USA**, **North-central USA**, **Northeast USA**, and **Southwestern USA**. Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. Labrador, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Wyoming. North Dakota, Nebraska, South Dakota. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont. Nevada. **Western South America**. Colombia.

Muhlenbergia grandis Vasey. *Contrib. U.S. Nat. Herb*. i. 283. (1892).

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 Synonomy Database: LT: *E. Palmer 515*, Jun-Oct 1886, Mexico: Jalisco: Río Blanco (US-73222; ILT: LE, MO-1837830, US-822914). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 17(3): 301 (1913), but without specifying a specific sheet; also by Soderstrom, Contr. U.S. Natl. Herb. 34: 161 (1967), who designated a specific sheet (as type).

ST: *C.G. Pringle 1760*, 1888, Mexico: Jalisco (US).

IST: *E.Palmer 515A*, 1886, Mexico: Jalisco: Río Blanco (US-999059, US-822915).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. tall. Plants robust with tall culms.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 100–150 cm long. Culm-internodes distally pubescent (below nodes). Leaf-sheaths keeled. Ligule an eciliate membrane, 1.5–6 mm long, lacerate. Leaf-blades 30–75 cm long, 3–5 mm wide. Leaf-blade surface pubescent, moderately hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, equilateral or nodding, 30–50 cm long, 4–5 cm wide. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

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, 1.5–2.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume lanceolate, 1.4–2.2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous, glabrous or puberulous. Lower glume apex entire or erose, obtuse or acute. Upper glume lanceolate, 1.4–2.2 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex entire or erose, obtuse or acute.

Florets. Fertile lemma lanceolate, 1.5–2.2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn 10–20 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Guanajuato. Sinaloa, Sonora. Jalisco, Nayarit.

Muhlenbergia gypsophila C. G. & J. R. Reeder. *Madrono,* xviii. 186 (1966).

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 Synonomy Database: HT: *J.R. Reeder et al. 3963*, 30 Oct 1964, Mexico: Nuevo León (YU; IT: US-2524092).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 963, fig.11 (2007)).

Derivation (Clifford & Bostock 2007): Gk. *gypsos*, gypsum; *phileo*, love. Growing on gypsum soils.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–50 cm long. Culm-nodes pubescent. Leaf-sheaths longer than adjacent culm internode, antrorsely scabrous, glabrous on surface or puberulous. Ligule a ciliolate membrane, 2–8 mm long, truncate. Leaf-blades curved, involute, 2–10 cm long, 0.5–2 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear, 7.5–15 cm long. Panicle axis pubescent. 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, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume elliptic, 1.5–2 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous, hairy at apex. Lower glume apex acute. Upper glume lanceolate, 1.5–2 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent, hairy above. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.5–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex dentate, 4 -fid, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 10–15 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–2 mm long, yellow. Caryopsis with adherent pericarp, fusiform, 2 mm long.

$2n = 20$ (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Coahuila, Neuvo Leon, San Luis Potosi.

Muhlenbergia hakonensis (Hack.) Makino. *J. Jap. Bot.* 1:13 (1917).

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.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. **Basionym or Replaced Name**: *Muhlenbergia japonica* var. *hakonensis* Hack. ex Matsum., *Bot. Mag. (Tokyo)* 11: 444 (1897). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan: Hakone, Prov. Fagami, *Matsumura*.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (174, Fig 61), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 690).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Hakone, Sagami Province, Japan.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 35–70 cm long, 1–1.5 mm diam., 6–8 -noded. Lateral branches lacking or sparse. Ligule an eciliate membrane, 0.5–1 mm long, erose, truncate. Leaf-blades 10–22 cm long, 2–4 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, interrupted, 8–15 cm long, 0.5–0.8 cm wide. Primary panicle branches appressed, 1–2 -nate. 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, 0.8 mm wide, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3–3.5 mm long, 0.9 length of upper glume, membranous, pallid, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 3.25–4 mm long, 0.7–0.8 length of adjacent fertile lemma, membranous, pallid, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4–5 mm long, membranous, light green or grey, without keel, 3 -veined, 0–3 -veined. Lemma midvein scabrous. Lemma surface pilose, hairy below. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 6–10 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.3–1.8 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**, **Eastern Asia**. China South Central, China Southeast. Japan Honshu, or Kyushu. Japan, Korea.

Anhui. Sichuan.

Muhlenbergia himalayensis Hack. ex Hook.f. *Fl. Brit. India* 7:259 (1896).

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

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *J.F. Duthie 10128*, (US-995912). IT.

IT: *J.F. Duthie 10128*, 22 Aug 1889, Simla (US-1126573). IT(fragm. ex Vienna).

Illustrations (Books): S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 689).

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rootstock evident. Rhizomes absent. Stolons present. Culms erect or decumbent or prostrate, 35–80 cm long, rooting from lower nodes. Ligule an eciliate membrane, 1 mm long, obtuse. Leaf-blades 5–25 cm long, 1.5–3 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or elliptic, nodding, 10–25 cm long, contracted about primary branches. Panicle branches flexuous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate or elliptic, 2.5–3.4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate or elliptic, 2.5–3.4 mm long, 0.75–0.8 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy at base. Lemma apex emarginate, awned, 1 -awned. Principal lemma awn 8–18 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp, fusiform.

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

Country /Province /State. **Western Asia**, **China**. Afghanistan, Iran. China South Central, Tibet. **Indian Subcontinent**. Eastern Himalaya, India, Nepal, Pakistan, West Himalaya.

Sichuan, Yunnan. Bhutan. Punjab, Uttah Pradesh. Himachal Pradesh.

Muhlenbergia hintonii Swallen. *Contrib. U. S. Nat. Herb.* xxix. 409 (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 Synonomy Database: Mexico: México: in meadow, Crucero, Temascaltepec, alt. 2880 m, 30 Dec 1932, *G.B. Hinton 3059* (HT: US-1840838).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of George Bode Hinton (1882–1943) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 27–50 cm long. Leaf-sheaths without keel, glabrous on surface. Ligule an eciliate membrane, 1 mm long, truncate or obtuse. Leaf-blades involute, 9–30 cm long, 1–3 mm wide. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 4–12 cm long. Primary panicle branches ascending or spreading, distant, 2–4.5 cm long. Panicle branches stiff. 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, 2.6–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, obtuse, muticous or mucronate. Upper glume lanceolate, 1.2–1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels. Upper glume apex dentate, 2 -fid, obtuse, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2.6–2.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy at base. Lemma margins pubescent, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn 3.5–5 mm long overall. Palea 2 -veined. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico.

Mexico State.

Muhlenbergia holwayorum Hitchcock. *Contrib. U. S. Nat. Herb.* xxiv. 389 (1927).

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

TYPE from Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E.W.D. Holway et al. 530*, 16 Apr 1920, Bolivia: Sorata (US-1108445).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Edward Willet Dorlan Holway (1853–1923) and Mary Ellen Holway (1872) United States plant collectors in North and South America.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–140 cm long. Leaves mostly basal. Ligule an eciliate membrane. Leaf-blades involute, 25–45 cm long, 2–3 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 20–30 cm long. Primary panicle branches appressed, 3–7 cm long. Panicle branches scabrous. 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, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–1.8 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.5–1.8 mm long, 0.3–0.4 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 3.5–4 mm long overall. Palea 1 mm long, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Bolivia.

Muhlenbergia huegelii Trin. *Mem. Acad. Petersb. Ser.* VI. 6 II. 293. (1845).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online, 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), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from India. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: India: Himalaya: Massuri, *de Hugel* (HT: ?).

Illustrations (Books): E.E.Henty, *A Manual of the Grasses of New Guinea* (1969) (65, Pl. 22 as *M. arisanensis*), H.J.Noltie, *The Grasses of Bhutan* (2000) (653, Fig. 32), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 689).

Derivation (Clifford & Bostock 2007): in honor of Carl Alexander Anselm Huegel (1794–1870) German botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms decumbent or prostrate, 100–160 cm long (long). Ligule an eciliate membrane, lacerate. Leaf-blades 8–15 cm long, 4–8 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, interrupted, 10–20 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1–2 mm long, scabrous.

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, compressed slightly, 2–2.5 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, 1 mm long, 0.66 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, 1.5 mm long, 0.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 20 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pilose.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp, fusiform.

n = 20 (1 ref TROPICOS). $2n$ = 42.

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

Country /Province /State. Russian Far East, **Middle Asia**, **Western Asia**, **China**, **Eastern Asia**, **Russia**. Primorye. Turkmenistan. Afghanistan, Iran. China South Central, Inner Mongolia, Manchuria, China North-Central, Qinghai, China Southeast, Tibet, Xinjiang. Korea, Taiwan. **Indian Subcontinent**, **Indo-China**, **Malesia**, **Papuasia**. Eastern Himalaya, India, Nepal, Pakistan, West Himalaya. Myanmar. Java, Lesser Sunda Is, Philippines, Sulawesi, Sumatra. New Guinea.

Gansu, Hebei, Shaanxi, Shandong, Shanxi. Anhui, Fujian, Henan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan. Darjeeling, Bhutan.

Muhlenbergia implicata (Kunth) Trin. *Gram. Unifl.* 193. (1824).

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 Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Michoacán: near Lake Cuiseo and Puerto de Andaracuas (B-W; IT: P).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *implico*, entangle. Inflorescence branches intertwined.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 30–50 cm long, 0.5 mm diam., rooting from lower nodes. Culm-internodes distally pubescent, with reflexed hairs. Culm-nodes constricted, glabrous. Lateral branches ample. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades conduplicate, 4–8 cm long, 1–1.4 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 5–15 cm long, 4–8 cm wide. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, 3–4 mm long, tip widened.

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, 2.8–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume orbicular, 0.2–0.3 mm long, 0.5 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume orbicular, 0.4–0.5 mm long, 0.15 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 2.8–3.2 mm long, membranous, purple, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins close to midvein. Lemma surface scabrous, rough on veins or in lines (5 lines in all). Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, 12–20 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.7 mm long, purple. Caryopsis with adherent pericarp, fusiform.

n = 10 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**. Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Venezuela. Colombia.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, Zacatecas. Veracruz. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia inaequalis Soderstr. *Contrib. U.S. Nat. Herb.* iv. 142 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A.S. Müller 973*, 11 Nov 1939, Venezuela: Trujillo (US-2380325; IT: MO-fragm., US-2383834, VEN).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *in-*, not; *aequalis*, equal. The glumes differ in length.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 50–75 cm long, 3–4 -noded. Culm-internodes smooth or scaberulous, distally glabrous. Leaf-sheaths keeled, smooth or scaberulous. Leaf-sheath auricles absent. Ligule an eciliate membrane, 0.5–1.5 mm long, brown. Collar glabrous. Leaf-

blades flat or conduplicate, 15–26 cm long, 2–3 mm wide. Leaf-blade surface scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 25–30 cm long, 5–10 cm wide. Primary panicle branches ascending or spreading, 5–8 cm long. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 0.5–1.8 mm long, scaberulous.

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, 2.5–3.1 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume elliptic, 1.6–2.5 mm long, 0.75 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume elliptic, 2–3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute.

Florets. Fertile lemma elliptic, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, flexuous, 10–20 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.1–1.2 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Muhlenbergia iridifolia Soderstr. *Contrib. U.S. Nat. Herb.* iv. 145 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. McVaugh 21313*, 25 Nov 1960, Mexico: Jalisco (MICH; IT: US-2432724, US-2960226).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *folium*, leaf. Leaf-blades rather wide and flat, the plants thereby resembling Iris species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–130 cm long. Culm-internodes distally glabrous. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane, 5–7 mm long. Leaf-blades conduplicate, 30–70 cm long, 4–7 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, nodding, 40–45 cm long. Primary panicle branches appressed. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 3.5–4 mm long.

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, 3.5–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 2.7–3.3 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate, mucronate. Upper glume lanceolate, 3.5–4 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, awned, 1 -awned, awn 0.5–0.8 mm long.

Florets. Fertile lemma linear, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 20–25 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Southwest Mexico.

Jalisco.

Muhlenbergia jaime-hintonii Peterson & Valdes. *Sida* 18:686 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *J.Valde-Reyna & M.A.Carranza Peez 2560*, 31 Oct 1998, Mexico: Nuevo Leo: La Joya, Cuesta Blanca, approximately 15 km de Arramberri Rumba a Zaragoza (US-3377556, US-3377557).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 965, fig.12 (2007)).

Derivation (Clifford & Bostock 2007): In honor of Jaime (James C.) Hinton (fl.1940) who collected in Mexico; collections by Hinton family members were often, as in this case, attributed solely to George Boole Hinton (1882–1943) the father of Jaime.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes short. Basal innovations extravaginal. Culms erect, 44–82 cm long. Culm-internodes elliptical in section, distally pubescent. Culm-nodes glabrous or pubescent. Leaf-sheaths 6–28 cm long, longer than adjacent culm internode, glabrous on surface or puberulous. Ligule a ciliolate membrane, 0.4–1 mm long, truncate. Leaf-blades flat or conduplicate, 5–22 cm long, 1.8–5 mm wide. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, lanceolate, 3–34 cm long, 0.7–7 cm wide, contracted about primary branches. Primary panicle branches ascending, 0.5–6.5 cm long, bearing spikelets almost to the base. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–2 mm long, scaberulous.

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, 1.5–2.1 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 oblong, 0.7–1.2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins obscure. Lower glume apex entire or erose, obtuse or acute. Upper glume oblong, 0.7–1.2 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex entire or erose, obtuse or acute.

Florets. Fertile lemma elliptic or oblong, 1.5–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins obscure. Lemma surface pubescent, hairy below. Lemma margins pubescent. Lemma hairs 0.2–0.5 mm long. Palea oblong, 1.5–2 mm long, 2 -veined. Palea surface pubescent, hairy on back and on flanks, hairy below. Palea apex obtuse or acute.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.8–1 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Neuvo Leon.

Muhlenbergia jaliscana Swallen. *Bol. Soc. Bot. Mexico,* No. 23. 32 (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 Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. McVaugh 13991*, 7 Nov 1952, Mexico: Jalisco: Sierra de Manantlán, 15–20 mi SE of Aytlan, on the bajada S and W of the divide between Aserradero San Miguel Uno and Durazno, alt. 1700 m (US-2118498).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-anum*, indicating location. From Jalisco, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 60–120 cm long. Leaf-sheath auricles erect.

Ligule an eciliate membrane, 1–4 mm long. Leaf-blades involute, 25–50 cm long, 2–4 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, 15–30 cm long. Primary panicle branches ascending. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 1–10 mm long, scaberulous, tip widened.

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, 5–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or ovate, 1.5–2 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous, rough above. Lower glume apex acute. Upper glume lanceolate or ovate, 2–2.5 mm long, 0.4–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, rough above. Upper glume apex acute, muticous or mucronate.

Florets. Fertile lemma linear, 5–5.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, pubescent, hairy at base. Lemma apex attenuate, awned, 1 -awned. Principal lemma awn 10–20(–28) mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.5–3 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Southwest Mexico.

Jalisco.

Muhlenbergia japonica Steud. *Syn. Pl. Gram.* 422. (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), N.Tsvelev, *Grasses of the Soviet Union* (1983), T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan:, *P.F. von Siebold s.n.* (HT: L).

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (170, Fig 59), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 689).

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 Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms decumbent, 15–45 cm long, 1 mm diam., rooting from lower nodes. Culm-internodes 3–5 cm long. Lateral branches ample. Ligule a ciliolate membrane, 0.2–0.5 mm long, truncate. Leaf-blades linear or lanceolate, 4–15 cm long, 1.5–4 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 8–15 cm long, 0.8–1.5 cm wide. Primary panicle branches 1 -nate, bearing spikelets almost to the base. Panicle branches capillary, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2 mm long, 0.75 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, 1.8–2.2 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, grey, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn 4–8 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6–0.7 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 40 (1 ref TROPICOS), or 42.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian Far East, **China**, **Eastern Asia**. Primorye. China South Central, Manchuria, China North-Central, China Southeast. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan.

Beijing, Shaanxi, Shandong. Anhui, Fujian, Henan, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Muhlenbergia jonesii (Vasey) Hitchcock. *Jepson. Fl Calif.* i. 111 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *M.E. Jones 303*, 1881, USA: California (US-556886).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (184).

Derivation (Clifford & Bostock 2007): in honor of Marcus Eugene Jones (1852–1934) United States mining engineer, teacher and botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, slender, 20–40 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades filiform, involute, 5–15 cm long, 0.5 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle open, linear or lanceolate, 5–8 cm long. Primary panicle branches appressed or ascending, 1–2 cm long. Panicle axis scabrous. 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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex entire or erose, obtuse. Upper glume oblong, 1 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex entire or erose, obtuse.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous, hairy below. Lemma apex acuminate or attenuate, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**. California.

Muhlenbergia laxa Hitchcock. *N. Am. Fl.* 17: 445 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *M. Botteri 1259*, Mexico: Orizaba (US-822840).

Illustrations: None found.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 40–70 cm long. Culm-internodes distally glabrous. Lateral branches ample. Leaf-sheaths mostly shorter than adjacent culm internode, without keel, glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades 2–5 cm long, 1–2 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, interrupted, 4–6 cm long. Primary panicle branches appressed. Panicle axis scaberulous. Panicle branches pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 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, laterally compressed, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex dentate, 2 -fid, acute, awned, 1 -awned, awn 1.5 mm long. Upper glume oblong, 1.5 mm long, 0.5–0.6 length of adjacent fertile lemma, membranous, without keels. Upper glume surface scabrous. Upper glume apex dentate, 2 -fid, acute, awned, 1 -awned, awn 1.5 mm long.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma surface scaberulous, rough above. Lemma apex awned, 1 -awned. Principal lemma awn 4–8 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Gulf (Mexico).

Veracruz.

Muhlenbergia laxiflora Scribn. *Zoe,* iv. 389. (1894).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Brandegee 74*, 17 Oct 1893, Mexico: Baja California Sur: La Chuparosa (UC; ILT: US (fragm. ex UC)). LT designated by A.S. Hitchcock, Contr. U.S. Natl. Herb. 17: 298 (1913). A Pringle collection is also cited in the Scribner's protologue, without the two collections being clearly distinguished as types, except in the context of the title of the article..

IST: *C.G. Pringle 1412*, 23 Sept 1887, Mexico: Chihuahua: Cool slopes of Sierra Madre, 2286 to 2591 m (US-822919, US-91919 (fragm. ex UC)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *laxus*, loose; *flos*, flower. Inflorescence an open panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 75–100 cm long. Culm-internodes antrorsely scabrous. Culm-nodes purple. Leaf-sheaths mostly shorter than adjacent culm internode, without keel, smooth or scaberulous. Ligule an eciliate membrane, 5–8 mm long. Leaf-blades flat or involute, 20–40 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–15 cm long, 1–3 cm wide. Primary panicle branches ascending, 4–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–5 mm long, scabrous (above).

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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs 0.5–0.7 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous, rough at apex. Lower glume apex acute. Upper glume lanceolate, 1.5–2 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, rough at apex. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above or on veins. Lemma apex dentate, 2 -fid, mucronate, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 2 -veined. Palea surface scaberulous. Palea apex acute or acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.2 mm long, purple. Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long, red.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico.

Chihuahua. Baja California.

Muhlenbergia lehmanniana Henrard. *Meded. Herb. Leid. No.* 40, 59 (1921).

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 Colombia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Lehmann 1267*, Colombia: Popayan? (L-908.350–519; IT: US-72979 (fragm. ex L), US-72977 (fragm. ex L), US-72978 (fragm. ex K)).

Illustrations (Books): G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 77, Fig. 11 (2001)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Friedrich Karl Lehmann (1850–1903) who collected in South America.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Basal innovations flabellate. Culms geniculately ascending, 70–170 cm long, 2 mm diam., 3–4 -noded. Culm-internodes distally glabrous. Lateral branches lacking. Leaves mostly basal. Leaf-sheaths keeled. Ligule an eciliate membrane. Leaf-blades persistent or deciduous at the ligule, conduplicate, 40–70 cm long, 1–4 mm wide, coriaceous, stiff. Leaf-blade midrib keeled beneath. Leaf-blade surface scabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, 20–40 cm long, 5–10 cm wide, contracted about primary branches. Primary panicle branches appressed or ascending or spreading. Spikelets appressed, 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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, disarticulating obliquely.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume lanceolate, 2.5–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex emarginate or obtuse, muticous or mucronate. Upper glume lanceolate, 2.5–3 mm long, 1–1.1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex emarginate or obtuse, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2.4–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma surface scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 20–30 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–1.7 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Western South America**. Venezuela. Colombia.

Muhlenbergia ligularis (Hack.) Hitchcock. *Contrib. U. S. Nat. Herb.* xxiv. 388 (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 Ecuador. **Basionym or Replaced Name**: *Sporobolus ligularis* Hack., *Oesterr. Bot. Z.* 52(2): 57 (1902)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Sodiro s.n.*, 23 Jan 1899, Ecuador: Pichincha (W; IT: BAA-2905 (ex W), US-3274313 (fragm.)). BAA specimen has 2311 as collection no..

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (339, Fig 71), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 74, Fig. 10 (2001)).

Illustrations (Journals): *Ruizia* (13:263, Fig 30d-f (1993)).

Derivation (Clifford & Bostock 2007): L. *ligula*, small tongue; *-aris,* pertaining to. Ligule conspicuous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 4–8 cm long. Ligule an eciliate membrane. Leaf-blades 1–2 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 1–2 cm long, bearing few spikelets. 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, 2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1–1.3 mm long, 1 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume oblong, 1–1.3 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate or obtuse.

Florets. Fertile lemma ovate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute or acuminate, muticous. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Mesoamerica**, **Northern South America**, **Western South America**, **Southern South America**. Guatemala. Venezuela. Bolivia, Colombia, Ecuador, Peru.

Catamarca, Tucuman. Cordoba.

Muhlenbergia ligulata (Fourn.) Scribn. & Merrill. *U.S. Dept. Agric. Bull. Agrost.* xxiv. 19 (1901).

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

TYPE from Mexico. **Basionym or Replaced Name**: *Chaboissaea ligulata* E. Fourn., *Mexic. Pl.* 2: 112t. 1 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Virlet d'Aoust s.n.*, 1851, Mexico: San Luis Potos?(P; IT: US-A865709 (fragm. ex P)).

Illustrations (Books): R.McVaugh, *Flora Nova-Galiciana* Vol.14 *Gramineae* (1983) (as *Chaboissaea*).

Derivation (Clifford & Bostock 2007): L. *ligula*, small tongue; *-ata*, possessing. Leaf-blades short and strap-shaped.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–60 cm long. Ligule an eciliate membrane, 6–10 mm long, acuminate. Leaf-blades conduplicate or involute, 5–15 cm long, 1–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–25 cm long, contracted about primary branches. Primary panicle branches 2–10 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

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, compressed slightly, 2.5–3 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, 1.2–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.2–2 mm long, 0.6–1 length of

adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2 mm long, cartilaginous, keeled, keeled above, 3 -veined, 0–3 -veined. Lemma apex apiculate. Palea 1 length of lemma, cartilaginous, 2 -veined. Apical sterile florets 1 in number, male or barren, lanceolate, 2 mm long.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.4–1.8 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico.

Distrito Federal, Mexico State. Aguascalientes, Chihuahua, Durango, Guanajuato, San Luis Potosi, Zacatecas. Jalisco.

Muhlenbergia lindheimeri Hitchcock. *Journ. Wash. Acad. Sc.* 24: 291 (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Lindheimer 725*, 1847, USA: Texas (US-998949; IT: F, GH, MO, UC, US-998947, W).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (195), F.W.Gould, *The Grasses of Texas* (1975).

Illustrations (Journals): *Sida* (29: 92, Fig. 45 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 959, fig.9 (2007)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): in honor of Ferdinand Jakob Lindheimer (1801–1879) German-born United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, robust, (50–)80–100(–150) cm long. Leaf-sheaths keeled. Ligule an eciliate membrane, 8–15 mm long. Leaf-blades conduplicate, 10–45(–50) cm long, 2–3(–5) mm wide, light green or glaucous. Leaf-blade surface pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, 20–40 cm long, 1–1.5 cm wide. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 2–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume elliptic, 2–3.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate or acute, muticous or mucronate. Upper glume elliptic, 2–3.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth to scabrous. Upper glume apex emarginate or acute, muticous or mucronate.

Florets. Fertile lemma elliptic, 2–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth to scabrous. Lemma apex acute, muticous or awned, 1 -awned. Principal lemma awn 0–4 mm long overall. Palea 0.8–0.9 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5 mm long. Caryopsis with adherent pericarp, fusiform.

$2n$ = 20, or 26, or 30 (all Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA**, **Mexico**. Texas. Northeast Mexico.

Coahuila, Chihuahua, Neuvo Leon.

Muhlenbergia longiglumis Vasey. *Contrib. U.S. Nat. Herb.* i 283. (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *E. Palmer 766*, Jul-Oct 1886, Mexico: Jalisco: Guadalajara (US-2383429; ILT: LE, MO-1837829, US-822922, US-995812). LT designated by Hitchcock, Contr. U.S. Natl. Herb. 17(3): 301 (1913), but without specifying a sheet; also by Soderstrom, Contr. U.S. Natl. Herb. 34(4): 166 (1967), who did specify a specific sheet.

ST: *C.G. Pringle 2365*, 1889, Mexico: Jalisco: Guadalajara (MO-1837828, US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *longus*, long; *gluma*, husk. Spikelets with long glumes and or lemmas.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 60–100 cm long. Leaf-sheaths keeled. Ligule an eciliate membrane, 7–15 mm long, lacerate. Leaf-blades conduplicate or involute, 20–30 cm long, 1.5–2 mm wide. Leaf-blade surface scabrous, glabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, equilateral or nodding, 20–40 cm long, 1–2.5 cm wide. Primary panicle branches ascending. 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, 5.5–6.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose, truncate.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 5.5–6.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, glabrous or puberulous. Lower glume apex attenuate or setaceously acuminate. Upper glume lanceolate, 5.5–6.5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous, glabrous or puberulous. Upper glume apex attenuate, muticous or awned, 1 -awned, awn 0.5–1 mm long.

Florets. Fertile lemma linear, dorsally compressed, 5.5–6.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma margins eciliate or ciliate, hairy at base. Lemma apex acute, awned, 1 -awned. Principal lemma awn 10–65 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.3–2.6 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Southwest Mexico.

Aguascalientes, Zacatecas. Sonora.

Muhlenbergia longiligula Hitchcock. *Am. Journ. Bot.* xxi. 136 (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *J.W. Toumey s.n.*, 23 Jul 1892, USA: Arizona (US-A865974 (fragm.)).

LT: *C.G. Pringle s.n.*, 26 Jul 1884, USA: Arizona (US-746686; ILT: F, GH, US-87018, W-1916–26578). LT designated by Hitchcock, Amer. J. Bot. 21: 136 (1934).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (189).

Derivation (Clifford & Bostock 2007): L. *longus*, long; *ligula*, small tongue. Ligule, long.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths yellow, persistent and investing base of culm. Culms 60–130 cm long, 1–2 -noded. Culm-internodes smooth. Culm-

nodes glabrous. Leaf-sheaths without keel, smooth or scaberulous. Leaf-sheath oral hairs lacking. Ligule an eciliate membrane, 10–30 mm long, scarious, brown. Collar glabrous. Leaf-blades flat or involute, 20–40 cm long, 3–5.5 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially or on both sides. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Peduncle scaberulous above. Panicle open, linear or elliptic, 15–55 cm long, 1–5 cm wide. Primary panicle branches 3–5 cm long. Panicle axis smooth or scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, smooth or scaberulous.

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, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume lanceolate, 2.5–3.5 mm long, 1 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 2.5–3.5 mm long, 1–1.2 length of adjacent fertile lemma, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2.5–2.9 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma apex acute, muticous or mucronate, 1 -awned. Palea 1 length of lemma, 2 -veined. Palea surface glabrous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

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.

Puebla. Chihuahua, Durango. Sonora. Jalisco.

Muhlenbergia longistolon Ohwi. *Bull. Nat. Sci. Mus., Tokyo,* No. 26, 3 (1949).

Accepted by: T.Koyama, *Grasses of Japan and its neighboring regions* (1987).

TYPE from Japan. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan: Yezo [Hokkaido], Hondo: Mt. Sasagotoge in Kai, *K. Watanabe 63003* (HT: NSM).

Illustrations (Books): C-C Hsu, *Flora of Taiwan*, Vol 5 (1978) (438), C-C Hsu,*Taiwan Grasses* (1975) (500, Pl. 1409).

Derivation (Clifford & Bostock 2007): L. *longus*, long; *stolo*, useless sucker. Plant with long stolons or rhizomes.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated, scaly. Culms erect, 50–110 cm long, 2–3 mm diam., 8–12 -noded. Lateral branches ample, arising from mid culm. Leaf-sheaths glabrous on surface or puberulous. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blades 8–22 cm long, 3–8 mm wide, dark green. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or ovate, dense, nodding, 8–30 cm long, 1–3 cm wide. Primary panicle branches ascending, 1–3 -nate, 3–8 cm long, bearing spikelets almost to the base. 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, 2.6–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 0.5–0.6 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein smooth or scabrous. Lower glume lateral veins absent. Lower glume apex dentate, 2 -fid, obtuse. Upper glume ovate, 0.75–1.2 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein smooth or scabrous. Upper glume lateral veins absent. Upper glume apex dentate, 2 -fid, obtuse.

Florets. Fertile lemma lanceolate, 2.6–3 mm long, membranous, grey, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 8–10 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.
$2n = 40$ (1 ref TROPICOS), or 42.

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. Russian Far East, **China**, **Eastern Asia**. Amur. Japan Hokkaido, or Honshu, or Shikoku, or Kyushu. Japan, Korea, Taiwan.

Muhlenbergia lucida Swallen. *Journ. Wash. Acad. Sc*. xxvi. 208 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F.W. Pennell 18955*, 16 Sep 1934–17 Sep 1934, Mexico: Chihuahua (US-1614380; IT: US-1614381).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. clear. A new name required for the purposes of nomenclature thereby making clear the identity of the species.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60 cm long. Culm-internodes distally pubescent. Leaf-sheaths longer than adjacent culm internode, without keel, scaberulous, glabrous on surface or pubescent. Ligule an eciliate membrane, 3–6 mm long, obtuse. Leaf-blades flexuous, involute, 15–30 cm long, 1–3 mm wide. Leaf-blade surface glabrous or puberulous.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 15 cm long. Primary panicle branches 5–6 cm long. Panicle branches flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 10–15 mm long.

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 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3 mm long, 1 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume lanceolate, 3 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface villous. Lemma apex dentate, 2 -fid, with lobes 1 mm long, awned, 1 -awned. Principal lemma awn from a sinus, flexuous or geniculate, 12 mm long overall, without a column or with a straight or slightly twisted column. Palea 1 length of lemma, 2 -veined. Palea surface villous, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico.

Mexico State. Chihuahua, Guanajuato.

Muhlenbergia macrotis (Piper) Hitchcock. *N. Am. Fl.* 17: 463 (1935).

TYPE from Mexico. **Basionym or Replaced Name**: *Epicampes macrotis* Piper, *Proc. Biol. Soc. Wash.* 18: 144 (1905). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.N. Rose 3528*, 7 Aug 1897, Mexico: Zacatecas: Sierra Madre Montains, ca. 40 km W of San Juan Capistrano (US-302505).

Illustrations: None found.

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

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 100–200 cm long. Culm-internodes smooth or antrorsely scabrous. Leaf-sheaths keeled. Leaf-sheath auricles erect, 20–40 mm long. Ligule an eciliate membrane, 5–8 mm long, lacerate. Leaf-blades 50–100 cm long, 4–7 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 30–60 cm long, 1–2 cm wide. Primary panicle branches ascending, 8–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

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, 2–2.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets. Lower glume lanceolate, 2–2.7 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex obtuse or acute. Upper glume lanceolate, 2–2.7 mm long, 0.9–1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 2–2.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or asperulous. Lemma apex acute, muticous or mucronate or awned, 1 -awned. Principal lemma awn 1 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.7 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

Distrito Federal, Puebla. Durango, Guanajuato, Zacatecas. Sinaloa. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia macroura (Kunth) Hitchc. *N. Am. Fl.* 17: 468 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F.W.H.A. von Humboldt & A.J.A. Bonpland s.n.*, Sep, Mexico: México: near the Nevado de Toluca (P-Bonpl.; IT: US-A865654 (fragm.)).

Illustrations (Journals): *Sida* (29: 93, Fig. 46 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 968, fig.13 (2007)).

Derivation (Clifford & Bostock 2007): Gk. *makros*, large; *oura*, tail; Inflorescence a spike or spike-like panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 100–200 cm long. Leaf-sheaths without keel. Ligule an eciliate membrane, 10–25 mm long. Leaf-blades involute, 20–50 cm long, 1–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 15–40 cm long, 0.5–1.2 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

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, 4–6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 4–6 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scaberulous. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 4–6 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scaberulous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3.6–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.7 mm long. Caryopsis with adherent pericarp, fusiform.

$2n = 20$, or 24, or 28 (all Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, San Luis Potosi. Veracruz. Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia majalcensis P.M. Peterson. *Syst. Bot.* 14(3): 316–318, f. 1 (1989).

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 Synonomy Database: HT: *P.M. Peterson & C.R. Annable 4519*, 20 Sep 1986, Mexico: Chihuahua: Sierra Madre Occidental, 21.1 mi W of Hwy. 45, 0.4 mi E of Cumbres de Majalca, Parque Nacional, elev. 2200 m, barranca with Pinyon pines and *Juniperus* (WS; IT: ARIZ, ENCB, GH, HSC, MEXU, MICH, MO-3643064, NMC, NY, RSA, TAES, UC, US-3127034, WIS).

Illustrations (Journals): *Sida* (29: 94, Fig. 47 (2007)).

Derivation (Clifford & Bostock 2007): L. *-ensis,* denoting origin. From Cumbres de Majalca, Chihuahua, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect, slender, 18–36 cm long, 0.4–0.5 mm diam. Culm-internodes 1.5–6 cm long, smooth or scaberulous. Leaf-sheaths 1–3.2 cm long, mostly shorter than adjacent culm internode, smooth or scaberulous. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1.5–2 mm long, erose or lacerate, obtuse. Leaf-blades flat or involute, 2–10 cm long, 0.7–1.4 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scaberulous, rough abaxially, puberulous, hairy adaxially. Leaf-blade margins cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 9–15 cm long, 3.5–9.5 cm wide. Primary panicle branches ascending or spreading, 1–3 -nate, 1–6 cm long. Panicle axis 15–35 noded. Panicle branches capillary. Spikelets pendulous or deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, recurved, 3–8 mm long.

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, 1.2–1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1.2–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.2–1.5 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 1–1.2 mm long, membranous, light brown, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma apex obtuse, muticous. Palea 1–1.2 mm long, 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.5 mm long. Caryopsis with adherent pericarp, ellipsoid, 0.8–0.9 mm long, dark brown.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Chihuahua.

Muhlenbergia maxima S. Laegaard & I. Sanchez Vega. *Nordic J. Bot.*, 10(4): 439 (1990).

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 Synonomy Database: Peru: Prov. Cajamarca: Choten between Paso El Gavilan and San Juan at km 153 on the road to the coast, 2900 m a.s.l., 29 May 1984, *Sanchez Vega & Ruiz Vigo 3561* (HT: CPUN; IT: AAU, K, US, USM).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. greatest. Culms very tall.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Culms 100–130 cm long. Leaf-sheaths longer than adjacent culm internode, keeled. Ligule an eciliate membrane. Leaf-blades flat or revolute, 30–40 cm long, 3–4 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 30–50 cm long, 3–4.5 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. 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, 2.5–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2.5 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.5–2.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn subapical, flexuous, 5–6 mm long overall. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Peru.

Muhlenbergia mexicana (L.) Trin. *Gram. Unifl.* 189 (1824).

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).

TYPE from USA. **Basionym or Replaced Name**: *Agrostis mexicana* L., *Mant.* 31 (1767). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *Anon.*, Cultivated in Hortus Upsaliensis (LINN; IT: US-76278 (fragm. ex LINN)). see Hitchcock, Contr. U.S. Natl. Herb. 12: 119 (1908).

Recent Synonyms: *Bealia mexicana* Scribn, *Proc. Calif. Acad. Ser.*2. ii. 212 (1890).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (155).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating origin. From Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated. Culms 30–90 cm long. Culm-internodes smooth, distally pubescent. Lateral branches ample, arising from upper culm. Ligule an eciliate membrane, 0.4–1 mm long. Leaf-blades 5–15 cm long, 2–6 mm wide. Leaf-blade surface glabrous.

Inflorescence. Inflorescence a panicle, terminal and axillary. Peduncle 2–12 cm long. Panicle contracted, linear or lanceolate, interrupted, dense, 7–21 cm long, 0.2–1 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2–4(–4.4) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets or exceeding apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–4.4 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex attenuate, awned, 1 -awned, awn 0.5–1.5 mm long. Upper glume lanceolate, 2–4.4 mm long, 0.9–1.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex attenuate, awned, 1 -awned, awn 0.5–1.5 mm long.

Florets. Fertile lemma lanceolate, 1.4–3.4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute, muticous or mucronate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.5 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

2*n* = 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. Pacific, North America.

Country /Province /State. **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**. Yukon. Alberta, British Columbia, Manitoba, Saskatchewan. Nova Scotia, Ontario. Colorado, Idaho, Oregon, Washington, Wyoming. Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. 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. North Carolina, Tennessee. Northeast Mexico.

Uttah Pradesh. Chihuahua, Durango.

Muhlenbergia michisensis Y. Herrera A. & P.M. Peterson. *Novon,* 2(2): 117 (1992).

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 Synonomy Database: HT: *Y.Herrera & S.Acevedo 986*, 18 Sep 1989, Mexico: Durango: Suchil Mun.: Las Escobas, San Juan de Michis, Bosque de *Quercus-Pinus*, 2420 m (CIIDIR; IT: MTMG, US-3239026). dates verified in pub. and on US specimen, 17 & 18, respectively.

Illustrations (Journals): *Novon* (2: 116, Fig. 2 (1992)).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From San Juan de Michis, Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes absent. Butt sheaths papery, persistent and investing base of culm, with curly dead sheaths. Culms erect, 68–80 cm long. Culm-internodes distally glabrous. Culm-nodes glabrous. Leaf-sheaths 8–14 cm long, longer than adjacent culm internode, without keel, scaberulous. Ligule an eciliate membrane, 4–7 mm long, acuminate. Leaf-blades flat or conduplicate or involute, 8.5–20 cm long, 1–3 mm wide. Leaf-blade surface scabrous, rough abaxially, glabrous or hirsute, sparsely hairy, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 12–17 cm long, 2–4 cm wide. Primary panicle branches spreading, 0.4–3 cm long. Panicle axis scabrous. Spikelets solitary or in pairs. Fertile spikelets pedicelled. Pedicels present, 0.2–1 mm long, scabrous.

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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 4.5–5 mm long, 1 length of upper glume, membranous, dark green, without keels, 1 -veined. Lower glume primary vein pubescent. Lower glume lateral veins absent. Lower glume surface scabrous, pubescent, hairy at base. Lower glume apex acute. Upper glume lanceolate, 4.5–5 mm long, 1.3 length of adjacent fertile lemma, membranous, dark green, without keels, 1(–3) -veined. Upper glume primary vein pubescent. Upper glume lateral veins absent or obscure. Upper glume surface scabrous, pubescent, hairy at base. Upper glume apex acute.

Florets. Fertile lemma oblong, 3.5–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliolate. Lemma margins ciliolate. Lemma hairs 0.3 mm long. Lemma apex dentate, 2 -fid, with lobes 0.2 mm long, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 10–15 mm long overall. Palea oblanceolate, 2.8–3.5 mm long, 2 -veined. Palea surface pubescent, hairy on back. Palea apex lobed, 3 -fid.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.4 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Durango.

Muhlenbergia microsperma (DC.) Trin. *Gram. Unifl.* 193 (1824).

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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Sésse & Mociño s.n.*, Mexico: cult. at Montpellier, from seeds collected in Mexico and disributed by the Botanical Garden of Madrid (MPU; IT: P, US (fragm. ex P)).

Illustrations (Books): W.L.Wagner et al., *Manual of the Flowering Plants of Hawai'i*, Vol. 2 (1990) (1564, Pl. 232), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (163), S.A.Renvoize, *Gramineas de Bolivia* (1998) (343, Fig. 72), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 77, Fig. 11 (2001)).

Illustrations (Journals): *Sida* (29: 95, Fig. 48 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 969, fig.14 (2007)).

Derivation (Clifford & Bostock 2007): Gk. *mikros*, small; *sperma*, seed. Caryopses or spikelets small.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Butt sheaths papery. Culms 10–60(–70) cm long, disarticulating at the nodes. Ligule an eciliate membrane, 1–1.5(–2) mm long, lacerate. Leaf-blades persistent or deciduous at the ligule, flat or involute, 4–6(–10) cm long, 1–1.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 5–20 cm long, 1–3 cm wide. Primary panicle branches ascending or spreading, bearing spikelets almost to the base. 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, compressed slightly, (2.5–)3–3.5(–4) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume elliptic, 0.5–1.2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume elliptic, 0.5–1.2 mm long, 0.1–0.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, (2.5–)3–3.5(–4) mm long, cartilaginous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scaberulous, rough on veins. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 10–20(–30) mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.9 mm long. Caryopsis with adherent pericarp, fusiform, 2.2–2.5 mm long.

Cleistogenes present, in lower sheaths.

n = 10 (1 ref TROPICOS). $2n$ = 20, or 40, or 60 (all Peterson et al 2007).

Distribution (TDWG). Continent. Pacific, North America, South America.

Country /Province /State. **North-central Pacific**. Hawaii (*). **Southwestern USA**, **Mexico**. Arizona, California, Nevada, Utah. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**. Guatemala. Venezuela. Bolivia, Colombia, Ecuador, Peru.

Mexico State, Morelos, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa, Sonora. Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia minuscula H. Scholz. *Contrib. U. S. Nat. Herb.* xxiv. 388 (1927).

TYPE from Bolivia. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Bolivia: Canton Ulla-Ulla: Apolobamba Cordillera, Pampa von Ulla-Ulla, 4450 m, *Menhofer 1974* (HT: B).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *minus*, less; *-ula*, diminutive. Culms very small.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 1.5–4 cm long. Ligule an eciliate membrane. Leaf-blades flat or involute, 0.5–1.5 cm long, 1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 0.5–1.5 cm long, bearing few spikelets. Primary panicle branches appressed. 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, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume elliptic or ovate, 1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume elliptic or ovate, 1 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.5–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex obtuse, muticous or mucronate. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Bolivia.

Muhlenbergia minutissima (Steud.) Swallen. Contrib. U. S. Nat. Herb. xxix. 207 (1947).

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**: *Agrostis minutissima* Steud., *Syn. Pl. Glumac.* 1: 171 (1854). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *A. Fendler 986*, 1847, USA: New Mexico (MO, NY-327637, US-825378, US-997292).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (199), F.W.Gould, *The Grasses of Texas* (1975) (284, Fig. 151).

Derivation (Clifford & Bostock 2007): L. *minutus,* very small; *-issima*, most. Spikelets very small.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose, clumped densely. Culms geniculately ascending, weak, 5–40 cm long. Culm-internodes distally hirsute. Ligule an eciliate membrane, 1–3 mm long, hyaline, lacerate. Leaf-blades flat or involute, 2–6 cm long, 1 mm wide. Leaf-blade surface scabrous, glabrous or hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 10–20(–40) cm long, 0.66–0.75 of culm length. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–5 mm long.

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, 1.2–1.8 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 elliptic, 0.5–1 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex obtuse or acute. Upper glume elliptic, 0.5–1 mm long, 0.4–0.6 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 1.2–1.8 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex emarginate to obtuse, muticous or mucronate. Palea 1 length of lemma, 2 -veined. Palea apex obtuse.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.5 mm long. Caryopsis with adherent pericarp, fusiform, 0.6–1 mm long.

n = 30 (2 refs TROPICOS). $2n$ = 60 (1 ref TROPICOS, Peterson et al 2007), or 80 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. Arizona, California, Nevada, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Zacatecas. Veracruz. Baja California, Sinaloa, Sonora. Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia monandra Alegria & Rugolo. *Darwiniana* 39(1–2): 20 (2001).

Accepted by: 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 Synonomy Database: Peru: Lima: Prov. Canta, 5 km arriba de San Jos?en camino a Huamantanga, frente a Apio, 2700 m, 21 May 1999, *Granda & Alegría 2230* (HT: MOL; IT: SI, US).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *monos*, one; *aner*, man. Florets with one stamen.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending, 4–25 cm long, 0.3–0.7 mm diam., 2–3 -noded. Culm-internodes smooth or scaberulous. Culm-nodes glabrous. Lateral branches ample. Leaf-sheaths 0.4–4.7 cm long, mostly shorter than adjacent culm internode, scaberulous, glabrous on surface. Ligule an eciliate membrane, 1–3 mm long, erose or lacerate, acute. Leaf-blades flat or conduplicate, 0.3–7 cm long, 0.7–3.5 mm wide. Leaf-blade surface pilose, sparsely hairy, hairy adaxially. Leaf-blade apex acute or acuminate.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle spiciform, elliptic or oblong, interrupted, 0.5–3.7 cm long, 0.2–0.8 cm wide. Primary panicle branches appressed, 0.4–1.5 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.1–0.2 mm long, scabrous.

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, 1.3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, obtuse.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 1–4.3 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, 1.2–4.5 mm long, 1–2.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma elliptic or oblong, 1.3–2.1 mm long, membranous, mid-green and grey, mottled with last colour, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma surface pilose. Lemma hairs 0.4 mm long. Lemma apex dentate, 2 -fid, acute, awned, 1 -awned. Principal lemma awn from a sinus, straight or flexuous, 1.1–4.2 mm long overall. Palea elliptic, 1.2–2 mm long, 2 -veined. Palea surface pilose, hairy on back. Palea apex dentate, 2 -fid.

Flower and Fruit. Lodicules 2, cuneate, 0.1–0.2 mm long, fleshy, truncate. Anthers 1, 0.2–0.6 mm long, retained within floret. Caryopsis with adherent pericarp, oblong, 0.9–1.5 mm long. Embryo 0.66–0.75 length of caryopsis. Hilum punctiform.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Peru.

Muhlenbergia montana (Nutt.) Hitchcock. *U. S. Dept. Agric. Bull*. No. 772, 147 (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 USA. **Basionym or Replaced Name**: *Calycodon montanum* Nutt., *Proc. Acad. Nat. Sci. Philadelphia* 4: 23 (1848). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *W. Gambel s.n.*, USA: New Mexico: Santa Fe Co.: near Santa Fe (BM; IT: GH, PH).

Recent Synonyms: *Muhlenbergia trifida* Hack., Fedde, *Repert. Nov. Sp.* 8: 518 (1910).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (184), F.W.Gould, *The Grasses of Texas* (1975) (268, Fig. 141).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 972, fig.15 (2007)).

Derivation (Clifford & Bostock 2007): L. *mons*, mountain; *-ana*, indicating location. Growing on mountains.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Basal innovations subterete or flabellate. Culms 25–75(–80) cm long. Leaf-sheaths without keel, glabrous on surface. Ligule an eciliate membrane, 4–12(–20) mm long. Leaf-blades flat or involute, 6–25 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, interrupted, dense, 8–20(–25) cm long, 1–3 cm wide. Primary panicle branches bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.2–1.5 mm long.

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, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.5–1.5 mm long, 0.4–0.75 length of upper glume, membranous, grey, 1-keeled, 1(–3) -veined. Lower glume lateral veins absent or distinct. Lower glume surface smooth or scabrous. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 1.2–2 mm long, 0.4–0.5 length of adjacent fertile lemma, membranous, grey, 1-keeled, 3 -veined. Upper glume lateral veins distinct. Upper glume surface smooth to scabrous. Upper glume apex lobed, 3 -fid, setaceously acuminate.

Florets. Fertile lemma lanceolate, 3–4.5 mm long, membranous, yellow to mid-green, concolorous or suffused with last colour, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scabrous, rough above. Lemma margins pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 6–25 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

n = 20 (2 refs TROPICOS). $2n$ = 20 (Peterson et al 2007), or 40 (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona, California, Utah. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, Zacatecas. Sonora. Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia mucronata (Kunth) Trin. Gram. Unifl. 194. (1824).

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**: *Podosemum mucronatum* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 129–130 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Guanajuato: in montanis prope Santa Rosa (P; IT: US-91925 (fragm. ex P-Bonpl. & photo)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *mucro*, sharp point; *-ata*, possessing.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 75–100 cm long. Culm-internodes antrorsely scabrous. Culm-nodes purple. Leaf-sheaths mostly shorter than adjacent culm internode, without keel, smooth or scaberulous. Ligule an eciliate membrane, 5–8 mm long. Leaf-blades flat or involute, 20–40 cm long, 2–3 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–15 cm long, 1–3 cm wide. Primary panicle branches ascending, 4–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–5 mm long, scabrous (above).

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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent. Floret callus hairs 0.5–0.7 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous, rough at apex. Lower glume apex acute. Upper glume lanceolate, 1.5–2 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, rough at apex. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4.5–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above and on veins. Lemma apex dentate, 2 -fid, mucronate, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 2 -veined. Palea surface scaberulous. Palea apex acute or acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.2 mm long, purple. Caryopsis with adherent pericarp, ellipsoid, 2–2.5 mm long, red.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southeast Mexico.

Zacatecas.

Muhlenbergia mutica (Fourn.) Hitchcock. *N. Am. Fl.* xvii. 459 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name**: *Epicampes mutica* Rupr. ex E. Fourn., *Mexic. Pl.* 2: 87 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Galeotti 5797*, Mexico: secus sylvulas in practis calidis Mirador, Zacuapan, Cantaranas, 1000–3500' (P). LT designated by Soderstrom, Contr. U.S. Natl. Herb. 34: 141 (1967).

ST: *Bott. 104 in part*, Mexico: Orizaba

ST: *Bott. 111*, Mexico: Orizaba (herb. Coss. & Franq.).

ST: *Thomas*, Mexico: Orizaba (herb. Buchinger).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. blunt. Lacking awns or lemmas and/or glumes truncate.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, robust, 200–250 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, striately veined, glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, 5–10 mm long, lacerate. Leaf-blades flat or conduplicate, 35–40 cm long, 5–7 mm wide. Leaf-blade surface scabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 50–60 cm long, 15–30 cm wide. Primary panicle branches 25–30 cm long. Panicle branches with prominent pulvini. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 2.5–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous or scabrous. Lower glume apex acute or acuminate. Upper glume lanceolate, 2.5–3 mm long, 1.2–1.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous or scabrous. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or scaberulous. Lemma apex obtuse, muticous. Palea 2 -veined. Palea surface glabrous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.8 mm long. Caryopsis with adherent pericarp, fusiform, 1.5 mm long, red.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Southeast Mexico.

Chiapas.

Muhlenbergia nigra Hitchcock. *N. Am. Fl.* xvii. 468 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 4211*, 2 Sep 1892, Mexico: Mexico: Nevada de Toluca, cool slopes under pines, 11000 ft (US-746689; IT: F, MO-2974170, MSC, US-821929).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. black. Culms or spikelets dark-colored culms.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 90–100 cm long, 2–3 mm diam. Culm-internodes scaberulous. Culm-nodes glabrous. Lateral branches lacking. Ligule an eciliate membrane, 7–20 mm long, white, entire or lacerate, acute. Leaf-blades involute, 30–50 cm long, 2–3 mm wide. Leaf-blade surface ribbed, scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle antrorsely scabrous above. Panicle spiciform, linear, tapering above or tapering below, 10–14 cm long, 0.5–1 cm wide. Panicle axis puberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, reduced to a stump, puberulous.

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, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume lanceolate, 6–7 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 6–7 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, 6–6.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex acuminate, muticous or mucronate. Palea 0.9 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.5–3 mm long. Caryopsis with adherent pericarp, linear, dark brown.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Western South America**. Costa Rica, Guatemala. Colombia.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Guanajuato, San Luis Potosi. Veracruz. Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia orophila Swallen. *Contrib. U. S. Nat. Herb.* xxix. 408 (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 Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 50309*, 8 Aug 1942, Guatemala: Huehuetenango (F-1202399; IT: US-132785, US-132784, US-1935066, US-2208672).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *oros*, mountain; *phileo,* love. Growing on high mountains.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 12–30 cm long. Culm-internodes smooth or scaberulous. Leaves mostly basal. Leaf-sheaths longer than adjacent culm internode, without keel, glabrous on surface. Ligule an eciliate membrane, 0.3–0.5(–1) mm long, erose, truncate. Leaf-blades flat or involute, 5–8 cm long, 1–1.5 mm wide. Leaf-blade surface smooth or scaberulous. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 5–8 cm long, 2–3 cm wide. Primary panicle branches appressed or ascending. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous, 4–6 mm long, scaberulous.

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, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus sparsely hairy.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1–1.5 mm long, 0.5–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or setaceously acuminate. Upper glume lanceolate, 2 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or setaceously acuminate.

Florets. Fertile lemma lanceolate, 3–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface puberulous, hairy at base. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5 mm long, purple. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Morelos, Puebla.

Muhlenbergia palmeri Vasey. *Bull. Torrey Bot. Club,* 13: 232 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Palmer 16*, Aug-Nov 1885, Mexico: Chihuahua: southwestern Chihuahua (US-995818; IT: GH, MEXU-5194, US-995817, W-1916–29045).

Recent Synonyms: *Muhlenbergia dubioides* Goodding, *Journ. Wash. Acad. Sc*. 30:. 20. (1940).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (195).

Illustrations (Journals): *Sida* (29: 96, Fig. 49 (2007)).

Derivation (Clifford & Bostock 2007): in honor of Edward Palmer (1831–1911) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, robust, 60–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades 20–30 cm long, 2–4 mm wide. Leaf-blade surface scabrous, rough adaxially, puberulous, hairy abaxially. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle contracted or spiciform, linear, 15–30 cm long. Primary panicle branches appressed or ascending, subdividing 2–3 times. Panicle axis angular, scabrous. Panicle branches flexuous, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

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 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex acute, awned, 1 -awned, awn 1–2 mm long. Upper glume lanceolate, 3 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper

glume lateral veins absent. Upper glume surface scabrous. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 5 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **Mexico**. Arizona. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Chihuahua. Sonora. Michoacan.

Muhlenbergia palmirensis I. Grignon & S. Laegaard. Nordic J. Bot., 9(1): 47 (1989).

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>: *fide* TROPICOS and Kew Synonomy Database: HT: *Lægaard 52721*, Ecuador: Chimborazo: 3200 m (AAU!; IT: K, MO, NY, QCA, QCNE, US).

Illustrations (Books): G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 74, Fig. 10 (2001)).

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Palmira, Ecuador.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped loosely. Rhizomes absent or short. Basal innovations intravaginal. Culms erect, 10–25 cm long. Leaves mostly basal. Leaf-sheaths longer than adjacent culm internode, keeled, glabrous on surface. Ligule an eciliate membrane, 2–5 mm long, entire or lacerate, acute. Leaf-blades curved, conduplicate, 1.5–2.5 cm long, 1 mm wide, glaucous. Leaf-blade surface papillose.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle spiciform, linear, continuous or interrupted, secund, 3–6 cm long, 0.3 cm wide. Primary panicle branches appressed, 1.2–1.5 cm long. Panicle axis hispidulous. 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, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret. Spikelet callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 1.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acute or acuminate. Upper glume lanceolate, 1.5 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 acute or acuminate.

Florets. Fertile lemma ovate, 1.5–1.7 mm long, membranous, without keel, 1 -veined, 0–3 -veined, one-veined. Lemma surface puberulous. Lemma apex acute, muticous or mucronate. Palea 1.2–1.4 mm long, 2 -veined. Palea surface puberulous, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 11–12, 0.8 mm long, red. Caryopsis with adherent pericarp, fusiform, isodiametric, 0.8 mm long. Embryo 0.25 length of caryopsis.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**. Ecuador.

Muhlenbergia paniculata (Nutt.) P.M.Peterson. *Am. J. Bot.* 97 (9): 1543 (2010).

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**: *Lepturus paniculatus* Nutt., *Gen. Am*. 1: 81 (1818). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: USA, North Dakota, Fort Mandan: Nuttall (K iso).

Recent Synonyms: *Schedonnardus paniculatus* (Nutt.) Trelease, *Rep. Geol. Surv. Ark.* 1888 (4) 236 (1891).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (149), K.F.Best, et al, *Prairie Grasses* (1971) (203), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (230), F.W.Gould, *The Grasses of Texas* (1975) (315, Fig. 166), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (398, Fig. 139), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970).

Derivation (Clifford & Bostock 2007): L. *panus*, thread; *-ula*, diminutive; *-ata*, possessing. Inflorescence open with thread-like pedicels.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms decumbent, 8–50(–70) cm long. Leaves mostly basal. Leaf-sheaths keeled. Ligule an eciliate membrane, 1–3 mm long. Leaf-blades flat to conduplicate, 2–12 cm long, 0.6–2(–3) mm wide. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes, deciduous as a whole. Racemes 4–7, borne along a central axis, distant, spreading, unilateral, 2–10(–20) cm long. Central inflorescence axis 15–60 cm long (elongating and coiling at maturity). Rhachis angular. Spikelet packing distant. 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 linear, laterally compressed, 3–4 mm long, falling entire, deciduous with accessory branch structures, readily shedding fertile florets.

Glumes. Glumes dissimilar, exceeding apex of florets, gaping. Lower glume lanceolate, 0.5 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate. Upper glume linear, 1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex attenuate.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acuminate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules absent. Caryopsis with adherent pericarp, fusiform, 2.5–3.5 mm long. Embryo 0.33 length of caryopsis. Disseminule comprising a inflorescence. Secondary disseminule a floret.

$2n = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), North America, South America.

Region. **Northern Europe** (*).

Country /Province /State. : Great Britain (*). **Western Canada**, **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Southeastern USA**, **Mexico**. Alberta, British Columbia, Saskatchewan. Montana, Wyoming. Iowa, Missouri, North Dakota, Nebraska, Oklahoma, South Dakota, Wisconsin. Arizona, California, Utah. New Mexico, Texas. Northeast Mexico. **Southern South America**. Argentina Northeast.

San Luis. Buenos Aires, Cordoba, Distrito Federal, La Pampa, Santa Fe. Chihuahua, Tamaulipas.

Muhlenbergia pauciflora Buckl. *Proc. Acad. Sc. Philad.* 1862 91. (1863).

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 Synonomy Database: LT: *C. Wright 732*, no date, USA: Texas (PH; ILT: US-81637). LT designated by Hitchcock, Man. Grass. U.S. 891 (1935), but without citing a specific sheet in a specific herbarium; specific sheet designated by Herrera & Peterson, Sida, Bot. Misc. 29: 50 (2007).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (168).

Derivation (Clifford & Bostock 2007): L. *paucus*, few; *flos*, flower. Spikelets few per inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rootstock evident. Culms decumbent, 20–70 cm long, wiry, without nodal roots or rooting from lower nodes. Lateral branches ample, arising from lower culm. Leaf-sheaths mostly shorter than adjacent culm internode, without keel. Leaf-sheath auricles erect, 1.5–3 mm long. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades filiform, flat or involute, 4–12 cm long, 0.5–1 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, continuous or interrupted, 5–12 cm long, 0.4–1(–1.5) cm wide. Primary panicle branches appressed, 3–6 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear, 0.2–1.5 mm long.

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, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 1.5–3.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.5–3.5 mm long, 0.5–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–4.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface smooth to scabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight or flexuous, (5–)7–25 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Coahuila, Chihuahua, Neuvo Leon. Baja California, Sonora. Jalisco.

Muhlenbergia pectinata Goodding. *Journ. Wash. Acad. Sci.* i. 505 (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. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 1745*, 1 Nov 1888, Mexico: Jalisco: near Guadalajara (US-995478; IT: GH, NY).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (166).

Derivation (Clifford & Bostock 2007): L. *pecten*, comb; *-ata*, possessing. Inflorescence with spikes or racemes bearing a fanciful resemblance to a comb.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 10–33 cm long, 0.3–0.5 mm diam., without nodal roots or rooting from lower nodes. Culm-internodes 1–38 cm long. Lateral branches ample, arising from lower culm or mid culm. Leaf-sheaths 1.2–4 cm long, longer than adjacent culm internode, glabrous on surface, outer margin hairy. Ligule a ciliate membrane, 0.3–0.4 mm long. Leaf-blades flat or involute, 1–6 cm long, 0.6–2 mm wide. Leaf-blade surface pubescent or pilose.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open or contracted, oblong, 4–12 cm long, 0.5–2.6 cm wide. Primary panicle branches appressed or ascending, 1 -nate, 2–3.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long, smooth.

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, 3–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.8–1.7 mm long, 0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute or acuminate, muticous or mucronate or awned, 1 -awned, awn 0–1.5 mm long. Upper glume lanceolate, 1–2 mm long, 0.33–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute or acuminate, muticous or mucronate or awned, 1 -awned, awn 0–1.5 mm long.

Florets. Fertile lemma linear or lanceolate, 3–4.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma surface smooth or scaberulous, rough in lines. Lemma

margins eciliate or ciliate, hairy above. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 10–32 mm long overall. Palea 2.4–4.4 mm long, 2 -veined. Palea surface glabrous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.6 mm long. Caryopsis with adherent pericarp, fusiform, 0.6–3.1 mm long, light brown.

n = 10 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **Mexico**. Arizona. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Mexico State, Morelos. Chihuahua, Durango, Zacatecas. Sinaloa, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia pereilema P.M.Peterson. *Caldasia* 31 (2): 293 (2009).

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 Panama. **Basionym or Replaced Name**: *Pereilema crinitum* J. & C. Presl, *Reliq. Haenk.* 1: 233, t. 37. f. a. (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Haenke s.n.*, Panama (PR-198058; IT: PR-849, LE-TRIN-1519.01 (& fig.), MO-3047510, US-0090603 (fragm.)).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (474, Fig 178), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 89, Fig. 13 (2001)).

Derivation (Clifford & Bostock 2007): L. with long hair. Hairy as of leaf-blades or awns invested in long weak hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, 15–80 cm long, rooting from lower nodes. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane, 0.3–0.5 mm long. Leaf-blades 5–15 cm long, 2–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 5–13 cm long, 2–3 cm wide. Primary panicle branches appressed, 1 cm long. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1–2 in the cluster. Companion sterile spikelets sessile, 2–3 in the cluster. Involucre composed of imperfect spikelets, cuneate, 3 mm long. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets represented by awns, comprising a tuft of awns, 3 mm long, persistent. Companion sterile spikelet glumes glabrous.

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, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus bearded. Floret callus hairs 0.33–0.5 length of lemma.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex emarginate, awned, 1 -awned, awn 2 mm long. Upper glume oblong, 1 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex emarginate, awned, 1 -awned, awn 2 mm long.

Florets. Fertile lemma ovate, 1.5 mm long, cartilaginous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins close to margins. Lemma surface scabrous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 20–30 mm long overall. Palea 1 length of lemma.

Flower and Fruit. Anthers 3, 0.5–0.7 mm long, yellow. Caryopsis with adherent pericarp.

2*n* = 20 (2 refs 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**, **Brazil**. Costa Rica, El Salvador, Guatemala, Honduras, Panama. Venezuela. Colombia.

Mexico State, Morelos, Puebla. Aguascalientes, Chihuahua, Durango, Queretaro, Zacatecas. Veracruz. Baja California, Baja California Sur, Sinaloa. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia peruviana (Beauv.) Steud. *Nom. ed.* II. i. 41 (1840).

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. **Basionym or Replaced Name**: *Clomena peruviana* P. Beauv., *Ess. Agrostogr.* 28, t. 7, f. 10; t. 3, f. 20.. (1812). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Thibaut s.n.*, Peru (P).

Recent Synonyms: *Muhlenbergia pulcherrima* Scribn. ex Beal, Grasses N. Amer. 2: 240 (1896). *Muhlenbergia pusilla* Steud., *Syn. Pl. Gram.* 177 (1854).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (150), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (186), S.A.Renvoize, *Gramineas de Bolivia* (1998) (343, Fig 72), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 83, Fig. 12 (2001)).

Illustrations (Journals): *Ruizia* (13:263, Fig 30a-c (1993)).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating location. From Peru.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, culms solitary or caespitose. Culms 3–27 cm long, 0.1–0.3 mm diam. Culm-internodes 0.1–2.5 cm long. Lateral branches ample, arising from lower culm. Leaf-sheaths 0.5–8 cm long, longer than adjacent culm internode, striately veined, smooth or scaberulous. Ligule an eciliate membrane, 1.5–3 mm long, acute. Leaf-blades flat or involute, 1–5 cm long, 0.6–1.5 mm wide. Leaf-blade surface scaberulous, rough adaxially or on both sides, glabrous or pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle open or contracted, linear or lanceolate, 2–8 cm long, 0.3–3.4 cm wide. Primary panicle branches appressed or ascending, 1 -nate, 1.5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.4–5 mm long, smooth or scaberulous.

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, 1.4–4.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.8–2.8 mm long, 0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 0.9–3 mm long, 0.6–0.75 length of adjacent fertile lemma, membranous, without keels, 1–3 -veined. Upper glume lateral veins absent or obscure. Upper glume apex dentate, 2–3 -fid, truncate.

Florets. Fertile lemma lanceolate, 1.4–4.2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or scabrous, rough above, pubescent, hairy below. Lemma apex dentate, 2 -fid, acute, muticous or awned, 1 -awned. Principal lemma awn from a sinus, flexuous, 0–22 mm long overall. Palea 1.3–3.8 mm long, 2 -veined. Palea surface glabrous or pilose, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–1 mm long. Caryopsis with adherent pericarp, fusiform, 1–1.6 mm long.

n = 15 (1 ref TROPICOS).

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, Southeast Mexico. **Mesoamerica**, **Western South America**, **Southern South America**. Guatemala. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest, Chile North, Chile Central.

Catamarca, Jujuy, La Rioja, Salta, Tucuman. Cordoba. Tarapaca, Antofagasta. Maule. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Zacatecas. Veracruz. Baja California Sur. Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia phalaroides (Kunth) P.M.Peterson. *Caldasia* 31 (2): 294 (2009).

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**: *Lycurus phalaroides* Kunth., *Nov. Gen. et Sp.* i. 142. (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sept, Mexico: Michoacán: near Valladolid, Alberca de Palangeo and Patzcuaro (P; IT: B-W-1630, BM, BAA-1530, US-91988 (fragm. ex P-Bonpl.), US-610837 (fragm. ex LE-TRIN)).

Illustrations (Journals): *Ruizia* (13:269, Fig 3a-d (1993)).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. The spikelets resemble those of *Phalaris.*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Culms decumbent, 4–40 cm long. Ligule an eciliate membrane, (0.3–)0.4–1.5(–2) mm long, entire, truncate. Leaf-blades conduplicate, 0.4–6 cm long, 0.4–0.7 mm wide. Leaf-blade apex obtuse, hooded.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 1–7 cm long, 0.3–0.8 cm wide. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis angular, scabrous, bearing deciduous spikelet clusters. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, fused to each other, united below, linear, unequal, 0.5–1 mm long, scaberulous.

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, 3.5–4 mm long, falling entire, deciduous in a cluster with fused pedicels.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 2 -veined. Lower glume apex awned, 2 -awned, awn 2–3 mm long. Upper glume oblong, 1–1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume awned, 1 -awned, awn 2–3 mm long.

Florets. Fertile lemma elliptic, 3.5–4 mm long, chartaceous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 2–3 mm long overall. Palea elliptic, 2 -veined. Palea keels ciliate. Palea apex acuminate.

Flower and Fruit. Anthers 3, 1.7–2 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Western South America**, **Southern South America**. Guatemala. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest.

Jujuy, Salta, Tucuman. 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. Colima, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia phleoides (Kunth) P.M.Peterson. *Am.J.Bot.* 97 (9) 1546 (2010).

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**: *Lycurus phleoides* Kunth, *Nov. Gen. et Sp.* i. t. 45. (1815). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sept, Mexico: inter Guanaxuato et Temascatio et in radicibus aridissimi montis La Buffa, alt. 1030 hexap. (P; IT: BAA (fragm.), US-610840 (fragm. ex P-Bonpl.), US-610841 (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (203), F.W.Gould, *The Grasses of Texas* (1975) (245, Fig. 131), S.A.Renvoize, *Gramineas de Bolivia* (1998) (346, Fig 73), G.Harling & C.Persson, *Flora of Ecuador* (2006) (68: 89, Fig. 13 (2001)), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (51, Fig. 11).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 944, fig.3 (2007), as *Lycurus*).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, like. Inflorescence a spike-like panicle as for *Phleum.*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect or geniculately ascending or decumbent, 20–50 cm long. Ligule an eciliate membrane, 1.5–3 mm long, trilobed. Leaf-blades 3–10 cm long, 0.5–2 mm wide. Leaf-blade apex acute or acuminate, simple.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 3–6 cm long. Primary panicle branches accrescent to a central axis, with lateral stumps on axis. Panicle axis angular, scabrous, bearing deciduous spikelet clusters. Spikelets in pairs. Fertile spikelets pedicelled, 2 in the cluster. Pedicels present, fused to each other, united below, linear, unequal, 0.5–1 mm long, scaberulous.

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, 3.5–4 mm long, falling entire, deciduous in a cluster with fused pedicels.

Glumes. Glumes similar, shorter than spikelet, thinner than fertile lemma. Lower glume oblong, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 2 -veined. Lower glume apex awned, 2 -awned, awn 2–3 mm long. Upper glume oblong, 1–1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume awned, 1 -awned, awn 2–3 mm long.

Florets. Fertile lemma elliptic, 3.5–4 mm long, chartaceous, keeled, 3 -veined, 0–3 -veined. Lemma margins ciliate, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 2–3 mm long overall. Palea elliptic, 2 -veined. Palea keels ciliate. Palea apex acuminate.

Flower and Fruit. Anthers 3, 1.7–2 mm long. Caryopsis with adherent pericarp, fusiform.

$2n = 40$ (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. Hawaii (*). **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Western South America**. Bolivia, Colombia.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Sonora. Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia pilosa P.M. Peterson, J.K. Wipff & S.D. Jones. *Madrono,* 39(2): 151 (1992).

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 Synonomy Database: HT: *S.D. Koch & P.A. Fryxell 82256*, 30 Oct 1992, Mexico: Mexico: Tejupilco Mun.: 17 km NE de Tupilco, por la carr. a Temascaltepec, 1,530 mt (HT:CHAPA; IT:CHAPA, IEB, MEXU, MICH, TAES, US-323217, XAL).

Illustrations: None found.

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. Perennial, caespitose. Rhizomes absent. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms erect, 50–130 cm long. Culm-internodes smooth or scaberulous. Culm-nodes pubescent. Leaf-sheaths 5–70 cm long, longer than adjacent culm internode, without keel, scaberulous, outer margin hairy. Ligule an eciliate membrane, 0.5–5 mm long, lacerate, truncate or obtuse. Leaf-blades flat or involute, 15–35 cm long, 1–3 mm wide. Leaf-blade surface scaberulous, rough on both sides, glabrous or pilose, sparsely hairy, hairy adaxially. Leaf-blade margins ciliate (sparsely).

Inflorescence. Inflorescence a panicle. Panicle open, linear, 20–45 cm long, 3–8 cm wide. Primary panicle branches ascending, 0.3–4.7 cm long. Panicle branches pubescent in axils. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–7 mm long, glabrous or puberulous.

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, 2.4–3.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.8–3.2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex acute. Upper glume lanceolate, 1.8–3.2 mm long, 0.8–0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex acuminate, mucronate.

Florets. Fertile lemma lanceolate or elliptic, 2.1–3.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma hairs 1–1.6 mm long. Lemma apex entire or dentate, 2 -fid, with lobes 0.1–0.2 mm long, acute or acuminate, awned, 1 -awned. Principal lemma awn apical or from a sinus, flexuous, 18–31 mm long overall. Palea oblong, 2–3.5 mm long, 2 -veined. Palea surface pilose, hairy on back. Palea apex acute or acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.3–1.9 mm long, yellow. Caryopsis with adherent pericarp, fusiform, 1.1–1.4 mm long, light brown.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Southwest Mexico.

Mexico State. Guerrero.

Muhlenbergia plumbea (Trin.) Hitchcock. *Contrib. US. Nat. Herb* xvii. 296 (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).

TYPE from Mexico. **Basionym or Replaced Name**: *Vilfa plumbea* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 98 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Schlechtendal ex Schiede s.n.*, Mexico: Mineral del monte (LE-TRIN-1724.01; IT: US-557435 (fragm. ex LE)). fig..

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. leaden. Spikelets dark-grey.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms erect or geniculately ascending, 10–40 cm long. Culm-internodes distally glabrous. Lateral branches ample, arising from lower culm. Leaf-sheaths keeled, smooth, glabrous on surface. Ligule a ciliolate membrane, 1 mm long. Leaf-blades flat or conduplicate, 5–10 cm long, 1–2 mm wide. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 3–15 cm long, with spikelets clustered towards branch tips. Primary panicle branches ascending or spreading, 1 -nate, 4–8 cm long. Panicle axis scaberulous. Panicle branches scaberulous. 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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5 mm long, 1 length of upper glume, membranous, grey, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1.5 mm long, 0.5 length of adjacent fertile lemma, membranous, grey, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3 mm long, membranous, grey, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined. Palea apex obtuse.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Puebla, Tlaxcala. Durango, Zacatecas.

Muhlenbergia plumiseta Columbus. *Aliso* 28: 66 (2010).

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**: *Pereilema ciliatum* Fourn. *Mex. Pl.* 2: 93 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *Bourgeau 3328*, Nov, Mexico: Orizaba (P; IST: GH, K, L, US-996083 (fragm. ex LE)). ST: *F. Muller 2073*, Nov, Mexico: Orizaba (L, IST: K, NY, US-996084 (fragm. in Herb. Col. College), US-996083 (fragm.)). ST: *Schaffner 155*, Nov, Mexico: Valle de Orizaba (P; IST: MO, Herb. Franq. [P & PC]). ST: *Botteri 87*, Nov, Mexico: Cerro del Borreyo (P). ST: *Botteri 40*, Nov, Mexico: Orizaba (P; herb. Franq. [P & PC]; IST: US-0090799 (fragm. ex Pitt & Dur.), US-996083 (fragm. ex P)). ST: *Schaffner 274*, Jul, Mexico: Cordova (P; herb. Franq. [P & PC]; IST: US-090800 (fragm. ex Pitt & Dur)).

Recent Synonyms: Muhlenbergia plumosa P.M.Peterson, *Am. J. Bot.* 97 (9) 1546 (2010).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *cilium*, eyelid; *-ata,* possessing. Plant hairy overall or in part.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 20–50 cm long, rooting from lower nodes. Leaf-sheath oral hairs ciliate. Leaf-sheath auricles falcate. Ligule an eciliate membrane. Leaf-blades 3–6(–10) cm long, 1–3 mm wide. Leaf-blade surface scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 3–7 cm long, 0.5 cm wide. Panicle axis bearing deciduous spikelet clusters. Panicle branches flat, pilose. Spikelets subtended by an involucre. Fertile spikelets pedicelled, 1–3 in the cluster. Companion sterile spikelets sessile, 4–12 in the cluster. Involucre composed of imperfect spikelets, cuneate, 2–4 mm long. Pedicels present, oblong.

Sterile Spikelets. Companion sterile spikelets represented by awns, comprising a tuft of awns, 2–4 mm long, deciduous with the fertile. Companion sterile spikelet glumes pilose.

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, 2.5–3 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume subulate, 2 mm long, 1 length of upper glume. Lower glume surface pilose. Upper glume subulate, 2 mm long. Upper glume surface pilose.

Florets. Fertile lemma ovate, 2.5–3 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn flexuous, (1–)5–15(–25) mm long overall, limb scabrous. Palea 1 length of lemma, 2 -veined. Palea keels scaberulous.

Flower and Fruit. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**. El Salvador, Guatemala.

Mexico State, Morelos. Zacatecas. Veracruz. Jalisco, Michoacan, Nayarit. Chiapas.

Muhlenbergia polycaulis Scribn. *Bull. Torr. Bot. Club* viii. 327, (1911).

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 Synonomy Database: HT: *C.G. Pringle 1414*, 30 Sep 1887, Mexico: Chihuahua: Sierra Madre (US-81636; IT: US-822943, US-155173, US-995733).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (170).

Illustrations (Journals): *Sida* (29: 97, Fig. 50 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 961, fig.10 (2007)).

Derivation (Clifford & Bostock 2007): Gk. *polys*, many; *kaulos*, stem. Culms much branched at the base.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, knotty. Culms slender, 15–40 cm long, wiry. Leaf-sheaths without keel, smooth or scaberulous. Ligule an eciliate membrane, 0.5–1 mm long, erose or lacerate. Leaf-blades flat or conduplicate or involute, 3–8(–10) cm long, 1 mm wide. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 3–9 cm long, 0.3–0.6 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.3–3.5 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, 1.5–2.5 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate, awned, 1 -awned, awn 0.2–1.5 mm long. Upper glume lanceolate, 1.5–2.5 mm long, 0.6–0.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.3–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface villous, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 10–20(–25) mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface villous, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–2 mm long, orange. Caryopsis with adherent pericarp, fusiform, 1.5–2 mm long.

$2n = 20$ (Peterson et al 2007), or 40 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona, Nevada. Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

Mexico State. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Zacatecas. Baja California, Baja California Sur, Sinaloa, Sonora. Jalisco, Nayarit.

Muhlenbergia porteri Scribn. ex Beal. *Grasses N. Amer*. ii. 259 (1896).

Accepted by: 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 Synonomy Database: ST: *J.M. Bigelow s.n.*, 5 Nov 1850, USA: Texas: Rio San Pedro (GH, US (fragm. ex GH)).

ST: *C.C. Parry*, Jul 1852, USA: Texas: Presidio del Norte (GH, US (fragm. ex GH)).

ST: *C. Wright 734*, May-Oct 1849, USA: Texas: Western Texas to El Paso (GH, US (fragm. ex GH)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (172), F.W.Gould, *The Grasses of Texas* (1975) (256, Fig. 134).

Illustrations (Journals): *Sida* (29: 98, Fig. 51 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 975, fig.16 (2007)).

Derivation (Clifford & Bostock 2007): in honor of Thomas Conrad Porter (1822–1901) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rootstock evident. Culms decumbent, slender, 30–100 cm long, wiry. Culm-internodes 1.5–6 cm long. Culm-nodes pubescent. Leaf-sheaths mostly shorter than adjacent culm internode. Ligule an eciliate membrane, 1–2(–2.5) mm long, lacerate. Leaf-blades flat or involute, 2–5 cm long, 0.5–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate or globose, effuse, 4–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 5–20 mm long.

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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 2–3 mm long, 0.66–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous, hairy between veins. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 5–10(–13) mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex acuminate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.7–2 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 20, or 23, or 24, or 40 (all Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. Hawaii (*). **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico.

Coahuila, Chihuahua, Durango, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas. Baja California, Sonora.

Muhlenbergia pubescens (H. B. & K.) Hitchcock. *N. Am. Fl.* xvii. 460 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from Mexico. **Basionym or Replaced Name**: *Agrostis pubescens* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 136 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Guanajuato: Villalpando: Santa Rosa et Cerro del Cubilete (P; IT: LE-TRIN-1557.01 b (fragm. [hrbr. no. 1746] & fig.), US-76283).

Illustrations (Journals): *Sida* (29: 99, Fig. 52 (2007)).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *pubesco*, become hairy. Plant whole or in part hairy.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent. Butt sheaths villous. Culms erect, 80–120 cm long. Culm-internodes distally hirsute. Leaf-sheaths keeled. Leaf-sheath auricles absent. Ligule an eciliate membrane, 2–4 mm long, lacerate. Leaf-blades 15–50 cm long, 2.5–6 mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 20–40 cm long, 2–7 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, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 1–3 mm long, 0.5–1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface villous. Lower glume hairs 0.5 mm long. Lower glume apex acute. Upper glume lanceolate, 2–3 mm long, 1–1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface villous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.8–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface villous. Lemma apex acuminate, muticous or awned, 1 -awned. Principal lemma awn 5–10 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico.

Distrito Federal, Mexico State, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, San Luis Potosi, Zacatecas. Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia pubigluma Swallen. *Proc. Biol. Soc. Wash.* lvi. 78 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.H. Muller 3264*, 10 Sep 1939, Mexico: Coahuila (HT: US-2209360 (ex NA-145092)).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 977, fig.17 (2007)).

Derivation (Clifford & Bostock 2007): L. *pubes*, signs of puberty; *gluma*, husk. Glumes densely hairy.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, robust, 75–125 cm long, 3 -noded. Culm-internodes distally glabrous. Culm-nodes pubescent. Leaf-sheaths keeled, glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 5–13 mm long. Leaf-blades conduplicate, 15–35 cm long, 1–2 mm wide, light green. Leaf-blade surface scabrous, rough abaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 20–35 cm long, 1–2 cm wide. Primary panicle branches appressed, 4–5 cm long, bearing spikelets almost to the base. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, scabrous.

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, 2.5–3.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, similar to fertile lemma in texture. Lower glume elliptic, 2.5–3.3 mm long, 0.9 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface puberulous. Lower glume apex obtuse. Upper glume elliptic, 2.5–3.3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume surface puberulous. Upper glume apex obtuse.

Florets. Fertile lemma elliptic, 2.9–3.1 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma surface scabrous, rough above, pubescent, hairy below. Lemma margins pubescent, hairy at base. Lemma apex obtuse or acute, muticous or awned, 1 -awned. Principal lemma awn 0.5–3.5 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Coahuila, Chihuahua, Neuvo Leon, Tamaulipas, Zacatecas.

Muhlenbergia pungens Thurb. *Proc. Acad. Sc. Philad.* 1863 :78. (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).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Hall & J.P. Harbour 632*, 1862, USA: American Plains Flora, Lat. 41?(GH; IT: US-3376135 (fragm. ex GH)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (176), F.W.Gould, *The Grasses of Texas* (1975).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes elongated, scaly. Culms 20–50(–60) cm long. Ligule a ciliolate membrane, 0.5–1 mm long. Leaf-blades filiform, involute, 2–4 cm long, 1 mm wide, stiff. Leaf-blade apex pungent.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 8–18 cm long. Primary panicle branches 3–5 in number. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 10–25 mm long.

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, 3–4 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, 1.5–2.5 mm long, 0.8 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex erose, acute, awned, 1 -awned, awn 0.5–1 mm long. Upper glume lanceolate, 1.7–3 mm long, 0.5–0.75 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex erose, acute, mucronate or awned, 1 -awned, awn 0.5–1 mm long.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, purple, keeled, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acute, awned, 1 -awned. Principal lemma awn 1–1.5(–2) mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.5 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**. Colorado, Wyoming. Nebraska, South Dakota. Arizona, California, Utah. New Mexico, Texas.

Muhlenbergia purpusii Mez. *Fedde, Repert*. xvii. 214 (1921).

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 Synonomy Database: HT: *C.A. Purpus 5011*, Nov 1911, Mexico: San Luis Potos? Minas de San Rafael (B; IT: MO-2974180, US-463679, US-72636 (fragm. ex B)).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 963, fig.11 (2007)).

Derivation (Clifford & Bostock 2007): in honor of Carl Albert Purpus (1853–1941) German-born United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms erect. Culm-nodes pubescent. Leaf-sheaths longer than adjacent culm internode, without keel, antrorsely scabrous. Ligule an eciliate membrane. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or pyramidal. Primary panicle branches 4–7 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 lanceolate, laterally compressed, 2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume oblong, 1 mm long, 0.4–0.5 length of adjacent fertile lemma, membranous, without keels. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex awned, 1 -awned. Principal lemma awn 15 mm long overall. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

$2n = 20$ (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Coahuila, Chihuahua, Neuvo Leon, San Luis Potosi, Tamaulipas.

Muhlenbergia quadridentata (Kunth) Trin. *Gram. Unifl*. 194. (1824).

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**: *Podosemum quadridentatum* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 130–131 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Humboldt & A.J.A. Bonpland s.n.*, Sep, Mexico: México: near Toluca (P; IT: US-2557456, US-86634 (fragm. ex P), US-86635). LT designated by ?; cited by McVaugh, Fl. Novo-Gal. 14: 253 (1983).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 979, fig.18 (2007)).

Derivation (Clifford & Bostock 2007): L. *quatuor*, four; *dens*, tooth; *-ata*, possessing. Upper glume four-toothed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm. Culms 20–70 cm long. Leaf-sheaths without keel. Ligule an eciliate membrane, 2–5 mm long. Leaf-blades involute, 5–15 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, 5–20 cm long. Primary panicle branches appressed or ascending, 2–5 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 lanceolate, laterally compressed, 4–4.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate or elliptic, 2–3 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume elliptic or oblong, 2.5–4 mm long, 0.6–0.8 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex dentate, 3–4 -fid, truncate or obtuse.

Florets. Fertile lemma elliptic, 4–4.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy at base. Lemma margins ciliate, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 5–20 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.5 mm long. Caryopsis with adherent pericarp, fusiform.

n = 10 (2 refs TROPICOS). $2n$ = 20 (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Queretaro, San Luis Potosi, Zacatecas. Veracruz. Sonora. Colima, Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia racemosa (Michx.) Britton, Stern & Pogg. Prelim. Catal. 67 (1888).

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

TYPE from USA. **Basionym or Replaced Name**: *Agrostis racemosa* Michx., *Fl. Bor.-Amer.* 1: 53 (1803)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Michaux s.n.*, USA: in ripis sabulosis inundatis fluminis Mississippi (P; IT: US-76287 (fragm. & photo ex P)).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (155), F.W.Gould, *The Grasses of Texas* (1975) (275, Fig. 145), S-L Chen et al, *Flora of China*, Illustrations, Poaceae (2007) (Fig. 690).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 981, fig.19 (2007)).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

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 Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms 25–60(–100) cm long. Culm-internodes smooth, distally glabrous or pubescent. Leaf-sheaths keeled, smooth or scaberulous or antrorsely scabrous. Ligule an eciliate membrane, 0.5–1.5 mm long, erose or lacerate, truncate. Leaf-blades flat or involute, 4–10(–16) cm long, 3–5(–7) mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, interrupted, 3–10(–17) cm long, 0.4–1(–1.8) cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.2–4.5 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, 1.5–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex attenuate, awned, 1 -awned, awn 3–4.5 mm long. Upper glume lanceolate, 1.5–3 mm long, 0.66 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex attenuate, awned, 1 -awned, awn 3–4.5 mm long.

Florets. Fertile lemma lanceolate, 2.2–4.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma hairs 0.5–0.9 mm long. Lemma apex attenuate, muticous. Palea 0.9 length of lemma, 2 -veined. Palea surface pilose, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.9 mm long, yellow. Caryopsis with adherent pericarp, fusiform, 1.4–2.3 mm long.

$2n = 20$ (Peterson et al 2007), or 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. Europe (*), North America.

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Western Canada**, **Eastern Canada**, **Northwest USA**, **North-central USA**, **Northeast USA**, **Southwestern USA**, **South-central USA**, **Southeastern USA**, **Mexico**. Alberta, British Columbia, Manitoba, Saskatchewan. Nova Scotia, Ontario, Quebec. Colorado, Idaho, Montana, Wyoming. Illinois, Iowa, Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Arizona, Nevada, Utah. New Mexico. Northeast Mexico.

Coahuila, Neuvo Leon, Tamaulipas.

Muhlenbergia ramosa (Hack.) Makino. *Journ. Jap. Bot.* i. 13 (1917).

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, 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**: *Muhlenbergia japonica* var. *ramosa* Hack. ex Matsum., *Bot. Mag. (Tokyo)* 11: 444 (1897). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Japan: Tokyo, *Matsumura*.

Illustrations (Books): T.Koyama, *Grasses of Japan and its neighbouring regions* (1987) (172, Fig 60).

Derivation (Clifford & Bostock 2007): L. *ramus*, branch; *-osa*, abundance. Inflorescences or culms much branched.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes short, scaly. Culms erect, 35–90 cm long, 1–2.5 mm diam. Lateral branches ample, arising from upper culm. Leaves cauline. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades 7–15 cm long, 2–5 mm wide, stiff, dark green. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex acute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, dense, 8–15 cm long, 1–2 cm wide. Primary panicle branches appressed or ascending, 1–2 -nate, bearing spikelets almost to the base. Panicle branches scabrous. 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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2 mm long, 0.75 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, 2–2.5 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, glaucous or grey, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 5–8 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.75 mm long. Caryopsis with adherent pericarp, oblong, 1.8 mm long.

2*n* = 40 (1 ref TROPICOS).

Distribution (TDWG). Continent. Temperate Asia.

Country /Province /State. **China**, **Eastern Asia**. China South Central, China North-Central, China Southeast. Japan Honshu, or Kyushu. Japan.

Shandong. Anhui, Fujian, Hunan, Jiangsu, Jiangxi, Zhejiang. Guizhou, Hubei, Sichuan, Yunnan.

Muhlenbergia ramulosa (H. B. & K.) Swallen. *Contrib. U. S. Nat. Herb.* 29: 205 (1947).

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**: *Vilfa ramulosa* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 137 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Humboldt & Bonpland s.n.*, Mexico: Michoacán: Jorullo (P-Bonpl. (the middle plant on the sheet); ILT: B-W, BM, LE-TRIN-1730.01, US-91131 (fragm.)). LT designated by Peterson & Annable, Syst. Bot. Monogr. 31: 77 (1991).

Recent Synonyms: *Muhlenbergia wolfii* (Vasey) Rydb., *Journ. Wash. Acad. Sc*. 30: 20. (1940).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (201), W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (333, Fig 122).

Illustrations (Journals): *Sida* (29: 100, Fig. 53 (2007)).

Derivation (Clifford & Bostock 2007): L. *ramulus,* small branch; *-osa*, abundance.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose, clumped densely. Culms decumbent, 5–15 cm long, 0.3–0.5 mm diam. Lateral branches ample. Leaf-sheaths ribbed, glabrous on surface. Ligule a ciliolate membrane, 0.3–0.5 mm long. Leaf-blades conduplicate, 1–2 cm long, 0.6–0.8 mm wide. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle, terminal and axillary. Panicle open, oblong, 1–5 cm long, 0.5–1 cm wide. Primary panicle branches ascending or spreading, 1 -nate. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–1.2 mm long.

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, laterally compressed, 3.5–4(–5) mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 0.4–0.6 mm long, 0.75–1 length of upper glume, membranous, without keels, 0 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 0.4–0.6 mm long, 0.35–0.5 length of adjacent fertile lemma, membranous, without keels, 0 -veined. Upper glume primary vein absent. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma ovate, 1 mm long, cartilaginous, black, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma apex obtuse, muticous. Palea 1 length of lemma, cartilaginous, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.2 mm long. Caryopsis with adherent pericarp, fusiform.

n = 10 (2 refs TROPICOS). 2*n* = 20 (1 ref TROPICOS).

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, Southeast Mexico. **Mesoamerica**, **Southern South America**. Costa Rica, Guatemala, Honduras.

Tucuman. Distrito Federal, Mexico State, Morelos, Puebla. Chihuahua, Durango, Guanajuato, Hidalgo, San Luis Potosi, Tamaulipas. Veracruz. Baja California, Baja California Sur, Sonora. Guerrero, Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia reederorum Soderstr. *Contrib. U.S. Nat. Herb.* 4:122 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.R. Reeder & C.G. Reeder 3834*, 26 Sep 1963, Mexico: Durango (HT: YU; IT: F, K, MEXU, MICH, NY, P, UC, US-2443512).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. of the Reeders. Collected by John Raymond Raymond (1914-) and Charlotte Gooding (1916-) Reeder, American botanists.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100 cm long, 3 -noded. Culm-internodes antrorsely scabrous. Culm-nodes pubescent. Leaf-sheaths without keel, glabrous on surface. Ligule an eciliate membrane, 10–15 mm long, scarious, brown, lacerate. Leaf-blades conduplicate, 30–65 cm long, 1.5 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 30–47 cm long, 2–3 cm wide. Primary panicle branches 4–6 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1.5–2.5 mm long, scabrous.

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, 3.5–4.6 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 3.5–4.6 mm long, 1 length of upper glume, membranous, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute. Upper glume lanceolate, 3.5–4.6 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 0–1 -veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex acute, mucronate or awned, 1 -awned. Principal lemma awn subapical, 0.2–2.5 mm long overall. Palea 2 -veined. Palea surface glabrous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Southwest Mexico.

Durango. Jalisco, Michoacan.

Muhlenbergia repens (Presl) Hitchcock. *Jepson, Fl. Calif.* i. 111 (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 Mexico. **Basionym or Replaced Name**: *Sporobolus repens* J. Presl, *Reliq. Haenk.* 1(4–5): 241 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Haenke s.n.*, Mexico (PR; IT: LE-TRIN-1732.01 (fragm. & fig.), MO, US (fragm.)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (178), F.W.Gould, *The Grasses of Texas* (1975) (271, Fig. 143).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 983, fig.20 (2007)).

Derivation (Clifford & Bostock 2007): L. *repo*, crawl. Rhizome well developed.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms decumbent, 6–25(–35) cm long. Culm-internodes smooth. Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 0.5–1 mm long, truncate. Leaf-blades curved, involute, 1–3(–5) cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 1–4 cm long, 0.2–0.3 cm wide, bearing few spikelets. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.5–4 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 ovate, 1.3–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute. Upper glume ovate, 1.3–3 mm long, 0.5–0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or scabrous. Upper glume apex acuminate, awned, 1 -awned, awn 0.2–1.5 mm long.

Florets. Fertile lemma ovate, 2.5–3.5 mm long, membranous, grey, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or scaberulous, rough above. Lemma apex attenuate, mucronate or awned, 1 -awned. Principal lemma awn 0.5 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.2–1.4 mm long. Caryopsis with adherent pericarp, fusiform, 1.3–1.5 mm long.

$2n = 60$, or 70–72 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Oklahoma. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Veracruz. Baja California, Baja California Sur, Sonora. Guerrero, Jalisco, Oaxaca. Chiapas.

Muhlenbergia reverchonii Vasey & Scribn. ex Vasey. *Contrib. U.S. Nat. Herb.* iii. 1 66. (1892).

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 Synonomy Database: HT: *J. Reverchon 73*, (US-81635).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (191).

Images: R.Darke, *Ornamental Grasses* (2004);.

Derivation (Clifford & Bostock 2007): in honor of Julien Reverchon (1837–1905) French-born United States plant collector.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 40–80 cm long. Leaf-sheaths without keel, scaberulous. Ligule an eciliate membrane, 2–4(–9) mm long, lacerate. Leaf-blades curved, filiform, involute, 8–35 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 10–20(–30) cm long, 4–10(–15) cm wide. Primary panicle branches 3–8(–10) cm long. Panicle branches stiff. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 1–2.5(–3) mm long, 1 length of upper glume, membranous, light brown, without keels, 1

-veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute, muticous or mucronate. Upper glume lanceolate, 1–2.5(–3) mm long, 0.3–0.5 length of adjacent fertile lemma, membranous, light brown, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth to scabrous. Lemma apex acute, awned, 1 -awned. Principal lemma awn 0.5–3(–6) mm long overall. Palea 0.8–0.9 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **South-central USA**, **Mexico**. Oklahoma. Texas. Central Mexico, Northeast Mexico.

Puebla. Coahuila, Neuvo Leon, Tamaulipas.

Muhlenbergia richardsonis (Trin.) Rydb. *Bull. Torr. Bot. Club,* 1905, 600. (1905).

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: *Vilfa richardsonis* Trin., *Mem. Acad. Imp. Sci. Saint-Petersbourg, Ser. 6, Sci. Math., Seconde Pt. Sci. Nat.* 6,4(1–2): 103 (1840). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Richardson s.n.*, North America (LE; IT: US (fragm. ex LE)).

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (161), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (178).

Derivation (Clifford & Bostock 2007): In honor of John Richardson (1787–1865) English physician, naturalist and Arctic explorer.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, mat forming. Rootstock evident. Rhizomes short, scaly. Culms erect or geniculately ascending, 5–60 cm long. Culm-internodes striate, scaberulous (nodulose). Leaf-sheaths glabrous on surface. Ligule an eciliate membrane, 1.5–2(–3) mm long, erose. Leaf-blades flat or involute, 1–5 cm long, 1–1.5 mm wide. Leaf-blade surface smooth or scaberulous, rough abaxially, puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 2–10 cm long. Primary panicle branches appressed. 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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume oblong, 1–1.5 mm long, 0.4–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above. Lemma apex acute or acuminate, muticous or mucronate. Palea 0.9 length of lemma, 2 -veined. Palea surface scaberulous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.2–1.5 mm long. Caryopsis with adherent pericarp, fusiform, 1.2 mm long, light brown.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Subarctic America**, **Western Canada**, **Eastern Canada**, **Northwest USA**, **North-central USA**, **Northeast USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Yukon, Northwest Territories. Alberta, British Columbia, Manitoba, Saskatchewan. New Brunswick, Nova Scotia, Ontario, Prince Edward I, Quebec. Colorado, Idaho, Montana, Oregon, Washington, Wyoming. North Dakota, Nebraska, South Dakota. Maine. Arizona, California, Nevada, Utah. Central Mexico, Northeast Mexico, Northwest Mexico.

Distrito Federal, Puebla. Chihuahua, Hidalgo, San Luis Potosi. Baja California, Sonora.

Muhlenbergia rigens (Benth.) Hitchcock. *Journ. Wash. Acad. Sc.* xxiii. 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).

TYPE from USA. **Basionym or Replaced Name**: *Epicampes rigens* Benth., *J. Linn. Soc., Bot.* 19: 88 (1881). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *H.N. Bolander 6124*, 1860–1867, USA: California: Sonoma (US-323974, US-323975).

Recent Synonyms: *Muhlenbergia leptoura* (Piper) Hitchcock, *N. Am. Fl.* xvii. 468 (1935). *Muhlenbergia marshii* I. M. Johnston, *Journ. Arn. Arb.* 24: 392 (1943).

Muhlenbergia mundula I. M. Johnston, *Journ. Arn. Arb*. 34: 392 (1943).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (197), F.W.Gould, *The Grasses of Texas* (1975) (264, Fig. 139).

Illustrations (Journals): *Sida* (29: 101, Fig. 54 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 968, fig.13 (2007)).

Images: R.Darke, *Ornamental Grasses* (2004);, R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 60–100 cm long. Ligule an eciliate membrane or a ciliolate membrane, 1–3 mm long. Leaf-blades involute, 15–50 cm long, 1–4 mm wide, stiff. Leaf-blade surface ribbed, scabrous, rough adaxially. Leaf-blade apex filiform.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, continuous or interrupted, 30–60 cm long. Primary panicle branches 1–4 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 lanceolate, laterally compressed, compressed slightly, 2.5–3.5 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, 2–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous. Lower glume apex obtuse or acute. Upper glume lanceolate, 2–3 mm long, 0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic, 2.5–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy above. Lemma surface scaberulous, rough above. Lemma margins pubescent, hairy below. Lemma apex obtuse or acute, muticous or mucronate. Palea 1 length of lemma, 2 -veined. Palea surface scabrous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–1.7 mm long. Caryopsis with adherent pericarp, fusiform, 2 mm long.

$2n = 40$ (Peterson et al 2007).

Distribution (TDWG). Continent. North 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.

Puebla. Aguascalientes, Coahuila, Chihuahua, Durango, Neuvo Leon, Zacatecas. Baja California, Baja California Sur, Sonora. Jalisco, Michoacan.

Muhlenbergia rigida (Kunth) Kunth. *Rev. Gram.* 1:63 (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).

TYPE from Mexico. **Basionym or Replaced Name**: *Podosemum rigidum* Kunth, *Nov. Gen. Sp. (quarto ed.)* 1: 129 (1815 [1816]). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Guanajuato: near Guanajuato (P; IT: B-W, US-91920 (fragm. ex P)).

Recent Synonyms: *Muhlenbergia glabrata* (HBK) Trin., *Gram. Unifl.* 194. (1824). *Muhlenbergia metcalfei* M.E. Jones, *Contr. W. Bot.* 14: 12 (1912).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (152), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (193), S.A.Renvoize, *Gramineas de Bolivia* (1998) (343, Fig 72).

Illustrations (Journals): *Sida* (29: 102, Fig. 55 (2007)), *J. Bot. Res. Inst. Texas* (1(2): 956, fig.8 (2007)), *Ruizia* (13:263, Fig 30m (1993)).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. stiff. Culms, spikelets or inflorescence branches held stiffly erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, slender, 50–100 cm long. Culm-nodes flush with internodes. Leaf-sheaths without keel. Leaf-sheath auricles erect. Ligule an eciliate membrane, 3–9(–15) mm long, lacerate. Leaf-blades involute, 12–35 cm long, 1–3 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear or lanceolate, 10–35 cm long, 2–4(–10) cm wide. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 5–15 mm long.

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, shorter than spikelet, similar to fertile lemma in texture. Lower glume elliptic or ovate, 1–1.3(–1.5) mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume elliptic or ovate, 1–1.3(–1.5) mm long, 0.25 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 4–5 mm long, membranous, purple, keeled, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acute, awned, 1 -awned. Principal lemma awn 10–22 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.8–2.3 mm long, purple. Caryopsis with adherent pericarp, fusiform.

$2n = 40$, or 44 (both Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Northern South America**, **Western South America**, **Southern South America**. Costa Rica, Panama. Venezuela. Bolivia, Colombia, Ecuador, Peru. Argentina Northwest.

Catamarca, Jujuy, La Rioja, Salta, Tucuman. 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, Sonora. Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia robusta (Fourn.) Hitchcock. *N. Am. Fl.* xvii. 462 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name**: *Epicampes robusta* E. Fourn., *Mexic. Pl.* 2 : 89 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *M. Bourgeau 1153*, 2 Oct 18?, Mexico: Distrito Federal: Santa Fe (P; ILT: US-999036, US-999031 (fragm.), US-90734 (fragm.)). LT designated by Hitchcock, N. Amer. Fl. 17(6): 462 (1935).

ST: *E.Bourgeau 683*, Mexico: supra Tacubaya (P; IST: US-999030 (fragm.)).

ST: *Hahn 420*, Mexico: Cuernavaca (P).

Recent Synonyms: *Epicampes stricta* J. & C. Presl, *Rel. Haenk.* 1:. 235. t. 39. (1830).

Illustrations (Books): R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (as *epicampes srtictus*).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 977, fig.17 (2007)).

Derivation (Clifford & Bostock 2007): L. robust. Culms tall, or leaf-blades or spikelets large.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms robust, 100–300 cm long. Leaf-sheaths keeled. Leaf-sheath auricles erect, 2–5 mm long. Ligule an eciliate membrane, 2–5 mm long, lacerate. Leaf-blades 30–50 cm long, 4–5 mm wide. Leaf-blade surface scabrous.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 30–60 cm long, 2–4 cm wide. Primary panicle branches 8–15 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1 mm long.

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, 2–2.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, exceeding apex of florets. Lower glume lanceolate, 2–2.8 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex obtuse or acute. Upper glume lanceolate, 2–2.8 mm long, 1.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex obtuse or acute.

Florets. Fertile lemma lanceolate, 2–2.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or asperulous. Lemma apex acute, muticous or mucronate or awned, 1 -awned. Principal lemma awn 1 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.2 mm long. Caryopsis with adherent pericarp, fusiform.

$2n = 40$ (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**. Guatemala, Honduras, Nicaragua.

Distrito Federal, Mexico State, Morelos, Puebla. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, San Luis Potosi, Zacatecas. Veracruz. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia schmitzii Hack. *Ann. Nat. Hofmus. Wien*, xvii. 255. (1902).

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 Synonomy Database: HT: *A. Schmitz 380*, no date, Mexico (W-1889–118905; IT: US-84832 (fragm.)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. in honor of Albert Schmitz (pre 1879) who collected in Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect, robust, 30–80 cm long. Culm-internodes 3.7–10.7 cm long, scaberulous. Lateral branches sparse. Leaf-sheaths 2.5–10 cm long, mostly shorter than adjacent culm internode, scaberulous. Ligule an eciliate membrane, 2–3 mm long, hyaline, erose or lacerate, truncate or obtuse. Leaf-blades 5–20 cm long, 1.6–5 mm wide. Leaf-blade midrib conspicuous. Leaf-blade venation prominent. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate or elliptic, 12–36 cm long, 3–14 cm wide, contracted about primary branches. Primary panicle branches ascending or spreading, 1–2 -nate, 1.2–8 cm long. Panicle axis 19–46 noded. Panicle branches capillary. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1.5 mm long.

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, 2.6–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, shorter than spikelet. Lower glume lanceolate or ovate, 1.3–2.1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins

absent. Lower glume surface asperulous, glabrous or puberulous, hairy at apex. Lower glume apex attenuate, awned, 1 -awned, awn 0.5–0.8 mm long. Upper glume oblong, 1.3–2.1 mm long, 0.5–0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, glabrous or puberulous, hairy at apex. Upper glume apex dentate, 2–3 -fid, awned, 1 -awned, awn 0.5–0.8 mm long.

Florets. Fertile lemma elliptic or oblong, 2.6–3.2 mm long, membranous, light brown, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent. Lemma lateral veins prominent. Lemma margins pubescent. Lemma apex entire or erose, obtuse or acute, muticous or pungent. Palea elliptic or oblong, 2.7–3.4 mm long, 1.1 length of lemma, 2 -veined. Palea apex dentate, 2 -fid.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.9–1.6 mm long, purple. Caryopsis with adherent pericarp, oblong, 1.1–3 mm long, light brown.

n = 20 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico.

Mexico State. Chihuahua, Hidalgo. Michoacan.

Muhlenbergia schreberi J. F. Gmel. *Syst.* 171. (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), N.Tsvelev, *Grasses of the Soviet Union* (1983).

TYPE from USA. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: [USA: presumably Pennsylvania], *[Muhlenberg]*.

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (153), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (163), F.W.Gould, *The Grasses of Texas* (1975) (270, Fig. 142), L.B. Smith, D.C. Wasshausen, R.M. Klein *Flora Illustrada Catarinensis Gramineas* (1981–1982) (507, Fig. 108 & 515, Fig.111), A.Burkat, *Flora Ilustrada de Entre Rios (Argentina*), Pt II, Gramineas (1969) (225, Fig. 85), A.L.Cabrera, *Flora de la Provincia de Buenos Aires, IV Pt 2 Gramineas* (1970) (373, Fig. 95), B.Rosengurtt, *Gramineas UruguayasI* (1970) (268, Fig. 110), E.Hafliger & E.Schultz, Grass Weeds, CIBA-GEIGY (2:106(1980)).

Derivation (Clifford & Bostock 2007): in honor of Johan Christian Daniel Schreber (1739–1810) German botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 10–30 cm long, rooting from lower nodes. Ligule a ciliolate membrane, 1 mm long. Leaf-blades 2–5 cm long, 2–4 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5–15 cm long. Primary panicle branches appressed or ascending. Panicle branches scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 0.5 mm long, scaberulous.

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, compressed slightly, 2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes one the lower absent or obscure, persistent, shorter than spikelet, thinner than fertile lemma. Upper glume ovate, 0.1–0.2 mm long, 0.05–0.1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 20–30 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. Europe (*), Temperate Asia, North America, South America.

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Caucasus**. North Caucasus, Transcaucasus. **Eastern Canada**, **North-central USA**, **Northeast USA**, **Southwestern USA**, **South-central USA**, **Southeastern USA**, **Mexico**. Ontario. Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma,

Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona. Texas. Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, District of Columbia. Central Mexico, Northeast Mexico, Gulf (Mexico). **Brazil**, **Southern South America**. Brazil South. Argentina Northeast, Argentina Northwest.

Rio Grande do Sul, Santa Catarina. Jujuy, Salta, Tucuman. Buenos Aires, Distrito Federal, Entre Rios, Misiones. Tlaxcala. Hidalgo, Queretaro. Veracruz.

Muhlenbergia scoparia Vasey. *Contrib. U.S. Nat. Herb.* i. 283. (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *C.G. Pringle 2350*, 10 Nov. 1893, Mexico: Jalisco: rocky hills near Guadalajara (US-999069; ILT: LE, MO-1837823, TEX, US-91909, US-822950). LT designated by Hitchcock, N. Amer. Fl. 17(6): 457 (1935), but without explicitly citing a specific sheet in a specific herbarium; fully lectotypified by Sodertrom, Contr. U.S. Natl. Herb. 34(4): 144 (1967), who designated the US specimen as lectotype.

ST: *Dr. E. Palmer*, 1885, Mexico: Chihuahua, Batopilas (US-999070).

Illustrations (Journals): *Sida* (29: 103, Fig. 56 (2007)).

Derivation (Clifford & Bostock 2007): L. *scopae*, broom; *-aria,* pertaining to. Culms fasciculate.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths persistent and investing base of culm, with curly dead sheaths. Culms 60–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths keeled, glabrous on surface. Ligule an eciliate membrane, 1 mm long. Leaf-blades conduplicate, 25–50 cm long, 2.5–3 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear, equilateral or nodding, 20–40 cm long, 4–6 cm wide. Primary panicle branches ascending. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

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, 1.5–2 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 0.8–1.2 mm long, 0.75 length of upper glume, hyaline, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous, glabrous. Lower glume apex acute, mucronate. Upper glume lanceolate, 1–1.5 mm long, 1 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous, glabrous. Upper glume apex acute, awned, 1 -awned, awn 0.2–1 mm long.

Florets. Fertile lemma linear, 1.5–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface smooth or scaberulous, pubescent, hairy at base. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 6–15 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.4 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Chihuahua, Durango, Zacatecas. Sinaloa, Sonora. Jalisco, Michoacan, Nayarit.

Muhlenbergia seatonii Scribn. *Proc. Am. Acad.* xxviii. 122. (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *H.E. Seaton 320*, 14 Aug 1891, Mexico: Veracruz: hills near Esperanza, 8000 ft (US-995669).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Henny Eliason Seaton (1869–1893) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary. Rhizomes elongated. Culms erect or geniculately ascending, 20 cm long. Culm-internodes distally glabrous. Leaf-sheaths longer than adjacent culm internode, smooth, glabrous on surface. Ligule an eciliate membrane, 2–3 mm long. Leaf-blades flat or involute, 3–8 cm long, 1 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–15 cm long. Primary panicle branches ascending or spreading, 4–7 cm long. Panicle axis smooth. Panicle branches stiff, scaberulous. 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 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse. Upper glume oblong, 1.5 mm long, 0.4 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex dentate, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, flexuous, 10–15 mm long overall. Lateral lemma awns present, 1–2 mm long. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico.

Distrito Federal, Puebla, Tlaxcala.

Muhlenbergia sericea (Michx.) Peterson. *Contrib. US Nat. Herb.* 41:167 (2001).

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

TYPE from USA. **Basionym or Replaced Name**: *Stipa sericea* Michx., *Fl. Bor.-Amer.* 1: 54 (1803)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *A. Michaux s.n.*, no date, USA: South Carolina (P-MICHX; IT: US-866059 (fragm.)).

Recent Synonyms: *Muhlenbergia filipes* M. A. Curt., *Am. Journ. Sc. Ser. I.* 44: 83 (1843).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (191).

Derivation (Clifford & Bostock 2007): L. *sericus*, silken; *-ea*, indicating resemblance. Densely invested in part or totally with long hairs.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms 70–160 cm long. Culm-internodes distally glabrous. Leaf-sheaths without keel, glabrous on surface. Ligule an eciliate membrane, 1–2(–10) mm long. Leaf-blades curved, involute, 40–100 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, effuse, 30–70 cm long, 20–30 cm wide. Primary panicle branches spreading. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume lanceolate, 0.5–1 mm long, 0.5–0.66 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, awned, 1 -awned, awn 1–5 mm long. Upper glume lanceolate, 1–1.5 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, awned, 1 -awned, awn 5–19 mm long.

Florets. Fertile lemma lanceolate, 3–4(–5) mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma apex lobed, 2 -fid, with lobes 1–3 mm long, incised 0.33–0.5 of lemma length, setaceously

acuminate, awned, 1 -awned. Principal lemma awn flexuous, 11–26 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–2 mm long, purple. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA** and **Southeastern USA**. Texas. Alabama, Florida, Georgia, Mississippi.

Muhlenbergia setarioides Fourn. *Mex. Pl. Enum., Gram.* 84 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *W. Schaffner 161*, Mexico: Valle de Orizaba (P; IST: LE, MO-2940108 (fragm.)). W. Schaffner pl. Mexic..

ST: *Thomas s.n.*, Mexico (herb. Buchinger; IST: MO).

ST: *Mueller 2022*, Mexico (IST: US (fragm. ex. LE)).

ST: *Botteri & Sum. 1202*, Mexico

ST: *Botteri & Sum. 1279*, Mexico

ST: *Bourgeau 3362*, Mexico (P; IST: MO-2974294, US (fragm. ex P), US (fragm. ex LE)).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (334, Fig 123).

Derivation (Clifford & Bostock 2007): Gk. *-oides*, resembling. Inflorescence spicate resembling that of *Setaria*.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Culms decumbent, 50–100 cm long, 1.5 mm diam., rooting from lower nodes. Culm-internodes distally glabrous. Lateral branches lacking. Leaves cauline. Leaf-sheaths keeled, glabrous on surface. Leaf-sheath auricles erect. Ligule an eciliate membrane, 1.5–3.5 mm long, lacerate. Leaf-blades 4–12 cm long, 4–9 mm wide, dark green. Leaf-blade surface scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle 3–6 cm long. Panicle open, oblong, interrupted, 8–11 cm long, 1.5–5 cm wide, with spikelets clumped along branches. Primary panicle branches ascending, 1–2 cm long, bearing spikelets almost to the base. Spikelets 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 lanceolate, laterally compressed, 2.7–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent, disarticulating obliquely.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.1–1.5 mm long, 0.66 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 1.5–2.1 mm long, 0.5 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 2.3–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma surface scabrous, pubescent, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 5–9 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.2 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

$2n = 40$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Gulf (Mexico), Southeast Mexico. **Mesoamerica**. Costa Rica, El Salvador, Guatemala, Honduras, Panama.

Puebla. Veracruz. Chiapas.

Muhlenbergia setifolia Coult. *Bot. Gaz.* vii. 92. (1882).

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 Synonomy Database: HT: *V. Havard s.n.*, 1881, USA: Texas (US-81634; IT: GH, W-1916–29061).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (193).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 972, fig.15 (2007)).

Derivation (Clifford & Bostock 2007): L. *seta,* bristle; *folium*, leaf. Leaf-blades bristle-like.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 50–80 cm long. Leaf-sheaths wider than blade at the collar, without keel. Ligule an eciliate membrane, 4–7(–10) mm long. Leaf-blades curved or curled, involute, 6–18(–25) cm long, 1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 8–20(–25) cm long, 2–4 cm wide. Primary panicle branches ascending. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume ovate, 1.5–2(–2.5) mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate or obtuse. Upper glume ovate, 1.5–2(–2.5) mm long, 0.4–0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate or obtuse, muticous or mucronate.

Florets. Fertile lemma lanceolate, 3.5–5 mm long, cartilaginous, yellow, shiny, keeled, 3 -veined, 0–3 -veined. Lemma surface smooth. Lemma apex acute, awned, 1 -awned. Principal lemma awn 10–28 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 40 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA**, **Mexico**. New Mexico, Texas. Northeast Mexico. Coahuila, Chihuahua, Guanajuato, San Luis Potosi, Tamaulipas.

Muhlenbergia shepherdii (Vasey) Swallen. *Contr. U.S.Nat. Herb.*29 (4) 204 (1947).

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**: *Sporobolus shepherdii* Vasey, *Bull. Torrey Bot. Club,* 14: 8. (1887). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *E. Palmer 9*, Aug-Nov 1885, Mexico: Chihuahua: Hacienda San Miguel, near Batopilas (LT: US-825391; ILT: US-81961). LT designated by Peterson & Annable, *Syst. Bot*. 15: 519 (1990)..

Recent Synonyms: *Blepharoneuron shepherdii* (Vasey) P.M. Peterson & C.R. Annable, *Syst. Bot*., 15(4): 519 (1990).

Illustrations (Journals): *Systematic Botany* (15: 520, Fig.7 (1990) as *Blepharoneuron*).

Derivation (Clifford & Bostock 2007): In honor of A. H. Shepherd who extended hospitality in Mexico to Dr. Palmer, plant collector.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 16–40 cm long, 0.3–0.6 mm diam. Culm-internodes 2.2–5 cm long, scaberulous. Leaf-sheaths 3.2–9 cm long, longer than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 1.4–2.8 mm long, erose or

lacerate, truncate or obtuse. Leaf-blades flat or involute, 4–8.5 cm long, 0.8–2 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface smooth or scaberulous, rough abaxially, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, obovate, effuse, 8–18 cm long, 2.7–7 cm wide. Primary panicle branches ascending or spreading, 1–2 -nate, 3–6 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 7–12 mm long.

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, with terminal spikelet tilted on the pedicel, laterally compressed, 1.3–1.7 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume elliptic or oblong, 0.7–1.6 mm long, 0.75–0.9 length of upper glume, membranous, without keels. Lower glume apex acute. Upper glume elliptic or oblong, 1–1.7 mm long, 1 length of adjacent fertile lemma, membranous, without keels. Upper glume apex acute.

Florets. Fertile lemma ovate, 1.3–1.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein ciliate. Lemma margins ciliate. Lemma apex obtuse. Palea 1.2–1.7 mm long, 1 length of lemma, 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Anthers 3, 0.8–1.4 mm long. Caryopsis with adherent pericarp, 1–1.7 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico.

Chihuahua, Durango, Zacatecas. Sonora.

Muhlenbergia sinuosa Swallen. *Contrib. U. S. Nat. Herb.* 29: 204 (1947).

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 Synonomy Database: HT: *E.A. Mearns 2457*, 26 Sep 1893, USA: New Mexico: Hidalgo Co.: W side of the San Luis Mts. (US-234817; IT: K, US-1910761).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (199).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms erect or geniculately ascending, 12–50 cm long, 0.3–0.5 mm diam. Culm-internodes 1.7–2.7 cm long, scaberulous. Lateral branches ample, arising from lower culm. Leaf-sheaths 2.5–10 cm long, longer than adjacent culm internode, smooth or scaberulous. Ligule an eciliate membrane, 1.5–3.1 mm long, erose or lacerate, truncate or obtuse. Leaf-blades flat or involute, 2–8.5 cm long, 0.8–2 mm wide. Leaf-blade midrib prominent beneath. Leaf-blade surface scaberulous, rough abaxially, pubescent, hairy adaxially. Leaf-blade margins unthickened or cartilaginous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 10–26 cm long, 2.8–8 cm wide. Primary panicle branches ascending or spreading, 1–2 -nate, 2.6–7 cm long. Spikelets deflexed, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 4–7 mm long.

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, 1.4–2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.7–1.2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pilose. Lower glume apex obtuse or acute. Upper glume lanceolate, 0.7–1.2 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pilose. Upper glume apex obtuse or acute.

Florets. Fertile lemma elliptic or oblong, 1.4–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex obtuse or acute, muticous. Palea 1.3–1.8 mm long, 2 -veined. Palea surface glabrous or pubescent, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6–1.2 mm long, green. Caryopsis with adherent pericarp, fusiform, 0.8–1.2 mm long.

n = 10 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Northeast USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico. Northeast Mexico, Northwest Mexico.

Chihuahua. Sonora.

Muhlenbergia sobolifera (Muhl.) Trin. Gram. Unifl. 189. (1824).

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 Synonomy Database: HT: *Ex Herb. Muhlenberg 111*, no date, USA: Pennsylvania (PH; IT: US-1535796 (fragm. ex PH)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (159), F.W.Gould, *The Grasses of Texas* (1975) (276, Fig. 146).

Derivation (Clifford & Bostock 2007): L. *sobolis*, underground stem base creeping; *fero*, bear; Strongly rhizomatous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, culms solitary or caespitose. Rhizomes elongated, scaly. Culms erect or geniculately ascending, 60–100 cm long. Culm-internodes distally pubescent. Culm-nodes glabrous. Lateral branches sparse. Leaf-sheaths outer margin glabrous or hairy. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades spreading, 7–15 cm long, 4–8 mm wide. Leaf-blade venation with 7–9 secondary veins. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Peduncle pubescent above. Panicle contracted, linear, equilateral or nodding, 6–20 cm long, 0.3 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. 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, 2–2.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.1–1.8 mm long, 0.8–0.9 length of upper glume, membranous, without keels, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acuminate. Upper glume lanceolate, 1.4–1.9 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 2–2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex obtuse, mucronate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.7–0.8 mm long. Caryopsis with adherent pericarp, fusiform, 1.2–1.4 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **Northeast USA**, **South-central USA**, **Southeastern USA**. Illinois, Kansas, Oklahoma, Wisconsin. Connecticut, Indiana, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Texas. Alabama, North Carolina, Tennessee.

Muhlenbergia solisii (G.A. Levin) P.M.Peterson. *Am. J. Bot.* 97 (9) 1546 (2010).

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

TYPE from Mexico. **Basionym or Replaced Name**: *Aegopogon solisii* G.A. Levin, *Mem. San Diego Soc. Nat. Hist.* 16: 61 (1989). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Mexico, Isla Socorro: Moran 28504 (SD holo, CHAPA, MO, US).

Illustrations: None found.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms decumbent, slender, 5–20 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Lateral branches sparse, arising from lower culm. Leaves cauline. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 0.7–1 mm long, lacerate. Leaf-blades 2–6 cm long, 0.8–1.2 mm wide, flaccid. Leaf-blade surface scaberulous, rough adaxially or on both sides, glabrous.

Inflorescence. Inflorescence composed of racemes. Racemes 18–30, borne along a central axis, spreading, cuneate, unilateral, 0.15–0.2 cm long, bearing a triad of spikelets. Central inflorescence axis 2.5–4 cm long. Rhachis obsolete, deciduous from axis. Raceme-bases cuneate, pubescent, shed with the raceme, acute. Spikelets in threes. Fertile spikelets sessile, 1 in the cluster. Companion sterile spikelets pedicelled, 2 in the cluster. Pedicels present, oblong, 0.8–1 mm long, pubescent.

Sterile Spikelets. Companion sterile spikelets well-developed, containing empty lemmas or male, lanceolate, laterally compressed, 0.5–0.8 mm long, shorter than fertile, deciduous with the fertile. Companion sterile spikelet glumes membranous, 0.3–0.5 mm long, scaberulous, glabrous, lobed, 2 -fid, awned, one glume awned, with 0.4–0.6 mm long awn. Companion sterile spikelet lemmas 1, exserted from glumes, 0.5–0.8 mm long, lobed, 1-awned, with 1–1.3 mm long awn.

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, 1.5–1.8 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes similar, shorter than spikelet. Lower glume cuneate, 0.8–1 mm long, 0.8 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume apex lobed, 2 -fid, obtuse, awned, 1 -awned, awn 0.7–1.1 mm long. Upper glume cuneate, 0.9–1.1 mm long, 0.6 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume apex lobed, 2 -fid, obtuse, awned, 1 -awned, awn 0.7–1.1 mm long.

Florets. Fertile lemma ovate, laterally compressed, lanceolate in profile, 1.5–1.8 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma surface puberulous. Lemma apex lobed, 2 -fid, awned, 3 -awned. Principal lemma awn from a sinus, 4.5–5 mm long overall. Lateral lemma awns present, arising on inner edge of lobes, 0.8–0.9 mm long, shorter than principal. Palea lanceolate, 1 length of lemma, 2 -veined. Palea keels contiguous above a sulcus. Palea surface puberulous. Palea apex dentate, 2 -fid, acute, awned, awns 0.6–0.8 mm long.

Flower and Fruit. Anthers 3, 0.5–0.8 mm long. Caryopsis with adherent pericarp, fusiform, isodiametric, biconvex, 0.9–1 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Southwest Mexico.

Colima.

Muhlenbergia speciosa Vasey. *Bull. Torrey Bot. Club,* xiii. 232. (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).

TYPE from Mexico. **Basionym or Replaced Name**: *Bealia speciosa* (Vasey) Beal, *Grasses N. Amer.* 2: 268 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Edward Palmer 30*, Aug-Nov 1885, Mexico: Chihuahua: S.W. Chihuahua (US-999062; IT: LE, US-999063, US-822953, W-1916–29064).

Illustrations (Journals): *Sida* (29: 104, Fig. 57 (2007)).

Derivation (Clifford & Bostock 2007): L. species, beauty; *-osa*, abundance. Showy in some respect, in particular the inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–150 cm long. Culm-internodes distally hirsute. Leaf-sheaths keeled, hirsute. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blades conduplicate or involute, 30–50 cm long, 2.5–4 mm wide. Leaf-blade surface hirsute.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, equilateral or nodding, 30–60 cm long, 4–10 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1.3 mm long.

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, 1.4–2.3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets or exceeding apex of florets. Lower glume lanceolate, 1.4–2.3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface pubescent. Lower glume hairs 0.5 mm long. Lower glume apex obtuse. Upper glume lanceolate, 1.4–2.3 mm long, 1–1.3 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface pubescent. Upper glume hairs 0.5 mm long. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 1.1–2.2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 8–12 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico, Northwest Mexico, Southwest Mexico. Chihuahua, Durango, Zacatecas. Sinaloa. Jalisco, Michoacan, Nayarit.

Muhlenbergia spiciformis Trin. *Mem. Acad. Petersb. Ser.* VI. vi. II. 288. (1845).

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 Synonomy Database: T: *Karwinsky s.n.*, Mexico (LE).

Recent Synonyms: *Muhlenbergia parviglumis* Vasey, *Contrib. U.S. Nat. Herb.*3, 1. 71 , 522. (1892).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (170).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 969, fig.14 (2007)).

Derivation (Clifford & Bostock 2007): L. *spica,* thorn; *forma*, appearance. Inflorescence a condensed spike-like panicle.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 30–60 cm long. Culm-internodes smooth or scaberulous, distally glabrous. Leaf-sheaths smooth, glabrous on surface. Ligule a ciliolate membrane, 0.5 mm long. Leaf-blades erect, flat or involute, 5–10 cm long, 1–2 mm wide. Leaf-blade surface puberulous.

Inflorescence. Inflorescence a panicle, embraced at base by subtending leaf. Panicle contracted or spiciform, linear, 10–15 cm long. Primary panicle branches appressed, bearing spikelets almost to the base. Panicle branches scaberulous. 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, 3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex erose, truncate. Upper glume oblong, 1 mm long, 0.33 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex erose, truncate.

Florets. Fertile lemma lanceolate, 3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 10–40 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

$2n = 40$ (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico. **Caribbean**. Cuba.

Puebla. Coahuila, Hidalgo, Queretaro, San Luis Potosi, Tamaulipas. Veracruz. Jalisco, Michoacan, Oaxaca. Chiapas.

Muhlenbergia straminea Hitchcock. *Contrib. US. Nat. Herb*. xvii. 302 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R. Endlich 1210*, 10 Apr 1906, Mexico: Chihuahua (US-691888).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (184).

Derivation (Clifford & Bostock 2007): L. straw-yellow. Spikelets and attendant structures straw-colored.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short. Butt sheaths persistent and investing base of culm, with curly dead sheaths. Culms erect, 50–80 cm long. Culm-internodes antrorsely scabrous. Leaf-sheaths without keel, antrorsely scabrous. Ligule an eciliate membrane, 3–12 mm long. Leaf-blades flat or involute, 50–80 cm long, 2 mm wide. Leaf-blade surface scabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 10–20 cm long. Primary panicle branches appressed, 4–7 cm long. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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.

Glumes. Glumes persistent, similar, reaching apex of florets. 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 length of adjacent fertile lemma, chartaceous, without keels, 3 -veined. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 4–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous, rough above, villous, hairy below. Lemma apex awned, 1 -awned. Principal lemma awn 5–15 mm long overall. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

$2n = 20$ (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Northeast Mexico.

Chihuahua.

Muhlenbergia stricta (Presl) Kunth. *Enum.* Pl. i. 202 (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).

Basionym or Replaced Name: *Podosemum strictum* J. Presl, *Reliq. Haenk.* 1(4–5): 230 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Hab. ?, *Haenke s.n.*Country of origin not indicated in the protologue [gd, 1995].

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 954, fig.7 (2007)).

Derivation (Clifford & Bostock 2007): L. erect. Inflorescence branches erect.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100–150 cm long. Culm-internodes distally pubescent. Leaf-sheaths keeled, pubescent. Leaf-sheath auricles erect. Ligule an eciliate membrane, 2–5 mm long, truncate. Leaf-blades involute, 25–50 cm long, 2–4 mm wide. Leaf-blade surface scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, oblong or ovate, effuse, 15–50 cm long. Primary panicle branches whorled at most nodes, 5–10 cm long. Panicle branches capillary. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 1–10 mm long, scaberulous, tip widened.

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, 2.5–3.6 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate or elliptic, 0.8–1.5 mm long, 0.33–0.4 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous, rough above. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate or elliptic, 2.5–3.6 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface asperulous, rough above. Upper glume apex acute, muticous or awned, 1 -awned, awn 0.5–1.2 mm long.

Florets. Fertile lemma linear, 2.5–3.6 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, pubescent, hairy at base. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 5–15 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.1–1.6 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 32, or 40 (both Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico.

Mexico State, Morelos. Durango, Guanajuato, Zacatecas. Veracruz. Colima, Jalisco, Michoacan, Nayarit, Oaxaca.

Muhlenbergia strictior Beal. *Grasses N. Amer*. ii. 263 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *C.G. Pringle 1418*, 17 Sep 1887, Mexico: Chihuahua (MSC; IT: K, MEXU, NY, US-86380, US-822895, VT).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. more erect. Panicle branches more appressed than in related taxa.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms geniculately ascending, slender, 20 cm long. Leaf-sheaths mostly shorter than adjacent culm internode, without keel. Ligule an eciliate membrane. Leaf-blades 1–3 cm long, 1 mm wide. Leaf-blade apex obtuse.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 5 cm long, bearing few spikelets. Primary panicle branches appressed, bearing 1–3 fertile spikelets on each lower branch. 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 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume oblong, 2 mm long, 0.5 length of adjacent fertile lemma, membranous, yellow, without keels. Upper glume surface scabrous. Upper glume apex acuminate.

Florets. Fertile lemma elliptic, 4 mm long, membranous, yellow, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, muticous. Palea 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

n = 9 (1 ref TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico.
Distrito Federal, Mexico State. Chihuahua, Durango. Sonora.

Muhlenbergia subaristata Swallen. *Journ. Wash. Acad. Sc.* xxvi. 208 (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).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F.W. Pennell 18572*, 1 Sep 1934, Mexico: Durango (US-1614379).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *sub*, approaching; *arista*, bristle. Lemma sharply acute.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 120 cm long. Culm-internodes distally glabrous or pubescent. Leaf-sheaths subequal to internodes, without keel, antrorsely scabrous. Ligule an eciliate membrane, 1–2 mm long, truncate. Leaf-blades flexuous, involute, 15–30 cm long, 1–3 mm wide. Leaf-blade surface scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, pyramidal, 25 cm long. Primary panicle branches ascending, 5–10 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, flexuous, 1–5 mm long, pubescent, hairy above.

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, 4–4.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume obovate, 1–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, pubescent, hairy at apex. Lower glume apex erose, acute. Upper glume obovate, 1–1.5 mm long, 0.25–0.33 length of adjacent fertile lemma, membranous, without keels. Upper glume surface scabrous, pubescent, hairy at apex. Upper glume apex erose, obtuse.

Florets. Fertile lemma lanceolate, 4–4.5 mm long, membranous, purple, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous, glabrous or pubescent. Lemma apex muticous or awned, 1 -awned. Principal lemma awn 0–2 mm long overall. Palea 2 -veined. Palea surface glabrous or puberulous, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico.

Mexico State. Durango. Veracruz. Jalisco, Oaxaca.

Muhlenbergia subbiflora Hitchcock. *N. Am. Fl.* 17: 437 (1935).

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

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Palmer 948*, Apr-Nov 1896, Mexico: Durango: City of Durango and vicinity (US-995434; IT: L, MEXU, MO-2974308 US-3155932, US-995433, US-746245).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *sub*-, approaching; *bis,* twice; *flos*, flower. Spikelets often with two florets.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms 30–50 cm long. Ligule an eciliate membrane, 3 mm long, acute. Leaf-blades 3–7 cm long, 1 mm wide. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 7–10 cm long, contracted about primary branches. Primary panicle branches 1–2 -nate, 1–2 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present.

Fertile Spikelets. Spikelets comprising 1 fertile florets, without rhachilla extension or with a barren 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 lanceolate, laterally compressed, compressed slightly, 2.5–3 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, 2 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2 mm long, 0.6–0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex acute, awned, 1 -awned. Principal lemma awn straight or flexuous, 1–5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea apex with excurrent keel veins. Apical sterile florets 0–1 in number, male or barren, lanceolate, 2 mm long. Apical sterile lemmas awned.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Northeast Mexico.

Durango.

Muhlenbergia sylvatica Torr. *Gray, N Amer. Gram. Cyp.* 1:13 (1834).

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 Synonomy Database: USA: Mountians of New Jersey,.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (159), F.W.Gould, *The Grasses of Texas* (1975) (281, Fig. 148).

Derivation (Clifford & Bostock 2007): L. *silva*, wood; *-ica,* belonging to. Growing in woodlands.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms decumbent, slender, 40–100 cm long, wiry. Culm-internodes retrorsely scabrous, distally pubescent. Lateral branches ample, arising from mid culm. Leaf-sheaths without keel, glabrous on surface. Ligule a ciliolate membrane, 0.5–1.5(–2.5) mm long, erose. Leaf-blades 4–18 cm long, 2–8 mm wide, light green.

Inflorescence. Inflorescence a panicle. Peduncle 4–8 cm long. Panicle contracted, linear, interrupted, loose, 5–15 cm long, 0.3–0.6 cm wide. Primary panicle branches appressed, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 2.2–3.2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet or reaching apex of florets, similar to fertile lemma in texture. Lower glume lanceolate, 1.9–3 mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex attenuate or setaceously acuminate. Upper glume lanceolate, 1.9–3 mm long, 0.8–1 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex attenuate or setaceously acuminate.

Florets. Fertile lemma lanceolate, 2.2–3.2 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma apex acute, awned, 1 -awned. Principal lemma awn 3–10(–18) mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.7 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Eastern Canada**, **North-central USA**, **Northeast USA**, **Southwestern USA**, **South-central USA**, **Southeastern USA**. Ontario. Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, South Dakota, Wisconsin. Connecticut, Indiana, Maine, Massachusetts, Michigan, Ohio, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arizona. Texas. Alabama, Arkansas, Georgia, Mississippi, North Carolina, Tennessee.

Muhlenbergia tenella (HBK) Trin. *Gram. Unifl.* 193. (1824).

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 Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Feb, Mexico: Veracruz: inter Río Frio et Barranca Honda (P-Bonpl.; IT: P, US-91922 (fragm. ex P)).

Illustrations (Books): W.Burger, *Flora Costaricensis* 15, Gramineae: *Fieldiana Botany New Series* 4 (1980) (327, Fig 120).

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescence branches slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms geniculately ascending or decumbent, 15–35 cm long, 0.2–0.3 mm diam. Culm-internodes distally glabrous. Culm-nodes glabrous. Lateral branches ample, arising from lower culm or mid culm. Leaf-sheaths glabrous on surface or hirsute. Ligule an eciliate membrane, 0.3 mm long, lacerate. Leaf-blades 2–3.5 cm long, 0.8–2 mm wide. Leaf-blade surface glabrous or pubescent, hairy on both sides.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 3–7 cm long. Primary panicle branches appressed, 1 -nate, bearing spikelets almost to the base. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 1–3 mm long.

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, 2.2–2.7 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.6–1.7 mm long, 0.33 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 0.9–1.7 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma lanceolate, 1.8–2.7 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins prominent. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 15–25 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.4 mm long, yellow. Caryopsis with adherent pericarp, fusiform.

n = 10 (2 refs TROPICOS). $2n$ = 20 (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**, **Western South America**, **Southern South America**. Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama. Colombia. Argentina Northwest.

Jujuy, Tucuman. Mexico State, Morelos, Puebla. Chihuahua, San Luis Potosi. Veracruz. Sinaloa, Sonora. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia tenuiflora (Willd.) Britton, Stern & Pogg. *Prelim. Catal.* :67 (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).

T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *Anonymous s.n.*, no date, cult. in hort Beroliense (IT: US-76295 (fragm. ex LE-TRIN)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003).

Derivation (Clifford & Bostock 2007): L. *tenuis*, slender; *flos*, flower. With a delicate inflorescence.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms erect or geniculately ascending, 60–100 cm long. Culm-internodes distally pubescent. Culm-nodes pubescent. Lateral branches lacking or sparse. Leaf-sheaths loose, pubescent. Ligule an eciliate membrane, 0.5 mm long. Leaf-blades spreading, 8–15 cm long, 5–8(–13) mm wide. Leaf-blade venation with 5–13 secondary veins. Leaf-blade surface scaberulous, rough on both sides. Leaf-blade margins scaberulous.

Inflorescence. Inflorescence a panicle. Peduncle glabrous. Panicle contracted, linear, nodding, 15–30 cm long, 0.5 cm wide. Primary panicle branches appressed, 4–8 cm long. Panicle axis scabrous. Panicle branches scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scabrous.

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, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5–2.5 mm long, 0.9 length of upper glume, membranous, without keels, 1–5 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent or distinct. Lower glume surface asperulous, rough above. Lower glume apex acuminate or setaceously acuminate. Upper glume lanceolate, 1.7–2.6 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 1–5 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent or distinct. Upper glume surface asperulous, rough above. Upper glume apex acuminate or setaceously acuminate.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma hairs white. Lemma apex acute, awned, 1 -awned. Principal lemma awn 2–11 mm long overall. Palea 2 -veined. Palea surface pubescent, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1–1.3 mm long. Caryopsis with adherent pericarp, fusiform, 1.75–2.2 mm long.

n = 20 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Eastern Canada**, **North-central USA**, **Northeast USA**, **Southeastern USA**. Ontario. Illinois, Iowa, Missouri, Wisconsin. Connecticut, Indiana, Massachusetts, Michigan, Ohio, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Arkansas, Georgia, North Carolina, South Carolina, Tennessee.

Muhlenbergia tenuifolia (HBK) Kunth. Rev. Gram. 1:63 (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.

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Apr, Mexico: Distrito Federal: Mexico City (P-Bonpl.; IT: P).

Recent Synonyms: *Muhlenbergia monticola* (HBK) Kunth, *Rev. Gram.* 1:63 (1829).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (159).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 951, fig.5 (2007)).

Derivation (Clifford & Bostock 2007): L. *tenuis*, slender; *folium*, leaf. Leaf-blades narrow.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived. Culms weak, 20–75 cm long. Lateral branches sparse. Ligule an eciliate membrane, 1.5–2.3 mm long. Leaf-blades flat or involute, 5–10 cm long, 1–2 mm wide. Leaf-blade surface smooth or scaberulous.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, interrupted, 5–15 cm long. Primary panicle branches spreading, 2–5 cm long, bearing spikelets almost to the base. Spikelets spreading, 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, 2–3.4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate or ovate, 1.3–1.8 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute, muticous or awned, 1 -awned, awn 0.5 mm long. Upper glume lanceolate or ovate, 1.7–2.7 mm long, 0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, muticous or awned, 1 -awned, awn 0.5 mm long.

Florets. Fertile lemma lanceolate, subterete, 2–3.4 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma surface scaberulous. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 13–20 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.9–1.2 mm long, pallid. Caryopsis with adherent pericarp, fusiform, 1.5–2 mm long.

$2n = 20$, or 40 (both Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Northern South America**, **Western South America**, **Southern South America**. Venezuela. Bolivia, Peru.

Tucuman. Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Aguascalientes, Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Tamaulipas, Zacatecas. Sonora. Guerrero, Jalisco, Nayarit, Oaxaca. Chiapas.

Muhlenbergia tenuissima (Presl) Kunth. *Enum. Pl.* i. 198. (1830).

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

TYPE from Panama. **Basionym or Replaced Name**: *Podosemum tenuissimum* J. Presl, *Reliq. Haenk.* 1(4–5): 230 (1830). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Haenke s.n.*, Panama (PR; IT: MO-2974335, MO-2974336 (line drawing of MO isotype), US (fragm.)).

Recent Synonyms: *Muhlenbergia confusa* (Fourn.) Swallen, *Contrib. U. S. Nat. Herb.* 29:. 207 (1947).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *slender*; *-issima*, most. Inflorescence slender.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual. Culms decumbent, 7–30 cm long. Culm-internodes antrorsely scabrous. Lateral branches ample. Leaf-sheaths glabrous on surface or puberulous. Ligule an eciliate membrane, 0.8–1.2 mm long. Leaf-blades conduplicate, 3–7 cm long, 0.5–1 mm wide. Leaf-blade surface puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Peduncle 1–3 cm long. Panicle open, oblong, effuse, 4–8 cm long, 1–2 cm wide. Panicle branches capillary. Spikelets spreading, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, tip widened.

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, 1.7–1.9 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume ovate, 0.5–0.7 mm long, 0.6–0.7 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume ovate, 0.8–1 mm long, 0.5 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma lanceolate, 1.7–1.9 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins ciliate. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 6–11 mm long overall. Palea 1 length of lemma, 2 -veined. Palea keels ciliolate.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.5–0.6 mm long, purple. Caryopsis with adherent pericarp, fusiform.

$n = 10$ (2 refs TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Southwest Mexico, Southeast Mexico. **Mesoamerica**, **Western South America**, **Brazil**. Costa Rica, Honduras, Nicaragua, Panama. Bolivia, Peru.

Colima, Jalisco, Nayarit. Chiapas.

Muhlenbergia texana Thurb. ex Coult., non Buckl.(1863). *Man. Rocky Mt. Bot*. 410. (1874).

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 Synonomy Database: LT: *Wright 739*, May-Oct 1849, USA: Texas: W Texas to El Paso (US-994219; ILT: MO). LT designated by Peterson & Annable, Syst. Bot. Monogr. 31: 93 (1991). This lectotypification now superseded by next screen..

LT: *S.B. Buckley s.n.*, May, USA: northern Texas: [*Agrostis barbatis* Buck.] (PH). LT designated by Dorr & Peterson, Sida 15: 590 (1993).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (199).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating location. From Texas, USA.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, caespitose. Culms erect or geniculately ascending, slender, 10–35 cm long. Culm-internodes distally pubescent. Leaf-sheaths mostly shorter than adjacent culm internode, puberulous. Ligule an eciliate membrane, 1–2 mm long, erose. Leaf-blades flat or involute, 2–5 cm long, 1–1.5 mm wide. Leaf-blade surface scabrous, rough abaxially, glabrous or puberulous, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, 5–12 cm long, 3–6 cm wide, 0.33–0.5 of culm length. Primary panicle branches ascending or spreading. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2–5 mm long.

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, 1.5–1.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.8–1.5 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface hirsute. Lower glume hairs 0.5 mm long. Lower glume apex acute or acuminate. Upper glume lanceolate, 0.8–1.5 mm long, 0.5–0.8 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface hirsute. Upper glume apex acute or acuminate.

Florets. Fertile lemma lanceolate, 1.5–1.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface glabrous. Lemma margins pubescent, hairy below. Lemma apex dentate, 2 -fid, acuminate, mucronate or awned, 1 -awned. Principal lemma awn from a sinus, 0.1–0.3 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface puberulous, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.4–0.5 mm long. Caryopsis with adherent pericarp.

n = 20 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico, Southwest Mexico.

Chihuahua, Durango, Zacatecas. Baja California, Baja California Sur, Sinaloa, Sonora. Nayarit.

Muhlenbergia thurberi (Scribn.) Rydb. *Bull. Torr. Bot. Club*, 1905:601 (1905).

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**: *Sporobolus filiculmis* Vasey ex Beal, *Grass. N. Amer.* 2: 288 (1896). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *Bigelow s.n.*, Sep 1853, USA: New Mexico: Rio Arriba Co.: Plaza Larga (US).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (168).

Derivation (Clifford & Bostock 2007): in honor of George Thurber (1821–90) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, cushion forming. Rhizomes elongated, scaly. Culms erect or geniculately ascending, 20–30 cm long. Culm-internodes distally glabrous. Leaves mostly basal. Leaf-sheaths smooth or scaberulous, glabrous on surface. Ligule an eciliate membrane, 1 mm long, lacerate. Leaf-blades filiform, involute, 1–3 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 2–5 cm long. Primary panicle branches appressed. 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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2–3 mm long, 0.66–0.75 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma margins ciliate, hairy below. Lemma apex acute, mucronate or awned, 1 -awned. Principal lemma awn 0.5–1 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface pilose, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform, 1.8–2.2 mm long.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona, California, Nevada, Utah. New Mexico, Texas. Northeast Mexico.

Neuvo Leon, San Luis Potosi.

Muhlenbergia torreyana (Schult.) Hitchcock. *Am. Journ. Bot.* xxi. 136 (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).

TYPE from USA. **Basionym or Replaced Name**: *Agrostis compressa* Torr., *Cat. Pl. New York* 91 (1819)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: ST: *J. Goldie s.n.*, Oct. 1817, USA: New Jersey: pine barrens (NY-327622, NY-327623; IST: US-76265 (fragm. and photostat ex NY hb. Torrey)).

ST: Sep 1829, USA: New Jersey: Quaker Bridge (NY-327624 (possible)). if the colletion date is correct this is not a type.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (180).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of John Torrey (1796–1873) United States botanist, chemist and physician.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, scaly. Culms erect, 30–60 cm long. Culm-internodes distally glabrous. Culm-nodes pubescent. Lateral branches lacking. Leaf-sheaths keeled, smooth or scaberulous, glabrous on surface. Ligule a ciliolate membrane, 1 mm long. Leaf-blades flat or conduplicate, 1–3 mm wide. Leaf-blade surface scaberulous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 10–20 cm long. Primary panicle branches ascending, 5–10 cm long. Panicle axis scaberulous. Panicle branches capillary, scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 1.5–2 mm long, tip widened.

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, 2 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1.5 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, 1.8 mm long, 0.9 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined. Palea surface scaberulous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northeast USA**, **Southeastern USA**. New Jersey, New York. North Carolina, Tennessee.

Muhlenbergia torreyi (Kunth) Hitchcock ex Bush. *Am. Midl. Nat.* vi. 84 (1919).

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**: *Agrostis caespitosa* Torr., *Ann. Lyceum Nat. Hist. New York* 1(1): 152–153 (1824)

. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: T: *E. James s.n.*, USA: Prairies of the Missouri and Plate (NY-327621 (possible)).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (154), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (174), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (331, Fig. 113).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2) 949, fig.4 (2007)).

Derivation (Clifford & Bostock 2007): in honor of John Torrey (1796–1873) United States botanist, chemist and physician.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms geniculately ascending, 15–30(–40) cm long. Leaves mostly basal. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane, 2–5(–7) mm long. Leaf-blades curved, filiform, involute, 1–3(–4) cm long, 0.3–0.5 mm wide. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle open, ovate, effuse, 7–20 cm long, 4–12 cm wide. Primary panicle branches spreading. Spikelets appressed or ascending, solitary. Fertile spikelets pedicelled. Pedicels present, filiform, 2.5–4 mm long.

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, 2.5–3.5 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, 1.5–2.5(–3) mm long, 1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex acute or acuminate, muticous or mucronate. Upper glume lanceolate, 1.5–2.5(–3) mm long, 0.6–0.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex acute or acuminate, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma surface scabrous, rough above. Lemma margins pubescent, hairy above. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn 1–2(–3) mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.4–1.7 mm long. Caryopsis with adherent pericarp, fusiform.

2*n* = 20 (1 ref TROPICOS, Peterson et al 2007), or 21 (Peterson et al 2007).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado, Wyoming. Kansas, Oklahoma. Arizona. New Mexico, Texas. Northeast Mexico, Northwest Mexico. **Southern South America**. Argentina Northwest, Argentina Northeast.

Catamarca, Mendoza, Salta, San Luis, Tucuman. Cordoba, La Pampa. Coahuila, Chihuahua, Durango. Sonora.

Muhlenbergia tricholepis (Torr.) Columbus. *Aliso* 28: 66 (2010).

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**: *Vilfa tricholepis* Torr., *Pacif. Rail. Rep.*4: 155 (1857). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: LT: *Bigelow s.n.*, 10 Oct 1853, USA: New Mexico: Bernadillo Co.: Sandia Mountains (NY; ILT: MO). LT designated by Peterson & Annable, *Syst. Bot.* 15: 522. 1990..

Recent Synonyms: *Blepharoneuron tricholepis* (Torr.) Nash, *Bull. Torr. Bot. Cl.* 25: 88 (1898).

Illustrations (Books): 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) (312, Fig. 164), R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (65, Fig. 14).

Illustrations (Journals): *Systematic Botany* (15: 523, Fig.9 (1990) as *Bleparoneuron*), *J. Bot. Res. Inst. Texas* (1(2) 942, fig.2 (2007), as *Bleparoneuron*).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): Gk. *thrix*, hair; *lepis*, scale. Glumes or lemmas hairy.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 30–70 cm long. Culm-nodes glabrous. Leaves mostly basal. Leaf-sheaths without keel, glabrous on surface. Ligule a ciliolate membrane, 0.3–0.5 mm long. Leaf-blades filiform, involute, 8–15 cm long, 1–2 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 7–15 cm long, 2–5 cm wide. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform, flexuous.

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, 2.5–3.8 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume elliptic, 1 length of upper glume, membranous, without keels, 5 -veined. Lower glume apex obtuse or acute. Upper glume elliptic, 0.9 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex obtuse or acute.

Florets. Fertile lemma ovate, 2.5–3.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins ciliate. Lemma apex emarginate or obtuse, muticous or mucronate. Palea 1 length of lemma, 2 -veined. Palea keels pubescent. Palea surface pubescent, hairy on back.

Flower and Fruit. Caryopsis with adherent pericarp, ellipsoid. Embryo projecting below grain.

n = 8 (2 refs TROPICOS). 2n = 16 (Peterson et al 2007).

Distribution (TDWG). Continent. North 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.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Coahuila, Chihuahua, Durango, Hidalgo, Neuvo Leon, Tamaulipas. Baja California, Sonora. Colima, Jalisco.

Muhlenbergia uniflora (Muhl.) Fernald. *Rhodora,* xxix. 10 (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 USA. **Basionym or Replaced Name**: *Poa uniflora* Muhl., *Descr. Gram.* 151 (1817). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Muhlenberg 223*, USA (PH; IT: US-1535784 (fragm. ex PH)). US specimen notes PH slips 146 & 413.

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (182).

Derivation (Clifford & Bostock 2007): L. *unus*, one; *flos,* flower. Spikelets with one fertile floret.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, short-lived, caespitose. Culms decumbent, 20–40 cm long, rooting from lower nodes. Culm-internodes scaberulous, distally glabrous. Leaf-sheaths keeled, smooth, glabrous on surface or puberulous. Ligule an eciliate membrane, 1 mm long, erose, truncate. Leaf-blades 5–12 cm long, 0.5–1 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, oblong, 7–20 cm long, 2–4 cm wide. Primary panicle branches ascending. Panicle axis scabrous. Panicle branches stiff, scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

Fertile Spikelets. Spikelets comprising 1(–2) fertile florets, without rhachilla extension. 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, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 0.75 mm long, 1 length of upper glume, membranous, purple, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 0.75 mm long, 0.5 length of adjacent fertile lemma, membranous, purple, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.5 mm long, membranous, purple, without keel, 3 -veined, 0–3 -veined. Lemma apex acuminate, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Eastern Canada**, **Northwest USA**, **North-central USA**, **Northeast USA**, **South-central USA**. New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward I, Quebec. Oregon. Minnesota. Maine. Texas.

Muhlenbergia utilis (Torr.) Hitchcock. *Journ. Wash. Acad. Sc*. xxiii. 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).

TYPE from USA. **Basionym or Replaced Name**: *Vilfa utilis* Torr., *Pacif. Railr. Rep.* 5(2): 365–366 (1857). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *W.P. Blake s.n.*, USA: California: Lost Mountain Spring, trip from Tejon to the Lost Hills, in stony places (NY; IT: GH, MO, US (fragm. ex NY)).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (178), F.W.Gould, *The Grasses of Texas* (1975) (273, Fig. 144).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 983, fig.20 (2007)).

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial. Rhizomes elongated, scaly. Culms slender, 20–40 cm long. Culm-internodes smooth. Leaf-sheaths without keel. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blades spreading, filiform, involute, 5–20 cm long, 0.4–0.6(–1) mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, interrupted, 1–4 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, linear.

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, 1.6–2 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 ovate, 0.6–1(–1.3) mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume ovate, 0.6–1(–1.3) mm long, 0.5 length

of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma ovate, 1.6–2 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above or on veins. Lemma apex acute, muticous. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.4 mm long, purple. Caryopsis with adherent pericarp, fusiform.

2*n* = 20 (Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Arizona, California, Nevada. Texas. Central Mexico, Northeast Mexico, Gulf (Mexico), Northwest Mexico, Southwest Mexico, Southeast Mexico.

Distrito Federal, Mexico State, Puebla. Coahuila, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Zacatecas. Veracruz. Sonora. Jalisco, Michoacan. Chiapas.

Muhlenbergia vaginata Swallen. *Contrib. U. S. Nat. Herb.* xxix. 406 (1950).

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

TYPE from Guatemala. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 35589*, 15 Feb 1940, Guatemala: San Marcos: road between San Sebastian and San Marcos, 2700–3800 m (F-1046643; IT: US-2240531, US-2236472).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *vagina*, sheath; *-ata*, possessing. Leaf-sheaths conspicuous.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual or perennial, short-lived. Culms weak, 30–40 cm long, without nodal roots or rooting from lower nodes. Lateral branches lacking. Ligule an eciliate membrane, 1.5–3 mm long. Leaf-blades 1–3(–6) cm long, 1–1.5 mm wide. Leaf-blade surface scaberulous, rough adaxially.

Inflorescence. Inflorescence a panicle, exserted or embraced at base by subtending leaf. Panicle spiciform, linear, 1–3 cm long, bearing few spikelets. Primary panicle branches appressed. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–2.5 mm long, scaberulous.

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, 2.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong or ovate, 0.7–0.8 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex truncate to acuminate. Upper glume oblong or ovate, 0.7–0.8 mm long, 0.25 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex truncate to acuminate.

Florets. Fertile lemma linear, 2.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, rough above. Lemma apex acuminate, muticous or mucronate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.6–0.7 mm long. Caryopsis with adherent pericarp, fusiform, 1 mm long.

n = 9 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico. **Mesoamerica**. Guatemala.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Chihuahua, Durango, Hidalgo. Veracruz. Sinaloa. Jalisco, Michoacan. Chiapas.

Muhlenbergia venezuelae Luces. *Bol. Soc. Venez. Cienc. Nat.* xv. 14 (1953).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Venezuela: Edo Meida: coleccionado en el Páramo de Misint? Muchuchies: 27 Nov 1943, *Z. Luces 281* (HT: VEN).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): from Venezuela.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 25–35 cm long. Culm-internodes terete, scaberulous. Leaf-sheaths without keel, smooth or scaberulous. Ligule an eciliate membrane, 5–10 mm long, acuminate. Leaf-blades filiform, involute, 5–12 cm long, 1–1.5 mm wide. Leaf-blade surface scaberulous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, 8–9 cm long, 0.8 cm wide. Primary panicle branches appressed. 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, compressed slightly, 3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, similar to fertile lemma in texture. Lower glume ovate, 2–2.2 mm long, 0.9 length of upper glume, coriaceous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface scabrous, rough above. Lower glume apex acute. Upper glume ovate, 2–2.7 mm long, 0.5 length of adjacent fertile lemma, coriaceous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface scabrous, rough above. Upper glume apex acute.

Florets. Fertile lemma ovate, 3.5 mm long, coriaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scabrous. Lemma apex dentate, 2 -fid, awned, 1 -awned. Principal lemma awn from a sinus, 1 mm long overall. Palea 0.9 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Muhlenbergia versicolor Swallen. *Contrib. U. S. Nat. Herb.* xxix. 412 (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 Synonomy Database: HT: *E. Hernandez-Xolocotzi & J.A. Jenkins X-810*, 13 Dec 1945, Mexico: Oaxaca (US-1961991).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. variously colored.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Butt sheaths persistent and investing base of culm, with fibrous dead sheaths. Culms 82–100 cm long, 3–4 -noded. Culm-internodes distally glabrous or pubescent. Culm-nodes glabrous or pubescent. Leaf-sheaths without keel. Leaf-sheath oral hairs lacking. Leaf-sheath auricles erect, 4–8 mm long. Ligule an eciliate membrane, 5–22 mm long, membranous. Collar glabrous or pubescent. Leaf-blades conduplicate, 12–27 cm long, 2–5 mm wide. Leaf-blade surface scabrous, rough on both sides.

Inflorescence. Inflorescence a panicle. Panicle open, linear or lanceolate, 17–60 cm long, 1.5–6 cm wide. Primary panicle branches ascending, 4–11.5 cm long. Panicle axis scaberulous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 1–2.5 mm long, scaberulous.

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, 2.5–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, hyaline, without keels, 0–1 -veined. Lower glume lateral veins absent. Lower glume surface asperulous. Lower glume apex acute, muticous or mucronate or awned, 1 -awned, awn 0–1.2 mm long. Upper glume lanceolate, 2–3 mm long, 0.8 length of adjacent fertile lemma, hyaline, without keels, 0–1 -veined. Upper glume primary vein absent or obscure. Upper glume lateral veins absent. Upper glume surface asperulous. Upper glume apex acute, muticous or mucronate or awned, 1 -awned, awn 0–1.2 mm long.

Florets. Fertile lemma lanceolate, 2.5–3.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma margins ciliate. Lemma apex acute, awned, 1 -awned. Principal lemma awn flexuous, 17–30 mm long overall. Palea 1–1.1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America, South America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Gulf (Mexico), Southwest Mexico, Southeast Mexico. **Mesoamerica**. Guatemala, Honduras.

Distrito Federal, Mexico State, Morelos, Puebla. Guanajuato. Veracruz. Colima, Guerrero, Jalisco, Michoacan, Nayarit, Oaxaca. Chiapas.

Muhlenbergia villiflora Hitchcock. *N. Am. Fl.* xvii. 470 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Mexico: Canon de las Minas and Victoria, inter Michiguana et Tanquecillos, *Karw. 1012*.

Recent Synonyms: *Muhlenbergia villosa* Swallen, *Journ. Wash. Acad. Sci.*1: 350 (1941).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (176 as var. *villosa*).

Derivation (Clifford & Bostock 2007): L. *villi*, long weak hairs; *flos,* flower. Lemmas hairy.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms slender, 10 cm long. Culm-internodes distally glabrous. Leaf-sheaths smooth, glabrous on surface. Ligule an eciliate membrane, 0.5–1 mm long. Leaf-blades spreading, curved, involute, 1–2 cm long, 0.5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 1.5 cm long. Primary panicle branches bearing 1–3 fertile spikelets on each lower branch. 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, 1.5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume lanceolate, 1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 1 mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 1.5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma margins villous. Lemma apex apiculate, muticous. Palea 1 length of lemma, 2 -veined. Palea surface villous, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

$2n$ = 20, or 22 (both Peterson et al 2007).

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA**, **Mexico**. New Mexico, Texas. Northeast Mexico.

Coahuila, Chihuahua, Durango, Hidalgo, Neuvo Leon, San Luis Potosi, Tamaulipas, Zacatecas.

Muhlenbergia virescens (HBK) Kunth. Rev. Gram. 1:64 (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).

TYPE from Mexico. **Basionym or Replaced Name**: *Podosemum virescens* Kunth, *Nov. Gen. Sp. (quarto ed.)*. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Humboldt & Bonpland s.n.*, Sep, Mexico: Guanajuato: near Santa Rosa de la Sierra (P; IT: US-86633 (fragm. ex P-HBK Herb)).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 979, fig.18 (2007)).

Derivation (Clifford & Bostock 2007): L. viresco, become green. Panicle shiny-green.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent or short. Butt sheaths persistent and investing base of culm, with curly dead sheaths. Culms erect, 30–80 cm long. Leaf-sheaths without keel. Ligule an eciliate membrane, 2–4 mm long. Leaf-blades flexuous, flat or involute, 10–30 cm long, 1–3 mm wide. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle open, lanceolate, 5–10 cm long. Primary panicle branches appressed, 2–5 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–1 mm long.

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, 3.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate, 2.5–3 mm long, 0.66–0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute. Upper glume lanceolate, 3.5–5 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume apex erose or dentate, 3 -fid, truncate.

Florets. Fertile lemma linear, 3–4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose, hairy all along. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn 10–15 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pilose, hairy on back.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2–2.2 mm long. Caryopsis with adherent pericarp, fusiform.

n = 10 (2 refs TROPICOS).

Distribution (TDWG). Continent. North America.

Country /Province /State. **Southwestern USA**, **South-central USA**, **Mexico**. Central Mexico, Northeast Mexico, Northwest Mexico, Southwest Mexico.

Mexico State. Aguascalientes, Chihuahua, Durango, Guanajuato, Hidalgo, Neuvo Leon, Queretaro, San Luis Potosi, Zacatecas. Sonora. Guerrero, Jalisco, Michoacan, Nayarit.

Muhlenbergia virletii (Fourn.) Soderstr. *Contrib. U.S. Nat. Herb.* iv. 157 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. **Basionym or Replaced Name**: *Epicampes virletii* E. Fourn. *Mexic. Pl.* 2: 88 (1886). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *Virlet d'aoust 1415*, Mexico: San Luis de Potosi (P; IT: US-73225).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Virlet D'Aoust (-) who collected in Mexico.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms erect, 100 cm long. Culm-internodes smooth or scaberulous. Leaf-sheaths keeled, smooth or scaberulous. Leaf-sheath auricles absent. Ligule an eciliate membrane, 4–12 mm long, lacerate. Leaf-blades conduplicate, 30–40 cm long, 2.5–6 mm wide. Leaf-blade surface scabrous, rough on both sides. Leaf-blade margins scabrous.

Inflorescence. Inflorescence a panicle. Panicle open, linear or oblong, 29–55 cm long, 1.5–4 cm wide. Primary panicle branches ascending or spreading, 6–16.5 cm long. Panicle axis scabrous. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.7–2 mm long, scabrous.

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, 3–4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pilose.

Glumes. Glumes persistent, similar, reaching apex of florets. Lower glume lanceolate, 3–4 mm long, 1 length of upper glume, membranous, dark green, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume hairs 0.5 mm long. Lower glume apex acute. Upper glume lanceolate, 3–4 mm long, 1 length of adjacent fertile lemma, membranous, dark green, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2.7–3.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface glabrous. Lemma margins pubescent, hairy below. Lemma apex acuminate, muticous or mucronate. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Central Mexico, Northeast Mexico, Southwest Mexico, Southeast Mexico.

Distrito Federal, Mexico State, Morelos, Puebla, Tlaxcala. Durango, Hidalgo, San Luis Potosi, Tamaulipas, Zacatecas. Michoacan. Chiapas.

Muhlenbergia watsoniana Hitchcock. *N. Am. Fl.* xvii. 471 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Mexico: San Luis Potosi: San Luis Potosi, *Schaffner 1067* (HT: GH).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ana*, denoting connection. In honor of Sereno Watson (1826–1892) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Culms 40–70 cm long. Leaves mostly basal. Leaf-sheaths 3–6 cm long, longer than adjacent culm internode, without keel, smooth or scaberulous, glabrous on surface. Ligule a ciliolate membrane, 0.5–0.7 mm long, truncate. Leaf-blades flat or conduplicate, 10–20 cm long, 1.5–3 mm wide. Leaf-blade midrib keeled beneath. Leaf-blade surface scaberulous, pubescent, hairy adaxially.

Inflorescence. Inflorescence a panicle. Panicle open, linear, interrupted, 10–15 cm long, 1–2 cm wide. Primary panicle branches appressed or ascending, 2.5–5 cm long, bearing spikelets almost to the base. Panicle axis pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, 0.5–2 mm long.

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, 4–5.5 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, dissimilar, exceeding apex of florets. Lower glume lanceolate or elliptic, 3–4 mm long, 0.75 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface hispidulous. Lower glume apex obtuse or acute. Upper glume lanceolate or elliptic, 4–5.5 mm long, 1.1–1.3 length of adjacent fertile lemma, membranous, without keels, 3 -veined. Upper glume lateral veins obscure. Upper glume surface hispidulous. Upper glume apex entire or dentate, 2 -fid, obtuse, muticous or mucronate.

Florets. Fertile lemma elliptic, 3–5 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pilose. Lemma hairs 0.5–0.7 mm long. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn flexuous, 20–25 mm long overall. Palea 0.9 length of lemma, 2 -veined. Palea surface pilose.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 2.7–2.9 mm long. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.
Country /Province /State. **Mexico**. Northeast Mexico, Southwest Mexico.
Aguascalientes, Durango, San Luis Potosi. Jalisco.

Muhlenbergia wrightii Vasey ex Coult. *Man. Rocky Mt. Bot*. 409. (1885).

Accepted by: 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 Synonomy Database: HT: *C. Wright 1986*, 14 Sept 1851–1852, USA: New Mexico: valley of Sonora (US-556872; IT: GH, P).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (172).

Illustrations (Journals): *J. Bot. Res. Inst. Texas* (1(2): 981, fig.19 (2007)).

Derivation (Clifford & Bostock 2007): in honor of Charles Wright (1811–1885) United States botanist.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rootstock evident. Culms erect or geniculately ascending, 15–60 cm long, wiry, 3–5 -noded. Culm-internodes distally pubescent. Leaf-sheaths keeled, smooth or scaberulous, glabrous on surface. Ligule a ciliolate membrane, 0.5–1 mm long, obtuse. Leaf-blades erect or ascending, flat or conduplicate, 3–6 cm long, 1–3 mm wide. Leaf-blade midrib conspicuous. Leaf-blade surface puberulous, hairy adaxially. Leaf-blade margins cartilaginous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence a panicle. Panicle spiciform, linear, interrupted, 5–10(–15) cm long. Panicle branches bearing congested spikelets. 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, 2.5–3 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, shorter than spikelet. Lower glume oblong, 0.5–1 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex obtuse or acute, awned, 1 -awned, awn 0.5–0.8 mm long. Upper glume oblong, 0.5–1 mm long, 0.2–0.25 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse or acute, awned, 1 -awned, awn 0.5–0.8 mm long.

Florets. Fertile lemma lanceolate, 2.5–3 mm long, membranous, dark green or grey, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy below. Lemma margins pubescent, hairy below. Lemma apex acuminate, muticous or mucronate or awned, 1 -awned. Principal lemma awn 0.3–0.5 mm long overall. Palea 1 length of lemma, 2 -veined. Palea surface pubescent, hairy on back, hairy below.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1 mm long, green. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Northwest USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Colorado. Arizona, Nevada, Utah. New Mexico, Texas. Northeast Mexico, Northwest Mexico.
Chihuahua, Durango, Tamaulipas. Baja California, Sonora.

Muhlenbergia x curtisetosa (Scribn.) Bush. *Am. Midl. Nat*. vi. 35 (1919).

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**: *Muhlenbergia schreberi* subsp. *curtisetosa* Scribn., *Rhodora* 9(98): 17 (1907). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: IT: *J. Wolf s.n.*, 1881, USA: Illinois (US-952419).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (159).

Derivation (Clifford & Bostock 2007): L. *curtus*, short; *seta*, bristle; *-osa,* abundance. Lemma awn very short.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes absent. Culms decumbent, 20–70 cm long, rooting from lower nodes. Culm-internodes distally glabrous. Lateral branches ample. Ligule a ciliolate membrane, 0.2–1.1 mm long. Leaf-blades 3–8 cm long, 2–5 mm wide. Leaf-blade surface pilose.

Inflorescence. Inflorescence a panicle. Panicle contracted, linear, 4–9 cm long, 0.1–0.7 cm wide. Primary panicle branches appressed. 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, compressed slightly, 2.2–8.4 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, shorter than spikelet or reaching apex of florets, thinner than fertile lemma. Lower glume 0.4–1.8 mm long, 0.5–0.8 length of upper glume. Upper glume ovate, 0.8–1.9 mm long, 0.33–0.66 length of adjacent fertile lemma, hyaline, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse.

Florets. Fertile lemma lanceolate, 2.2–3.4 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma surface pubescent, hairy below. Lemma apex acuminate, awned, 1 -awned. Principal lemma awn straight, 1–2 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 0.3–0.9 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **North-central USA**, **Northeast USA**. Illinois, Missouri. Ohio.

Muhlenbergia x involuta Swallen. *Am. Journ. Bot.* xix. 436. (1932).

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 Synonomy Database: HT: *W.A. Silveus 358*, 10 Oct 1931, USA: Texas: Bexar Co. (HT: US-1501595; IT: US-1501594, US-3215628, US-3278410).

Illustrations (Books): M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (189).

Images: R.Darke, *The Encylopaedia of Grasses for Liveable Landscapes* (2007);.

Derivation (Clifford & Bostock 2007): L. *involvo*, inroll. Leaf-blades inrolled.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 60–140 cm long. Leaf-sheaths keeled. Ligule an eciliate membrane, 3–12 mm long. Leaf-blades conduplicate, 10–40(–45) cm long, 2–5 mm wide.

Inflorescence. Inflorescence a panicle. Panicle open, elliptic, 18–40 cm long, 2–5(–7) cm wide. Primary panicle branches ascending, 3–10(–15) cm long. Panicle branches straight. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, filiform.

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, 3–4 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, 2–2.5(–3) mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume surface smooth or asperulous. Lower glume apex erose, obtuse or acute, muticous or mucronate. Upper glume lanceolate, 2–2.5(–3) mm long, 0.66 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume surface smooth or asperulous. Upper glume apex erose, obtuse or acute, muticous or mucronate.

Florets. Fertile lemma lanceolate, 2–2.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma margins eciliate or pubescent, hairy at base. Lemma apex dentate, 2 -fid, acuminate, awned, 1 -awned. Principal lemma awn 0.5–2 mm long overall. Palea 1 length of lemma, 2 -veined.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3. Caryopsis with adherent pericarp, fusiform.

Distribution (TDWG). Continent. North America.

Country /Province /State. **South-central USA**. Texas.

Muhlenbergia xanthodas Soderstr. *Contrib. U.S. Nat. Herb.* iv. 173 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Mexico. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *E. Matuda 4003*, 14 Nov 1939–18 Nov 1939, Mexico: Chiapas (US-1817864; IT: F, MICH, US-2075810).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): Gk. *xanthos*, yellow; *das,* torch. The panicles are dense and golden.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Culms erect, 60–100 cm long. Culm-internodes distally glabrous. Leaf-sheaths keeled, scaberulous, glabrous on surface. Leaf-sheath auricles absent. Ligule an eciliate membrane, 6–10 mm long. Leaf-blades conduplicate, 30–40 cm long, 2–3 mm wide. Leaf-blade surface scabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate, filiform.

Inflorescence. Inflorescence a panicle. Panicle open, linear, 20–40 cm long, 2–3 cm wide. Primary panicle branches appressed, 4.5–6 cm long, bearing spikelets almost to the base. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, scaberulous.

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, 2–3 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, similar, reaching apex of florets, shiny. Lower glume lanceolate, 2–3 mm long, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume lanceolate, 2–3 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma lanceolate, 2–2.8 mm long, membranous, without keel, 3 -veined, 0–3 -veined. Lemma midvein pubescent, hairy at base. Lemma apex acute, awned, 1 -awned. Principal lemma awn 7–20 mm long overall. Palea 2 -veined. Palea surface glabrous.

Flower and Fruit. Lodicules 2, cuneate, fleshy. Anthers 3, 1.5–1.8 mm long. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. North America.

Country /Province /State. **Mexico**. Southeast Mexico.

Chiapas.

Mullerochloa moreheadiana (F. M. Bailey) K.M.Wong. *Blumea* 50(3): 435–439, f. 1–9 (2005).

Accepted by: D.Sharp, D. & B.K.Simon, *AusGrass* (2002) (as *Bambusa*).

TYPE from Australia. **Basionym or Replaced Name**: *Bambusa moreheadiana* F.M. Bailey, *Rep. Gov. Sci. Exped. Bellenden-Ker Range* 71 (1889). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F.M. Bailey s.n.*, Jul-Aug 1888, Australia: Queensland: Cook District: Russell River, Harvey's Creek (BRI; IT: K).

Illustrations: None found.

Images: D.Sharp & B.K.Simon, *AusGrass*. Grasses of Australia. CD-Rom Version 1.0. (2002); (as *Bambusa*), K.Domin, *Bibliotheca Botanica* 85 (1915) (413, Fig.97 as *Arundinaria*).

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Boyd Dunlop Morehead (1843–1905) English-born Australian politician.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, woody bamboo, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms scandent, pendulous at the tip, 500–700 cm long, 15–30 mm diam., woody, without nodal roots. Culm-internodes terete, thick-walled or solid, 20–30 cm long, distally hispid. Lateral branches dendroid. Branch complement several. Culm-sheaths present, hispid, with appressed hairs, with tawny hairs. Culm-sheath blade linear, reflexed, 6–7 cm long. Leaves cauline. Leaf-sheaths pilose. Leaf-sheath oral hairs lacking. Leaf-sheath auricles erect. Ligule an eciliate membrane, 2–3 mm long. Collar

with external ligule. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades lanceolate, 17–30 cm long, 15–50 mm wide. Leaf-blade venation with 12–14 secondary veins. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Synflorescence bractiferous, clustered at the nodes, in untidy tufts, 1–1.5 cm long, dense, with glumaceous subtending bracts, with axillary buds at base of spikelet, prophyllate below lateral spikelets, leafless between clusters, 20–30 cm long overall.

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, subterete, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes definite, obscured by lemmas.

Glumes. Glumes two. Lower glume ovate, 3 mm long. Lower glume apex obtuse. Upper glume ovate, 3 mm long. Upper glume apex obtuse.

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

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

Distribution (TDWG). Continent. Australasia.

Country /Province /State. **Australia**. Queensland.

North.

Munroa andina Phil. *Verz. Antofagasta Pfl.* 8: 90 (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Philippi s.n.*, Chile: Tarapac? ad Paroma 3800 m.s.m. lecta (SGO-PHIL-328; IT: SGO-37289, SGO-62661, SGO-63608, US-556619 (fragm. ex herb. Phillipi), US- (photo SGO-37289)).

Illustrations (Books): S.A.Renvoize, *Gramineas de Bolivia* (1998) (294, Fig 60).

Derivation (Clifford & Bostock 2007): L. *-inus*, belonging to. From the Andes.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Stolons present. Culms decumbent, 5–10 cm long. Culm-internodes alternately elongated and bunched. Lateral branches ample. Ligule a fringe of hairs. Leaf-blades 1 cm long, 1 mm wide, stiff. Leaf-blade surface pubescent, hairy adaxially. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 3 fertile spikelets, terminal and axillary (in a leafy fascicle), shorter than basal leaves, subtended by an inflated leaf-sheath (2 sheaths), embraced at base by subtending leaf. Spikelets solitary. Fertile spikelets sessile, heteromorphic (uppermost lacking lower glume).

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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4 mm long, 1.1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex obtuse, mucronate.

Florets. Fertile lemma cuneate, 3.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface granulose, with tufts of hair on midvein, bearing 2 hair tufts in all. Lemma margins ciliate. Lemma apex lobed, 4 -fid, incised 0.2 of lemma length, awned, 3 -awned. Principal lemma awn from a sinus, 2.5–3 mm long overall. Lateral lemma awns present, arising between lobes, 2–2.5 mm long, shorter than principal. Palea surface pubescent, hairy on flanks. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 0.5 mm long. Stigmas 2. Caryopsis with adherent pericarp, fusiform, laterally compressed, smooth. Embryo 0.33 length of caryopsis, projecting below grain. Endosperm flinty (translucent).

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia. Argentina Northwest, Chile North.

Catamarca, Jujuy, La Rioja, Salta, Tucuman. Tarapaca, Antofagasta, Atacama, Coquimbo. Tarapaca, Antofagasta.

Munroa argentina Griseb. *Goett. Abh.* xxiv. 300. (1879).

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 Synonomy Database: LT: *Schickendantz 153*, Feb 1873, Argentina: Catamarca: Atajo (CORD). LT designated by Parodi, Revista Mus. La Plata 34: 187 (1934).

Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (156), S.A.Renvoize, *Gramineas de Bolivia* (1998) (294, Fig 60).

Derivation (Clifford & Bostock 2007): from Argentina.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Stolons present. Culms decumbent, 5–10 cm long. Culm-internodes alternately elongated and bunched. Lateral branches ample. Leaf-sheaths 0.5 cm long, outer margin hairy. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 1–2 cm long, 1 mm wide, stiff. Leaf-blade surface scabrous, rough adaxially. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 2 fertile spikelets, terminal and axillary (in a leafy fascicle), shorter than basal leaves, deciduous as a whole, subtended by an inflated leaf-sheath (2 sheaths), embraced at base by subtending leaf. Peduncle disarticulating, disarticulating below uppermost sheaths. Spikelets solitary. Fertile spikelets sessile, heteromorphic (upper with bifid upper glume).

Fertile Spikelets. Spikelets comprising 2 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 oblong, laterally compressed, 4–5 mm long, falling entire, deciduous with accessory branch structures. Floret callus pubescent.

Glumes. Glumes dissimilar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–5 mm long, 1 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acuminate.

Florets. Fertile lemma oblong, 4–5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma surface scaberulous, with marginal hair tufts, bearing 2 hair tufts in all. Lemma apex dentate, 3 -fid, awned, 1 -awned. Principal lemma awn apical, 1 mm long overall.

Flower and Fruit. Anthers 2, 1.5 mm long. Stigmas 2. Caryopsis with adherent pericarp, ovoid, laterally compressed, smooth. Embryo 0.5 length of caryopsis, projecting below grain. Endosperm flinty (translucent).

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia. Argentina Northwest, Chile North.

Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, Tucuman. Cordoba. Antofagasta.

Munroa decumbens Phil. *Anal. Mus. nac. Chile* 90. (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).

TYPE from Chile. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: Chile: cerca Calcalhuay (SGO-63611), *F. Philippi s.n.*

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Illustrations (Books): F.O.Zuloaga, Z.E.Rugolo & A.M. Anton, *Flora Argentina* 3 – 1, Aristidoideae a Pharoideae (2012) (156), S.A.Renvoize, *Gramineas de Bolivia* (1998) (294, Fig 60), E.G.Nicora, *Los Generos de Gramineas de America Austral* (1987) (363, Fig. 124).

Illustrations (Journals): *Ruizia* (13:252, Fig 29d-e (1993)).

Derivation (Clifford & Bostock 2007): L. *decumbo*, fall down. Culms prostrate.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Stolons present. Culms decumbent, 6–12 cm long. Culm-internodes alternately elongated and bunched. Culm-nodes glabrous or pubescent. Lateral branches ample. Ligule a fringe of hairs. Leaf-blades 1.5–2.2 cm long, 1.5–2 mm wide, stiff. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 2–3 fertile spikelets, terminal and axillary (in a leafy fascicle), shorter than basal leaves, subtended by an inflated leaf-sheath (2 sheaths), embraced at base by subtending leaf. Spikelets solitary. Fertile spikelets sessile, heteromorphic (uppermost lacking lower glume).

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, 4.5–5 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 0.5 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acuminate. Upper glume lanceolate, 4–4.5 mm long, 1.2 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma cuneate, 3–3.5 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent. Lemma surface granulose, with marginal hair tufts or with tufts of hair on midvein, bearing 4 hair tufts in all. Lemma apex lobed, 3 -fid, with outer lobes longer, incised 0.5 of lemma length, awned, 1 -awned. Principal lemma awn apical, 3 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 0.8–1 mm long. Stigmas 2, protogynous. Caryopsis with adherent pericarp, ovoid, laterally compressed, smooth. Embryo 0.5 length of caryopsis, projecting below grain. Endosperm flinty (translucent).

Distribution (TDWG). Continent. South America.

Country /Province /State. **Western South America**, **Southern South America**. Bolivia, Peru. Argentina Northwest, Chile North.

Catamarca, Jujuy, La Rioja, Salta, San Juan, Tucuman. Coquimbo, Valparaiso.

Munroa mendocina Phil. *Sert. Mend. Alt.* 52. (1870).

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 Synonomy Database: HT: *R.A. Philippi s.n.*, Mendoza (SGO; IT: SGO-63609, SGO-37223, US-1939962 (fragm. ex SGO-37223 & photo)).

Illustrations (Books): R.Pilger, *Die Naturlichen Pflanzenfamilien* 14d (1956) (34, Fig. 5 as *Monroa*).

Derivation (Clifford & Bostock 2007): from Mendocina County, California, USA.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Stolons present, with alternating elongated and bunched internodes. Culms decumbent, 5–10 cm long. Culm-internodes alternately elongated and bunched. Ligule a fringe of hairs. Leaf-blades conduplicate, 1.5–2 cm long, 1–2 mm wide, stiff. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 2–3 fertile spikelets, terminal and axillary (in a leafy fascicle), shorter than basal leaves, deciduous as a whole, embraced at base by subtending leaf. Peduncle disarticulating, disarticulating below uppermost sheaths (2 sheaths). Spikelets solitary. Fertile spikelets sessile.

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, 4–4.5 mm long, falling entire, deciduous with accessory branch structures.

Glumes. Glumes both absent or obscure.

Florets. Fertile lemma elliptic, 3.5–4 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins extending close to apex. Lemma margins eciliate. Lemma apex dentate, 2 -fid, obtuse, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1 mm long overall. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 2, 1.25 mm long. Stigmas 2, papillose. Caryopsis with adherent pericarp, ovoid, 1.5 mm long, smooth (translucent). Embryo projecting below grain.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Southern South America**. Argentina Northwest.

Catamarca, La Rioja, Mendoza, San Juan.

Munroa squarrosa (Nutt.) Torr. *Pacif. Rail. Rep.* iv. 158. (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from USA. **Basionym or Replaced Name**: *Crypsis squarrosa* Nutt., *Gen. N. Amer. Pl.* 1: 49 (1818). T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: [USA]: South Dakota: On arid plains near the Grand Deour of the Missouri, *Nutall s.n.*.

Illustrations (Books): K.F.Best, et al, *Prairie Grasses* (1971) (163), M.E.Barkworth et al, *Flora of North America north of Mexico* Vol 25 *Poaceae*, part 2 (2003) (52), F.W.Gould, *The Grasses of Texas* (1975).

Derivation (Clifford & Bostock 2007): L. spreading at right angles from a common axis. Lemma square in outline.

Classification. Subfamily Chloridoideae. Tribe: Cynodonteae.

Habit, Vegetative Morphology. Annual, mat forming. Stolons present. Culms decumbent, 10–15 cm long. Culm-internodes alternately elongated and bunched, antrorsely scabrous. Lateral branches ample. Ligule a fringe of hairs. Leaf-blades flat or conduplicate, 1–5 cm long, 1–2.5 mm wide, stiff. Leaf-blade margins cartilaginous, scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence comprising only a few spikelets, comprising 2–3 fertile spikelets, terminal and axillary (in a leafy fascicle), shorter than basal leaves, embraced at base by subtending leaf. Spikelets solitary. Fertile spikelets sessile, heteromorphic (uppermost smaller and lacking lower glume).

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 oblong, laterally compressed, 7–10 mm long, breaking up at maturity, disarticulating below each fertile floret. Floret callus pubescent.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1 length of upper glume, membranous, without keels, 1 -veined. Lower glume lateral veins absent. Lower glume apex acute. Upper glume linear, 0.9 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute.

Florets. Fertile lemma elliptic, 6–9 mm long, chartaceous, without keel, 3 -veined, 0–3 -veined. Lemma lateral veins excurrent or extending close to apex. Lemma surface granulose. Lemma margins ciliate, hairy in the middle. Lemma apex truncate, awned, 1 -awned. Principal lemma awn from a sinus, 0.5–1.5 mm long overall. Palea surface glabrous. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Anthers 3. Stigmas 2, papillose. Caryopsis with adherent pericarp, ovoid, laterally compressed, smooth (translucent). Embryo projecting below grain.

Distribution (TDWG). Continent. Europe (*), North America.

Region. **Northern Europe** (*).

Country /Province /State. : GB Aliens (Ryves et al). **Western Canada**, **Northwest USA**, **North-central USA**, **Southwestern USA**, **South-central USA**, **Mexico**. Alberta, Saskatchewan. Colorado, Montana, Oregon, Wyoming. Kansas, North Dakota, Nebraska, Oklahoma, South Dakota. Arizona, Nevada, Utah. New Mexico, Texas. Northeast Mexico.

Coahuila, Chihuahua.

Myriocladus affinis Swallen. *Mem. N. Y. Bot. Gard.* 9: 244 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire 32792*, 28 Dec 1951, Venezuela: Bolívar: Cerro Guaiquinima, Río Paragua, occasional about thickets, borders of woodlands, and rocky elevations, Cumbre Camp, 1800 m (US-2078760; IT: F-1448800, NY (2 sheets)).

Illustrations: None found.

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–500 cm long. Culm-internodes shorter and closely spaced at top of culm, terete. Lateral branches sparse, arising from upper culm. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 0.5 mm long, truncate. Leaf-blade base broadly rounded. Leaf-blades ovate, 17–24 cm long, 35–50 mm wide, coriaceous. Leaf-blade surface glabrous. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, ascending, unilateral, 6–8 cm long. Central inflorescence axis 50–70 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 2–3 mm long, pubescent.

Fertile Spikelets. Spikelets comprising 1 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 oblong, 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, 2–2.5 mm long, 1-keeled, 1 -veined. Lower glume primary vein ciliolate. Lower glume lateral veins absent. Lower glume margins ciliate. Lower glume apex acute, muticous or mucronate. Upper glume lanceolate, 3.5–4 mm long, membranous, purple, without keels. Upper glume surface hispidulous, hairy at apex. Upper glume margins ciliate. Upper glume apex obtuse or acute, muticous or mucronate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 3.5–3.8 mm long, membranous, purple, hispidulous, obtuse, mucronate. Fertile lemma elliptic, 3.8–4.1 mm long, coriaceous, without keel, more than 3-veined. Lemma apex obtuse, pubescent. Palea 2.6 mm long. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus cardonae Swallen. *Fieldiana, Bot.,* xxviii. No. 1. 35 (1951).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Cardona 2307*, Oct 1947, Venezuela: Cerro Acopán, Chimanat?Massif, 2150 m (US-1914814, US-1914813, US-1914812; IT: (fragm., MO), VEN).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (163, Fig. 117).

Derivation (Clifford & Bostock 2007): In honor of Felix Cardona Puig (1903–1982) Venezualan geographer and explorer.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300 cm long, 10 mm diam., woody. Culm-internodes shorter and closely spaced at top of culm, terete. Lateral branches ample. Leaves distichous. Leaf-sheaths longer than adjacent culm internode, glabrous on surface. Ligule a fringe of hairs. Leaf-blade base broadly rounded. Leaf-blades deciduous at the ligule, lanceolate, 6–34 cm long, 20–55 mm wide. Leaf-blade venation with distinct cross veins. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, appressed, unilateral, 1–1.5 cm long. Central inflorescence axis 10–30 cm long, pubescent. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 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 oblong, laterally compressed, 5–7 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, 3 mm long. Lower glume apex attenuate. Upper glume lanceolate, 3 mm long, membranous, without keels. Upper glume apex attenuate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 3 mm long, membranous, obtuse. Fertile lemma elliptic, 3.5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma surface with a median groove. Lemma apex obtuse.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus churunensis Swallen. *Acta Bot. Venez.* 2(5–8): 132 (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, U.Quattrocchi, *CRC World Dictionary of Grasses* (2006).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 93281*, 3 May 1964, Venezuela: Bolívar: Auyan-tepu? cumbre de la parte norte de la seccion sur, a lo largo del Río Churún, SE del Second Wall, vecinidad del ca. 1690 m (US-2434006; IT: F(fragm., MO), NY, US-2434005, U, VEN, WAG).

Illustrations: None found.

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

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–300 cm long. Culm-internodes terete, distally glabrous. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades lanceolate, 15–30 cm long, 25–55 mm wide. Leaf-blade margins scabrous, ciliate, hairy at base. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, appressed, unilateral, 1–3.5 cm long. Central inflorescence axis 35 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 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 oblong, laterally compressed, 5.5–6 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, 3 mm long, 1 -veined. Lower glume lateral veins absent. Upper glume lanceolate, 4.5 mm long, membranous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 4 mm long, membranous, setaceously acuminate. Fertile lemma elliptic, 5 mm long, coriaceous, without keel, more than 3-veined. Lemma apex setaceously acuminate. Palea keels ciliate.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus confertus Swallen. *Mem. N. Y. Bot. Gard.* 9: 397 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark & J.J. Wurdack 1220*, 1 Mar 1955, Venezuela: Bolívar: Toron?tepu? Chimanta Massif, west side of Middle Falls of Río Tirica below Summit Camp, 1760 m (US-2182098; IT: NY, U, US-2182099, VEN(fragm., MO)).

Illustrations (Journals): *Smithsonian Contributions to Botany* (9: 95, Fig. 38 (1973)).

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 65–125 cm long. Culm-internodes abbreviated and closely packed at the base or shorter and closely spaced at top of culm, terete, distally glabrous. Lateral branches sparse. Culm-sheaths present, deciduous, 55 cm long. Culm-sheath blade inconspicuous. Leaf-sheaths 7 cm long, longer than adjacent culm internode. Leaf-sheath oral hairs bearded. Ligule a ciliolate membrane, 1 mm long, ciliate from base of abaxial surface. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades oblong, 7–15 cm long, 35–40 mm wide. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending or spreading, unilateral, 5–9 cm long. Central inflorescence axis 40–45 cm long, glabrous. Rhachis glabrous on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, glabrous.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1–2 fertile florets, with a barren rhachilla extension. 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 oblong, laterally compressed, 6–8 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, 2–2.3 mm long. Lower glume apex obtuse or acute. Upper glume lanceolate, 3–3.3 mm long, membranous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, elliptic, 3–3.3 mm long, membranous, obtuse. Fertile lemma elliptic, 4.5–5 mm long, coriaceous, purple, shiny, without keel, more than 3-veined. Lemma apex obtuse. Palea 1 length of lemma. Palea surface glabrous.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus distantiflorus Swallen. *Mem. N. Y. Bot. Gard.* 9: 248 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *F. Cardona 1972*, 11 Nov 1946, Venezuela: Bolívar: Chimant?Massif, Cumbre of Cerro Apacar? Río Caroni, 2300 m (VEN(fragm., US-2554699)).

Illustrations (Books): E.J.Judziewicz et al, *American Bamboos* (1999) (187, Fig. 92).

Derivation (Clifford & Bostock 2007): L. *disto*, be apart; *flos*, flower. Florets well separated in spikelet.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–500 cm long. Culm-internodes terete. Lateral branches sparse. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, pubescent on abaxial surface. Leaf-blade base broadly rounded. Leaf-blades lanceolate or ovate, 10–20 cm long, 35–45 mm wide, coriaceous.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, ascending, straight, unilateral, 5–10 cm long, with branchlets at base of longer racemes. Central inflorescence axis 65 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1–4 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 linear or oblong, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 0.5 mm long. Rhachilla internodes smooth.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 2–3 mm long. Lower glume surface hispidulous, hairy at apex. Lower glume apex acute. Upper glume lanceolate, 3–4 mm long, membranous, without keels. Upper glume surface hispidulous, hairy at apex. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, lanceolate, 3–4 mm long, membranous, hispidulous, hairy at apex, obtuse or acute, muticous or mucronate. Fertile lemma elliptic, 5–5.5 mm long, coriaceous, without keel, more than 3-veined. Lemma apex obtuse, muticous or mucronate. Palea 1 length of lemma. Palea apex pubescent. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus exsertus Swallen. *Mem. N. Y. Bot. Gard*. 9: 242 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire, R.S. Cowan & J.J. Wurdack 30295*, 17 Dec 1950, Venezuela: Amazonas: Río Cunucunuma, Cerro Huachamacari, occasional, Summit Camp of SW Escarpment, alt 1850 m (US-2040226; IT: F-1448791, NY, US-2040227).

Illustrations: None found.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–400 cm long. Culm-internodes terete. Lateral branches ample. Leaf-sheaths glabrous on surface or pubescent. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane. Leaf-blade base truncate or broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades oblong, 10–11.5 cm long, 20 mm wide, coriaceous. Leaf-blade margins scabrous, ciliate, hairy at base. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 8–15, borne along a central axis, ascending, unilateral, 4–16 cm long. Central inflorescence axis 17–33 cm long, glabrous. Rhachis glabrous on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 4 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 2–3 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 oblong, laterally compressed, 5–6 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, 2.5–3.5 mm long. Lower glume surface hispid. Lower glume margins ciliolate. Lower glume apex obtuse. Upper glume elliptic, 4 mm long, membranous, without keels. Upper glume surface hispidulous. Upper glume margins ciliolate. Upper glume apex obtuse.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 5 mm long, membranous, with conspicuous midvein, ciliolate on margins, acute. Fertile lemma elliptic, 5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma margins ciliolate. Lemma apex acute. Palea surface pubescent, hairy on back. Palea apex pubescent.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus gracilis Swallen. *Mem. N. Y. Bot. Gard.* 9: 393 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark & J.J. Wurdack 489*, 5 Feb 1955, Venezuela: Bolívar: Chimanta Massif, Central Section, island in Río Tiricaabove Middle Falls below Summit Camp, alt. 1925 m (US-2182094; IT: F-1521026 (fragm., MO), LE, NY, VEN).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. slender. Culms or inflorescences slender.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short, pachymorph, knotty. Butt sheaths absent. Culms erect, 50–75 cm long, wiry. Culm-internodes shorter and closely spaced at top of culm, terete. Lateral branches lacking or sparse. Culm-sheaths present, 2–3 cm long. Leaf-sheaths longer than adjacent culm internode, pubescent. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades appressed, deciduous at the ligule, linear, 1–1.7 cm long, 2 mm wide, stiff. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, axillary, embraced at base by subtending leaf. Racemes 1, single, 1–2 cm long, bearing a triad of spikelets, bearing 3–5 fertile spikelets on each. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent.

Fertile Spikelets. Spikelets comprising 1 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 oblong, laterally compressed, 6–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 1 mm long, pilose.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2 mm long. Lower glume surface pubescent. Lower glume apex obtuse. Upper glume lanceolate, 2–3 mm long, membranous, without keels. Upper glume surface pubescent. Upper glume apex obtuse, awned, 1 -awned, awn 1 mm long.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 4 mm long, membranous, pubescent, rostrate. Fertile lemma elliptic, 5–5.2 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy above. Lemma apex rostrate. Palea keels ciliate. Palea surface pubescent, hairy above. Palea apex truncate. Rhachilla extension 2.5 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus grandifolius Swallen. *Mem. N. Y. Bot. Gard.* 9: 245 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire & L. Politi 28101*, 1 Jan 1949, Venezuela: Amazonas: Cerro Sipapo (Parague), Lower Caño Negro, infrequent, thickets bordering stream (US-2040185, US-2040184; IT: F-1448789, NY).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. grandis, large; *folium*, leaf. Leaf-blades large.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–300 cm long. Culm-internodes terete. Lateral branches sparse. Leaf-sheaths glabrous on surface. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1 mm long, truncate. Leaf-blade base cordate. Leaf-blades ovate, 26 cm long, 120 mm wide, coriaceous. Leaf-blade margins smooth or scaberulous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending or spreading, unilateral, 4–7 cm long. Central inflorescence axis 68 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 oblong, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 0.5 mm long, scabrous. Rhachilla internodes scaberulous. Floret callus brief.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear. Lower glume surface pubescent. Lower glume apex attenuate. Upper glume lanceolate, 3–4 mm long, membranous, without keels. Upper glume surface pubescent. Upper glume apex acute, awned, 1 -awned, awn 1–2 mm long.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 4.5 mm long, membranous, setaceously acuminate. Fertile lemma elliptic, 5.5–5.7 mm long, coriaceous, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute, pubescent, muticous or awned, 1 -awned. Principal lemma awn 0.5 mm long overall. Palea 3 mm long. Palea surface pubescent, hairy on back. Palea apex pubescent, with excurrent keel veins. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Brazil**. Venezuela. Brazil North. Amazonas.

Myriocladus involutus E.J.Judziewicz & G.Davidse. *Novon,* 1(2): 83 (1991).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: Venezuela: Bolívar: Chimant?Massif, Central Section, rocky escarpment between W and E branches of headwaters of Río Tirica, 2260 m, 13 Feb. 1955, *Steyermark & Wurdack 819* (HT: NY; IT: F-1480644).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (162, Fig. 116).

Illustrations (Journals): *Novon* (1: 84, Fig. 4 (1992)).

Derivation (Clifford & Bostock 2007): L. *involvo*, inroll. Leaf-blades inrolled.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 50–100 cm long. Culm-internodes terete, 2.5–8 cm long, distally glabrous. Lateral branches ample, arising from upper culm. Culm-sheaths present. Leaf-sheaths longer than adjacent culm internode, without keel or keeled, smooth, glabrous on surface. Leaf-sheath oral hairs setose, 3–5 mm long. Ligule an eciliate membrane, 0.1 mm long. Leaf-blade base with a brief petiole-like connection to sheath, petiole 0.1 cm long. Leaf-blades ascending, deciduous at the ligule, linear, involute, 4.5–6.5 cm long, 0.7–1.5 mm wide, indurate, glaucous. Leaf-blade surface glabrous. Leaf-blade apex obtuse.

Inflorescence. Inflorescence composed of racemes, axillary. Racemes 1, single, 2.5–3.5 cm long, bearing few fertile spikelets, bearing 4–7 fertile spikelets on each. Rhachis angular, scabrous on surface, glabrous on surface. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 oblong, laterally compressed, 7–8 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 or oblong, 2–2.5 mm long. Lower glume apex obtuse or acute. Upper glume lanceolate, 3.2–5.5 mm long, membranous, without keels, 1(–3) -veined. Upper glume primary vein conspicuous. Upper glume lateral veins absent or obscure. Upper glume apex acute, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, lanceolate, 4.5–5 mm long, membranous. Fertile lemma lanceolate, 6–7 mm long, coriaceous, without keel, more than 3-veined. Rhachilla extension 2 mm long. Apical sterile florets 1 in number, ovate, 3 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp, ovoid, isodiametric, purple, acute. Embryo 0.15 length of caryopsis. Hilum linear.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus longiramosus Swallen. *Mem. N. Y. Bot. Gard.* 9: 243 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire 32822*, 29 Dec 1951, Venezuela: Bolívar: Cerro Guaiquinima, Río Paragua, occasional in thickets and on rocky elevations, 1 km S of Cumbre Camp, 1800 m (US-2078761; IT: F-1448799, NY).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *longus*, long; *ramus*, branch; *-osus*, abundance. Culm branches long.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–500 cm long. Culm-internodes terete. Lateral branches sparse. Leaf-sheaths wider than blade at the collar. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades ovate, 11–16 cm long, 25–50 mm wide, coriaceous. Leaf-blade surface glabrous. Leaf-blade margins scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending, straight, unilateral, 9–14 cm long. Central inflorescence axis 40–45 cm long, glabrous. Rhachis glabrous on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 2–3 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 elliptic, laterally compressed, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 0.4 mm long, scabrous. Rhachilla internodes 0.5 mm long, scaberulous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2–2.7 mm long. Lower glume apex obtuse. Upper glume elliptic, 2.8–3.5 mm long, membranous, without keels. Upper glume apex acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 3 mm long, membranous, with conspicuous midvein, obtuse, muticous or mucronate. Fertile lemma elliptic, 4–4.6 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma apex obtuse. Palea 5 mm long. Palea surface glabrous. Palea apex obtuse, undifferentiated or pubescent. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus maguirei Swallen. *Mem. N. Y. Bot. Gard.* 9: 239 (1957).

Accepted by: W.D.Clayton & K.Harman, *GrassBase* (2008) and online.

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire & L. Politi 28144*, 3 Jan 1949, Venezuela: Amazonas: Cerro Sipapo, infrequent, pocket thickets, Summit Peak IV (US-2040180; IT: NY).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Basset Maguire (1904-) United States botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect. Culm-internodes terete. Lateral branches sparse. Leaf-sheaths as wide as blade at the collar, pubescent. Leaf-sheath oral hairs ciliate. Ligule a ciliolate membrane, 1 mm long. Leaf-blades erect, lanceolate, 20–25 cm long, 6–10 mm wide. Leaf-blade surface smooth, glabrous. Leaf-blade margins scabrous. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending or spreading, unilateral, 0.5–1 cm long. Central inflorescence axis 30–34 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 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, 4 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes persistent, similar, reaching apex of florets, thinner than fertile lemma. Lower glume lanceolate, 4 mm long. Lower glume apex attenuate, awned, 1 -awned, awn 2–3 mm long. Upper glume lanceolate, 4 mm long, membranous, without keels. Upper glume apex attenuate, awned, 1 -awned, awn 2–3 mm long.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, lanceolate, 2–3 mm long, membranous, attenuate, awned. Awn of lower sterile floret 0.5–2 mm long. Fertile lemma elliptic, 3–3.5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma margins ciliate. Lemma apex acute. Palea 1 length of lemma. Palea keels eciliate. Palea apex ciliate. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus neblinaensis Swallen. *Mem. N. Y. Bot. Gard.* 9: 240 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire, J.J. Wurdack & G.S. Bunting 37208*, 10 Jan 1954, Venezuela: Amazonas: Río Yatua, Cerro de la Neblina, below Cumbre Camp, along escarpment overlooking Cañon Grande, 1650 m (US-2182105, US-2182104; IT: F, NY).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis,* denoting origin. From Cerro de la Neblina, Venezuela.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 100–150 cm long. Culm-internodes shorter and closely spaced at top of culm, terete. Lateral branches lacking or sparse, arising from upper culm. Leaf-sheaths pubescent. Ligule an eciliate membrane. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath. Leaf-blades erect or ascending, lanceolate or oblong, 4–6 cm long, 12–20 mm wide, coriaceous. Leaf-blade surface glabrous or puberulous. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes 8–15, borne along a central axis, closely spaced, erect or ascending, unilateral, 1–1.5 cm long. Central inflorescence axis 6–8 cm long. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 cuneate, laterally compressed, 8–12 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 5–7 mm long. Lower glume surface pubescent. Lower glume margins ciliolate. Lower glume apex acuminate. Upper glume lanceolate, 7–9 mm long, membranous, without keels. Upper glume surface pubescent. Upper glume margins ciliolate. Upper glume apex acuminate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 8–10 mm long, membranous, pubescent, acuminate, muticous or awned. Awn of lower sterile floret 0.5–1 mm long. Fertile lemma elliptic, 9–10 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent, hairy all along or below. Lemma margins ciliate, hairy above. Lemma apex muticous or awned, 1 -awned. Principal lemma awn 0.5–1 mm

long overall. Palea 8–9 mm long. Palea keels ciliate. Palea surface pubescent, hairy on back. Palea apex with excurrent keel veins. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Brazil**. Venezuela. Brazil North. Amazonas.

Myriocladus paludicola Swallen. *Mem. New York Bot. Gard.* 9(3): 246, 248, f. 4b. (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire, J.J. Wurdack & G.S. Bunting 37200*, 10 Jan 1954, Venezuela: Amazonas: Río Yatua, Cerro de Neblina, locally frequent on open he adland, 7 km N of Cumbre Camp, 1900 m (US-2182101, US-2182102; IT: F, NY, US-2182103).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (164, Fig. 119), E.Judziewicz, *Flora of the Guianas*, 187. *Poaceae* (1990) (338, Fig 62).

Derivation (Clifford & Bostock 2007): L. *palus*, swamp; *-cola*, dweller. Growing in swamps.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–800 cm long. Culm-internodes terete. Lateral branches sparse. Leaf-sheaths 4.5 cm long, glabrous on surface. Leaf-sheath oral hairs ciliate, curly. Leaf-sheath auricles erect. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades ovate, 9–30 cm long, 4–10 mm wide, coriaceous. Leaf-blade venation with distinct cross veins. Leaf-blade margins cartilaginous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending or spreading, unilateral, 4–5 cm long, with branchlets at base of longer racemes. Central inflorescence axis 30–40 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 oblong, laterally compressed, 6–8 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 4–4.5 mm long. Lower glume apex setaceously acuminate. Upper glume lanceolate, 6–8 mm long, membranous, without keels. Upper glume apex setaceously acuminate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 5 mm long, membranous, acuminate. Fertile lemma elliptic, 5–5.5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma margins eciliate or pubescent. Lemma apex obtuse, muticous or mucronate. Palea 1 length of lemma. Palea surface glabrous or pubescent, hairy on back. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Brazil**. Venezuela. Brazil North. Amazonas.

Myriocladus paraquensis Swallen. *Mem. N. Y. Bot. Gard.* 9: 246 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire & L. Politi 28395*, 17 Jan 1949, Venezuela: Amazonas: Cerro Sipapo (Paráque), cliffs above Savanna Camp (US-2040181, 2040182, US-2040183; IT: F-1448790, F-1448806, NY(2 sheets)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Parague, Venezuela.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 400–500 cm long, 14 mm diam. Culm-internodes terete, thin-walled. Lateral branches sparse. Leaf-sheaths 9.5 cm long, scaberulous. Leaf-sheath oral hairs ciliate, curly. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades ovate, 9–42 cm long, 60–115 mm wide, coriaceous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, spreading, straight, unilateral, 3–4.5 cm long. Central inflorescence axis 42–48 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 oblong, laterally compressed, 5–7 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 0.5 mm long, pubescent. Rhachilla internodes 2 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2–2.8 mm long. Lower glume surface pilose. Lower glume apex acute or acuminate. Upper glume lanceolate, 3.2–4.5 mm long, membranous, without keels. Upper glume surface pilose. Upper glume apex acute or acuminate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 3–3.5 mm long, membranous, pilose, hairy at apex, acute, muticous or mucronate. Fertile lemma elliptic, 5–5.5 mm long, coriaceous, without keel, more than 3-veined. Lemma margins ciliolate. Lemma apex acute, muticous or mucronate. Palea surface pubescent, hairy on back. Palea apex truncate, pubescent, with excurrent keel veins. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus paruensis Swallen. *Mem. N. Y. Bot. Gard.* 9: 244 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *R.S. Cowan & J.J. Wurdack 31076*, 31 Jan 1951, Venezuela: Amazonas: Serrania Par? Río Par? Caño Asisa, Río Ventuari, W rim N of Camp Cano, 2000 m (US-2040247, US-2040248; IT: NY(2 sheets)).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ensis*, denoting origin. From Rio Parz, Venezuela.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–500 cm long. Culm-internodes terete, solid, distally glabrous. Lateral branches sparse. Leaf-sheaths 9 cm long. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades ovate, 45 cm long, 90 mm wide, coriaceous. Leaf-blade margins cartilaginous, scabrous.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending or spreading, unilateral, 10–18 cm long, with branchlets at base of longer racemes. Central inflorescence axis 60–80 cm long, pubescent. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 2–4 mm long, glabrous or pubescent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 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 oblong, laterally compressed, 5 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.5 mm long, pubescent.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2–3 mm long. Lower glume surface hispidulous, hairy at apex. Lower glume apex acute or laterally pinched. Upper glume lanceolate, 2.5–5 mm long, membranous, without keels. Upper glume surface hispidulous, hairy at apex. Upper glume apex laterally pinched.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 2.5–5 mm long, membranous, hispidulous, hairy at apex, laterally pinched at apex. Fertile lemma elliptic, 4–4.3 mm long, coriaceous, without keel, more than 3-

veined. Lemma midvein thickened. Lemma margins eciliate or ciliolate. Lemma apex acute, pubescent. Palea 4.5–5 mm long. Palea apex obtuse. Rhachilla extension 1 mm long. Apical sterile florets 1 in number, rudimentary.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus purpureus Swallen. *Mem. N. Y. Bot. Gard.* 9: 397 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark & J.J. Wurdack 658*, 9 Feb 1955, Venezuela: Bolívar: Toron?tepu? Chimanta Massif, summit, at edge of escarpment in and among zanjones, 2165–2180 m (US-2182096; IT: F-1480650 (fragm., MO), NY, US-2182097, VEN).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. purple to reddish. Usually of purple spikelets.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 150–400 cm long. Culm-internodes terete. Lateral branches fastigiate. Leaf-sheaths 7 cm long, longer than adjacent culm internode, glabrous on surface. Ligule an eciliate membrane, 1–1.5 mm long. Leaf-blade base broadly rounded. Leaf-blades oblong, 18–20 cm long, 40–50 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acute.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, erect or ascending, unilateral, 1–4 cm long. Central inflorescence axis 60–75 cm long, pubescent. Rhachis pubescent on surface. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 2–3 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, 6–7 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, 1.5–2 mm long. Lower glume apex obtuse or acute. Upper glume lanceolate, 2.5–3 mm long, membranous, without keels. Upper glume primary vein thickened. Upper glume apex obtuse or acute, mucronate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 3.5 mm long, membranous, with conspicuous midvein, obtuse. Fertile lemma elliptic, 5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma apex obtuse, without ornament or pubescent. Palea 1 length of lemma.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus simplex Swallen. *Mem. N. Y. Bot. Gard.* 9: 242 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *B. Maguire & C.K. Maguire 35134*, 9 Feb 1953, Venezuela: Amazonas: Río Manapiare, Serrania Yutaj? frequent along stream bank, right branch of Caño Yutaj? elev. 1300 m, clumped 1–3 m high (US-2116105; IT: F, MO-1708757, NY, U).

Illustrations (Books): J.A.Steyermark et al, *Flora of the Venezuelan Guayana* Vol. 8 (2004) (163, Fig. 118).

Derivation (Clifford & Bostock 2007): L. simple. Culms or inflorescences unbranched.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 45–300 cm long. Culm-internodes alternately elongated and bunched, terete. Lateral

branches lacking or sparse, arising from upper culm. Leaf-sheaths wider than blade at the collar, glabrous on surface or puberulous. Leaf-sheath oral hairs ciliate. Ligule an eciliate membrane, 1 mm long, pubescent on abaxial surface. Leaf-blade base without a false petiole. Leaf-blades lanceolate, 5–7 cm long, 5–10 mm wide, coriaceous. Leaf-blade margins smooth or scaberulous.

Inflorescence. Inflorescence composed of racemes. Racemes 3–10, borne along a central axis, ascending, unilateral, 7–13 cm long. Central inflorescence axis 10–20 cm long, glabrous. Rhachis glabrous on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1–2 fertile florets, with a barren rhachilla extension. 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 elliptic, laterally compressed, 5–6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes 0.5 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2.8–4 mm long. Lower glume margins ciliolate. Upper glume lanceolate, 4.5–6 mm long, membranous, without keels. Upper glume primary vein thickened. Upper glume margins ciliolate. Upper glume apex obtuse, muticous or mucronate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 5–6 mm long, membranous, ciliolate on margins, obtuse. Fertile lemma elliptic, 5–6.3 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma margins ciliolate, hairy above. Lemma apex acute. Palea 5.8–7 mm long. Palea surface pubescent, hairy on back, hairy above. Palea apex pubescent.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus steyermarkii Swallen. *Mem. New York Bot. Gard.* 9(3): 395 (1957).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark & J.J. Wurdack 819*, 13 Feb 1955, Venezuela: Bolívar: Chimanta Massif, Central Section, frequent escarpment beween W and E branches of Río Tirica, frequent, 2260 m (US-2182095; IT: VEN).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of Julian Alfred Steyermark (1909–1988) United States botanist who worked principally in Venezuela.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 90 cm long, wiry. Culm-internodes terete. Lateral branches ample, arising from upper culm. Culm-sheaths present, 6–11 cm long. Leaves distichous. Leaf-sheaths 1.5–2 cm long, longer than adjacent culm internode, pubescent, with reflexed hairs. Leaf-sheath oral hairs setose. Ligule an eciliate membrane, 0.3 mm long. Leaf-blade base with a brief petiole-like connection to sheath. Leaf-blades appressed, deciduous at the ligule, linear, 0.9–1.4 cm long, 1.5–2 mm wide, coriaceous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes, axillary. Racemes 1, single, 1–1.5 cm long, bearing few fertile spikelets, bearing 3–5 fertile spikelets on each. Rhachis pubescent on surface. Spikelets appressed, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, pubescent.

Fertile Spikelets. Spikelets comprising 1 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 oblong, laterally compressed, 6 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 0.5 mm long, glabrous.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 1–2.5 mm long. Lower glume surface pubescent. Lower glume margins ciliate. Lower glume apex muticous or awned, 1 -awned, awn 0.5–1.5 mm long. Upper glume lanceolate, 2–2.5 mm long,

membranous, without keels. Upper glume surface pubescent. Upper glume margins ciliate. Upper glume apex acute, muticous or awned, 1 -awned, awn 0.5–1.5 mm long.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 3–3.5 mm long, membranous, pubescent, obtuse. Fertile lemma elliptic, 3.8–4.2 mm long, coriaceous, without keel, more than 3-veined. Lemma surface pubescent. Lemma margins ciliate. Lemma apex obtuse. Palea keels ciliate. Palea surface pubescent. Palea apex truncate. Rhachilla extension 1.5 mm long, glabrous or sparsely hairy, hairy above.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus variabilis Swallen. *Mem. N. Y. Bot. Gard.* 9: 396 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 75879*, 21 Jun 1953–22 Jun 1953, Venezuela: Bolívar: Chimant?Massif, east-central portion of summit of Apacar?tepu? 2450–2500 m, in recesses of deep fissures, in most ground with shrubs and small trees (US-2182908; IT: F-1449632, F-1449634, F1449633, NY, US-2182909, VEN).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *varius*, variable; *-abilis*, indicating capacity. Species polymorphic and usually with many varieties.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300 cm long, 4 mm diam. Culm-internodes terete. Lateral branches sparse. Leaf-sheaths 5–6 cm long, longer than adjacent culm internode, glabrous on surface. Leaf-sheath oral hairs setose. Ligule a ciliolate membrane, 1 mm long. Leaf-blade base broadly rounded, with a brief petiole-like connection to sheath, petiole 0.2 cm long. Leaf-blades ovate, 24–29 cm long, 43–60 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, ascending, unilateral, 5–10 cm long, bearing few fertile spikelets, bearing 3–4 fertile spikelets on each. Central inflorescence axis 38–50 cm long, villous. Rhachis villous on surface. Spikelet packing lax. Spikelets appressed or ascending or spreading, solitary. Fertile spikelets pedicelled. Pedicels present, oblong, 3–5 mm long.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 2–3 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 oblong, laterally compressed, 10–15 mm long, breaking up at maturity, disarticulating below each fertile floret.

Glumes. Glumes one the lower absent or obscure or two, persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume linear, 1.2–3 mm long. Lower glume surface hispid. Lower glume apex acute or setaceously acuminate. Upper glume linear, 2–5.5 mm long, membranous, without keels. Upper glume surface hispid. Upper glume apex acute or setaceously acuminate.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 3–4.5 mm long, membranous, hispidulous, hairy at apex, obtuse or acute, mucronate. Fertile lemma elliptic, 4.5–5.5 mm long, coriaceous, without keel, more than 3-veined. Lemma apex acute, pubescent. Palea surface puberulous. Palea apex truncate or acute, pubescent, muticous or with excurrent keel veins.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriocladus virgatus Swallen. *Fieldiana, Bot.,* xxviii. No. 1. 34 (1951).

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 Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.A. Steyermark 58293*, 2 Sep 1944, Venezuela: Amazonas: savanna hills, summit of Cerro Duida, 1025–1200 m (F-1189825(photo, US); IT: US-2876355).

Illustrations (Books): E.J.Judziewicz et al, *American Bamboos* (1999) (188, Fig. 93).

Illustrations (Journals): *Smithsonian Contributions to Botany* (9:96, Fig. 39; 98, Fig. 40 (1973)).

Derivation (Clifford & Bostock 2007): L. *virga*, broom; *-ata*, possessing. Inflorescence arms or culms held erect.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 300–400 cm long. Culm-internodes shorter and closely spaced at top of culm, terete, thin-walled. Lateral branches lacking. Leaf-sheaths longer than adjacent culm internode. Ligule an eciliate membrane, 1 mm long. Leaf-blades lanceolate, 30–40 cm long, 25–30 mm wide, coriaceous. Leaf-blade venation without cross veins. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, unilateral, 1–3 cm long. Central inflorescence axis 30–100 cm long. Rhachis pubescent on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1–2 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 oblong, laterally compressed, 3–3.5 mm long, breaking up at maturity, disarticulating below each fertile floret or above glumes but not between florets.

Glumes. Glumes persistent, dissimilar, shorter than spikelet, thinner than fertile lemma. Lower glume subulate, 1.5 mm long. Upper glume ovate, 1.5–2 mm long, 0.6–0.7 length of adjacent fertile lemma, membranous, without keels, 1 -veined. Upper glume lateral veins absent. Upper glume apex acute, awned, 1 -awned, awn 1 mm long.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to upper glume, ovate, 2–3 mm long, membranous, 1 -veined, without lateral veins, obtuse, awned. Awn of lower sterile floret 0.5–2 mm long. Fertile lemma elliptic, 3–3.5 mm long, coriaceous, shiny, without keel, 5 -veined, more than 3-veined. Lemma margins ciliolate. Lemma apex obtuse. Apical sterile florets 1 in number, barren, linear, 1–2 mm long.

Flower and Fruit. Lodicules 3, membranous, veined. Anthers 3. Stigmas 2. Ovary glabrous. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**, **Brazil**. Venezuela. Brazil North.
Amazonas.

Myriocladus wurdackii Swallen. *Mem. N. Y. Bot. Gard.* 9: 398 (1957).

TYPE from Venezuela. T:<Type of Basionym>: *fide* TROPICOS and Kew Synonomy Database: HT: *J.J. Wurdack 34194*, 24 Jan 1953, Venezuela: Bolívar: Churi-tepu? North-West cumbres, locally frequent in lower cumbre, 2100–2200 m (US-2116114: IT: NY, US-2116115).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): in honor of John Julius Wurdack (1921-) United States botanist.

Classification. Subfamily Bambusoideae. Tribe: Bambuseae.

Habit, Vegetative Morphology. Perennial, caespitose. Rhizomes short, pachymorph. Butt sheaths absent. Culms erect, 200–400 cm long. Culm-internodes terete. Lateral branches sparse. Leaf-sheaths longer than adjacent culm internode. Leaf-sheath oral hairs setose. Ligule an eciliate membrane. Leaf-blade base broadly rounded. Leaf-blades ovate, 15–20 cm long, 27–47 mm wide. Leaf-blade surface glabrous. Leaf-blade margins scabrous. Leaf-blade apex acuminate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, spreading, unilateral, 1–2 cm long, with branchlets at base of longer racemes. Central inflorescence axis 30–38 cm long, hirsute. Rhachis hirsute on surface. Spikelets solitary. Fertile spikelets pedicelled. Pedicels present, oblong.

Fertile Spikelets. Spikelets comprising 1 basal sterile florets, 1–2 fertile florets, with a barren rhachilla extension. 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 oblong,

laterally compressed, 7–9 mm long, breaking up at maturity, disarticulating below each fertile floret. Rhachilla internodes elongated below proximal fertile floret. Rhachilla elongation 1.5 mm long. Rhachilla internodes 2 mm long.

Glumes. Glumes persistent, similar, shorter than spikelet, thinner than fertile lemma. Lower glume lanceolate, 2–2.5 mm long. Lower glume primary vein ciliate. Lower glume margins ciliate. Lower glume apex obtuse or acute. Upper glume elliptic, 3–3.5 mm long, membranous, without keels. Upper glume primary vein ciliate. Upper glume margins ciliate. Upper glume apex obtuse or acute.

Florets. Basal sterile florets 1, barren, without significant palea, persisting on inflorescence. Lemma of lower sterile floret similar to fertile lemma, ovate, 3.5–4 mm long, membranous, with conspicuous midvein, hispidulous, hairy above, obtuse. Fertile lemma elliptic, 4–4.5 mm long, coriaceous, without keel, more than 3-veined. Lemma midvein thickened. Lemma surface hispidulous, hairy above. Lemma apex obtuse. Palea 5–5.5 mm long. Palea keels scabrous, eciliate or ciliolate. Palea apex pubescent. Rhachilla extension 2.5 mm long.

Flower and Fruit. Lodicules 3. Anthers 3. Stigmas 2. Caryopsis with adherent pericarp.

Distribution (TDWG). Continent. South America.

Country /Province /State. **Northern South America**. Venezuela.

Myriostachya wightiana (Nees ex Steud.) Hook. f. *Fl. Brit. Ind,* vii. 327 (1896).

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: *Leptochloa wightiana* Nees ex Steud., *Syn. Pl. Glumac.* 1: 209 (1854).

Illustrations: None found.

Derivation (Clifford & Bostock 2007): L. *-ana*, indicating connection. In honor of Robert Wight (1796–1872) Scots-born physician and sometime Superintendent, Botanic Gardens, Madras.

Classification. Subfamily Chloridoideae. Tribe: Chlordoideae incertae sedis.

Habit, Vegetative Morphology. Perennial, caespitose, clumped densely. Butt sheaths scarious, glabrous. Basal innovations intravaginal, flabellate. Culms erect, 100–150 cm long. Culm-internodes elliptical in section. Leaves mostly basal. Leaf-sheaths as wide as blade at the collar, keeled, smooth, glabrous on surface. Ligule a fringe of hairs, 0.5 mm long. Leaf-blades 45–60 cm long, 10–20 mm wide. Leaf-blade surface smooth. Leaf-blade margins smooth. Leaf-blade apex attenuate.

Inflorescence. Inflorescence composed of racemes. Racemes numerous, borne along a central axis, closely spaced, in a multilateral false spike, spreading, oblong, unilateral, 2–8 cm long. Central inflorescence axis 25–60 cm long. Rhachis deciduous from axis, subterete, puberulous on surface. Spikelet packing broadside to rhachis. Spikelets ascending, solitary. Fertile spikelets pedicelled. Pedicels present, linear, 1.5–2 mm long.

Fertile Spikelets. Spikelets comprising 2–12 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, 5–12 mm long, falling entire, deciduous with the pedicel, pedicel base truncate. Rhachilla internodes eventually visible between lemmas.

Glumes. Glumes similar, shorter than spikelet, gaping. Lower glume lanceolate, 0.7–1 length of upper glume, membranous, 1-keeled, 1 -veined. Lower glume primary vein scabrous. Lower glume lateral veins absent. Lower glume apex acuminate, awned, awn 1–5 mm long. Upper glume lanceolate, 0.5–0.7 length of adjacent fertile lemma, membranous, 1-keeled, 1 -veined. Upper glume primary vein scabrous. Upper glume lateral veins absent. Upper glume apex acuminate, awned, awn 1–3 mm long.

Florets. Fertile lemma ovate, laterally compressed, 2.5–3.5 mm long, membranous, keeled, 3 -veined, 0–3 -veined. Lemma lateral veins obscure. Lemma apex acute, mucronate. Palea oblong, 1 length of lemma, 2 -veined. Palea keels ciliolate. Palea apex entire, acute. Apical sterile florets resembling fertile though underdeveloped.

Flower and Fruit. Lodicules 2, cuneate, fleshy, truncate. Anthers 3, linear, 1 mm long. Stigmas 2. Caryopsis with adherent pericarp, ovoid, laterally compressed. Embryo 0.4 length of caryopsis. Disseminule comprising a spikelet.

Distribution (TDWG). Continent. Tropical Asia.

Country /Province /State. **Indian Subcontinent**, **Indo-China**, **Malesia**. Bangladesh, India, Sri Lanka. Myanmar, Thailand. Sumatra, Malaya.

Tamilnadu, West Bengal.